



AVEVA™ Asset Information Management

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# Welcome to AVEVA™ Asset Information Management

Welcome to the AVEVA AIM Documentation!

AVEVA AIM is a powerful web-based solution that supports users in organizing, validating and collaborating on asset data and documents irrespective of source and location, providing the ability to link project teams situated in various locations via one unique application.

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# Technical Support and Training Information

## Technical Support

If you encounter software issues or have suggestions for software improvements, contact the AVEVA Helpdesk (<https://softwaresupport.aveva.com>), and register a support incident.

After you register a support incident, we know your identity (from your customer ID) and the details of the incident, we endeavor to fix the software issue or consider the software improvement suggestion as soon as possible, and notify you about the status of the incident.

If you are an accredited user of the AVEVA products, you are entitled to use the AVEVA Helpdesk, for which you should have valid login credentials. For any other queries, contact the nearest AVEVA Regional Support Center (<https://www.aveva.com/en/support>).

## Training Information

For information about product training courses, see the Product Training section of AVEVA's website (<https://www.aveva.com/en/training>), or contact the nearest AVEVA Regional Support Center (<https://www.aveva.com/en/support>).

# Contact information

AVEVA Group Limited  
High Cross  
Madingley Road  
Cambridge  
CB3 0HB. UK

<https://sw.aveva.com/>

For information on how to contact sales and customer training, see <https://sw.aveva.com/contact>.

For information on how to contact technical support, see <https://sw.aveva.com/support>.

To access the AVEVA Knowledge and Support center, visit <https://softwaresupport.aveva.com>.

# What's new in AVEVA™ AIM?

These release notes explain the enhancements, defect fixes and known issues for the AIM-A, AIM-D and AIM (on-prem) solutions.

## AIM-A

This section describes the Release Notes for AIM-A.

For details on **Information Standards Manager** (ISM) releases, see:

<https://softwaresupportsp.aveva.com/#/producthub?q=information%20standards%20manager&selectedTab=Documents>

2023

January

### Introduction

This document provides the latest **Release Notes 23.01** for AVEVA Asset Information Management - Advanced.

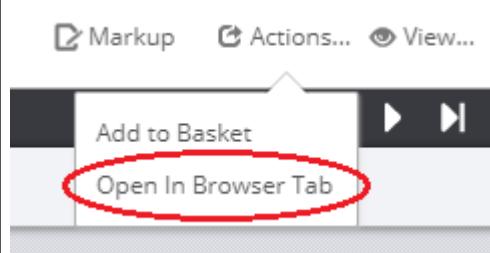
### Content

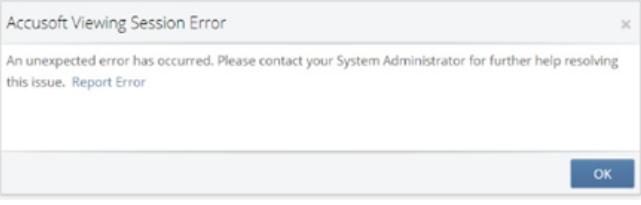
This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
1858376	Defect	Searches involving data with LifecycleType associations may have resulted in "High CPU Utilization" alerts indicating poor general performance of the solution.
2028590 960204266	Defect	When viewing Excel files in the Dashboard using the PrizmDoc viewer, headers and footers may have been overwritten by the body of the page.
2063084 960214938	Defect	When running a Query Form, depending on the date format entered, then results may have come back with a value of "Invalid Date".

Reference	Type	Description
2280327	Defect	Tag Summary view panes became empty when expanded.
2222182	Process	Updated the release to the latest Microsoft patches.
2279958 960252097	Defect	Tag Summary views showed misaligned content and panes became empty when expanded. This was happening for tags under the Location class.

## Known Issues

Reference	Description
1492249 1503066/960104911	The PrizmDoc viewer used to view TIF files currently does not support files where at least one dimension of the image is larger than 32767.  We are currently working with the supplier to resolve this issue.
1899246 960156293	When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:    In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.
2165885	When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.

Reference	Description
	

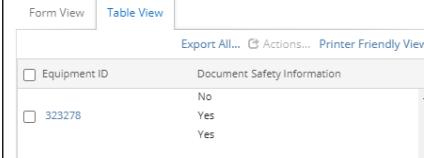
## February

### Introduction

This document provides the latest **Release Notes 23.02** for AVEVA Asset Information Management - Advanced.

### Content

This release contains the following significant enhancements and defect fixes:

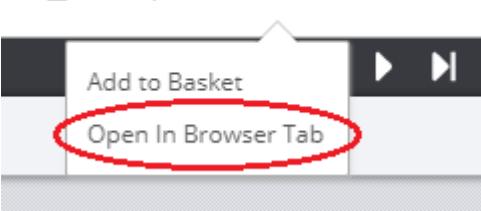
Reference	Type	Description						
1661105	Enhancement	<p>In the Dashboard, when selecting any of the following items from any Actions menu, then they are greyed out until their operation is completed: Select in view/ Highlight/Add to basket.</p> <p>This avoids inadvertently selecting the item twice causing an unnecessarily long operation.</p>						
1992309 960181570	Defect	<p>In the Dashboard, if a Query Form is designed to search for certain objects and list some of its related items, then in the Table View, all non-blank values are listed vertically. For example, if we are listing each equipment and the value of Document Safety Information on each of the equipment's related documents, then one entry may look like this:</p>  <p>Previously, when exporting data with related items to .xlsx files, then only unique values, rather than all values, were reported for each related item, and they were listed on one line in the Excel row separated by a comma (by default). For example:</p> <table border="1"> <thead> <tr> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Equipment ID Document Safety Information</td> </tr> <tr> <td>2</td> <td>323278 No,Yes</td> </tr> </tbody> </table> <p>Now the export is more similar to the Table View layout and lists all the values for related items and on a separate line within the Excel row. For example:</p>	A	B	1	Equipment ID Document Safety Information	2	323278 No,Yes
A	B							
1	Equipment ID Document Safety Information							
2	323278 No,Yes							

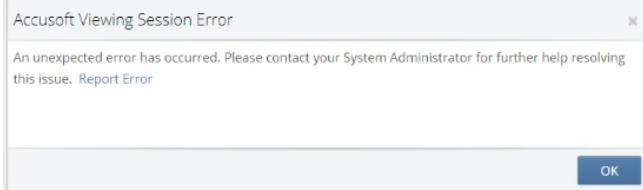
Reference	Type	Description												
		<table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Equipment ID</td> <td>Document Safety Information</td> </tr> <tr> <td></td> <td>323278</td> <td>No, Yes, Yes</td> </tr> <tr> <td>2</td> <td></td> <td></td> </tr> </tbody> </table>		A	B	1	Equipment ID	Document Safety Information		323278	No, Yes, Yes	2		
	A	B												
1	Equipment ID	Document Safety Information												
	323278	No, Yes, Yes												
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2020356 960205633 960226781	Defect	<p>When viewing a Tag Summary view in the Dashboard, some documents were incorrectly omitted from the "Documents and 3D Models" panel.</p> <p>This happened when the Data Group for the panel was following more than one type of association (from tag to document). For example: "is referenced in has document".</p>												

Reference	Type	Description
		The Relationship Explorer presented the correct information.
2069952	Defect	When loading 2D data files using the Data Pipeline, if there were no tags found to be scraped, then the 1D Data Orchestration was being triggered unnecessarily.
2184340	Defect	When loading data using the Data Pipeline, if there are multiple files where their names only differ by their extension, and then if one of the files fails to process, then the status of the file said, "Orchestration Completed" when it should have said "Failed".
2222183	Process	Updated the release to the latest Microsoft patches.
2301260 960256920	Defect	For attributes with Units of Measure (UoM), the UoM was showing in the Attribute panel, but searching with the attribute was failing to return the correct results.
2325747	Defect	When loading data using the Data Pipeline, if there are invalid XML characters: <ul style="list-style-type: none"> <li>• in an object's full ID or Name, then the object is skipped and not loaded.</li> <li>• in association names, then the association is skipped and not loaded (the object will still be loaded).</li> <li>• in attribute names, then the attribute is skipped and not loaded (the object will still be loaded).</li> </ul>

Reference	Type	Description
		loaded).
2327551 960262388	Defect	When loading a Tag Register through the Data Pipeline, the "del" action was sometimes failing to delete the tag, but only if the tag was referenced from a secondary register.

## Known Issues

Reference	Description
1492249 1503066/960104911	The PrizmDoc viewer used to view TIF files currently does not support files where at least one dimension of the image is larger than 32767.  We are currently working with the supplier to resolve this issue.
1899246 960156293	When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:   <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer,

Reference	Description																																
	<p>the PDFs may fail to load with the following error message.</p> 																																
2333598	<p>When exporting from a Query Form (via Table View) to a .xlsx file, where cells are for multiple related items and may contain multiple values, then at the top of the cell any values that are identical are only shown once rather than the correct number of times. For example, if "Approved" should occur twice at the top it is only shown once:</p> <table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Equipment ID</td> <td>Document ID</td> <td>Status</td> </tr> <tr> <td></td> <td>J-9002A</td> <td>Doc1, Doc2, Doc3, Doc4</td> <td>Approved, Draft, Draft</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>The correct view should be:</p> <table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Equipment ID</td> <td>Document ID</td> <td>Status</td> </tr> <tr> <td></td> <td>J-9002A</td> <td>Doc1, Doc2, Doc3, Doc4</td> <td>Approved, Approved, Draft, Draft</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		A	B	C	1	Equipment ID	Document ID	Status		J-9002A	Doc1, Doc2, Doc3, Doc4	Approved, Draft, Draft	2					A	B	C	1	Equipment ID	Document ID	Status		J-9002A	Doc1, Doc2, Doc3, Doc4	Approved, Approved, Draft, Draft	2			
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## March

### Introduction

This document provides the latest **Release Notes 23.03** for AVEVA Asset Information Management - Advanced.

### Content

This release contains the following significant enhancements and defect fixes:

#### Core Functionality

Reference	Type	Description
2149022	Defect	When opening a 3D model in the context of a tag (the tag gets
960227175		

Reference	Type	Description
		selected and zoomed to), then, when rotating the model it was not rotating about the selected tag.
2203012 960239256	Defect	After performing an Advanced Find using the Not operator and then doing an Export All, it was possible to receive an “Operation timed-out” message.
2222184	Process	Updated the release to the latest Microsoft patches.
2274850 960250902	Defect	When using Microsoft Edge, in the top-right of the Dashboard, the Basket icon (  ) may have been partly overwritten by the Tab Panel icon (  ).
2275074 960240661	Defect	When running a Query Form and using the date picker to define a Between operation and when using a browser locale other than UK English or US English, then the wrong format (dd/mm/yyyy vs mm/dd/yyyy) may have been used, resulting in the following message: “The value for the end of the range was lower than the value for the start of the range. They have been swapped.”
2282225	Enhancement	Mark-up from AVEVA Point Cloud Manager (APCM), which is also an alias of a tag, is now supported when viewing APCM documents. So, when an APCM model is opened from a Tag Summary view, it zooms to the tag for the aliased mark-up in the APCM viewer.
2289292 960260115	Defect	Some environments may have not loaded 3D models without manual refresh attempts.
2333598	Defect	When exporting from a Query Form

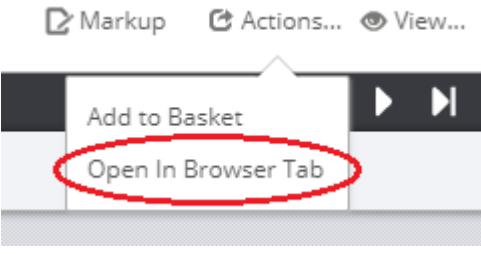
Reference	Type	Description																								
960181570		<p>(via the Table View) to a .xlsx file, where cells were for multiple related items and may have contained multiple values, then at the top of the cell any values that were identical were only shown once rather than the correct number of times. For example, if "Approved" should have occurred twice at the top it was only shown once:</p> <table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>1 Equipment ID</td> <td>Document ID</td> <td>Status</td> </tr> <tr> <td>J-9002A</td> <td>Doc1, Doc2, Doc3, Doc4</td> <td>Approved, Draft, Draft</td> </tr> <tr> <td>2</td> <td></td> <td></td> </tr> </tbody> </table> <p>The correct output is now created:</p> <table border="1"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>1 Equipment ID</td> <td>Document ID</td> <td>Status</td> </tr> <tr> <td>J-9002A</td> <td>Doc1, Doc2, Doc3, Doc4</td> <td>Approved, Approved, Draft, Draft</td> </tr> <tr> <td>2</td> <td></td> <td></td> </tr> </tbody> </table>	A	B	C	1 Equipment ID	Document ID	Status	J-9002A	Doc1, Doc2, Doc3, Doc4	Approved, Draft, Draft	2			A	B	C	1 Equipment ID	Document ID	Status	J-9002A	Doc1, Doc2, Doc3, Doc4	Approved, Approved, Draft, Draft	2		
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2361193	Defect	An incorrect mention of Security Access Groups (SAGs) in the User Guide has been removed. SAGs are not currently supported in this solution.																								

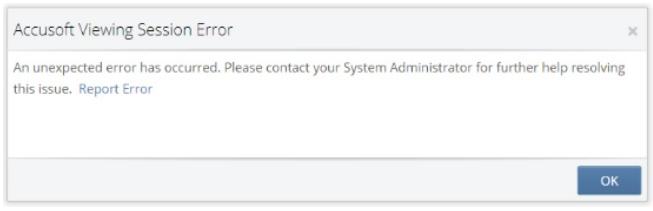
**Data Pipeline**

Reference	Type	Description
2278511	Enhancement	<p>When uploading a 2D file using the uploadurl endpoint, now both renditions (CAD and original) can be published by setting both of the following fields to true:</p> <ul style="list-style-type: none"> <li>• publishOriginal</li> <li>• publishRendition</li> </ul>
2368406 960273241	Defect	<p>The following column was not being populated in the reporting associations table:</p> <ul style="list-style-type: none"> <li>• ToObjectNameTemplateID</li> </ul> <p><b>Note:</b> To populate this column</p>

Reference	Type	Description
		<p><u>you will need to re-process the Class Library.</u></p>
2371022 960273550	Defect	<p>The following columns were not being populated in the reporting database:</p> <ul style="list-style-type: none"> <li>• AttributeSource in ISM_NamingTemplate_Element table</li> <li>• NamingTemplateElementLookups in EDW_Functional table</li> </ul> <p><b>Note:</b> To populate these columns you will need to re-process the Class Library.</p>

## Known Issues

Reference	Description
1492249 1503066/960104911	<p>The PrizmDoc viewer used to view TIF files currently does not support files where at least one dimension of the image is larger than 32767.</p> <p>We are currently working with the supplier to resolve this issue.</p>
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p> 

Reference	Description
	In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 
2379345	<p>If you open an AVEVA Point Cloud Manager model from a Tag Summary view, the page may become unresponsive. This happens when opening the model a couple of times.</p> <p>Once this error appears, to see the APCM model again:</p> <ol style="list-style-type: none"> <li>1. Close the browser.</li> <li>2. Re-open the browser.</li> <li>3. Re-load the APCM model.</li> </ol>

## April

### Introduction

This document provides the latest **Release Notes 23.04** for AVEVA Asset Information Management - Advanced.

### Content

This release contains the following significant enhancements and defect fixes:

#### Core Functionality

Reference	Type	Description
2276894 960247967	Defect	<p>In the Dashboard, when viewing PDF documents, the size and layout of pages may not have reflected the original document.</p> <p>This was because pages were</p>

Reference	Type	Description
		always rendered using “ <i>media box</i> ” dimensions. Now, the rendering of pages also honours “ <i>crop box</i> ” dimensions.
2354987 960222062	Defect	When a <i>custom</i> Home Page was failing to load, it was silently reverting to the <i>default</i> Home Page. If this happens, it now displays the following message: “Error encountered when loading the custom homepage, please refresh the browser window to retry.”.
2399346	Process	Updated the release to the latest Microsoft patches.

**Data Pipeline**

Reference	Type	Description
2336079 960256952	Defect	When processing 1D data, using the Registers Gateway, with a column name containing the text “REQUIRED”, and where a ValueExpression or UoMExpression was used, then the capture may have failed with the error: <i>AVEVA.APx.Data.ExpressionParseException: Error in expression</i>

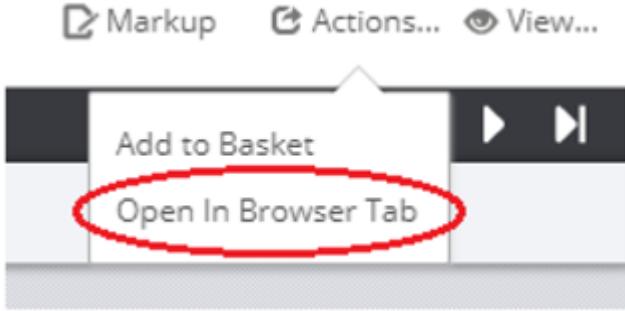
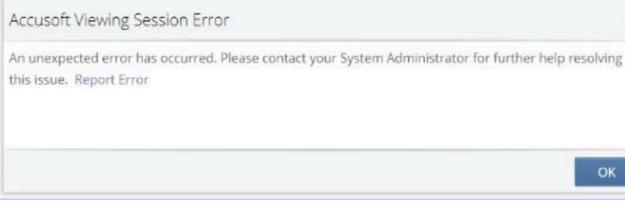
**Data Pipeline - Load Reporting**

Reference	Type	Description
2400014	Enhancement	In the Load Reporting Portal, when viewing the remediation details for a failed file, the Gateway Log is now available via the following link:   <a href="#">Download Log</a>

**Document Connector**

Reference	Type	Description
2388349	Enhancement	<i>Processing Unit</i> is now configurable in the onboarding pipeline.

**Known Issues**

Reference	Description
1492249 1503066 / 960104911	The PrizmDoc viewer used to view TIF files currently does not support files where at least one dimension of the image is larger than 32767.  We are currently working with the supplier to resolve this issue.
1899246 960156293	When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:    In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.
2165885	When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.  
2379345	If you open an AVEVA Point Cloud Manager model

Reference	Description
	<p>from a Tag Summary view, the page may become unresponsive. This happens when opening the model a couple of times.</p> <p>Once this error appears, to see the APCM model again:</p> <ol style="list-style-type: none"> <li>1. Close the browser.</li> <li>2. Re-open the browser.</li> <li>3. Re-load the APCM model.</li> </ol>

## May

### Introduction

This document provides the latest **Release Notes 23.05** for AVEVA Asset Information Management - Advanced.

### Content

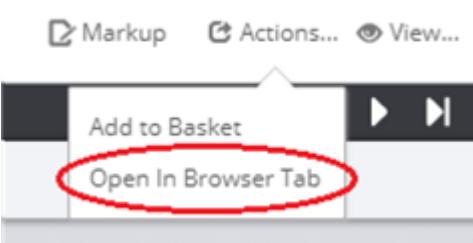
This release contains the following significant enhancements and defect fixes:

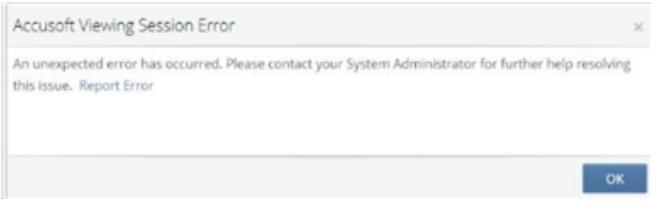
#### Core Functionality

Reference	Type	Description
1859657 960138053	Defect	The PrizmDoc viewer may not have hot-spotted some vertical tags. This is resolved by the latest PrizmDoc viewer – no reprocessing or re-importing is necessary.
1869849 960172989	Defect	In the PrizmDoc viewer, PDFs with embedded images greater than 30,000 x 20,000 pixels were giving a 580 error: "Document Not Found".
1894634 960104911	Defect	The PrizmDoc viewer was not displaying TIF files where at least one dimension of the image was larger than 32767.
2285561 960247172	Defect	When a user clicked on the alias in a document summary view, the resulting document view page continuously displayed the message "Item loading".

Reference	Type	Description
2399347	Process	Updated the release to the latest Microsoft patches.
2408670	Enhancement	When clicking the Information link ( ⓘ ) in the top-right of the Dashboard (which shows the Information and Help dialog), the link to the help guide now takes the user to the AIM area within AVEVA's new documentation website.
2411385 960240661	Defect	When running a Query Form, the date dropdown incorrectly converted between DD/MM/YYYY and MM/DD/YYYY formats.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.

Reference	Description
	 <p>An unexpected error has occurred. Please contact your System Administrator for further help resolving this issue. Report Error</p> <p>OK</p>

June

## Introduction

This document provides the latest **Release Notes 23.06** for AVEVA Asset Information Management - Advanced.

## Content

This release contains the following significant enhancements and defect fixes:

**Core Functionality**

Reference	Type	Description
2376486	Defect	In the Dashboard, when trying to open multiple documents using the <b>Open In Browser Tab</b> option, it was possible to receive an <code>AVEVA.NET.Workhub.Web.Owin.ThrottlingResponse</code> error.
2399348	Defect	Updated the release to the latest Microsoft patches.

**Data Pipeline**

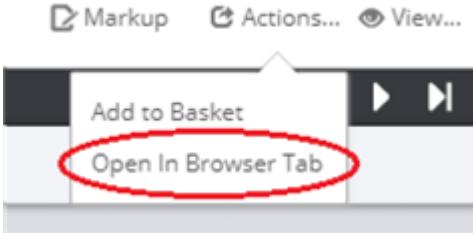
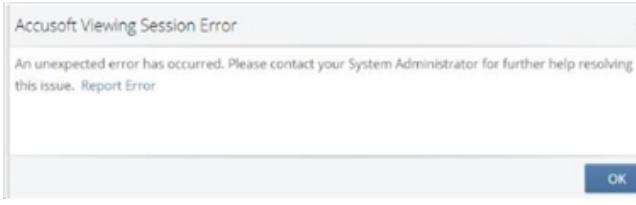
Reference	Type	Description
2323894 960259476	Defect	The <b>Data Pipeline</b> now correctly adds the <b>IDContext</b> to the <b>ObjectFullName</b> column in the following tables of the Reporting Database: <ul style="list-style-type: none"> <li>• EDW_Functional_InfoInterface</li> <li>• EDW_Functional_InfoInterface_Attributes</li> </ul>
2443546 960276673	Defect	In the <b>Data Pipeline</b> , the Registers Gateway now correctly processes special characters present in attribute values and units of measure, such as, superscripts ( $x^2$ ) and Greek letters such as mu ( $\mu$ ).
2463306 960293075	Defect	In the <b>Data Pipeline</b> , old document objects were not being deleted after delta updates via the Registers Gateway.  For example, perform a full update of a register, then after the capture is performed, delete some records, and redo the capture update using the delta timestamp. Then, only partial records were getting deleted as part of the waypoint.  Now, all records that were deleted are reflected in the waypoint.

Reference	Type	Description
2463747	Defect	In the <b>Data Pipeline</b> , duplicate folders were being created in the staging area when the class library was reprocessed.
2463788	Defect	<p>In the <b>Data Pipeline</b>, for the following scenario:</p> <ol style="list-style-type: none"> <li>1. Publish 1D Data that has sub-contexts.</li> <li>2. Reprocess the class library.</li> <li>3. Again re-publish 1D data that has sub-contexts with some changes.</li> </ol> <p>The delta timestamp in the logs is taken from the rootcontext waypoint folder, rather than the subcontext waypoint folder.</p>

#### Data Pipeline - Load Reporting

Reference	Type	Description
2395677	Enhancement	When using the Load Reporting Portal to monitor loads via the <b>Data Pipeline</b> , improvements have been made to the error messages to provide more detailed responses.

#### Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## July

### Introduction

This document provides the latest **Release Notes 23.07** for AVEVA Asset Information Management - Advanced.

### Content

This release contains the following significant enhancements and defect fixes:

**Core Functionality**

<b>Reference</b>	<b>Type</b>	<b>Description</b>
1087074	Enhancement	When processing files through the AutoCAD 2D Gateway, WIPEOUTFRAME variables for wipeout objects are now supported.
1464187 960070871	Enhancement	When processing files through the AutoCAD 2D Gateway, bitonal raster images are now supported.
1981070 960165756	Defect	When processing files through the AutoCAD 2D Gateway, improvements have been made to the accuracy of scraping tags. This avoids incorrect concatenation of text.  For example, 1234567890-ABC versus ABC-1234567890. Any files that had this issue will need to be re-processed.
2035115 960208296	Defect	When processing files through the AutoCAD 2D Gateway, some DWG files had the error “Error processing DWG/DXF file. Attempted to read or write protected memory.”.  Any files that had this issue will need to be re- processed.
2138930	Defect	When processing files through the AutoCAD 2D Gateway, high density DOT patterns will be replaced with a solid fill pattern. This greatly reduces processing time and SVG file size.
2183065 960238020	Defect	When processing files through the AutoCAD 2D Gateway, some DWG files had the error “Gateway extraction error: documents may contain broken objects.”.  Any files that had this issue will need to be re- processed.

Reference	Type	Description
2250575 960217548	Defect	When processing files through the AutoCAD 2D Gateway, drawing content may have been misaligned. Any files that had this issue will need to be re- processed.
2296389 960252549	Defect	When processing files through the AutoCAD 2D Gateway, some instrument tags were not captured in the SVG file. Any files that had this issue will need to be re- processed.
2299871 960254316	Defect	After running a Query Form, if a Reset was performed, then any links to documents, shown in the set of results, were still visible and active. Any links to documents are now removed after the reset.
2312424 960251305	Defect	When processing files through the AutoCAD 2D Gateway, some files were incorrectly referring to missing XREF files in the SVG as they were not displayed in the source drawing. Any files that had this issue will need to be re- processed.
2328846 960244129	Defect	If a single XML file was imported, that tried to perform multiple re-parenting of classes in the same hierarchy, then the Import Server may have terminated. An example would have been, if the hierarchy was C1-C2-C3-C4 and a single XML file tried to make C2 the parent of C4 and C4 the parent of C3 (effectively switching C3 and C4 in the hierarchy).
2336299 960265587	Defect	When processing files through the AutoCAD 2D Gateway, some diagonal lines were incorrectly appearing on the SVG drawing.

Reference	Type	Description
		Any files that had this issue will need to be re-processed.
2346504 960267141	Defect	After running a Query Form that returned a single result, switching from Table View to Form View did not populate the list of attributes in the Form View.
2391755 960246950	Defect	LinkClass attributes imported from ISM containing dots or commas were not appearing as hyperlinks in the Dashboard.
2391777 960246950	Defect	LinkClass attributes imported from ISM containing @ symbols were appearing in the Dashboard as mailto links rather than hyperlinks.
2436972	Enhancement	<p>Support for CONNECT service integration. This allows for applications to provide data to the Data Pipeline or for applications to read data from AIM-A.</p> <p><b>Note:</b> This functionality is restricted, please contact your AVEVA representative to discuss access to this functionality.</p> <p>For more information, please see <a href="https://docs.aveva.com/bundle/asset-information-management/page/1252243.html">https://docs.aveva.com/bundle/asset-information-management/page/1252243.html</a></p>
2503863 960252067	Defect	Security improvements.
2514762	Process	Updated the release to the latest Microsoft patches.

**Document Connector**

Reference	Type	Description
2390553	Enhancement	It is now possible to filter on the source of files and transactions. The source value can be

Reference	Type	Description
		customized for data coming from the Gateway Data Publisher and from Worktask (from August). For the Document Connector, it is pre-defined based on the DMS used. For more information, please see <a href="https://docs.aveva.com/bundle/asset-information-management/page/1047906.html">https://docs.aveva.com/bundle/asset-information-management/page/1047906.html</a>
2395508	Enhancement	Support for SharePoint integration. For more information, please see <a href="https://docs.aveva.com/bundle/asset-information-management/page/1236924.html">https://docs.aveva.com/bundle/asset-information-management/page/1236924.html</a>
2415660	Defect	If a Tenant ID was created with a hyphen, then any scheduled jobs were failing with the message "Invalid assetId parameter".
2500719	Enhancement	For integration with Aconex, a pagination capability has been provided. The page size needs to be configured and the value must be divisible by 25 up to a maximum of 500. For more information, please see <a href="https://docs.aveva.com/bundle/asset-information-management/page/1161672.html">https://docs.aveva.com/bundle/asset-information-management/page/1161672.html</a>

**Data Pipeline**

Reference	Type	Description
2527805	Enhancement	The Registers Gateway has been improved to allow the use of expressions in the Association Register. For example, this would allow a context to be added to a target object when creating associations, in particular when the data has

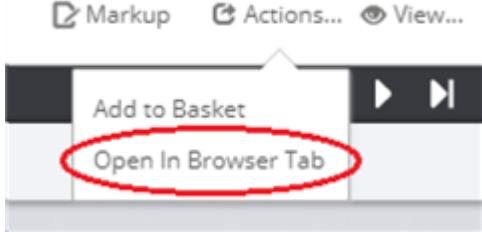
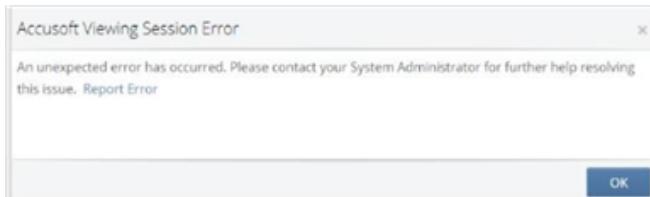
Reference	Type	Description
		<p>multiple target objects.</p> <p>For example, DOC-001 has association “is a document for” PLANT-A TAG-001;PLANT-B TAG-002</p> <p>This will allow the creation of associations by executing the expression during capture operation, for example:</p> <pre>&lt;DocTagAssociation Category="Docs"     RegisterType="Associations"     IDColumn="DOCUMENT_NUMBER"     DuplicateAttribute="AppendValue"&gt; &lt;Columns&gt;     &lt;FROM_PLANT_CODE /&gt;     &lt;DOCUMENT_NUMBER /&gt;     &lt;TO_PLANT_CODE /&gt;     &lt;TAG_NUMBER CaptureValueExpression=         "{{ '_'.join(@TO_PLANT_CODE,@TAG_NUMBER)].splitAny(',') }}"         AssociationType="is a document for"/&gt; &lt;/Columns&gt; &lt;/DocTagAssociation&gt;</pre> <p><b>Note:</b> The expressions are applied when the input rows are being read, which does have the negative aspect of being non-reversible, so would need to be used with caution. It is strongly advised to test the expression before pushing it to production.</p>

### Data Pipeline - Load Reporting

Reference	Type	Description
2165495	Defect	When viewing the transaction history of a file, the Load more results link was not returning the next page of results (a 2nd click was needed to return the results).
2212759	Defect	The pre-defined time filters (2 Hours, 6 Hours, etc) may not have shown the full set of results.
2283413	Enhancement	<p>The user experience has been improved, including the user’s flow through the website, a restyling of the filtering mechanism and general improvements to styling and layout.</p> <p>For more information, please see</p>

Reference	Type	Description
		<a href="https://docs.aveva.com/bundle/asset-information-management/page/1047888.html">https://docs.aveva.com/bundle/asset-information-management/page/1047888.html</a>
2360927	Enhancement	<p>When using the Load Reporting Portal to monitor loads via the Data Pipeline, improvements have been made to the error messages from the Registers Gateway, which provides more detailed responses.</p> <p>Also remediations specific to each error code have been added.</p>
2487670	Enhancement	<p>The following file state has been renamed:</p> <ul style="list-style-type: none"> <li>• Orchestration Completed -&gt; Completed</li> </ul> <p>For more information, please see <a href="https://docs.aveva.com/bundle/asset-information-management/page/1047907.html">https://docs.aveva.com/bundle/asset-information-management/page/1047907.html</a></p> <p>The following transaction states have been renamed:</p> <ul style="list-style-type: none"> <li>• Orchestration Completed (Amber) -&gt; Partially Completed</li> <li>• Orchestration Completed (Green) -&gt; Completed</li> </ul> <p>For more information, please see <a href="https://docs.aveva.com/bundle/asset-information-management/page/1047908.html">https://docs.aveva.com/bundle/asset-information-management/page/1047908.html</a></p>
2489808 960295447	Defect	<p>If a file failed to be ingested into the Data Pipeline, the user was unable to view the failure logs if the file name contained any URL encoding characters. For example, Test%20File.csv.</p>

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## August

### Introduction

This document provides the latest **Release Notes 23.08** for AVEVA Asset Information Management - Advanced.

### Content

This release contains the following significant enhancements and defect fixes:

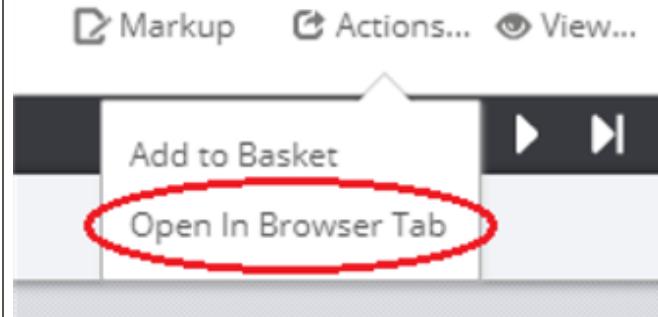
**Core Functionality**

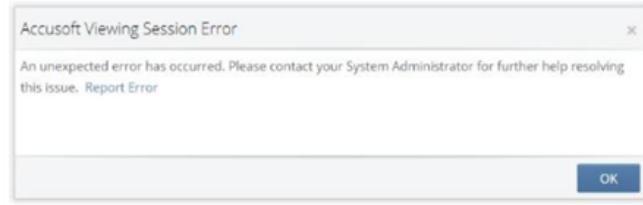
Reference	Type	Description
2516205	Process	Updated the release to the latest Microsoft patches.
2587663	Defect	It was possible for some Accusoft instances to not fully deploy, which may have resulted in Microsoft Office documents not displaying in the Dashboard.

**Document Connector**

Reference	Type	Description
2590024	Defect	When performing a delta load of documents from SharePoint or Assai, all documents were being loaded rather than just those changed since the previous load.

**Known Issues**

Reference	Description
1899246 960156293	When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:  
2165885	When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message:

Reference	Description
	
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## September

### Introduction

This document provides the latest **Release Notes 23.09** for AVEVA Asset Information Management - Advanced.

### Content

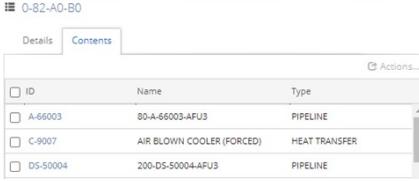
This release contains the following significant enhancements and defect fixes:

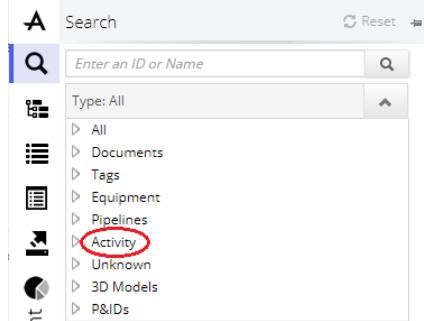
#### Core Functionality

Reference	Type	Description
1844883	Defect	After a large number of logins to the Dashboard, new logins may have been refused and presented with the error, "Application Initialise Data Failed".
2170060 960232837	Defect	Some DGN files had isolated dots converted to arbitrary lines. Any files that had this issue will need to be re-processed.
2280430 960246229	Defect	When viewing Query Form results in the Table View, where rows for a single result also have columns containing multiple associated <b>items</b> , and there are further column(s) containing corresponding <b>values</b> for each of those associated items, then the values for the corresponding items

Reference	Type	Description
		may not have lined up horizontally. This was due to blank values not being added.  The blank values are now inserted allowing corresponding cells in the same row to have their multiple values line up.
2346359 960265686	Defect	The browser tab for the Dashboard may have shown an incorrect icon of  , rather than the correct icon of  .
2390521 960239891	Defect	When running a Query Form and providing a value for an <b>Incidental Type ID</b> field, then the field was not resetting after selecting Reset.
2391777 960246950	Defect	In the Dashboard, some attribute values containing an @ symbol were wrongly being displayed as <b>mailto</b> links.
2397430	Enhancement	The Settings dialog can now also be used to <b>manage custom roles</b> . This allows those with the Administrator role to create/edit/delete custom roles (this excludes bootstrapped roles, such as Administrator and Core Team Admin).  See the documentation at: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1283329.html">https://docs.aveva.com/bundle/asset-information-management/page/1283329.html</a>
2473781	Enhancement	<b>Context Access Control</b> has been provided.  This allows for access to items viewed in the Dashboard to be controlled based on what contexts an item is in and what role a user is in.  The Settings dialog can be used to carry out the configuration and

Reference	Type	Description
		<p>requires the Administrator role. See the documentation at: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1283328.html">https://docs.aveva.com/bundle/asset-information-management/page/1283328.html</a></p>
2516209	Process	<p>Updated the release to the latest Microsoft patches.</p>
2525233	Enhancement	<p>Links to <b>External Views</b> can now be added to a Document Content Card. After configuration, selecting  the <b>Views</b> tab (  ) will show an <b>External Views</b> panel consisting of links to external URIs. Selecting a link displays the external view in the Content Card. Each link could, for example, display general webpages or Power BI reports.</p> <p>See the documentation at:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1271083.html">https://docs.aveva.com/bundle/asset-information-management/page/1271083.html</a> <a href="https://docs.aveva.com/bundle/asset-information-management/page/994021.html">https://docs.aveva.com/bundle/asset-information-management/page/994021.html</a></p>

Reference	Type	Description
2527098	Enhancement	<p>When viewing Sets in the Dashboard, the Content tab now displays the <b>Names</b> of the items in the Set (previously only the ID and Type were displayed). For example:</p>  <p>See the documentation at:  <a href="https://docs.aveva.com/bundle/asset-information-management/page/994063.html">https://docs.aveva.com/bundle/asset-information-management/page/994063.html</a>  <a href="https://docs.aveva.com/bundle/asset-information-management/page/994066.html">https://docs.aveva.com/bundle/asset-information-management/page/994066.html</a></p>
2527347	Enhancement	<p>Attribute data groups on summary views and content cards now have a <b>Hide Empty</b> checkbox. When checked, all attribute rows with empty values are removed and the counts on the attribute groups updated accordingly.</p>  <p>See the documentation at:  <a href="https://docs.aveva.com/bundle/asset-information-management/page/994020.html">https://docs.aveva.com/bundle/asset-information-management/page/994020.html</a>  <a href="https://docs.aveva.com/bundle/asset-information-management/page/994021.html">https://docs.aveva.com/bundle/asset-information-management/page/994021.html</a></p>

Reference	Type	Description
2531332	Enhancement	<p>When performing a search in the Dashboard, <b>Activity</b> has been added to the list of Search Categories. Selecting Activity will limit the search results to items classed as, or sub-classed from, Activity.</p> 

**Document Connector**

Reference	Type	Description
		No release this month.

**Data Pipeline**

Reference	Type	Description
2040367 960208166	Defect	<p>When importing class libraries from ISM, the Registers Gateway now correctly handles how <b>less than</b> and <b>greater than</b> characters (&lt;&gt;) are encoded.</p>
2588504 960321399	Defect	<p>Files with UTF-8 content were incorrectly processed as ANSI files, if they did not contain a BOM (byte order mark) at the beginning of the file.</p> <p>For example, this caused Chinese characters to not be ingested properly.</p>
2627346 960333061	Defect	<p>When using CaptureValueExpression in the ISM Class Library extensions, if a column has a colon or forward</p>

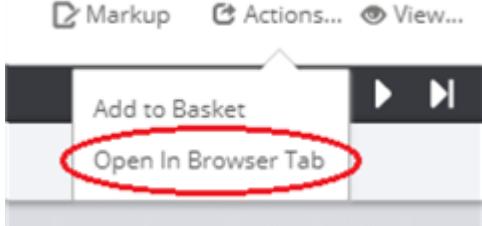
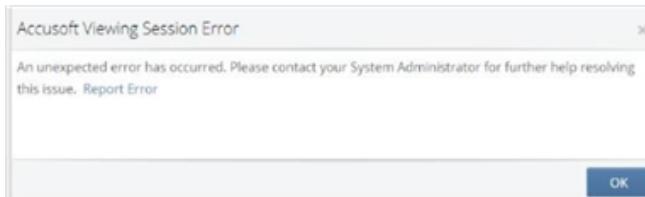
Reference	Type	Description
		slash, then it may have given an invalid ISM extension path error.

**Data Pipeline - Load Reporting**

Reference	Type	Description
2525887	Enhancement	<p>In the Load Reporting Portal, the Files Filter now searches on <b>Document IDs</b> as well as Document Names. The Document ID is also shown for each entry in the Files View and the Transactions View webpages when applicable.</p> <p>See the documentation at:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1047906.html">https://docs.aveva.com/bundle/asset-information-management/page/1047906.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1047908.html">https://docs.aveva.com/bundle/asset-information-management/page/1047908.html</a></p>
2525889	Enhancement	<p>When viewing the details of a file, the Progress Steps and History tabs have been combined. The individual steps a file went through for each transaction have been removed in favor of providing a cleaner list of the transactions a file was in, emphasizing the final state of each transaction.</p> <p>The steps have also been removed from the Files and Transactions pages, providing a cleaner, more relevant display.</p> <p>See the documentation at:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1047906.html">https://docs.aveva.com/bundle/asset-information-management/page/1047906.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1047907.html">https://docs.aveva.com/bundle/asset-information-management/page/1047907.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/">https://docs.aveva.com/bundle/asset-information-management/</a></p>

Reference	Type	Description
		<a href="#">page/1047908.html</a>
2533135	Defect	If no tags are found during the data scraping process, the resulting csv file appeared as <b>Failed</b> in the Load Reporting portal. It now appears as <b>Success</b> .
2564068 960323964 960324067	Defect	When the system is processing very large numbers of files through the Data Pipeline for one asset, then the relevant transactions may not have appeared in the Load Reporting Portal for hours, or even some days, for other assets.  The transactions for imported files are now processed into the Load Reporting Portal independently of each asset.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## October

### Introduction

This document provides the latest **Release Notes 23.10** for AVEVA Asset Information Management - Advanced.

### Content

This release contains the following significant enhancements and defect fixes:

**Core Functionality**

Reference	Type	Description
2558541 960314754	Defect	In the Dashboard, when viewing SVG renditions, and some tags have been highlighted, then the icon in the toolbar at the bottom to <b>Clear All Highlighting</b> was not taking affect.  
2640092	Process	Updated the release to the latest Microsoft patches.

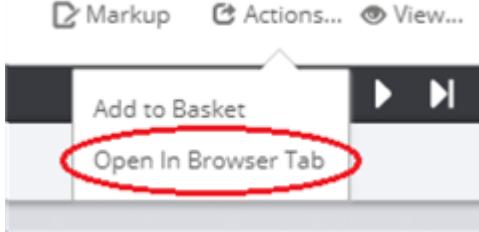
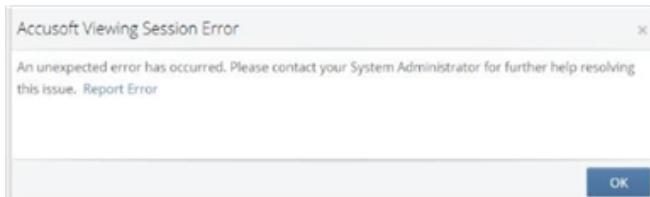
**Document Connector**

Reference	Type	Description
2525893 960294476	Enhancement	The Document Connector now supports the <b>client credentials</b> grant type for documents coming from Assai systems. See the documentation at: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1161673.html">https://docs.aveva.com/bundle/asset-information-management/page/1161673.html</a>
2590181	Defect	For the Document Connector, when onboarding a SharePoint tenant with a custom scraped file register pattern, the default register pattern was not being applied correctly.

**Data Pipeline - Load Reporting**

Reference	Type	Description
2473911	Enhancement	In the Load Reporting portal, the error messages and remediation messages for <b>Unknown</b> and <b>Invalid Input</b> have been improved.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## November

### Introduction

This document provides the latest **Release Notes 23.11** for AVEVA Asset Information Management - Advanced.

### Content

This release contains the following significant enhancements and defect fixes:

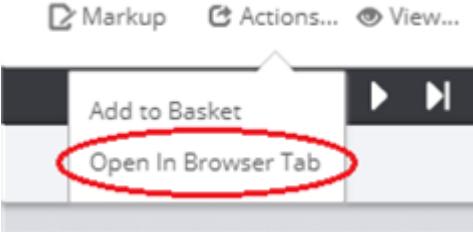
**Core Functionality**

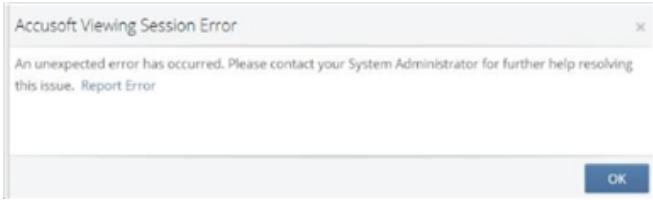
Reference	Type	Description
2640093	Process	Updated the release to the latest Microsoft patches.

**Data Pipeline**

Reference	Type	Description
2881684 960323513	Defect	In the Data Pipeline, when ingesting attribute values, we now handle multiple values for an attribute where those values are provided by different headers (due to different naming conventions).

**Known Issues**

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.

Reference	Description
	
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## December

### Introduction

This document provides the latest **Release Notes 23.12** for AVEVA Asset Information Management - Advanced.

### Content

This release contains the following significant enhancements and defect fixes:

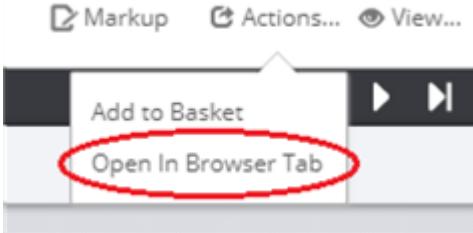
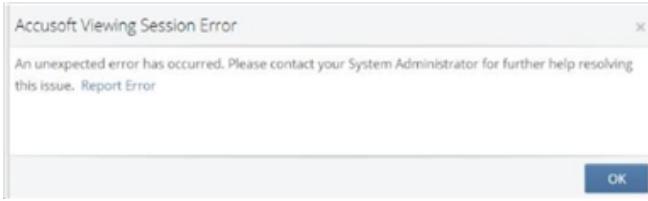
#### Core Functionality

Reference	Type	Description
2640094	Process	Updated the release to the latest Microsoft patches.

#### Document Connector

Reference	Type	Description
2922434	Defect	When loading files from an Aconex tenant and the last page in the pagination had files that had failed to load, then the Starting Date was not being updated. This meant that for the next run the Starting Date for the delta capture was the same as the previous delta capture.

### Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## 2024

### January

#### Introduction

This document provides the latest **Release Notes 24.01** for AVEVA Asset Information Management - Advanced.

#### Content

This release contains the following significant enhancements and defect fixes:

##### Core Functionality

Reference	Type	Description
2275890	Enhancement	<p>Document revisions are not supported, so the Revisions tab has been removed from Document Content Cards.</p> <p>See the documentation at:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/994021.html">https://docs.aveva.com/bundle/asset-information-management/page/994021.html</a></p>
2476900 960295199	Defect	<p>When opening P&amp;IDs from a tag summary view, some tags were zooming to an incorrect location. For example, when opened, a P&amp;ID was zoomed out and the tag highlighted in the top right corner rather than zoomed in with the tag in the center.</p> <p>Any files that had this issue will need to be re-processed.</p>
2541133 960309907	Defect	<p>When viewing SVG files in the Dashboard and editing some text annotation, then closing the “Edit Text Annotation” dialog, then an identical dialog may have been present behind the top dialog. The superfluous dialog was due to previously editing annotations on other SVG files. The dialog is now always presented once per annotation edit.</p>
2614401	Defect	<p>When running a Query Form and selecting the dropdown arrow for an attribute’s List of Values, then while the list was being populated the message “&lt;No Applicable Items&gt;” was displayed. This happened even when items were subsequently found to be present.</p> <p>While loading, the message now reads “Loading...”.</p>
2614402	Enhancement	<p>When viewing Related Items in a Document Content Card or viewing</p>

Reference	Type	Description
		<p>a Relationship Explorer in a Document Summary View, "is an element of" associations are no longer displayed.</p> <p>See the documentation at:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/994021.html">https://docs.aveva.com/bundle/asset-information-management/page/994021.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/994026.html">https://docs.aveva.com/bundle/asset-information-management/page/994026.html</a></p>
2614403	Enhancement	<p>When displaying attributes in a Dataset Summary View, the datagroup has been upgraded to provide the follow tools: filter, hide empty values, Page 3 of 8 expand and collapsible groups – as already seen in Document and Tag Summary Views.</p> <p>See the documentation at:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/994026.html">https://docs.aveva.com/bundle/asset-information-management/page/994026.html</a></p>
2614405 960172573 960264128	Enhancement	<p>In Summary Views, the Events and Activities/Tasks data groups now list their entries in alphabetical order.</p>
2614408	Enhancement	<p>In the Dashboard, references to "AVEVA NET", such as in error messages and the browser tab, have been updated to "AVEVA Asset Information Management".</p>
2872694	Defect	<p>If a custom role was created with a name of "Admin", then the "Admin" user was unable to log into the Admin Tool.</p>
2884924	Defect	<p>In CONNECT, when provisioning an AIM solution, the message "Switching service on..." persisted and suggested the solution was not</p>

Reference	Type	Description
		going to fully provision when it actually had already. The message now does not persist.
2935863	Process	Updated the release to the latest Microsoft patches.
2927046 960362340	Defect	When objects in a user's Basket were deleted from the AIM database, but were left in the Basket, then future Dashboard login attempts by that user were failing with the message "Application Initialise Data Failed".
2993088 960361921	Defect	In the Document Viewer, when selecting an item that had not had its tag data loaded yet, or the user was not authorized to view the item, an unnecessary message of "Item Not Found" was shown. This message is now removed.

**Document Connector**

Reference	Type	Description
2217663	Defect	When the Document Connector was loading files from an Assai system, after the first successful run, the system was not setting the IsFirstLoad parameter to false.
2499236	Enhancement	The Document Connector is now a CONNECT integrated solution.  To run the Document Connector integration between the Document Connector and AIM-A must be enabled in CONNECT.  See the documentation at: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1330038.html">https://docs.aveva.com/bundle/asset-information-management/page/1330038.html</a>
2614414	Enhancement	The Document Connector now allows for filtering of files that are

Reference	Type	Description
		<p>to be extracted from each of the supported Document Management Systems – currently Aconex, Assai and SharePoint. This enables faster extraction, processing and importing, as only relevant files are used.</p> <p>See the documentation at:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1161672.html">https://docs.aveva.com/bundle/asset-information-management/page/1161672.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1161674.html">https://docs.aveva.com/bundle/asset-information-management/page/1161674.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1161673.html">https://docs.aveva.com/bundle/asset-information-management/page/1161673.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1161675.html">https://docs.aveva.com/bundle/asset-information-management/page/1161675.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1236924.html">https://docs.aveva.com/bundle/asset-information-management/page/1236924.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1237264.html">https://docs.aveva.com/bundle/asset-information-management/page/1237264.html</a></p>
2634429	Defect	MetadataAIMContext.context was incorrectly considered as mandatory.
2843168	Defect	Multipart uploads for Model files greater than 5GB were throwing a warning and not being processed.
2906732	Defect	When running a delta load containing files that were not defined in the SupportedFileTypes setting and with a configuration of DownLoadFiles = true and isMetadataToStore = true, then both the files and metadata were being skipped. Only the files should have been skipped.

Reference	Type	Description
		The metadata is now pushed to S3.
2916149	Defect	DMSBaseUrl was becoming misconfigured. This no longer causes the execution to fail.
2964060	Defect	When running a delta load configured with publish keys set to false, then the metadata of the skipped files was not pushed to S3.  The metadata of the skipped files is now downloaded and pushed to S3.

### Data Pipeline

**Note:** AVEVA is working on performance improvements to support parallelization of the Data Pipeline's import process for documents, and migration of the Import Server into the Data Pipeline.

This major enhancement requires a migration phase for existing customers, that will happen throughout February and March with the improvements fully available at the end of Q1/24.

Reference	Type	Description
2614398	Enhancement	The bespoke attributes used in Faceted Search can now be configured by using the Data Pipeline.  See the documentation at:  <a href="https://docs.aveva.com/bundle/asset-information-management/page/1330030.html">https://docs.aveva.com/bundle/asset-information-management/page/1330030.html</a>  <a href="https://docs.aveva.com/bundle/asset-information-management/page/1174973.html">https://docs.aveva.com/bundle/asset-information-management/page/1174973.html</a>

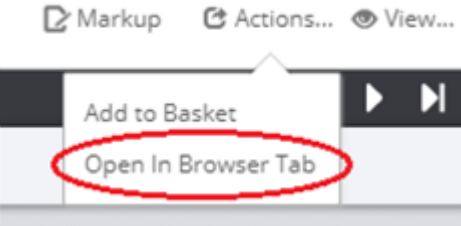
### Data Pipeline – Load Reporting

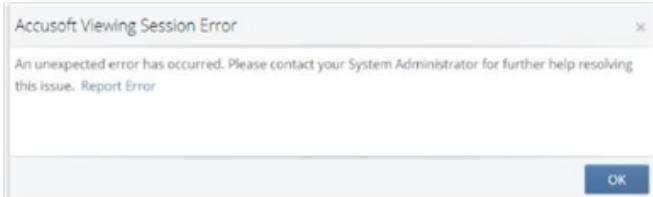
Reference	Type	Description
2534054	Enhancement	When viewing reports based on files or transactions, the reports may now be filtered on the Source of the data. To filter, enter at least 3 characters, before finally selecting the individual Sources to filter on.  See the documentation at:  <a href="https://docs.aveva.com/bundle/">https://docs.aveva.com/bundle/</a>

Reference	Type	Description
		<a href="https://docs.aveva.com/bundle/asset-information-management/page/1047906.html">asset-information-management/ page/1047906.html</a>
2614407 960334658	Enhancement	<p>For files that have completed their processing through the Data Pipeline, but there have been one or more warnings generated, then they are now set to a new status of "Completed with Warnings".</p> <p>This status can be seen in the Load Reporting Portal and allows the user to identify and correct any issue that has happened at a row level on a file.</p> <p>The warnings can be viewed within the log file which can be downloaded.</p> <p>See the documentation at:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1047905.html">https://docs.aveva.com/bundle/ asset-information-management/ page/1047905.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1047906.html">https://docs.aveva.com/bundle/ asset-information-management/ page/1047906.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1047907.html">https://docs.aveva.com/bundle/ asset-information-management/ page/1047907.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1047908.html">https://docs.aveva.com/bundle/ asset-information-management/ page/1047908.html</a></p>
2614730	Defect	When using a custom date-time range to filter, times were treated as local times, but the time stamps on files use UTC time. The times in custom date-times now also use UTC time.
2625761 960306899	Enhancement	<p>In CONNECT, when invoking the <b>Data Pipeline / Load Reporting</b> capability, the user may have been asked to select the asset twice.</p> <p>Now, the user is only asked for the asset once.</p>

Reference	Type	Description
2636123	Defect	When a file with a Source of, say, "xyz" was uploaded and then uploaded again with an empty Source, then the previous value of Source was shown in the Load Reporting Portal rather than the new empty value.
2771225	Defect	When processing 1D/2D/3D files, the "Orchestration Completed" status was given as soon as the files were orchestrated.  The status is now "Processing" (indicating further processing is to take place).
2856219	Defect	When viewing certain error messages in the Load Reporting Portal, there may have been some spurious spacing added to the messages.
2857240	Enhancement	In remediation messages, links to the online help site (docs.aveva.com), now appear as hyperlinks.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then</p>

Reference	Description
	printed using the built-in browser print functionality.
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## February

### Introduction

This document provides the latest **Release Notes 24.02** for AVEVA Asset Information Management - Advanced.

### Content

This release contains the following significant enhancements and defect fixes:

#### Core Functionality

Reference	Type	Description
2865196	Defect	In the Search hierarchy of the Dashboard, if the label of the nodes
960287450		

Reference	Type	Description
		was configured to show the description (based on the Desc attribute), then it wasn't displaying the description part of the label.
2908346 960284950	Defect	When viewing a 3D model in the Dashboard, selecting an item with the mouse may have caused the camera view to jump to a different location.
2930825 960314754	Defect	In the Dashboard, when viewing an SVG file, the <b>Clear All Highlighting</b> option in the toolbar was failing to clear the highlighted items in the drawing.
2935858	Process	Updated the release to the latest Microsoft patches.

**Document Connector**

Reference	Type	Description
2614415	Enhancement	Support is now provided for the deletion of files from an Assai tenant. See the documentation at: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1161673.html">https://docs.aveva.com/bundle/asset-information-management/page/1161673.html</a> <a href="https://docs.aveva.com/bundle/asset-information-management/page/1161675.html">https://docs.aveva.com/bundle/asset-information-management/page/1161675.html</a>

**Data Pipeline**

Reference	Type	Description
1927603	Enhancement	After files have been processed by the Gateways, they are then imported into the AIM database. The import process for these files has been integrated into the Data Pipeline. This provides improved

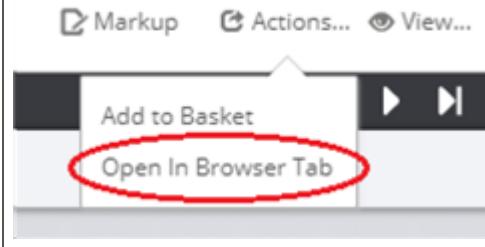
Reference	Type	Description
		<p>performance for the import process due to parallelization within the Data Pipeline and migration of the Import Server into the Data Pipeline.</p> <p>This major enhancement requires a migration phase for existing customers. This will happen throughout February and March with the improvements fully available at the end of Q1/24.</p> <p>Also, see 1927603 under Data Pipeline – Load Reporting.</p>
2870798 960346370	Defect	In the Registers Gateway, if the TAG_NAME is being set in the nomenclature mapping, then a delta load of a Tag Register may have overwritten the associations of an earlier load.
3009084 960373063	Defect	When loading a file that marked some associated tags of a document for deletion, then only those tags were deleted after the first run. However, if the file was loaded for a second time, then all tags associated to the document were deleted. Now, the second run does the same as the first run.

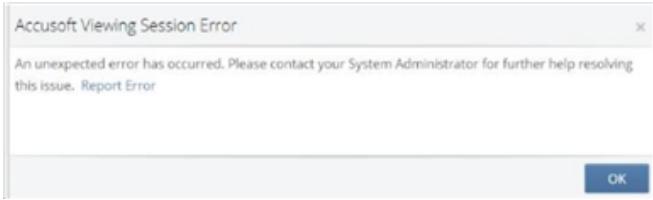
**Data Pipeline - Load Reporting**

Reference	Type	Description
1927603	Enhancement	<p>After files have been processed by the Gateways, they are then imported into the AIM database. The progress on the importing of these files has now been integrated into the Load Reporting Portal.</p> <p>See the documentation at:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1340240.html">https://docs.aveva.com/bundle/asset-information-management/page/1340240.html</a></p> <p><a href="https://docs.aveva.com/bundle/">https://docs.aveva.com/bundle/</a></p>

Reference	Type	Description
		<p><a href="asset-information-management/page/1047906.html">asset-information-management/page/1047906.html</a>  <a href="https://docs.aveva.com/bundle/asset-information-management/page/1047908.html">https://docs.aveva.com/bundle/asset-information-management/page/1047908.html</a></p> <p>Also, see 1927603 under Data Pipeline.</p>
2919337 960352835	Defect	<p>The Assets page of the Load Reporting Portal may have shown incorrect results, for example:</p> 

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p>

Reference	Description
	
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## March

### Introduction

This document provides the latest **Release Notes 24.03** for AVEVA Asset Information Management - Advanced.

### Content

This release contains the following significant enhancements and defect fixes:

#### Core Functionality

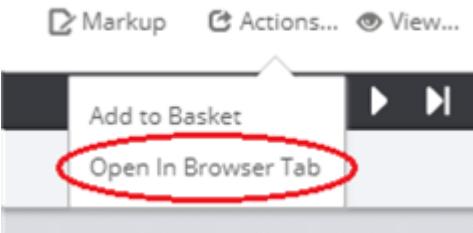
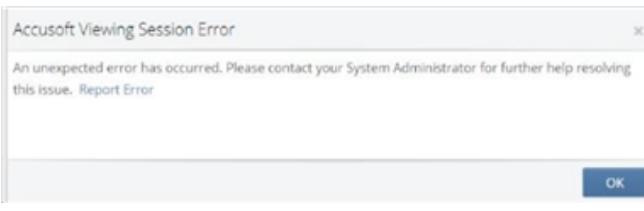
Reference	Type	Description
2935860	Process	Updated the release to the latest Microsoft patches.

#### Data Pipeline

Reference	Type	Description
3045794 960385528	Defect	If a Register being loaded into the Data Pipeline has a missing mandatory column (according to the class library), then the Registers Gateway will fail with an error code of 20.
		However, the error code was not shown in the Load Reporting Portal and therefore users could not view the remediation information and could not review the log files in order to fix the issue.  This issue is now resolved - the

Reference	Type	Description
		error code is now shown in the Load Reporting Portal and users can therefore view the associated remediation information and review the log files in order to fix the issue.

**Known Issues**

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

**April**

## Introduction

This document provides the latest **Release Notes 24.04** for AVEVA Asset Information Management - Advanced.

## Content

This release contains the following significant enhancements and defect fixes:

### Core Functionality

Reference	Type	Description
2391777 960246950	Defect	In the Dashboard, some attribute values containing an @ symbol were wrongly being displayed as mailto links.
2627889	Enhancement	In Summary Views, when filtering a data group, if the results for a particular class are zero, then the class name is no longer shown.
2628410 960318608	Defect	When viewing documents, tags that wrapped onto multiple lines may not have been highlighted. Any files that had this issue will NOT need to be re-processed.
2854631	Defect	When switching tabs in a Content Card, some tabs were gathering multiple close icons.

Reference	Type	Description
2914658	Enhancement	<p>To better support data modelled on CFIHOS standards, more data can be displayed in Summary Views.</p> <p>The set of panels that can appear on Summary Views comprises of:</p> <ul style="list-style-type: none"> <li>• Details Header</li> <li>• Attributes panel</li> <li>• Links panel</li> <li>• Tags panel</li> <li>• Equipment panel</li> <li>• Parts / Components panel</li> <li>• Documents and 3D Models panel</li> <li>• Events panel</li> <li>• Activities / Tasks panel</li> <li>• Relationship Explorer</li> </ul> <p>As before, the panels themselves will only be shown where relevant data is present.</p>
		<p>Location data was only available for the general Tag Summary View. Now Location data is also shown for Event, Activity and Document Summary Views.</p> <p>Any "is implemented by"/"implements" relationships are now shown, for example:</p> <ul style="list-style-type: none"> <li>• The general Tag Summary View can now show an "Equipment" panel and shows any "is implemented by" relationships.</li> <li>• The Equipment Summary View can now show a "Tags" panel and shows any "implements" relationships.</li> </ul> <p>See the documentation at:  <a href="https://docs.aveva.com/bundle/asset-information-">https://docs.aveva.com/bundle/asset-information-</a></p>

Reference	Type	Description
		<p><a href="#">management/page/994020.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/994026.html">https://docs.aveva.com/bundle/asset-information-management/page/994026.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/994036.html">https://docs.aveva.com/bundle/asset-information-management/page/994036.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/993983.html">https://docs.aveva.com/bundle/asset-information-management/page/993983.html</a></p>
2914661	Defect	In the Dashboard, labels used for class hierarchies in Search and Visual Reports always showed the class ID. They now correctly follow the configuration setting for Label Types.
2914682 960318717	Enhancement	In the Dashboard, Tag Content Cards now display any "has document" associations in the Related Documents tab.
3004287 960355515	Defect	In the Dashboard, when viewing files rendered in SVG and using the Print option in the viewer, then printouts may have had text wrongly shifted to the right.
3020285 960366343	Defect	When viewing documents, tags that contained some special characters may not have been fully highlighted. Any files that had this issue will NOT need to be re-processed.
3045887 960378366	Defect	When downloading documents viewed in the Dashboard, larger files (>1GB) may have resulted in an unhandled server error.

Reference	Type	Description
		Now, the case is handled with an appropriate error message.
3057849 960385339 960391859	Defect	Filters for dropdowns in Query Forms and the Query Form Designer had stopped working correctly.
3057879 960387873	Defect	When using Advanced Search in the Dashboard and adding a filter, the text entry box for the filter was adding a % symbol as soon as characters were typed. The I-bar cursor was then out of position and the % symbol could not be removed.

Reference	Type	Description
3074149	Process	Updated the release to the latest Microsoft patches.

**Document Connector**

Reference	Type	Description
2275878	Enhancement	<p>Support for importing documents from OpenText Core has been added.</p> <p>See the documentation at:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1363308.html">https://docs.aveva.com/bundle/asset-information-management/page/1363308.html</a></p>
3055329	Enhancement	When onboarding a tenant, values for TenantId are now case-insensitive.

**Data Pipeline**

Reference	Type	Description
2496205 960367287 960385693	Defect	Intermittently, some meta data loads were failing to fully load.
2914678	Enhancement	<p>The Registers Gateway has been enhanced to allow the definition of:</p> <ul style="list-style-type: none"> <li>• naming and numbering templates based on context</li> <li>• enumerated lists (lists of values) based on context.</li> </ul> <p>This is to better support the ability to have multiple assets (based on context) in one instance. Even if different assets follow the same class library, their naming and numbering templates and enumerated lists are often different.</p> <p>This will be documented as part of a wider appraisal of ISM</p>

Reference	Type	Description
		to AIM-A configuration.
2914688	Enhancement	<p>The time to process 2D files has been significantly improved. This has included upgrading to the new AVEVA Gateway for 2D Data. Existing files do NOT need to be re-processed.</p> <p>For more information on configuring the new Gateway, see the below section: <i>Using the AVEVA Gateway for 2D Data - Transformation Configurations</i> and <a href="https://docs.aveva.com/bundle/asset-information-management/page/1174973.html">https://docs.aveva.com/bundle/asset-information-management/page/1174973.html</a></p> <p>For more information on defects fixed, see:</p> <p><a href="https://docs.aveva.com/bundle/gateways/page/1264080.html">https://docs.aveva.com/bundle/gateways/page/1264080.html</a></p>
3016326 960318694 960334567	Defect	The Data Pipeline now reads the ISM extensions for Units of Measurement (UoM) - both scale and constant. This in turn enables the appropriate search functionality based on UoMs to work.
3029814	Enhancement	When importing IDs into the Data Pipeline, curly brackets, { and }, are invalid. However, if they do appear in IDs, they are now replaced with parenthesis, ( and ) respectively, and a warning is raised in the log

Reference	Type	Description
		<p>file.</p> <p>See the documentation at:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1166281.html">https://docs.aveva.com/bundle/asset-information-management/page/1166281.html</a></p>

### Data Pipeline - Load Reporting

Reference	Type	Description
3040986 960386534	Defect	<p>When viewing log files in the Load Reporting Portal, all errors and warnings were being truncated to 80 characters (except in verbose mode).</p> <p>The messages are no longer truncated.</p>

### Using the AVEVA Gateway for 2D Data – Transformation Configurations

- Pattern:** A set of regular expression rules used to find specific objects. A regular expression is a template that helps identify tags. For example: [A-Z]{3}-\d{2}\s\d\\d\x22-[A-Z]{3}-\d{7}-[A-Z]{2}-[A-Z]
  - [A-Z]{3}: This part matches exactly three uppercase letters from A to Z.
  - \d{2}: This matches a hyphen followed by exactly two digits (0-9).
  - \s: This matches a single whitespace character.
  - \d\\d: This matches a digit followed by a forward slash and another digit.
  - \x22: This matches a double quotation mark (").
  - [A-Z]{3}: This matches a hyphen followed by exactly three uppercase letters from A to Z.
  - \d{7}: This matches a hyphen followed by exactly seven digits (0-9).
  - [A-Z]{2}: This matches a hyphen followed by exactly two uppercase letters from A to Z.
  - [A-Z]: This matches a hyphen followed by a single uppercase letter from A to Z.
- Expansion:** A set of regular expression rules used to find additional objects that should be included. It's an extension of the template used for Patterns (see point 1).
- Char (Character):** This identifies a particular symbol used within the expansion to mark where it should be added. It's like a signpost indicating where to add extra things.
- Interpolate:** This tells the system whether a range of values should be inserted based on the expansion result. It's like deciding whether to fill in the gaps between identified objects.
- KeepPattern (optional):** This regular expression is used to narrow down the results matched by the original pattern. It helps to filter out specific subsets of the initial matches. For example in [A-Z]{1,2}-\d{4},
  - [A-Z]{1,2}: This part matches one or two uppercase letters from A to Z.
  - : This matches a hyphen.

- \d{4}: This matches exactly four digits (0-9).

So, overall, this pattern would match strings that start with one or two uppercase letters followed by a hyphen and then exactly four digits. For example, it would match patterns like "A-1234" or "AB-5678".

6. **SearchCriteriaPattern** (optional): These additional regular expression patterns are applied to the values of attributes. For instance, if you have text such as "P-101ASDFP-102ASDFP-103" and you want to identify codes within the text such as "P-101A" and "P-102A", then the search pattern might be something like "[A-Z]-\d{3}[A-Z]". This helps you find specific patterns within a larger text.

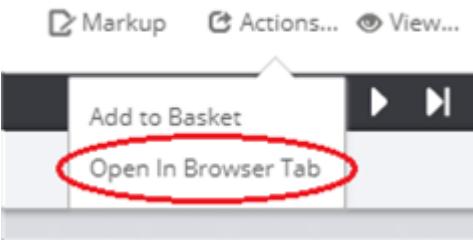
### Sample File for importing:

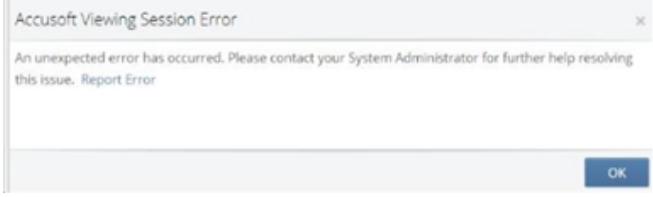
For AutoCAD the name of the file must be: drawingfile-ac2d-transformconfiguration.xml. For MicroStation the name of the file must be: **drawingfile-ms2d-transformconfiguration.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<MappingTemplate guid="d2d0574d-5e6a-4158-9841-23ff436623b0" componentVersion="2.10.0.0"
sourceProductName="AVEVA™ Gateway for 2D Data" componentName="BaseMapping"
creationDate="2023-12-20" createdBy="j.smith">
<ObjectMappings>
<Object>
<Conditions>
<Attribute name="ObjectID" pattern="A-Z]{3}-\d{2}\s\d\/\d\x22-[A-Z]{3}-\d{7}-[A-Z]{2}-[A-Z]" />
</Conditions>
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</Transforms>
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</Object>
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<Conditions>
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</Conditions>
<Transforms>
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</Transforms>
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<Object>
<Conditions>
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</Conditions>
</Object>
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</ObjectMappings>
</MappingTemplate>
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## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.

Reference	Description
	
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## May

### Introduction

This document provides the latest **Release Notes 24.05** for AVEVA Asset Information Management - Advanced.

### Content

This release contains the following significant enhancements and defect fixes:

#### Core Functionality

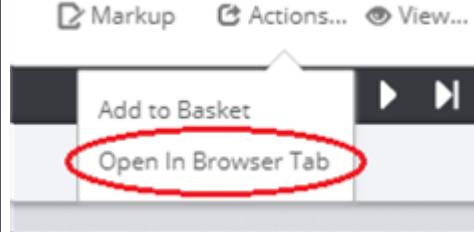
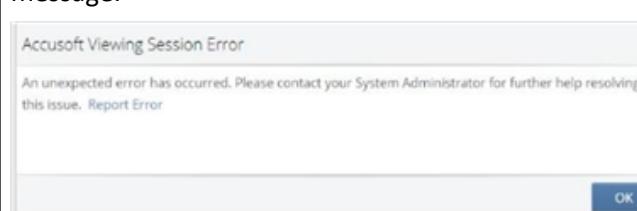
Reference	Type	Description
3074151	Process	Updated the release to the latest Microsoft patches.

#### Document Connector

Reference	Type	Description
3064604	Enhancement	<p>Support for Aconex Service to Service integration has been provided. There is also a new recommended authentication method of <b>Client Credentials Grant Type</b>.</p> <p>See the documentation at:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1161672.html#_authentication">https://docs.aveva.com/bundle/asset-information-management/page/1161672.html#_authentication</a></p> <p><a href="https://docs.aveva.com/bundle/">https://docs.aveva.com/bundle/</a></p>

Reference	Type	Description
		<a href="asset-information-management/page/1161674.html">asset-information-management/ page/1161674.html</a>

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 

June

## Introduction

This document provides the latest **Release Notes 24.06** for AVEVA Asset Information Management - Advanced.

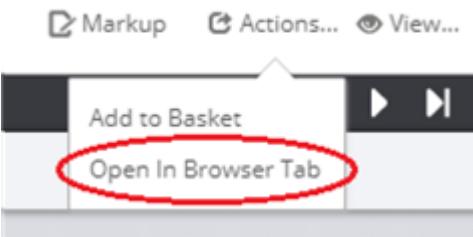
## Content

This release contains the following significant enhancements and defect fixes:

**Core Functionality**

Reference	Type	Description
3074153	Process	Updated the release to the latest Microsoft patches.

**Known Issues**

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>

**July****Introduction**

This document provides the latest **Release Notes 24.07** for AVEVA Asset Information Management - Advanced.

**Content**

This release contains the following significant enhancements and defect fixes:

**Core Functionality**

Reference	Type	Description
3057869 960382290	Defect	In the Dashboard, after adding an item to the basket, if a user switched to a role that does not have access to the item, due to a Security Access Group restriction,

Reference	Type	Description
		then the user was being locked out of the Dashboard. The Dashboard now works as expected with the restricted item removed from the basket.
3182071 960391634	Defect	When viewing SVG files, switching to another tab and then returning to the previous tab, items may have been highlighted in error.
3260736 960387077	Defect	When navigating from a Tag Summary View to a 3D model, the tag from the Tag Summary View is selected in the 3D model. When repeating the step, the selected tag may have been the tag from the previous Tag Summary View.
3319632	Defect	In the Dashboard, when downloading files viewed in the Accusoft Viewer, the message "Unable to download the document due to its size and complexity" was displayed, even when the file should have met the conditions for downloading.
3370468	Defect	When logging out from the Dashboard, an <b>invalid_request</b> error may have been shown.
3375954	Process	Updated the release to the latest Microsoft patches.
3406846 960433852	Defect	Any dependency on Chrome <b>Mutation Events</b> has been removed. Also see 3406846 under <a href="#">Known Issues</a> .

**Document Connector**

Reference	Type	Description
3321406	Defect	For an Assai tenant, larger deltas with EnableDeleteAudit enabled,

Reference	Type	Description
		may have failed to delete files when necessary.

**Data Pipeline**

Reference	Type	Description
2914669	Enhancement	The maximum file size for a 1D Register is now set at 5 GB. See the documentation at: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1166281.html">https://docs.aveva.com/bundle/asset-information-management/page/1166281.html</a>
2964228 960333436 960397544	Defect	The Registers Gateway was not deleting tags from a tag register that only contains tags to be deleted.
3041802	Enhancement	Unsupported file types now give an error code of UnsupportedFileType. For the list of supported file types, see the documentation at: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1166281.html">https://docs.aveva.com/bundle/asset-information-management/page/1166281.html</a>
3064489	Enhancement	The ability to delete 3D Model files has been provided. See the documentation at: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1174973.html">https://docs.aveva.com/bundle/asset-information-management/page/1174973.html</a> <a href="https://docs.aveva.com/bundle/asset-information-management/page/1393831.html">https://docs.aveva.com/bundle/asset-information-management/page/1393831.html</a>
3213198	Defect	When ingesting files with longer names, they may have given a <b>Could not find a part of the path</b> error, even though the filename length was within supported parameters.

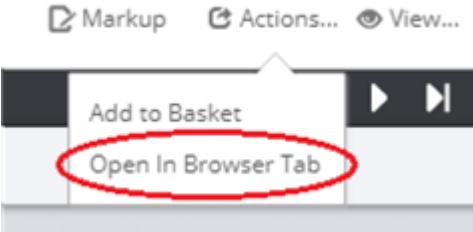
Reference	Type	Description
3296842 960404469	Defect	After suppressing Units of Measure in the class library, and loading the class library, there may have been a spurious warning about an <b>unknown Measure class</b> .
3371587	Defect	Tags and documents with multi-level contexts were failing to be created, whenever there were no objects created at any of the parent-level contexts.
3377193 960313483 960417137	Defect	Some larger <b>.pdf</b> and <b>.doc</b> files greater than 30 MB were failing to process through the Data Pipeline.
3389039	Defect	Clarified that the maximum file name length, for uploading to the Data Pipeline, is 120 characters. See the documentation at: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1166281.html">https://docs.aveva.com/bundle/asset-information-management/page/1166281.html</a>
3398714	Enhancement	Regarding the performance of loading data, documentation has been added that describes some expectations and best practices. See the documentation at: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1394120.html">https://docs.aveva.com/bundle/asset-information-management/page/1394120.html</a>

**Data Pipeline - Load Reporting**

Reference	Type	Description
2914686	Enhancement	When monitoring large data loads or several different data loads, rather than frequent reviews of the Load Reporting Portal to understand the progress of the loads, email <b>notifications</b> can now be created based on rules that query the state of data loads.

Reference	Type	Description
		See the documentation at: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1393819.html">https://docs.aveva.com/bundle/asset-information-management/page/1393819.html</a>
3044489	Defect	The <b>Last Updated</b> value for a file may have shown the database update time instead of the CloudWatch time.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
3406846	<p>Due to a change in Chromium, starting with version 127, which will be generally available from 23 July, the following issue will be apparent until 24.07 is deployed, which fixes the issue.</p> <p>When viewing the Dashboard in Chrome or Edge, white space may be seen at the bottom of panels on Summary Views.</p>

## August

### Introduction

This document provides the latest **Release Notes 24.08** for AVEVA Asset Information Management - Advanced.

## Content

This release contains the following significant enhancements and defect fixes:

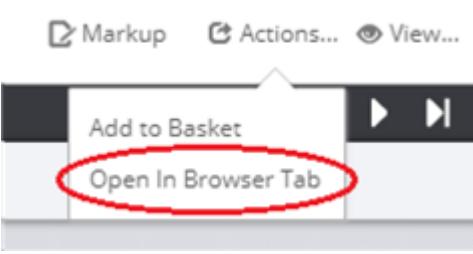
### Core Functionality

Reference	Type	Description
3375960	Process	Updated the release to the latest Microsoft patches.

### Document Connector

Reference	Type	Description
3446341	Announcement	<p>If connecting to Aconex, it is recommended to migrate any existing <b>Refresh Token Grant Type</b> (legacy OAuth) integrations to <b>Client Credential Grant type</b> (Lobby OAuth) integrations.</p> <p>Support from Aconex for Refresh Token Grant Type authentication will only continue for existing implementations until <b>1st September 2024</b>.</p> <p>For more information please see: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1161672.html">https://docs.aveva.com/bundle/asset-information-management/page/1161672.html</a></p>

### Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p> 

Reference	Description
	In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.

## September

### Introduction

This document provides the latest **Release Notes 24.09** for AVEVA Asset Information Management - Advanced.

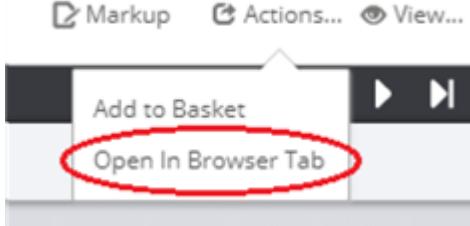
### Content

This release contains the following significant enhancements and defect fixes:

#### Core Functionality

Reference	Type	Description
3375970	Process	Updated the release to the latest Microsoft patches.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>

## October

### Introduction

This document provides the latest **Release Notes 24.10** for AVEVA Asset Information Management - Advanced.

### Content

This release contains the following significant enhancements and defect fixes:

#### Core Functionality

Reference	Type	Description
3068675 960387219	Defect	When viewing a 3D model, after selecting different objects in quick succession, then previously selected items may have been re-highlighted.
3325894	Defect	When viewing documents in the Dashboard, and performing a <b>Select in View</b> action, it was possible to receive the message <b>The item is not in the model, so can't be selected</b> , even when the item was in the model.

Reference	Type	Description
3351796	Defect	Complex SVGs displayed in the Dashboard were silently failing to print and export. Both printing and exporting now work as expected.
3413775 960383791	Defect	When running a Query Form that referenced related items, it may have returned some duplicated metadata in the Table View and in any exported files.
3447553 960440342	Defect	When processing some DWG files and viewing them in the Dashboard, some characters may have incorrectly shown as question marks (?). Any files that had this issue will need to be re-processed.
3455749 960444747	Defect	When viewing an SVG file in the Dashboard, opening another document and then selecting the tab for the original SVG file. Then the SVG file was zoomed into the bottom left corner rather than returning to the previous state.
3532309	Defect	Updated the release to the latest Microsoft patches.

**Document Connector**

Reference	Type	Description
3064507	Enhancement	For Assai tenants, when using the <b>FileTypeLookup</b> parameter to define what files to extract, as well as filtering based on <b>publish_file</b> , filtering can now be based on <b>source_file</b> . This extracts the original native files.  For more information see: <a href="https://docs.aveva.com/bundle/asset-information-management/">https://docs.aveva.com/bundle/asset-information-management/</a>

Reference	Type	Description
		<a href="#">page/1161673.html</a>

**Data Pipeline**

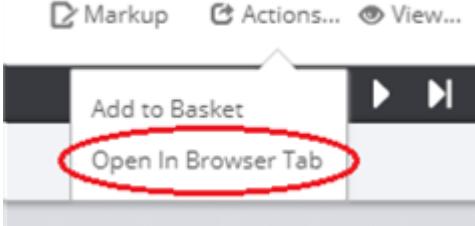
Reference	Type	Description
3195423	Defect	<p>When loading associated objects with curly brackets in their IDs, they are converted to round brackets. A warning is now given, for example:</p> <p>[No {} in ID] converted ID 'XX-{00X}' to 'XX-(00X)' when adding the association '[ASSOCIATION TYPE]' for object ID '[MAIN OBJECT ID]'</p>
3337777	Enhancement	<p>The AVEVA Gateway for 3D Data has been added to the Data Pipeline.</p> <p>This means that the following 3D model file types are now supported:</p> <ul style="list-style-type: none"> <li>• AutoCAD 3D: DWG, DXF</li> <li>• Industry Foundation Classes: IFC</li> <li>• Navisworks 3D: NWD</li> </ul> <p>Further benefits for these file types are:</p> <ul style="list-style-type: none"> <li>• They do not need to be manually converted to RVM or ZGL files in an on-prem setting.</li> <li>• Tag scraping can now be performed in the cloud for these file types.</li> <li>• The processing of these file types is fully compatible with the Data Pipeline and the Load Reporting portal.</li> </ul> <p>For more information see:</p>

Reference	Type	Description
		<p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1174973.html">https://docs.aveva.com/bundle/asset-information-management/page/1174973.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1373441.html">https://docs.aveva.com/bundle/asset-information-management/page/1373441.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1166281.html">https://docs.aveva.com/bundle/asset-information-management/page/1166281.html</a></p>
3400028 960426044	Defect	The Registers Gateway may have given a simple error message of "failed with exit code Unhandled". Now, in these cases, more descriptive error messages are provided.
3452979 960430393	Defect	<p>In the Reporting Database, the <b>ReportingName</b> column in the <b>ISM_Functional_Classes</b> table was populated with the <b>Class ID</b>. It is now correctly populated with the <b>Class Name</b>.</p> <p>The class library for the data will need to be re-processed.</p>
3479500 960447207	Defect	When importing tags, some printable characters such as Á, é, ö were ignored, causing P-101 and P-101 Á to be treated as the same. Now they would be created as separate objects when importing.

**Data Pipeline - Load Reporting**

Reference	Type	Description
3336505 960413097	Defect	Large log files were failing to download. Now, when unzipped, log files are trimmed to a maximum size of 250 MB.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>

## November

This document provides the latest **Release Notes 24.11** for AVEVA Asset Information Management - Advanced.

## Content

This release contains the following significant enhancements and defect fixes:

### Core Functionality

Reference	Type	Description
3337776	Enhancements	<p><b>Multiportal</b></p> <p>All new instances will support the Multiportal capability. This feature allows you to manage multiple data models in the same AIM-A instance, providing you more flexibility around the management of your various projects and sites.</p> <p>Please speak to your AVEVA sales representative to enable Multiportal.</p> <p>For more information, see:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/">https://docs.aveva.com/bundle/asset-information-management/</a></p>

Reference	Type	Description
		<a href="#">page/993975.html</a>
3447547 960439935	Defect	When viewing PDF files containing Japanese characters, they may have been incorrectly displayed as rectangles. This is fixed and the correct Japanese characters are displayed.
3528599	Enhancement	<p><b>3DVis Cloud Streaming Service</b></p> <p>The 3D capability has become a standalone, multi-tenant, scalable, cloud rendering service based on the 3DVis rendering framework provided via CONNECT. The new service, referred to as 3DVis, will supersede the 3DVS service in due course.</p> <p>Using 3DVis enables CONNECT users to benefit from:</p> <ul style="list-style-type: none"> <li>• Hide/Show/Isolate capabilities</li> <li>• Improved Fly and Walk modes</li> <li>• Teleport in all navigation modes</li> </ul> <p>For more information, see:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1486233.html">https://docs.aveva.com/bundle/asset-information-management/page/1486233.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1252243.html">https://docs.aveva.com/bundle/asset-information-management/page/1252243.html</a></p>
3532311	Process	Updated the release to the latest Microsoft patches.

**Document Connector**

Reference	Type	Description

**Data Pipeline**

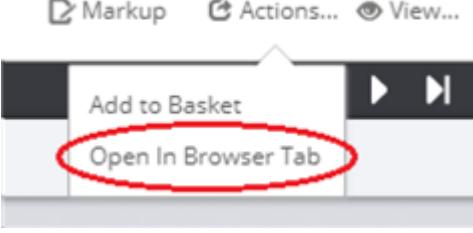
Reference	Type	Description
3369104 960495366	Defect	The values of Category attributes used in class libraries are now case-insensitive. This avoids the following error when processing 1D files: "Attempt 0 to open file 'insert.updateLock' with write lock failed due to 'Unable to open file for writing - The process cannot access the file 'C:\RegiGWWorkArea\xxx\Registers\master\general\insert.updateLock' because it is

Reference	Type	Description
		being used by another process.' ”

**Data Pipeline - Load Reporting**

Reference	Type	Description

**Known Issues**

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
3615935	<p>When zooming in or out over a 3D model using <b>touch</b> commands and where the model is displayed using the 3DVis viewer, then <b>zooming</b> can happen very rapidly and the model may disappear or move far away. This usually happens when the initial touch happens outside of the model area.</p> <p>Initiating the touch commands over the model area will mitigate the issue.</p>
3616082	<p>After interacting with a 3D model using <b>touch</b> commands and where the model is displayed using the 3DVis viewer, then the <b>Reset</b> command may become unstable and cause the model to reset then</p>

Reference	Description
	immediately rotate or pan away. Performing a separate rotate or zoom will enable the Reset to become stable again.

## December

This document provides the latest **Release Notes 24.12** for AVEVA Asset Information Management - Advanced.

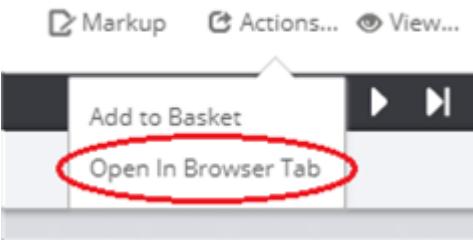
### Content

This release contains the following significant enhancements and defect fixes:

#### Core Functionality

Reference	Type	Description
3532313	Process	Updated the release to the latest Microsoft patches.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
3615935	<p>When zooming in or out over a 3D model using <b>touch</b> commands and where the model is displayed using the 3DVis viewer, then <b>zooming</b> can happen very rapidly and the model may disappear or move far away. This usually happens when the initial touch happens outside of the model area.</p> <p>Initiating the touch commands over the model area will mitigate the issue.</p>
3616082	<p>After interacting with a 3D model using <b>touch</b> commands and where the model is displayed using the 3DVis viewer, then the <b>Reset</b> command may become unstable and cause the model to reset then immediately rotate or pan away. Performing a separate rotate or zoom will enable the Reset to become stable again.</p>

# AIM-D

This section describes the Release Notes for AIM-D.

2023

January

## Introduction

This document provides the latest **Release Notes 23.01** for AVEVA Asset Information Management - Discovery.

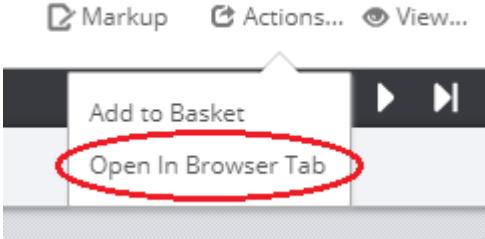
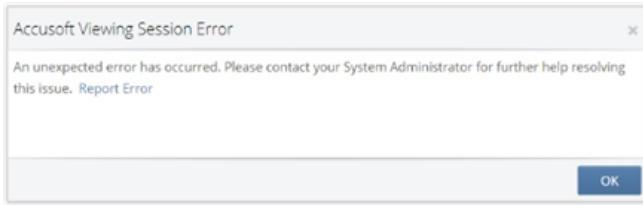
## Content

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
1858376	Defect	Searches involving data with LifecycleType associations may have resulted in "High CPU Utilization" alerts indicating poor general performance of the solution.
2028590 960204266	Defect	When viewing Excel files in the Dashboard using the PrizmDoc viewer, headers and footers may have been overwritten by the body of the page.
2063084 960214938	Defect	When running a Query Form, depending on the date format entered, then results may have come back with a value of "Invalid Date".
2222182	Process	Updated the release to the latest Microsoft patches.

## Known Issues

Reference	Description
1492249	The PrizmDoc viewer used to view TIF files currently

Reference	Description
1503066/960104911	<p>does not support files where at least one dimension of the image is larger than 32767.</p> <p>We are currently working with the supplier to resolve this issue.</p>
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 

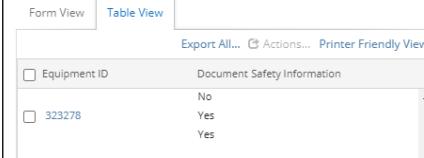
## February

### Introduction

This document provides the latest **Release Notes 23.02** for AVEVA Asset Information Management - Discovery.

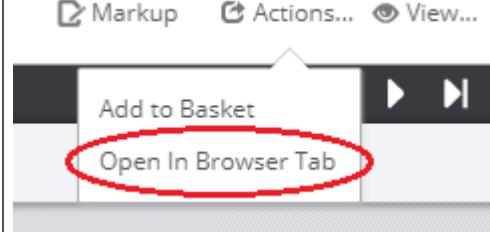
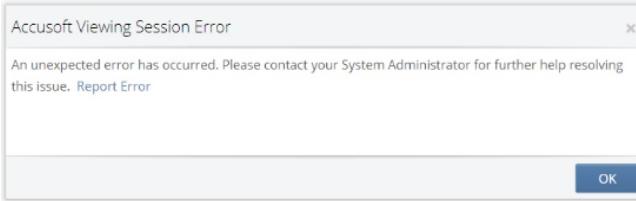
### Content

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description									
1661105	Enhancement	<p>In the Dashboard, when selecting any of the following items from any Actions menu, then they are greyed out until their operation is completed: Select in view/ Highlight/Add to basket.</p> <p>This avoids inadvertently selecting the item twice causing an unnecessarily long operation.</p>									
1992309 960181570	Defect	<p>In the Dashboard, if a Query Form is designed to search for certain objects and list some of its related items, then in the Table View, all non-blank values are listed vertically. For example, if we are listing each equipment and the value of Document Safety Information on each of the equipment's related documents, then one entry may look like this:</p>  <p>Previously, when exporting data with related items to .xlsx files, then only unique values, rather than all values, were reported for each related item, and they were listed on one line in the Excel row separated by a comma (by default). For example:</p> <table border="1"> <thead> <tr> <th></th> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Equipment ID</td> <td>Document Safety Information</td> </tr> <tr> <td>2</td> <td>323278</td> <td>No, Yes</td> </tr> </tbody> </table> <p>Now the export is more similar to the Table View layout and lists all the values for related items and on a separate line within the Excel row. For example:</p>		A	B	1	Equipment ID	Document Safety Information	2	323278	No, Yes
	A	B									
1	Equipment ID	Document Safety Information									
2	323278	No, Yes									

Reference	Type	Description								
		<table border="1"> <thead> <tr> <th>A</th> <th>B</th> </tr> </thead> <tbody> <tr> <td>1 Equipment ID</td> <td>Document Safety Information</td> </tr> <tr> <td>323278</td> <td>No, Yes, Yes</td> </tr> <tr> <td>2</td> <td></td> </tr> </tbody> </table>	A	B	1 Equipment ID	Document Safety Information	323278	No, Yes, Yes	2	
A	B									
1 Equipment ID	Document Safety Information									
323278	No, Yes, Yes									
2										
2222183	Process	Updated the release to the latest Microsoft patches.								

## Known Issues

Reference	Description
1492249 1503066/960104911	<p>The PrizmDoc viewer used to view TIF files currently does not support files where at least one dimension of the image is larger than 32767.</p> <p>We are currently working with the supplier to resolve this issue.</p>
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 

Reference	Description																																
2333598	<p>When exporting from a Query Form (via Table View) to a .xlsx file, where cells are for multiple related items and may contain multiple values, then at the top of the cell any values that are identical are only shown once rather than the correct number of times. For example, if "Approved" should occur twice at the top it is only shown once:</p> <table border="1" data-bbox="871 530 1514 713"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Equipment ID</td> <td>Document ID</td> <td>Status</td> </tr> <tr> <td></td> <td>J-9002A</td> <td>Doc1, Doc2, Doc3, Doc4</td> <td>Approved, Draft, Draft</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>The correct view should be:</p> <table border="1" data-bbox="871 777 1514 960"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Equipment ID</td> <td>Document ID</td> <td>Status</td> </tr> <tr> <td></td> <td>J-9002A</td> <td>Doc1, Doc2, Doc3, Doc4</td> <td>Approved, Approved, Draft, Draft</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		A	B	C	1	Equipment ID	Document ID	Status		J-9002A	Doc1, Doc2, Doc3, Doc4	Approved, Draft, Draft	2					A	B	C	1	Equipment ID	Document ID	Status		J-9002A	Doc1, Doc2, Doc3, Doc4	Approved, Approved, Draft, Draft	2			
	A	B	C																														
1	Equipment ID	Document ID	Status																														
	J-9002A	Doc1, Doc2, Doc3, Doc4	Approved, Draft, Draft																														
2																																	
	A	B	C																														
1	Equipment ID	Document ID	Status																														
	J-9002A	Doc1, Doc2, Doc3, Doc4	Approved, Approved, Draft, Draft																														
2																																	

## March

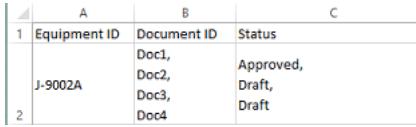
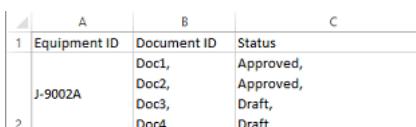
### Introduction

This document provides the latest **Release Notes 23.03** for AVEVA Asset Information Management - Discovery.

### Content

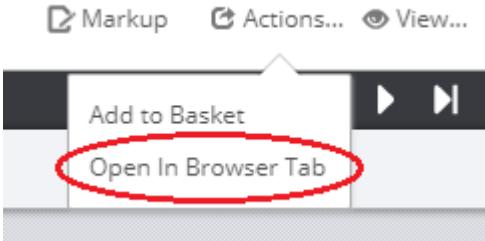
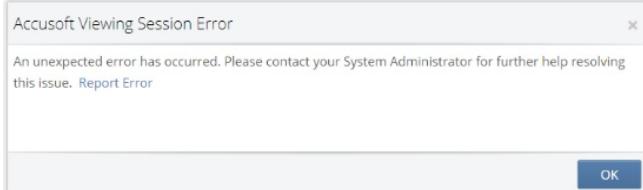
Reference	Type	Description
2149022 960227175	Defect	When opening a 3D model in the context of a tag (the tag gets selected and zoomed to), then, when rotating the model it was not rotating about the selected tag.
2178916 960183447	Defect	When viewing documents, hotspotted files may not have displayed in the Content Card. This was when processing tags before SVG files and where there was a difference in upper/lower casing of the tags.

Reference	Type	Description
2203012 960239256	Defect	After performing an Advanced Find using the Not operator and then doing an Export All, it was possible to receive an “Operation timed-out” message.
2222184	Process	Updated the release to the latest Microsoft patches.
2274850 960250902	Defect	When using Microsoft Edge, in the top-right of the Dashboard, the Basket icon (  ) may have been partly overwritten by the Tab Panel icon (  ).
2275074 960240661	Defect	When running a Query Form and using the date picker to define a Between operation and when using a browser locale other than UK English or US English, then the wrong format (dd/mm/yyyy vs mm/dd/yyyy) may have been used, resulting in the following message: “The value for the end of the range was lower than the value for the start of the range. They have been swapped.”
2282225	Enhancement	Mark-up from AVEVA Point Cloud Manager (APCM), which is also an alias of a tag, is now supported when viewing APCM documents. So, when an APCM model is opened from a Tag Summary view, it zooms to the tag for the aliased mark-up in the APCM viewer.
2289292 960260115	Defect	Some environments may have not loaded 3D models without manual refresh attempts.
2331986	Enhancement	Due to the use of non-standard fonts in CAD files impacting how well files were displayed (for example, legibility of text, position of symbols and text), we have

Reference	Type	Description
		improved the mapping of the CAD fonts to Microsoft supported TrueType fonts (vector fonts), or in some cases converted text to polylines. This improves the legibility and positioning of text and symbols when viewing the CAD files in the Dashboard.
2333598 960181570	Defect	When exporting from a Query Form (via the Table View) to a .xlsx file, where cells were for multiple related items and may have contained multiple values, then at the top of the cell any values that were identical were only shown once rather than the correct number of times. For example, if "Approved" should have occurred twice at the top it was only shown once:   <p>The correct output is now created:</p> 
2361193	Defect	An incorrect mention of Security Access Groups (SAGs) in the User Guide has been removed. SAGs are not currently supported in this solution.

## Known Issues

Reference	Description
1492249 1503066/960104911	The PrizmDoc viewer used to view TIF files currently does not support files where at least one dimension of the image is larger than 32767.  We are currently working with the supplier to resolve

Reference	Description
	this issue.
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 
2379345	<p>If you open an AVEVA Point Cloud Manager model from a Tag Summary view, the page may become unresponsive. This happens when opening the model a couple of times.</p> <p>Once this error appears, to see the APCM model again:</p> <ol style="list-style-type: none"> <li>1. Close the browser.</li> <li>2. Re-open the browser.</li> <li>3. Re-load the APCM model.</li> </ol>

April

## Introduction

This document provides the latest **Release Notes 23.04** for AVEVA Asset Information Management - Discovery.

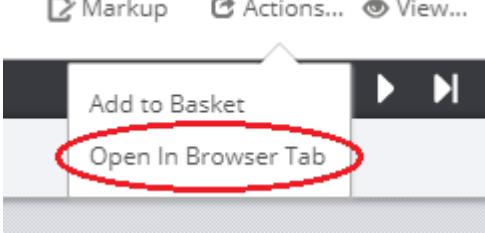
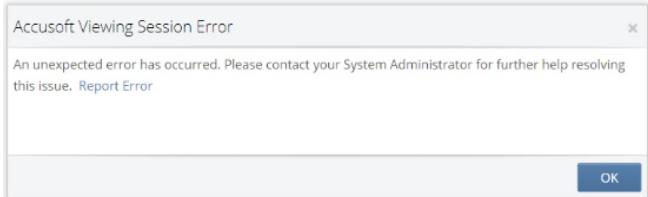
## Content

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
2276894 960247967	Defect	In the Dashboard, when viewing PDF documents, the size and layout of pages may not have reflected the original document.  This was because pages were always rendered using " <i>media box</i> " dimensions. Now, the rendering of pages also honours " <i>crop box</i> " dimensions.
2354987 960222062	Defect	When a <i>custom</i> Home Page was failing to load, it was silently reverting to the <i>default</i> Home Page. If this happens, it now displays the following message:  "Error encountered when loading the custom homepage, please refresh the browser window to retry.".
2399346	Process	Updated the release to the latest Microsoft patches.

## Known Issues

Reference	Description
1492249 1503066/960104911	The PrizmDoc viewer used to view TIF files currently does not support files where at least one dimension of the image is larger than 32767.  We are currently working with the supplier to resolve this issue.
1899246 960156293	When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab

Reference	Description
	<p>using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 
2379345	<p>If you open an AVEVA Point Cloud Manager model from a Tag Summary view, the page may become unresponsive. This happens when opening the model a couple of times.</p> <p>Once this error appears, to see the APCM model again:</p> <ol style="list-style-type: none"> <li>1. Close the browser.</li> <li>2. Re-open the browser.</li> <li>3. Re-load the APCM model.</li> </ol>

## May

### Introduction

This document provides the latest **Release Notes 23.05** for AVEVA Asset Information Management - Discovery.

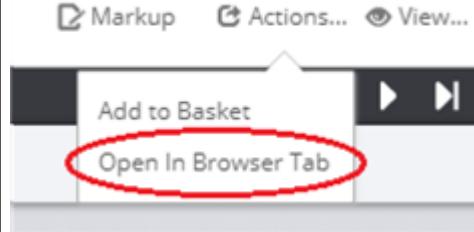
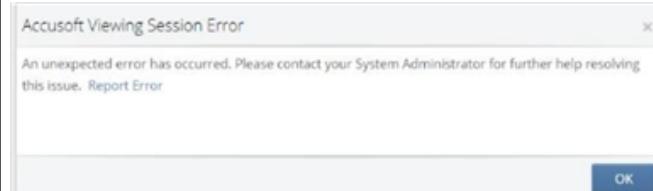
## Content

### Core Functionality

Reference	Type	Description
1859657 960138053	Defect	The PrizmDoc viewer may not have hot-spotted some vertical tags. This is resolved by the latest PrizmDoc viewer – no reprocessing or re-importing is necessary.
1869849 960172989	Defect	In the PrizmDoc viewer, PDFs with embedded images greater than 30,000 x 20,000 pixels were giving a 580 error: "Document Not Found".
1894634 960104911	Defect	The PrizmDoc viewer was not displaying TIF files where at least one dimension of the image was larger than 32767.
2384316	Defect	When importing files, it was possible to receive the error: "The process was terminated due to an unhandled exception.".
2399347	Process	Updated the release to the latest Microsoft patches.
2408670	Enhancement	When clicking the Information link (  ) in the top-right of the Dashboard (which shows the Information and Help dialog), the link to the help guide now takes the user to the AIM area within AVEVA's new documentation website.
2411385 960240661	Defect	When running a Query Form, the date dropdown incorrectly converted between DD/MM/YYYY and MM/DD/YYYY formats.
2440896	Defect	When importing XML data, it was possible to receive the error: "The remote server returned an error: (403) Forbidden.".

Reference	Type	Description
2443608	Defect	When importing documents, the Import Progress website was not updating every hour, but only at the beginning and end of the imports.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 

June

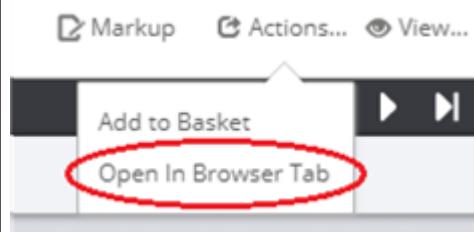
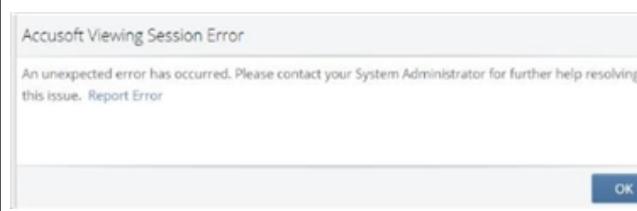
### Introduction

This document provides the latest **Release Notes 23.06** for AVEVA Asset Information Management - Discovery.

## Content

Reference	Type	Description
2376486	Defect	In the Dashboard, when trying to open multiple documents using the <b>Open In Browser Tab</b> option, it was possible to receive an <i>AVEVA.NET.Workhub.Web.Owin.ThrottlingResponse</i> error.
2399348	Process	Updated the release to the latest Microsoft patches.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 

July

## Introduction

This document provides the latest **Release Notes 23.07** for AVEVA Asset Information Management - Discovery.

## Content

This release contains the following significant enhancements and defect fixes:

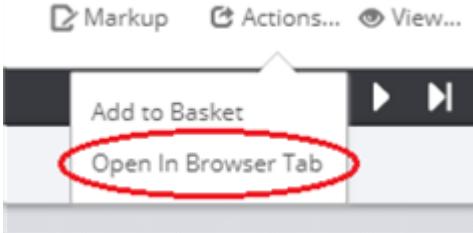
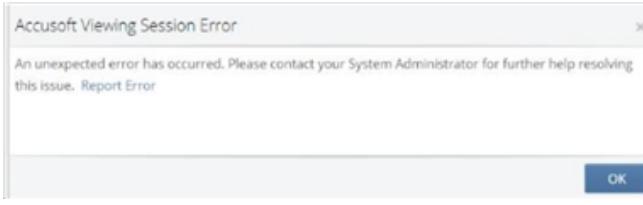
### Core Functionality

Reference	Type	Description
1087074	Enhancement	When processing files through the AutoCAD 2D Gateway, WIPEOUTFRAME variables for wipeout objects are now supported.
1464187 960070871	Enhancement	When processing files through the AutoCAD 2D Gateway, bitonal raster images are now supported.
1981070 960165756	Defect	When processing files through the AutoCAD 2D Gateway, improvements have been made to the accuracy of scraping tags. This avoids incorrect concatenation of text. For example, 1234567890-ABC versus ABC-1234567890. Any files that had this issue will need to be re-processed.
2035115 960208296	Defect	When processing files through the AutoCAD 2D Gateway, some DWG files had the error "Error processing DWG/DXF file. Attempted to read or write protected memory.". Any files that had this issue will need to be re-processed.
2138930	Defect	When processing files through the AutoCAD 2D Gateway, high density DOT patterns will be replaced with a solid fill pattern. This greatly reduces processing time and SVG file size.

Reference	Type	Description
2183065 960238020	Defect	When processing files through the AutoCAD 2D Gateway, some DWG files had the error “Gateway extraction error: documents may contain broken objects.”. Any files that had this issue will need to be re- processed.
2250575 960217548	Defect	When processing files through the AutoCAD 2D Gateway, drawing content may have been misaligned. Any files that had this issue will need to be re- processed.
2296389 960252549	Defect	When processing files through the AutoCAD 2D Gateway, some instrument tags weren't captured in the SVG file. Any files that had this issue will need to be re- processed.
2299871 960254316	Defect	After running a Query Form, if a Reset was performed, then any links to documents, shown in the set of results, were still visible and active. Any links to documents are now removed after the reset.
2312424 960251305	Defect	When processing files through the AutoCAD 2D Gateway, some files were incorrectly referring to missing XREF files in the SVG as they were not displayed in the source drawing. Any files that had this issue will need to be re- processed.
2328846 960244129	Defect	If a single XML file was imported, that tried to perform multiple re-parenting of classes in the same hierarchy, then the Import Server may have terminated. An example would have been, if the hierarchy was C1-C2-C3-C4 and a single XML file tried to make C2 the

Reference	Type	Description
		parent of C4 and C4 the parent of C3 (affectively switching C3 and C4 in the hierarchy).
2336299 960265587	Defect	When processing files through the AutoCAD 2D Gateway, some diagonal lines were incorrectly appearing on the SVG drawing. Any files that had this issue will need to be re-processed.
2346504 960267141	Defect	After running a Query Form that returned a single result, switching from Table View to Form View did not populate the list of attributes in the Form View.
2467923 960269077	Defect	When loading DWG files through the AutoCAD 2D Gateway, if no tags were scraped, then the files failed to load and had the following error in the Gateway Log File: <i>System.ArgumentException: Post-processing input file '*.csv' not found.</i> Any files that had this issue will need to be re-processed.
2476798 960290919	Defect	The Import Progress website may have shown a completion rate of > 100%. This only occurred when some files had been marked as deleted.
2503863 960252067	Defect	Security improvements.
2514762	Process	Updated the release to the latest Microsoft patches.

**Known Issues**

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message.</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## August

### Introduction

This document provides the latest **Release Notes 23.08** for AVEVA Asset Information Management - Discovery.

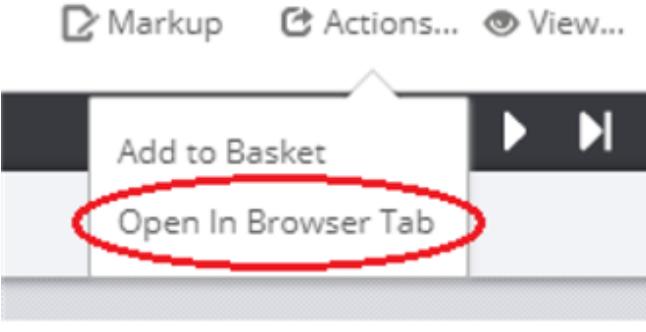
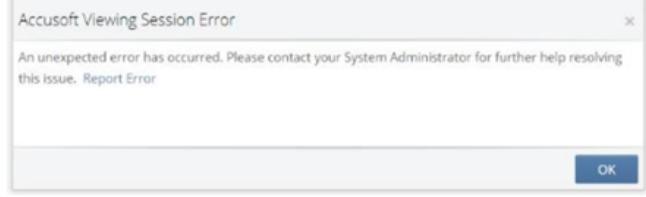
### Content

This release contains the following significant enhancements and defect fixes:

**Core Functionality**

Reference	Type	Description
2516205	Process	Updated the release to the latest Microsoft patches.
2587663	Defect	It was possible for some Accusoft instances to not fully deploy, which may have resulted in Microsoft Office documents not displaying in the Dashboard.

**Known Issues**

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p> 
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message:</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## September

### Introduction

This document provides the latest **Release Notes 23.09** for AVEVA Asset Information Management - Discovery.

### Content

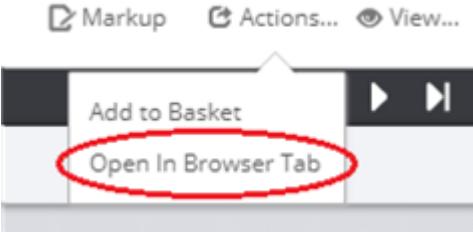
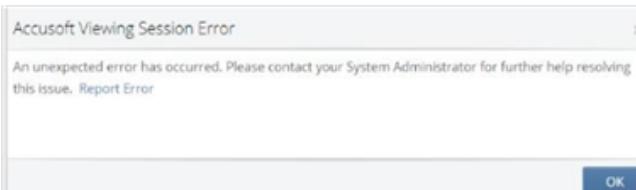
This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
1713047 960136907	Defect	For Excel files, date cells may not have been formatted as expected. Any files that had this issue will need to be re-processed.
1844883	Defect	After a large number of logins to the Dashboard, new logins may have been refused and presented with the error, "Application Initialise Data Failed".
2170060 960232837	Defect	Some DGN files had isolated dots converted to arbitrary lines. Any files that had this issue will need to be re-processed.
2280430 960246229	Defect	When viewing Query Form results in the Table View, where rows for a single result also have columns containing multiple associated items, and there are further column(s) containing corresponding values for each of those associated items, then the values for the corresponding items may not have lined up horizontally. This was due to blank values not being added.  The blank values are now inserted allowing corresponding cells in the same row to have their multiple values line up.
2330895 960178313	Defect	Document to document aliases are not supported.  If any are inadvertently added to

Reference	Type	Description
		the Aliases Register in the future, then neither document will be created as an alias of the other. This means that if either document has not been created as an object yet, they will be correctly created when added to a Document Register in the future.
2346359 960265686	Defect	The browser tab for the Dashboard may have shown an incorrect icon of  rather than the correct icon of  .
2390521 960239891	Defect	When running a Query Form and providing a value for an <b>Incidental Type ID</b> field, then the field was not resetting after selecting Reset.
2391777 960246950	Defect	In the Dashboard, some attribute values containing an @ symbol were wrongly being displayed as <b>mailto</b> links.
2516209	Process	Updated the release to the latest Microsoft patches.
2527098	Enhancement	When viewing Sets in the Dashboard, the Content tab now displays the <b>Names</b> of the items in the Set (previously only the ID and Type were displayed). For example:  <p>See the documentation at: <a href="https://docs.aveva.com/bundle/asset-information-management/page/998885.html">https://docs.aveva.com/bundle/asset-information-management/page/998885.html</a> <a href="https://docs.aveva.com/bundle/asset-information-management/page/998888.html">https://docs.aveva.com/bundle/asset-information-management/page/998888.html</a></p>

Reference	Type	Description
2549619 960290997 960313483	Defect	A gateway time-out has been extended to reduce the occurrence of the following gateway errors: <ul style="list-style-type: none"> <li>• "Please check that the file is not opened in another application"</li> <li>• "file-not-found"</li> </ul>

## Known Issues

Reference	Description
1899246 960156293	When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:  
2165885	When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message:  
2504721	When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.

## October

## Introduction

This document provides the latest **Release Notes 23.10** for AVEVA Asset Information Management - Discovery.

## Content

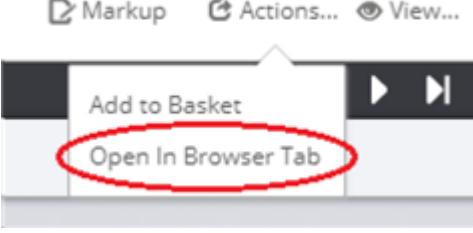
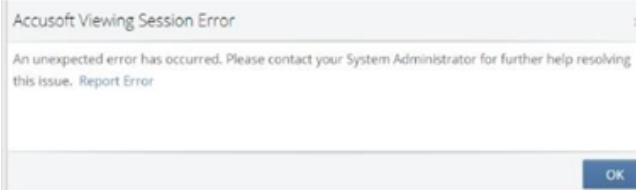
### Core Functionality

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
2403560	Defect	If a register is loaded from an incorrect location, and the location is corrected, then the new load was still generating an error. For example: <i>RunRegisterPartitioner-EventRegister was failing in the SWF with reason 'Register file 'C:\Register Partitioner Worker\aaaaaaaaaa-792b-4d3a-be3b-0998a76d9642\InputRegisterFile\1EventData.csv' doesn't exist.'</i>
2558541 960314754	Defect	In the Dashboard, when viewing SVG renditions, and some tags have been highlighted, then the icon in the toolbar at the bottom to <b>Clear All Highlighting</b> was not taking affect. 
2640092	Process	Updated the release to the latest Microsoft patches.
2761231	Defect	When removing a record from a document register and loading it using DriveSync, then the import progress report correctly indicated the document was deleted. However, when a new document was added to the register and the register was re-loaded, then the document record which was removed from the 1st load was

Reference	Type	Description
		shown once again “as deleted” in the import report for the 2nd load. Now, the document which was deleted from the 1st load does not appear in the import report of the 2nd load.

**Known Issues**

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p> 
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard’s PrizmDoc viewer, the PDFs may fail to load with the following error message:</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

November

## Introduction

This document provides the latest **Release Notes 23.11** for AVEVA Asset Information Management - Discovery.

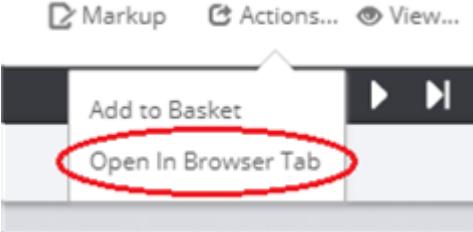
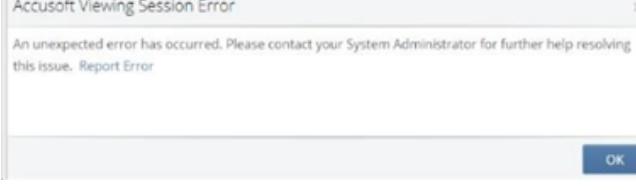
## Content

### Core Functionality

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
2640093	Process	Updated the release to the latest Microsoft patches.

### Known Issues

Reference	Description
1899246 960156293	When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:  
2165885	When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message:  
2504721	When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of

Reference	Description
	text in the SVG.

## December

### Introduction

This document provides the latest **Release Notes 23.12** for AVEVA Asset Information Management - Discovery.

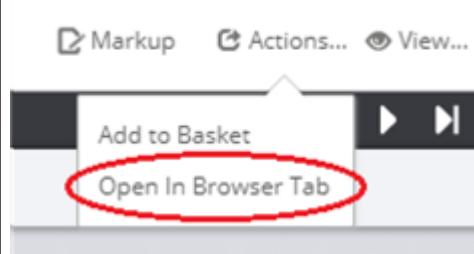
### Content

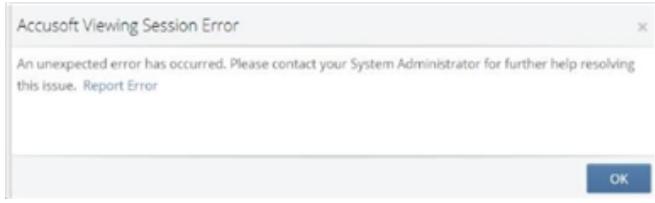
### Core Functionality

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
2640094	Process	Updated the release to the latest Microsoft patches.

### Known Issues

Reference	Description
1899246 960156293	When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:  
2165885	When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message:

Reference	Description
	
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## 2024

### January

#### Introduction

This document provides the latest **Release Notes 24.01** for AVEVA Asset Information Management - Discovery.

#### Content

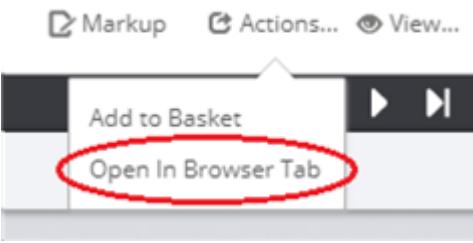
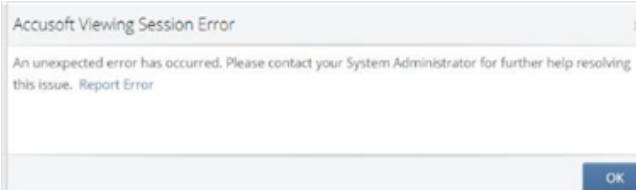
This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
2476900 960295199	Defect	<p>When opening P&amp;IDs from a tag summary view, some tags were zooming to an incorrect location. For example, when opened, a P&amp;ID was zoomed out and the tag highlighted in the top right corner rather than zoomed in with the tag in the center. Any files that had this issue will need to be re-processed.</p>
2541133 960309907	Defect	<p>When viewing SVG files in the Dashboard and editing some text annotation, then closing the "Edit Text Annotation" dialog, then an identical dialog may have been present behind the top dialog. The superfluous dialog was due to previously editing annotations on other SVG files. The dialog is now</p>

Reference	Type	Description
		always presented once per annotation edit.
2614401	Defect	When running a Query Form and selecting the dropdown arrow for an attribute's List of Values, then while the list was being populated the message "<No Applicable Items>" was displayed. This happened even when items were subsequently found to be present. While loading, the message now reads "Loading...".
2614408	Enhancement	In the Dashboard, references to "AVEVA NET", such as in error messages and the browser tab, have been updated to "AVEVA Asset Information Management".
2872694	Defect	If a custom <b>role</b> was created with a name of "Admin", then the "Admin" <b>user</b> was unable to log into the Admin Tool.
2884924	Defect	In CONNECT, when provisioning an AIM solution, the message "Switching service on..." persisted and suggested the solution was not going to fully provision when it actually had already.  The message now does not persist.
2935863	Process	Updated the release to the latest Microsoft patches.
2927046 960362340	Defect	When objects in a user's Basket were deleted from the AIM database, but were left in the Basket, then future Dashboard login attempts by that user were failing with the message "Application Initialise Data Failed".
2993088 960361921	Defect	In the Document Viewer, when selecting an item that had not had its tag data loaded yet, or the user

Reference	Type	Description
		was not authorized to view the item, an unnecessary message of "Item Not Found" was shown. This message is now removed.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p> 
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message:</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## February

### Introduction

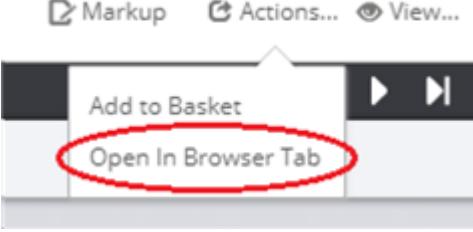
This document provides the latest **Release Notes 24.02** for AVEVA Asset Information Management - Discovery.

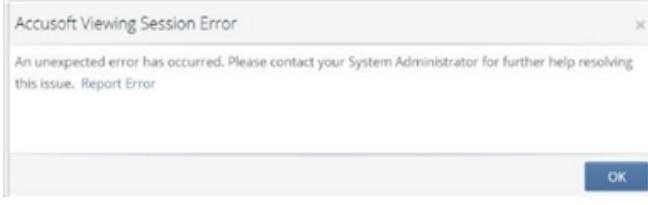
## Content

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
2865196 960287450	Defect	In the Search hierarchy of the Dashboard, if the label of the nodes was configured to show the description (based on the Desc attribute), then it wasn't displaying the description part of the label.
2908346 960284950	Defect	When viewing a 3D model in the Dashboard, selecting an item with the mouse may have caused the camera view to jump to a different location.
2930825 960314754	Defect	In the Dashboard, when viewing an SVG file, the <b>Clear All Highlighting</b> option in the toolbar was failing to clear the highlighted items in the drawing.
2935858	Process	Updated the release to the latest Microsoft patches.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p> 
2165885	When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error

Reference	Description
	<p>message:</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## March

### Introduction

This document provides the latest **Release Notes 24.03** for AVEVA Asset Information Management - Discovery.

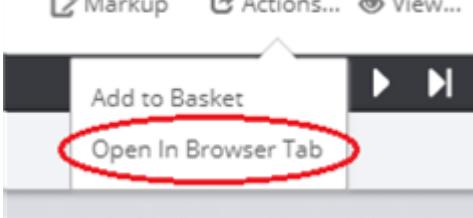
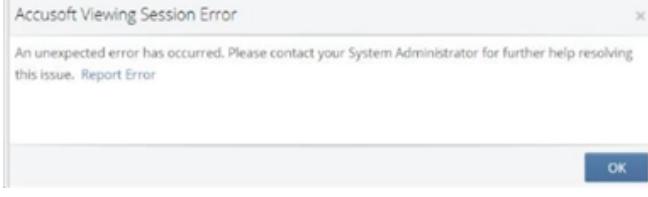
### Content

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
2935860	Process	Updated the release to the latest Microsoft patches.

### Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p>

Reference	Description
	
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message:</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

## April

### Introduction

This document provides the latest **Release Notes 24.04** for AVEVA Asset Information Management - Discovery.

### Content

This release contains the following significant enhancements and defect fixes:

**Core Functionality**

REFERENCE	TYPE	DESCRIPTION
2628410 960318608	Defect	When viewing documents, tags that wrapped onto multiple lines may not have been highlighted. Any files that had this issue will NOT need to be re-processed.
2854631	Defect	When switching tabs in a <b>Content Card</b> , some tabs were gathering multiple close icons.
2914655 960183628	Defect	DWG files are converted to SVGs for viewing in the Dashboard, with backgrounds set to white and all foreground items converted to black. This meant that solid shapes containing text, had both of their colours converted to black – making the text unreadable.  Now, any white (255, 255, 255) elements are converted to a light grey colour (191, 191, 191) enabling white text to still be seen (whether over a black solid element or the white background). Any files that had this issue WILL need to be re-processed.
2914661	Defect	In the Dashboard, labels used for class hierarchies in Search and Visual Reports always showed the class ID. They now correctly follow the configuration setting for Label Types.
2914688	Enhancement	The time to process 2D files has been significantly improved.  This has included upgrading to the new AVEVA Gateway for 2D Data. Existing files do NOT need to be re-processed.  For more information on configuring the new Gateway, see the below section: <i>Using the AVEVA Gateway for 2D Data -</i>

REFERENCE	TYPE	DESCRIPTION
		<p><i>Transformation Configurations</i>  For more information on defects fixed, see:  <a href="https://docs.aveva.com/bundle/gateways/page/1264080.html">https://docs.aveva.com/bundle/gateways/page/1264080.html</a></p>
3004287 960355515	Defect	In the Dashboard, when viewing files rendered in SVG and using the Print option in the viewer, then printouts may have had text wrongly shifted to the right.
3020285 960366343	Defect	When viewing documents, tags that contained some special characters may not have been fully highlighted.  Any files that had this issue will NOT need to be re-processed.
3045887 960378366	Defect	When downloading documents viewed in the Dashboard, larger files (>1GB) may have resulted in an unhandled server error.  Now, the case is handled with an appropriate error message.
3057849 960385339 960391859	Defect	Filters for drop-downs in <b>Query Forms</b> and the <b>Query Form Designer</b> had stopped working correctly.
3057879 960387873	Defect	When using Advanced Search in the Dashboard and adding a filter, the text entry box for the filter was adding a % symbol as soon as characters were typed. The I-bar cursor was then out of position and the % symbol could not be removed.

REFERENCE	TYPE	DESCRIPTION
3074149	Process	Updated the release to the latest Microsoft patches.

## Using the AVEVA Gateway for 2D Data – Transformation Configurations

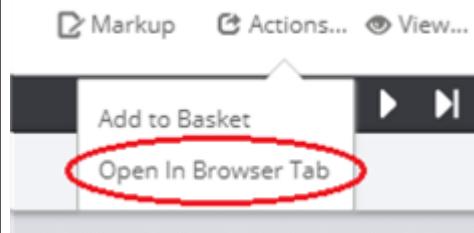
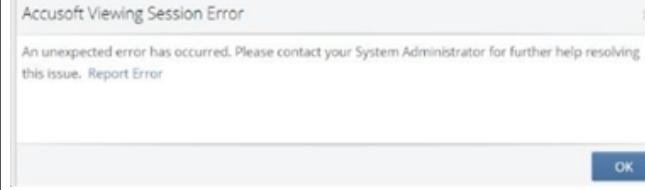
1. **Pattern:** A set of regular expression rules used to find specific objects. A regular expression is a template that helps identify tags. For example: [A-Z]{3}-\d{2}\s\d\\d\x22-[A-Z]{3}-\d{7}-[A-Z]{2}-[A-Z]
  - [A-Z]{3}: This part matches exactly three uppercase letters from A to Z.
  - -\d{2}: This matches a hyphen followed by exactly two digits (0-9).
  - \s: This matches a single whitespace character.
  - \d\\d: This matches a digit followed by a forward slash and another digit.
  - \x22: This matches a double quotation mark (").
  - -[A-Z]{3}: This matches a hyphen followed by exactly three uppercase letters from A to Z.
  - -\d{7}: This matches a hyphen followed by exactly seven digits (0-9).
  - -[A-Z]{2}: This matches a hyphen followed by exactly two uppercase letters from A to Z.
  - -[A-Z]: This matches a hyphen followed by a single uppercase letter from A to Z.
2. **Expansion:** A set of regular expression rules used to find additional objects that should be included. It's an extension of the template used for Patterns (see point 1).
3. **Char (Character):** This identifies a particular symbol used within the expansion to mark where it should be added. It's like a signpost indicating where to add extra things.
4. **Interpolate:** This tells the system whether a range of values should be inserted based on the expansion result. It's like deciding whether to fill in the gaps between identified objects.
5. **KeepPattern (optional):** This regular expression is used to narrow down the results matched by the original pattern. It helps to filter out specific subsets of the initial matches. For example in [A-Z]{1,2}-\d{4},
  - [A-Z]{1,2}: This part matches one or two uppercase letters from A to Z.
  - -: This matches a hyphen.
  - \d{4}: This matches exactly four digits (0-9).

So, overall, this pattern would match strings that start with one or two uppercase letters followed by a hyphen and then exactly four digits. For example, it would match patterns like "A-1234" or "AB-5678".
6. **SearchCriteriaPattern (optional):** These additional regular expression patterns are applied to the values of attributes. For instance, if you have text such as "P-101ASDFP-102ASDFP-103" and you want to identify codes within the text such as "P-101A" and "P-102A", then the search pattern might be something like "[A-Z]-\d{3}[A-Z]". This helps you find specific patterns within a larger text.

**Sample File for importing: CADPatterns.xlsx**

	A	B	C	D	E	F
1	Pattern	Expansion	Char	Interpolate	KeepPattern	SearchCriteriaPattern
2	[A-Z]{3}-\d{2}\s\d\\d\x22-[A-Z]{3}-\d{7}-[A-Z]{2}-[A-Z]					[A-Z]{1,2}-\d{4}
3	[A-Z]{3}-\d\\.\\s\d{2}\\x22-[A-Z]{2}-\d{3}-\d{4}-[A-Z]{2}-[A-Z]				[A-Z]{1,2}-\d{4}	[A-Z]{1,2}-\d{4}
4	[A-Z]{3}-\d{2}-[A-Z]{3}-\d{3}-\d{4}-[A-Z]\d{2}[A-Z]{2}-[A-Z]				[A-Z]{1,2}-\d{4}"	
5	[A-Z]{3}-\d{2}\s\d\\d\x22-[A-Z]{2}-\d{6}-[A-Z]{3}-[A-Z]					
6	[A-Z]{3}-\d\s\d\\d\x22-[A-Z]{3}-\d{7}-[A-Z]{2}-[A-Z]					

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:</p> 
2165885	<p>When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message:</p> 
2504721	<p>When processing files through the AutoCAD 2D Gateway, an input drawing with a mixture of fonts with different widths can result in misalignment of text in the SVG.</p>

May

## Introduction

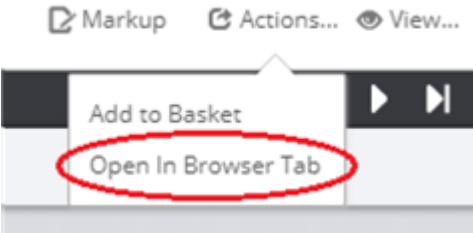
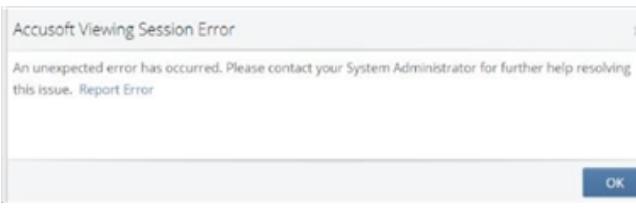
This document provides the latest **Release Notes 24.05** for AVEVA Asset Information Management - Discovery.

## Content

This release contains the following significant enhancements and defect fixes:

REFERENCE	TYPE	DESCRIPTION
3074151	Process	Updated the release to the latest Microsoft patches.

## Known Issues

Reference	Description
1899246 960156293	When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:  
2165885	When viewing large PDFs, typically of around 900 pages or more, in the Dashboard's PrizmDoc viewer, the PDFs may fail to load with the following error message:  

June

## Introduction

This document provides the latest **Release Notes 24.06** for AVEVA Asset Information Management - Discovery.

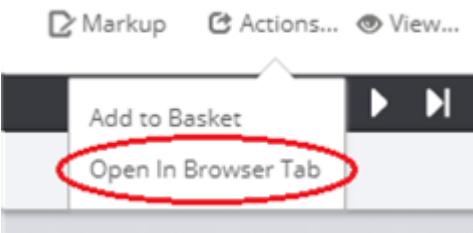
## Content

This release contains the following significant enhancements and defect fixes:

### Core Functionality

REFERENCE	TYPE	DESCRIPTION
3074153	Process	Updated the release to the latest Microsoft patches.

## Known Issues

Reference	Description
1899246 960156293	When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab using the following option:  

## July

## Introduction

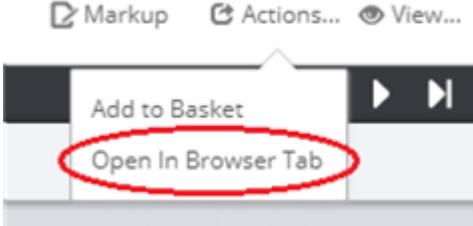
This document provides the latest **Release Notes 24.07** for AVEVA Asset Information Management - Discovery.

## Content

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
3057869 960382290	Defect	In the Dashboard, after adding an item to the basket, if a user switched to a role that does not have access to the item, due to a Security Access Group restriction, then the user was being locked out of the Dashboard. The Dashboard now works as expected with the restricted item removed from the basket.
3182071 960391634	Defect	When viewing SVG files, switching to another tab and then returning to the previous tab, items may have been highlighted in error.
3260736 960387077	Defect	When navigating from a Tag Summary View to a 3D model, the tag from the Tag Summary View is selected in the 3D model. When repeating the step, the selected tag may have been the tag from the previous Tag Summary View.
3319632	Defect	In the Dashboard, when downloading files viewed in the Accusoft Viewer, the message "Unable to download the document due to its size and complexity" was displayed, even when the file should have met the conditions for downloading.
3370468	Defect	When logging out from the Dashboard, an <b>invalid_request</b> error may have been shown.
3375954	Process	Updated the release to the latest Microsoft patches.
3406846 960433852	Defect	Any dependency on Chrome <b>Mutation Events</b> has been removed. Also see 3406846 under <a href="#">Known Issues</a>

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
3406846	<p>Due to a change in Chromium, starting with version 127, which will be generally available from 23 July, the following issue will be apparent until 24.07 is deployed, which fixes the issue.</p> <p>When viewing the Dashboard in Chrome or Edge, white space may be seen at the bottom of panels on Summary Views.</p>

## August

### Introduction

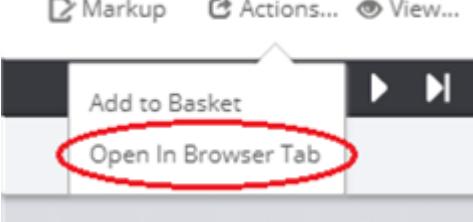
This document provides the latest **Release Notes 24.08** for AVEVA Asset Information Management - Discovery.

### Content

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
3375960	Process	Updated the release to the latest Microsoft patches.

### Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>

## September

### Introduction

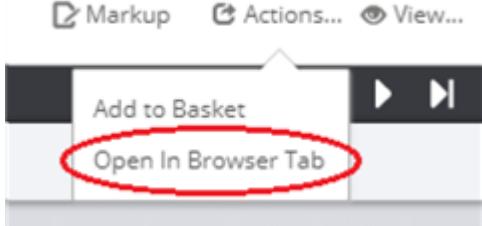
This document provides the latest **Release Notes 24.09** for AVEVA Asset Information Management - Discovery.

### Content

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
3375970	Process	Updated the release to the latest Microsoft patches.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>

## October

### Introduction

This document provides the latest **Release Notes 24.10** for AVEVA Asset Information Management - Discovery.

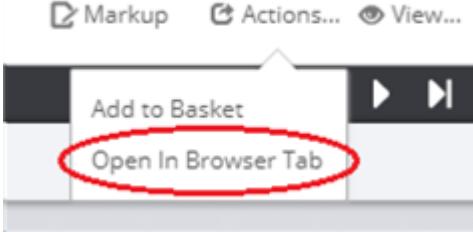
### Content

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
3068675 960387219	Defect	When viewing a 3D model, after selecting different objects in quick succession, then previously selected items may have been re-highlighted.
3325894	Defect	When viewing documents in the Dashboard, and performing a "Select in View" action, it was possible to receive the message "The item is not in the model, so can't be selected", even when the item was in the model.

Reference	Type	Description
3351796	Defect	Complex SVGs displayed in the Dashboard were silently failing to print and export. Both printing and exporting now work as expected.
3413775 960383791	Defect	When running a Query Form that referenced related items, it may have returned some duplicated metadata in the Table View and in any exported files.
3447553 960440342	Defect	When processing some DWG files and viewing them in the Dashboard, some characters may have incorrectly shown as question marks (?). Any files that had this issue will need to be re-processed.
3455749 960444747	Defect	When viewing an SVG file in the Dashboard, opening another document and then selecting the tab for the original SVG file. Then the SVG file was zoomed into the bottom left corner rather than returning to the previous state.
3462886 960447306	Defect	When processing some MicroStation files, such as DGNs, some aliases were incorrectly set as "N/A". Any files that had this issue will need to be re-processed.
3532309	Process	Updated the release to the latest Microsoft patches.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>

## November

This document provides the latest **Release Notes 24.11** for AVEVA Asset Information Management - Discovery.

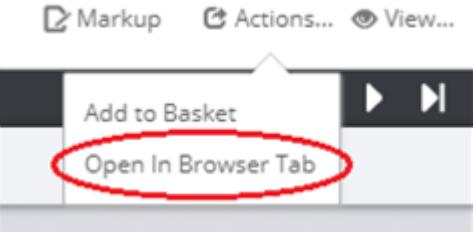
## Content

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
3447547 960439935	Defect	When viewing PDF files containing Japanese characters, they may have been incorrectly displayed as rectangles. This is fixed and the correct Japanese characters are displayed.
3528599	Enhancement	<p><b>3DVis Cloud Streaming Service</b>  The 3D capability has become a standalone, multi-tenant, scalable, cloud rendering service based on the 3DVis rendering framework provided via CONNECT. The new service, referred to as 3DVis, will supersede the 3DVS service in due course.</p>

Reference	Type	Description
		<p>Using 3DVis enables CONNECT users to benefit from:</p> <ul style="list-style-type: none"><li>• Hide/Show/Isolate capabilities</li><li>• Improved Fly and Walk modes</li><li>• Teleport in all navigation modes</li></ul> <p>For more information, see:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1486233_1.html">https://docs.aveva.com/bundle/asset-information-management/page/1486233_1.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1487208.html">https://docs.aveva.com/bundle/asset-information-management/page/1487208.html</a></p>
3532311	Process	Updated the release to the latest Microsoft patches.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
3615935	<p>When zooming in or out over a 3D model using <b>touch</b> commands and where the model is displayed using the 3DVis viewer, then <b>zooming</b> can happen very rapidly and the model may disappear or move far away. This usually happens when the initial touch happens outside of the model area.</p> <p>Initiating the touch commands over the model area will mitigate the issue.</p>
3616082	<p>After interacting with a 3D model using <b>touch</b> commands and where the model is displayed using the 3DVis viewer, then the <b>Reset</b> command may become unstable and cause the model to reset then immediately rotate or pan away.</p>

## December

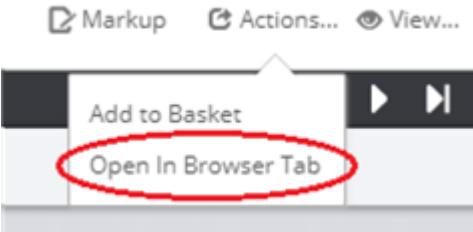
This document provides the latest **Release Notes 24.12** for AVEVA Asset Information Management - Discovery.

### Content

This release contains the following significant enhancements and defect fixes:

Reference	Type	Description
3532313	Process	Updated the release to the latest Microsoft patches.

## Known Issues

Reference	Description
1899246 960156293	<p>When viewing or printing Excel spreadsheets, excess white space can be present down the right-hand side and along the bottom. If this is an issue, we recommend opening the file in a new browser tab, using the following option:</p>  <p>In the new browser tab, the file can be viewed, then printed using the built-in browser print functionality.</p>
3615935	<p>When zooming in or out over a 3D model using <b>touch</b> commands and where the model is displayed using the 3DVis viewer, then <b>zooming</b> can happen very rapidly and the model may disappear or move far away. This usually happens when the initial touch happens outside of the model area.</p> <p>Initiating the touch commands over the model area will mitigate the issue.</p>
3616082	<p>After interacting with a 3D model using <b>touch</b> commands and where the model is displayed using the 3DVis viewer, then the <b>Reset</b> command may become unstable and cause the model to reset then immediately rotate or pan away.</p>

## AIM

This section describes the Release Notes for AIM.

2022

December

## Introduction

These release notes describe the enhancements, fault corrections and general information for the following release:

**Asset Information Management (AIM) 5.1.10**

**Full Main Release: 71444**

## This Release Contains

A full release of *AVEVA Asset Information Management 5.1.10*, which upgrades the full release 71406 *AVEVA Asset Information Management 5.1.9*.

The separately licensed products or product components installable from, or upgraded by this release are as follows:

<b>Product Code</b>	<b>Product Name</b>	<b>Version Number</b>
<u>V00FN658</u>	<u>AIM Dashboard</u>	5.1.10
<u>V00FN659</u>	<u>AIM Workhub</u>	5.1.10

## Prerequisite for this Release - Operating System

<b>Prerequisites</b>	<b>Version Details</b>
Server Environment	Windows Server 2019
Client Environment	Windows 10
Mobile Environment	iOS 13.7 Android 6.0.1 Windows 10 Professional (64-bit)
Mandatory O/S Patches (for each supported platform)	

**Note:** The recommended/supported hardware and software configurations are constantly subject to review, so please consult the AVEVA support web pages for the latest recommendations.

## Prerequisite for this Release - Products

AVEVA Licensing System 4.1 or latest and an appropriate licence file. For further details, please see <https://softwaresupport.aveva.com/>.

**Works (is compatible) with**

Name of the Product	Version No.
Accusoft PrizmDoc (included with AVEVA Asset Information Management)	13.23
AVEVA VizStream Server	6.1.10
AVEVA Gateways	AIM Data Extractor Gateway 5.0.11 AVEVA Data Processor Gateway 5.0.11 AVEVA Document Indexing Gateway 5.0.11 AVEVA Gateway Configuration Tool 5.0.11.5 AVEVA Gateway for MicroStation 2D AVEVA Gateway for MicroStation 3D AVEVA Gateway for PDS 3D AVEVA Gateway for CMIS 5.0.11.1 AVEVA Gateway for SAP ERP 5.0.11 AVEVA Gateway for AutoCAD 2D 5.1.4.1 AVEVA Gateway for AutoCAD 3D 5.1.2
AVEVA Information Standards Manager	2.2.2
AVEVA Engage	4.1.2.2
AVEVA Point Cloud Manager on CONNECT	2.9.0
AVEVA Enterprise Resource Management	18.0.1
OMI	1.0.0.1
AVEVA NET Gatekeeper	No longer tested. The last version tested was 5.0.11.
AVEVA Change Manager	No longer tested. The last version tested was 5.0.11.
AVEVA Xchange	No longer tested. The last version tested was 5.0.8.1.

**AIM-hybrid Compatibility**

Viewing 3D models using *AIM-hybrid* is an alternative to the VizStream technology.

**Notes:**

- All versions prior to AVEVA Asset Information Management (previously known as AVEVA NET Workhub and Dashboard) 5.1.9 no longer support this feature due to changes in authentication.
- AVEVA's cloud hosted 3DVS service has been replaced by AVEVA *AIM-hybrid*.

## Auth0 Support

Auth0 is only supported as an authentication provider with CONNECT.

### To Install product release:

Please read the installation guide, which is available from the download site and will be placed under the *product\manuals* folder once the product install (*setup.exe*) has been run.

---

#### **IMPORTANT:**

While upgrading from a version 5 installation, any new files you have added are deleted, and all files delivered with the application, are overwritten.

This includes:

- web.config settings, such as additional Portal IDs.
- AVEVA.NET.Import.Server.exe.Config settings, such as database related details.

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**Note:** When installing Microsoft SQL Server, ensure that the Full-Text Search feature is selected in the Feature Selection window.

---

## Statement of Withdrawal

Support for the following technologies has been withdrawn.

- Windows 8.1
- Windows Server 2016
- SQL Server 2016
- SQL Server 2017
- Internet Explorer 11

This follows on from the statement in the 5.1.9 release notes: The Installation Guide has been updated to explain: After Microsoft ends support for Internet Explorer [currently scheduled for 15 June 2022], then it is recommended to use Microsoft Edge in "Internet Explorer Mode" to run the VizStream ActiveX control.

## Supersedes

This release supersedes the previous full release 71406 AVEVA Asset Information Management 5.1.9.

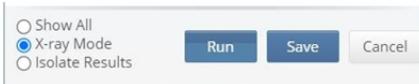
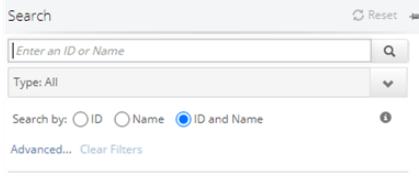
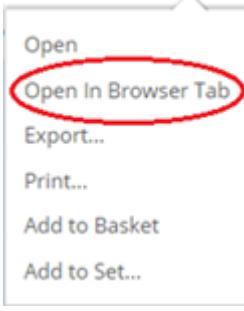
## Content

### List of Enhancements

This release includes the following functional enhancements:

Customer Number	Enhancement Number	Description
960085592	1423282	Unexpected errors that may require

Customer Number	Enhancement Number	Description
		<p>the customer to request support of AVEVA, now say: "Please contact your System Administrator or Support for further help resolving this issue (EventId: eventid )". Please provide the value of the eventid according to the specific case.</p>
	1787513	<p>In the Dashboard, certain long running operations are now limited to 60 seconds and then halted with an appropriate message.</p> <p>This is to prevent long or open-ended running of user operations, to prevent performance degradation and impact to other operations and services which may impact all users.</p> <p>The long running operations affected are: performing complex searches and query forms where search results are very large, running complex visual reports, opening large files in the PrizmDoc viewer (for example, DWGs, PDFs), expanding complex tree views, exporting large amounts of data and complex markup operations</p> <p>An example of the message is:</p>
960114780	1572805	<p>If the PrizmDoc viewer fails to load a file, an alert is given after 5 secs, then the file is opened in a new browser tab automatically.</p> <p>If the browser supports the file, then it's opened in a new tab, and if the browser does not support the file, then it's offered for download.</p>
	1661597	<p>When viewing 3D documents using the 3DVS cloud-hosted service, then Visual Reporting now has a new X-ray mode.</p>

Customer Number	Enhancement Number	Description
		 <p>When choosing this option and selecting Run, all items that are not specifically coloured by one of the Visual Report search criteria (background objects) are made translucent.</p> <p>To view all background objects without change, select Show All.</p> <p>To remove all background objects, select Isolate Results.</p>
	1797343	<p>The default value for the "search by" option is now set to "ID and Name". For example:</p>  <p><b>Note:</b> Where any of the Site Settings have been modified before, then the existing value for the "search by" option will be honored.</p>
	1787477	<p>An option has been added to the Actions menu to open documents in a browser tab rather than in an AIM Dashboard tab.</p>  <p>If the browser cannot render the file, then the user may download</p>

Customer Number	Enhancement Number	Description
		<p>the file.</p> <p>For more information, please see the User Guide.</p>
	1923814	<p>When viewing 3D documents using the 3DVS cloud-hosted service, and a 3DVS server runs out of resource to load, display or manipulate 3D models, then a message to that effect is displayed.</p> <div style="background-color: #f2f2f2; padding: 5px; margin-top: 10px;">  The request is timed out or waiting for 3D server to become available. Please try again later.     </div>
960210184	2063005	<p>In the Installation Guide, when creating a SQL Server database, we now stipulate:</p> <p>"Under the Options page, ensure the Recovery Model is set to Full. Other models are not supported."</p>
	2072051 2072088	<p>When viewing 3D documents using the 3DVS cloud-hosted service, there is now the ability to:</p> <p>Walk – use the mouse to walk left and right</p> <p>Fly – use the mouse to move up/down/left/right</p> <p>Teleport – drag a marker  to view from that point.</p> <p>See the User Guide for more information.</p>
960148157 960215151	2137032	<p>Support for Azure Active Directory when authenticating and defining Access Control Lists.</p> <p>See section <i>Use Azure Active Directory</i> in the Installation Guide.</p>
	2180248	<p>The Installation Guide has been updated to describe how to configure the solution to have 3D models securely uploaded to the cloud and streamed directly to the client browser using AVEVA's 3DVS</p>

Customer Number	Enhancement Number	Description
		<p>cloud-hosted service. This gives improved performance, especially with larger models.</p> <p>See section <i>2.2 Configuring to Stream 3D Models from the 3DVS Cloud Service</i> in the Installation Guide.</p>

### List of Fault Corrections

This release addresses defects arising from the following support incidents:

Customer Number	Defect Number	Description
960103536	1470824	When editing an export definition with a modified label, the label was not shown unless it was opened a second time for editing.
960085140 960168605	1540169 1852596	When manipulating a 3D model with the mouse, there was a lag seeing the updated model.
960132286	1653501	When exporting to Excel, multiple attribute values may have been exported due to case sensitivity. Attributes are now exported in a case insensitive way avoiding unwanted duplication of values.
960121570	1704351	A performance issue with viewing large PDF files has now been resolved.
960152972	1756494	When viewing 3D models streamed from the 3DVS cloud-hosted service, some items were not being selected in the model.
960154137	1765108	After editing and saving the first export definition, then immediately trying to edit a second export definition, the first export definition was presented for editing instead of the second.
960074346	1769587	The message "Error Performing

Customer Number	Defect Number	Description
		Search" may have been displayed when running a Visual Report, or "Error Performing Query Form Search" may have been displayed when running a Query Form.
960164683	1816272	When viewing 3D models streamed from the 3DVS cloud-hosted service, and the model was rotated by dragging the mouse, and the mouse was moved outside of the viewing area and then released. When the mouse came back into the viewing area it was acting as if the left mouse button was still down and erroneously rotated the model.
960188365 960179353	1937551	When viewing documents in the PrizmDoc viewer, the highlighted hotspot may have been in slightly the wrong location.  The affected files do not need to be re-imported or reprocessed.
960191681	1951234	When viewing a document, opening its content card, selecting the Contents tab, expanding the tag association and selecting a tag ID. If the tag had the same short ID as the document, then the content card would switch from the tag to the document content card.
960194869 960218319	1964140	When the Print->Colours setting was set to "Black on White", then the printout had shapes filled in that should have been in outline only.  The affected files do not need to be re-imported or reprocessed.
960203108 960204197	2045362	When running Query Forms where the results have a very large number of associations, then it may have taken a long time to complete or even timeout out with an

Customer Number	Defect Number	Description
		"Unexpected Error". The performance is now greatly improved.
960210106 960217038	2112400	Exports were not working ("Starting Download..." message with no further action), if the Dashboard was using a specified Portal ID.
960219221	2178860	In the Installation Guide, under <u>Hardware and Software Requirements</u> , we now stipulate that when viewing 3D models using <i>VizStream</i> with <i>Edge in IE Mode</i> , that the following should be installed on the client browser machine.  Microsoft Visual C++ 2013 Redistributable Package (x64).
960230403	2154804	The installation guide now clarifies that the maximum number of Portal IDs (<portal> elements) that can be added to the web.config file is 32.

## Known Issues

AVEVA intends to fix the defects listed below in a fix release or service pack as soon as reasonably possible.

Incident number	Defect number	Description	Recommended Workaround
	2044058	When a file fails to load in the PrizmDoc viewer, then it should automatically open it in a new browser, but this is not happening for Documents with revisions set.	When the file fails to load in the PrizmDoc viewer, explicitly choose Actions -> "Open in Browser Tab".
	2117389	When exporting markup, the file download dialog does not close automatically after the download completes.	Close the dialog manually.

Incident number	Defect number	Description	Recommended Workaround
	2156870	The tab dropdown selector may misalign with the basket icon, for example, 	For information only. Take care when choosing either icon.
		When viewing 3D models using the 3DVS cloud-hosted service, the Walk mode can appear jerky.	Moving the mouse slower from left to right will reduce the jerkiness.

For the latest list of exceptions and other updates, please see the *Product Release Latest Update Note* on AVEVA's support web site <https://softwaresupport.aveva.com/>.

Please refer also to the *Product Release Latest Update Note* for the original full release, <https://softwaresupport.aveva.com/>.

## 2023

### May

#### Introduction

These release notes describe the enhancements, fault corrections and general information for the following release:

**Asset Information Management (AIM) 5.1.11**

**Full Main Release: 71456**

#### This Release Contains

A full release of AVEVA Asset Information Management 5.1.11, which upgrades the full release 71444 AVEVA Asset Information Management 5.1.10.

The separately licensed products or product components installable from, or upgraded by this release are as follows:

Product Code	Product Name	Version Number
FLEX-AIM-013	AVEVA Asset Information Management Dashboard	5.1.11
FLEX-AIM-014	AVEVA Asset Information Management Workhub	5.1.11

**Prerequisite for this Release - Operating System**

<b>Prerequisites</b>	<b>Version Details</b>
Server Environment	Windows Server 2019
Client Environment	Windows 10
Mobile Environment	iOS 13.7 or later Android 6.0.1 or later Windows 10 Professional (64-bit)
Mandatory O/S Patches	

**Note:** The recommended/supported hardware and software configurations are constantly subject to review, so please consult the AVEVA support web pages for the latest recommendations.

**Prerequisite for this Release - Products**

**AVEVA Licensing System 4.1** or latest and an appropriate licence file. For further details, see <https://softwaresupport.aveva.com>.

**Works (is compatible with)****3D Models in the Cloud**

Where 3D models are already hosted in AVEVA's cloud infrastructure using 3DVS, please contact AVEVA to ensure they get migrated to the new AIM-hybrid infrastructure.

**VizStream Compatibility**

Due to an incompatibility between Accusoft's PrizmDoc Viewer and Microsoft Edge in **IE Mode**, we recommend that customers who wish to continue to view 3D models using the **VizStream Viewer** (requires the VizStream Server and client-side VizStream ActiveX controls) do not upgrade to AIM 5.1.11. However, viewing 3D models using **WebGL** (requires the VizStream Server without client-side VizStream ActiveX controls) continues to be supported at 5.1.11.

From AIM 5.1.11, the recommended approach to manage 3D models is to use AVEVA AIM-hybrid.

AIM-hybrid allows 3D models to be uploaded to a cloud service, using the AVEVA Data Pipeline, which can then be streamed down to the client browser. This enables much better performance for large 3D models.

**Auth0 Support**

Auth0 is only supported as an authentication provider with CONNECT.

<b>Name of the Product</b>	<b>Version No.</b>
Accusoft PrizmDoc (included with AIM)	13.23
AVEVA NET Gateways	AVEVA NET Data Extractor Gateway <b>5.0.11.3</b> AVEVA NET Gateway Configuration Tool <b>5.0.11.6</b>
<b>Note:</b> Only Gateways routinely tested are listed.	AVEVA NET Gateway for MicroStation

Name of the Product	Version No.
The latest versions of other Gateways are expected to be compatible.	AVEVA NET Gateway for CMIS <b>5.0.11.1</b> AVEVA Gateway for AutoCAD 2D <b>5.1.5</b> AVEVA NET Gateway for SAP ERP <b>5.0.11</b> AVEVA Gateway for Integrated Engineering & Design <b>1.6.1 Beta</b> AVEVA NET Gateway for AutoCAD 3D <b>5.1.2</b> AVEVA NET Gateway for IFC <b>5.1.4.1</b>
AVEVA Information Standards Manager	2.2.2
AVEVA Engage	4.1.2.2
AVEVA Point Cloud Manager on CONNECT	23.4
AVEVA Enterprise Resource Management	18.1
OMI	1.0.1
AVEVA NET Gatekeeper	No longer tested. The last version tested was 5.0.11.
AVEVA Change Manager	No longer tested. The last version tested was 5.0.11.
AVEVA Xchange	No longer tested. The last version tested was 5.0.8.1.

### To Install this Product Release

Please read the installation guide, which is available at <https://docs.aveva.com/bundle/asset-information-management/page/1126128.html>.

#### Notes:

- When installing Microsoft SQL Server, ensure that the Full-Text Search feature is selected in the Feature Selection window.
- While upgrading from a version 5 installation, any new files you have added are deleted, and all files delivered with the application, are overwritten. This includes:
  - web.config settings, such as additional Portal IDs.
  - AVEVA.NET.Import.Server.exe.Config settings, such as database related details.

### Viewing 3D Models from AIM-hybrid

AVEVA recommends using AIM-hybrid for 3D models.

AIM-hybrid is AVEVA's cloud infrastructure that enables 3D models to be stored and streamed down to a browser on-demand.

Each 3D model needs to be uploaded to the Data Pipeline inside the AIM-hybrid solution – this can be done using the Ingestion API.

To upload 3D models to AIM-hybrid using the Ingestion API, the following steps are needed:

1. Obtain the following from your CONNECT Account Administrator:
  - **Account Name (assetId)** – if your AIM-hybrid solution is enabled at an account level.
  - **Folder Name** - if your AIM-hybrid solution is enabled at a folder level.
  - **Connect Token**
2. Your CONNECT Account Administrator needs to add all users, that need to view 3D models, to the CONNECT Default User Group used by AIM-hybrid.

For more information on using AIM-hybrid please see,

<https://docs.aveva.com/bundle/asset-information-management/page/1214443.html>.

## Statement of Withdrawal

No technologies have been withdrawn at this release.

## Product Quality Statement

The development, maintenance and testing of AVEVA Solutions' software products is carried out in accordance with the AVEVA Quality Management System lifecycle processes and this document includes a summary of the testing carried out on this release and a list of significant defects known to exist at the time of release.

## Development Testing

The development, maintenance and testing of AVEVA Solutions' software products is carried out in accordance with the AVEVA Quality Management System lifecycle processes and this document includes a summary of the testing carried out on this release and a list of significant defects known to exist at the time of release.

## System Testing

Independent system testing has been carried out on the product, as released, to verify that it installs correctly in all supported configurations and that product functionality operates as intended, subject to any known exceptions listed below.

## Acceptance Testing

This document has been prepared before Acceptance Testing. This product release will be subjected to an acceptance test by AVEVA's System Test team.

Any exceptions found during Acceptance Testing or after release will be reported in the Product Release Latest Update Note on AVEVA's support web site. <https://softwaresupport.aveva.com/>.

## Content

## List of Enhancements

This release includes the following functional enhancements:

Customer Number	Enhancement Number	Description
	1661105	<p>In the Dashboard, certain long running operations are now limited to 60 seconds and then halted with an appropriate message.</p> <p>This is to prevent user operations that take too long from happening, which in turn prevents performance degradation and impact to other operations and services, which may impact all users.</p> <p>The long running operations affected are: opening large files in the PrizmDoc viewer (for example, DWGs, PDFs), expanding complex tree views, exporting large amounts of data, complex markup operations, running complex visual reports, performing complex searches and query forms where search results are very large.</p> <p>An example of the message is:</p> <div style="background-color: #e04060; color: white; padding: 5px; text-align: right;">✖</div> <p>Operation timed-out, please refine your search criteria.</p>
	2282129	<p>Support for AIM-hybrid has been provided.</p> <p>AIM-hybrid provides a cloud infrastructure for streaming 3D models.</p> <p>It provides greater performance, particularly for larger models.</p>
	2282225	<p>Mark-up from AVEVA Point Cloud Manager (APCM) On CONNECT, which is also an alias of a tag, is now supported when viewing APCM documents. So, when an APCM model is opened from a Tag Summary view, it zooms to the tag for the aliased mark-up in the APCM viewer.</p>

Customer Number	Enhancement Number	Description
	2312392	The AIM user and installation documentation can now be found online at AVEVA's documentation website: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1125068.html">https://docs.aveva.com/bundle/asset-information-management/page/1125068.html</a> Release notes can be found at <a href="https://docs.aveva.com/bundle/asset-information-management/page/1150641.html">https://docs.aveva.com/bundle/asset-information-management/page/1150641.html</a>
	2408670	When clicking the Information link (  ) in the top-right of the Dashboard (which shows the Information and Help dialog), the link to the help guide now takes the user to the AIM area within AVEVA's documentation website. That is: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1042369.html">https://docs.aveva.com/bundle/asset-information-management/page/1042369.html</a>

### List of Fault Corrections

This release addresses defects arising from the following support incidents:

Customer Number	Defect Number	Description
960138053	1859657	The PrizmDoc viewer may not have hot-spotted some vertical tags. This is resolved by the latest PrizmDoc viewer – no reprocessing or re-importing is necessary.
960172989	1869849	In the PrizmDoc viewer, PDFs with embedded images greater than 30,000 x 20,000 pixels were giving a 580 error: "Document Not Found".

Customer Number	Defect Number	Description																														
960181570	2333598	<p>When exporting from a Query Form (via the Table View) to a .xlsx file, where cells were for multiple related items and may have contained multiple values, then at the top of the cell any values that were identical were only shown once rather than the correct number of times. For example, if "Approved" should have occurred twice at the top it was only shown once:</p> <table border="1" data-bbox="1095 713 1514 834"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> <tr> <th>1</th> <th>Equipment ID</th> <th>Document ID</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td></td> <td>J-9002A</td> <td>Doc1, Doc2, Doc3, Doc4</td> <td>Approved, Draft, Draft</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>The correct output is now created:</p> <table border="1" data-bbox="1095 889 1514 1030"> <thead> <tr> <th>A</th> <th>B</th> <th>C</th> </tr> <tr> <th>1</th> <th>Equipment ID</th> <th>Document ID</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td></td> <td>J-9002A</td> <td>Doc1, Doc2, Doc3, Doc4</td> <td>Approved, Approved, Draft, Draft</td> </tr> <tr> <td>2</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	A	B	C	1	Equipment ID	Document ID	Status		J-9002A	Doc1, Doc2, Doc3, Doc4	Approved, Draft, Draft	2				A	B	C	1	Equipment ID	Document ID	Status		J-9002A	Doc1, Doc2, Doc3, Doc4	Approved, Approved, Draft, Draft	2			
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1	Equipment ID	Document ID	Status																													
	J-9002A	Doc1, Doc2, Doc3, Doc4	Approved, Approved, Draft, Draft																													
2																																
960183447	2178916	<p>When viewing documents, hotspotted files may not have displayed in the Content Card. This was when processing tags before SVG files and where there was a difference in upper/lower casing of the tags.</p>																														
960205633 960226781	2020356	<p>When viewing a Tag Summary view in the Dashboard, some documents may have been omitted from panels.</p> <p>This happened when the Data Group for the panel was following more than one type of association (from tag to document).</p> <p>For example: "is referenced in has document".</p>																														
960227175	2149022	<p>When opening a 3D model in the context of a tag (the tag gets selected and zoomed to), then, when rotating the model it was not rotating about the selected tag.</p>																														

Customer Number	Defect Number	Description
960239256	2203012	After performing an Advanced Find using the Not operator and then doing an Export All, it was possible to receive an "Operation timed-out" message.
960240661	2275074	When running a Query Form and using the date picker to define a Between operation and when using a browser locale other than UK English or US English, then the wrong format (dd/mm/yyyy vs mm/dd/yyyy) may have been used, resulting in the following message: "The value for the end of the range was lower than the value for the start of the range. They have been swapped."
960250902	2274850	When using Microsoft Edge, in the top-right of the Dashboard, the Basket icon (  ) may have been partly overwritten by the Tab Panel icon (  ).

## Additional Information

### Changes to Database Connection Strings

At AVEVA NET Workhub and Dashboard 5.1.3 there are important changes related to multi-tenancy.

The place that a database connection string needs to be added has changed. Now, any <add connectionString> XML elements need to be added below the relevant <Portal> section.

For the Access Control Lists section, Users and Groups are no longer values they are defined in a "Value" attribute.

Also, the AVEVA NET Player configuration file has been removed and can now be defined in the web.config or in the configuration database.

### Changes to Rights for Exporting to the Server

From AVEVA NET Workhub and Dashboard 5.1.4, an explicit **Right** is needed to be able to export files to the server. The **Right** is called **ExportToServer**.

So, if you have assigned the **RunExport Right** to a **Role** and you want to continue to allow members of that **Role** to be able to export to a configured location on the server (and not just be able to export data), then you will

need to add the **ExportToServer Right** to that **Role**.

AVEVA intends to fix the defects listed below in a fix release or service pack as soon as reasonably possible.

## Changes to the "Max list items for AVEVA NET Player and Visual Reports" Setting

From *AVEVA NET Workhub and Dashboard 5.1.5*, due to introducing Visual Reports for SVGs, the "Max list items for AVEVA NET Player and Visual Reports" setting has been rationalized.

The setting:

Role->General->VizStream Viewer->"Max list items for AVEVA NET Player and Visual Reports"

has been replaced by the following two settings:

Site->General->Player->"Max list items for AVEVA Asset Information Management Player"

and

Site->General->Visual Reports->"Max list items for Visual Reports"

## Known Issues

AVEVA intends to fix the defects listed below in a fix release or service pack as soon as reasonably possible.

Incident Number	Defect Number	Description	Recommended Workaround
	2044058	When a file fails to load in the PrizmDoc viewer, then it should automatically open in a new browser, but this is not happening for Documents with revisions set.  When the file fails to load in the PrizmDoc viewer, explicitly choose Actions -> "Open in Browser Tab".	
	2117389	When exporting markup, the file download dialog does not close automatically after the download completes.  Close the dialog manually.	
		When viewing 3D models using AIM-hybrid, the Walk mode can appear jerky. Moving the mouse slower from left to right will reduce the jerkiness.	

For the latest list of exceptions and other updates, please see the Product Release Latest Update Note on AVEVA's support web site <https://softwaresupport.aveva.com>.

Please refer also to the Product Release Latest Update Note for the original full release, <https://softwaresupport.aveva.com>.

2024

July

These release notes describe the enhancements, fault corrections and general information for **Asset Information Management (AIM) 5.1.12**. It is a **Full Main Release**.

## This Release Contains

A full release of AVEVA Asset Information Management 5.1.12, which upgrades the full release of AVEVA Asset Information Management 5.1.11.

The separately licensed products or product components installable from, or upgraded by this release are as follows:

Product Code	Product Name	Version Number
FLEX-AIM-013	AVEVA Asset Information Management Dashboard	5.1.12
FLEX-AIM-014	AVEVA Asset Information Management Workhub	5.1.12

## Prerequisite for this Release - Operating System

Prerequisites	Version Details
Server Environment	Windows Server 2019, Windows Server 2022
Client Environment	Windows 10, Windows 11
Mobile Environment	iOS 17 or later Android 9 or later
Mandatory O/S Patches	

**Note:** The recommended/supported hardware and software configurations are constantly subject to review, so please consult the AVEVA support web pages for the latest recommendations.

## Prerequisite for this Release - Products

AVEVA Licensing System **4.1** or latest and an appropriate licence file. For further details, see

<https://softwaresupport.aveva.com>.

## Works (is compatible with)

Please see the Technology Matrix for compatible technologies and products at: <https://gcsresource.aveva.com/TechnologyMatrix/Report/Details?id=15583>

Name of the Product	Version No.
Accusoft PrizmDoc (included with AIM)	13.27
AVEVA NET Gatekeeper	No longer tested. The last version tested was 5.0.11.
AVEVA Change Manager	No longer tested. The last version tested was 5.0.11.
AVEVA Xchange	No longer tested. The last version tested was 5.0.8.1.

### Viewing 3D Models from AIM-hybrid

AVEVA recommends using AIM-hybrid for 3D models. AIM-hybrid is AVEVA's cloud infrastructure that allows 3D models to be uploaded to a cloud service, using the AVEVA Data Pipeline. The 3D models can then be streamed down on-demand to a browser. This enables much better performance for large 3D models.

For more information on configuring AIM-hybrid refer to <https://docs.aveva.com/bundle/asset-information-management/page/1363031.html>

### 3D Models in the Cloud (not using AIM-hybrid)

Where 3D models are already hosted in AVEVA's cloud infrastructure using 3DVS, please contact AVEVA to ensure they get migrated to the new AIM-hybrid infrastructure.

### VizStream Compatibility

Due to an incompatibility between Accusoft's PrizmDoc Viewer and Microsoft Edge in **IE Mode**, we recommend that customers who wish to continue to view 3D models using the VizStream Viewer (requires the VizStream Server and client-side VizStream ActiveX controls) do **not** upgrade to AIM 5.1.11 or later. However, viewing 3D models using WebGL (requires the VizStream Server without client-side VizStream ActiveX controls) continues to be supported at 5.1.12.

The recommended approach to manage 3D models is to use AVEVA AIM-hybrid.

### Auth0 Support

Auth0 is only supported as an authentication provider with CONNECT.

AIM supports the OpenID Connect protocol. However, we test with Auth0 supported by CONNECT, but we do not test it with every authentication provider available on market

## To Install this Product Release

Please read the installation guide, which is available at <https://docs.aveva.com/bundle/asset-information-management/page/1126128.html>.

### Notes:

- To enhance the security there is a provision to create encryption keys before deployment and the same keys can be used during the installation.

- This increases security and safeguards critical information such as databases, services and application pool passwords.
- The key created must be securely stored at a location accessible across multiple machines while installing the applications.
- The Import, Job, FileStore and EIA services will run with the virtual service account by default instead of Local System. These services can run with the minimum privileges required.
- When installing Microsoft SQL Server, ensure that the Full-Text Search feature is selected in the Feature Selection window.
- While upgrading from a version 5 installation, any new files you have added are deleted, and all files delivered with the application, are overwritten. This includes:
  - web.config settings, such as additional Portal IDs.
  - AVEVA.NET.Import.Server.exe.Config settings, such as database related details.

## Statement of Withdrawal

Technologies that have been withdrawn at this release.

- STS (Security Token Service) authentication
- Windows 10 Mobile

## Product Quality Statement

The development, maintenance and testing of AVEVA Solutions' software products is carried out in accordance with the AVEVA Quality Management System lifecycle processes and this document includes a summary of the testing carried out on this release and a list of significant defects known to exist at the time of release.

### Development Testing

The development, maintenance and testing of AVEVA Solutions' software products is carried out in accordance with the AVEVA Quality Management System lifecycle processes and this document includes a summary of the testing carried out on this release and a list of significant defects known to exist at the time of release.

### System Testing

Independent system testing has been carried out on the product, as released, to verify that it installs correctly in all supported configurations and that product functionality operates as intended, subject to any known exceptions listed below.

### Acceptance Testing

This document has been prepared before Acceptance Testing. This product release will be subjected to an acceptance test by AVEVA's System Test team.

Any exceptions found during Acceptance Testing or after release will be reported in the Product Release Latest Update Note on AVEVA's support web site. <https://softwaresupport.aveva.com/>.

## Content

### List of Enhancements

This release includes the following functional enhancements:

Internal Number	Customer Number	Description
2277682		<p>Licensing as a Service (LaaS) is now supported.</p> <p>LaaS is a licensing solution that provides hassle-free license management. LaaS eliminates the need to manage an on-prem license server and instead moves license management to the cloud using CONNECT platform.</p> <p>LaaS also enables you to capture usage logs for AIM and AIM-hybrid users.</p> <p>For more information, see:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1403676.html">https://docs.aveva.com/bundle/asset-information-management/page/1403676.html</a></p>
2286987		<p>The AIM Dashboard must now be configured to use SSL (Secure Sockets Layer).</p> <p>For more information, see:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/999776.html">https://docs.aveva.com/bundle/asset-information-management/page/999776.html</a></p> <p>SSL is now also mandatory when configuring SSRS reports.</p> <p>For more information, see:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/999820.html">https://docs.aveva.com/bundle/asset-information-management/page/999820.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/999786.html">https://docs.aveva.com/bundle/asset-information-management/page/999786.html</a></p>
2287093	960248484 960252966 960262739	<p>Documented that the x-xsrf-tokendefault cookie does not contain any sensitive information.</p> <p>For more information, see:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/999775.html">https://docs.aveva.com/bundle/asset-information-management/page/999775.html</a></p>

Internal Number	Customer Number	Description
2488434		<p>When viewing Sets in the Dashboard, the Content tab now displays the Names of the items in the Set (previously only the ID and Type were displayed). For example:</p> <p>For more information, see:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1042466.html">https://docs.aveva.com/bundle/asset-information-management/page/1042466.html</a></p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1042469.html">https://docs.aveva.com/bundle/asset-information-management/page/1042469.html</a></p>
2525216		<p>When performing a search in the Dashboard, Activity has been added to the list of Search Categories. Selecting Activity will limit the search results to items classed as, or sub-classed from, Activity.</p>

Internal Number	Customer Number	Description
2578753 3203112	960313886	<p>Server-side support has been provided for:</p> <ul style="list-style-type: none"> <li>• Windows Server 2022</li> <li>• Microsoft SQL Server 2022</li> </ul> <p>Client-side support has been provided for:</p> <ul style="list-style-type: none"> <li>• Windows 11</li> </ul> <p>See the Technology Matrix at:  <a href="https://gcsresource.aveva.com/TechnologyMatrix/Report/Details?id=15583">https://gcsresource.aveva.com/ TechnologyMatrix/Report/ Details?id=15583</a></p>
2614405	960172573 960264128	<p>In Summary Views, the Events and Activities/Tasks data groups now list their entries in alphabetical order.</p>
2614408		<p>In the Dashboard, references to "AVEVA NET", such as in error messages and the browser tab, have been updated to "AVEVA Asset Information Management".</p>
2908396		<p>Any external links that need to be viewed in the Dashboard should be registered in the web.config file, including links to reports.</p> <p>For more information, see:  <a href="https://docs.aveva.com/bundle/asset-information-management/page/1396966.html">https://docs.aveva.com/bundle/ asset-information-management/ page/1396966.html</a></p>
2914684		<p>Context Access Control has been provided.</p> <p>This allows for access to items viewed in the Dashboard to be controlled based on what contexts an item is in and what role a user is in.</p> <p>The Settings dialog can be used to carry out the configuration and requires the Administrator role.</p> <p>For more information, see:</p>

Internal Number	Customer Number	Description
		<a href="https://docs.aveva.com/bundle/asset-information-management/page/1283627.html">https://docs.aveva.com/bundle/asset-information-management/page/1283627.html</a>
2926142		<p>The AVEVA.NET.Encryption.exe utility allows users to create their own encryption key. Steps are now provided to ensure the security of this key.</p> <p>For more information, see:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/1399316.html">https://docs.aveva.com/bundle/asset-information-management/page/1399316.html</a></p>
3391440		<p>Guidelines have been provided regarding SQL Server collations.</p> <p>For more information, see the Collations section at:</p> <p><a href="https://docs.aveva.com/bundle/asset-information-management/page/999773.html">https://docs.aveva.com/bundle/asset-information-management/page/999773.html</a></p>

### List of Fault Corrections

This release addresses defects arising from the following support incidents:

Internal Number	Customer Number	Description
2280430	960246229	<p>When viewing Query Form results in the Table View, where rows for a single result also have columns containing multiple associated <b>items</b>, and there are further column(s) containing corresponding <b>values</b> for each of those associated items, then the values for the corresponding items may not have lined up horizontally. This was due to blank values not being added.</p> <p>The blank values are now inserted allowing corresponding cells in the same row to have their multiple values line up.</p>

2299871	960254316	After running a <b>Query Form</b> , if a Reset was performed, then any links to documents, shown in the set of results, were still visible and active.  Any links to documents are now removed after the reset.
2328846	960244129	If a single XML file was imported, that tried to perform multiple re-parenting of classes in the same hierarchy, then the Import Server may have terminated.  An example would have been, if the hierarchy was C1-C2-C3-C4 and a single XML file tried to make C2 the parent of C4 and C4 the parent of C3 (effectively switching C3 and C4 in the hierarchy).
2335762		Labels used on browser tabs may have shown ampersands (&) as &amp;;
2346359	960265686	The browser tab for the Dashboard may have shown an incorrect icon rather than the correct AVEVA icon.
2346504	960267141	After running a <b>Query Form</b> that returned a single result, switching from <b>Table View</b> to <b>Form View</b> did not populate the list of attributes in the <b>Form View</b> .
2390521	960239891	When running a <b>Query Form</b> and providing a value for an <b>Incidental Type ID</b> field, then the field was not resetting after selecting Reset.
2445732	960287450	In the <b>Search</b> hierarchy of the Dashboard, if the label of the nodes was configured to show the description (based on the Desc attribute), then it was not displaying the description part of the label.

2476900	960295199	<p>When opening P&amp;IDs from a <b>Tag Summary View</b>, some tags were zooming to an incorrect location. For example, when opened, a P&amp;ID was zoomed out and the tag highlighted in the top right corner rather than zoomed in with the tag in the center.</p> <p>Any files that had this issue will need to be re-processed.</p>
2486826	960299633	When re-importing the value of an attribute that only differed due to its case, e.g. Test vs TEST, then the value was not updating.
2541133	960309907	When viewing SVG files in the Dashboard and editing some text annotation, then closing the <b>Edit Text Annotation</b> dialog, then an identical dialog may have been present behind the top dialog. The superfluous dialog was due to previously editing annotations on other SVG files. The dialog is now always presented once per annotation edit.
2558541	960314754	<p>In the Dashboard, when viewing SVG renditions, and some tags have been highlighted, then the icon in the toolbar at the bottom to <b>Clear All Highlighting</b> was not taking affect.</p> 
2565626		When running a <b>Query Form</b> , the <b>Clear Selected</b> function was not clearing for boolean and date types.
2567285		When running a <b>Query Form</b> , the <b>Clear Selected</b> function was not clearing for the fields <b>Incidental Type ID</b> and <b>Type Name</b> .

2753063		When running a Query Form and selecting the dropdown arrow for an attribute's List of Values, then while the list was being populated the message <b>&lt;No Applicable Items&gt;</b> was displayed. This happened even when items were subsequently found to be present. While loading, the message now reads <b>Loading....</b> .
2628410	960318608	When viewing Office documents in the Accusoft viewer, valid tags that wrapped onto a second line, may not have been hot-spotted.
2698422		When using AIM-hybrid, then renaming the <b>Default Portal ID</b> in the Dashboard's web.config file was causing an error when accessing the Dashboard.
2826381	960315886	Viewing SVG files may have frozen the Dashboard when metadata nodes contained lots of <b>vnet:ID</b> nodes under the same group node (<g>).
2842814	960301004	<b>Open in Browser Tab</b> functionality was not working for multiple <b>Portal IDs</b> .
2843987	960338185 960404647	In the case of AIM-hybrid, only one user could log into CONNECT.
2854631		When switching tabs in a <b>Content Card</b> , some tabs were gathering multiple close icons.
2865196	960287450	In the <b>Browse</b> hierarchy of the Dashboard, if the label of the nodes was configured to show the description (based on the <b>Desc</b> attribute), then it was not displaying the description part of the label.
2872604		Import performance has been improved.

2908346	960284950	When viewing a 3D model in the Dashboard, selecting an item with the mouse may have caused the camera view to jump to a different location.
2909023		After creating a role, via XML, with a name of <b>Admin</b> , then the <b>Admin</b> user was unable to log into the <b>Admin Tool</b> .
2927046	960362340 960363759 960366017	Logging into the Dashboard with an item in the Basket that had been deleted from the database, was resulting in an error and the Dashboard blocking all user interaction. Now the item is deleted from the basket as well as the database and no interruption is caused.
2969694		When configuring AIM to use Microsoft Entra ID (formerly Azure Active Directory) for accessing the Dashboard, a step is added to whitelist <a href="https://login.microsoftonline.com">https://login.microsoftonline.com</a> . This was causing the Dashboard site to fail to open. For more information, see: <a href="https://docs.aveva.com/bundle/asset-information-management/page/1214625.html">https://docs.aveva.com/bundle/asset-information-management/page/1214625.html</a>
2930825	960314754	In the Dashboard, when viewing an SVG file, the <b>Clear All Highlighting</b> option in the toolbar was failing to clear the highlighted items in the drawing.
2982352		In the Dashboard, labels used for class hierarchies in Search and Visual Reports always showed the class ID. They now correctly follow the configuration setting for Label Types.
3004287	960355515	In the Dashboard, when viewing files rendered in SVG and using the

		Print option in the viewer, then printouts may have had text wrongly shifted to the right.
3020285	960366343	In the Dashboard, when viewing files in the Accusoft viewer, tags with some special characters, such as square brackets and round brackets, were causing the tag to not be fully highlighted.
3045887	960378366	When downloading documents viewed in the Dashboard, larger files (>1GB) may have resulted in an unhandled server error.  Now, the case is handled with an appropriate error message.
3046856		When in AVEVA Change Manager and managing a working set, then doing a <b>Partial Checkin</b> for a tag, a <b>Cannot insert duplicate key in object</b> error may have occurred.
3057849	960385339 960391859	Filters for dropdowns in <b>Query Forms</b> and the <b>Query Form Designer</b> had stopped working correctly.
3057869	960382290	In the Dashboard, after adding an item to the basket, if a user switched to a role that does not have access to the item, due to a <b>Security Access Group</b> restriction, then the user was being locked out of the Dashboard.  The Dashboard now works as expected with the restricted item removed from the basket.
3057879	960387873	When using <b>Advanced Search</b> in the Dashboard and adding a filter, the text entry box for the filter was adding a % symbol as soon as characters were typed. The I-bar cursor was then out of position and the % symbol could not be removed.

3182071	960391634	When viewing SVG files, switching to another tab and then returning to the previous tab, items may have been highlighted in error.
3195701		When integrated with AIM-hybrid and authenticating via CONNECT, the user may have been logged off automatically after just a few minutes.
3260736	960387077	When navigating from a <b>Tag Summary View</b> to a 3D model, the tag from the <b>Tag Summary View</b> is selected in the 3D model. When repeating the step, the selected tag may have been the tag from the previous <b>Tag Summary View</b> .
3319259	960416976	When filtering for values in <b>Advanced Search</b> , two characters were needed to initiate the filter. Now only one character is needed.
3406846	960433852	Any dependency on Chrome <b>Mutation Events</b> has been removed. Also see 3406846 under the <i>Known Issues</i> topic.
3420261		If two documents with revisions are imported and then tags are imported that are associated to the document but without a document revision defined, then all the tags are now associated to the latest revision of the document.  Recent behaviour was that when tags were imported and associated to the document without a revision defined, then a new document was created as a latest revision and all the tags associated to that.

**Known Issues**

AVEVA intends to fix the defects listed below in a fix release or service pack as soon as reasonably possible.

Incident Number	Defect Number	Description	Recommended Workaround
	2044058	When a file fails to load in the PrizmDoc viewer, then it should automatically open in a new browser, but this is not happening for Documents with revisions set.	When the file fails to load in the PrizmDoc viewer, explicitly choose Actions -> "Open in Browser Tab".
	2117389	When exporting markup, the file download dialog does not close automatically after the download completes.	Close the dialog manually.
	2909023	After creating a role, via XML, with a name of "Admin", then the "Admin" user was unable to log into the Admin Tool.	Avoid creating a role with the name of "Admin".
		When viewing 3D models using AIM-hybrid, the Walk mode can appear jerky.	Moving the mouse slower from left to right will reduce the jerkiness.
	3406846	Due to a change in Chromium, starting with version 127, which will be generally available from 23 July, the following issue will be apparent until AIM 5.1.12 is deployed, which fixes the issue.  When viewing the Dashboard in Chrome or Edge, white space may be seen at the bottom of panels on Summary Views.	Upgrade to AIM 5.1.12
	3440341	The first attempt of deployment on a new Virtual Machine may not be successful.	Re-try the deployment. The second attempt should be successful.

Incident Number	Defect Number	Description	Recommended Workaround
		If the user checks the Reports component, then a configuration error of <b>Unable to find Microsoft SQL Server Data Transformation Services on this machine</b> may be given.	

For the latest list of exceptions and other updates, please see the Product Release Latest Update Note on AVEVA's support web site <https://softwaresupport.aveva.com>.

Please refer also to the Product Release Latest Update Note for the original full release, <https://softwaresupport.aveva.com>.

# Get Started with AVEVA™ AIM

AVEVA AIM enables information of any type and from any source to be stored and viewed in a secure environment. Related information is automatically linked together to add context, can be navigated, visualized and reported upon to provide a single environment to view and understand information from multiple systems, providing a single source of truth across the asset lifecycle.

AVEVA AIM is a necessity for any organization involved in designing, building or operating complex engineering assets. It enables organizations to maintain a digital replica of their asset throughout its lifecycle, and enables the information therein to be accessible to support the many business processes which make up the lifecycle of such an asset.

- *AVEVA Asset Information Management - Advanced (AIM-A)* is a cloud-based version of AIM, that provides, a scalable and flexible solution following data governance and standards rules. For information on how to use AVEVA AIM-A, see [AIM Advanced](#).
- *AVEVA Asset Information Management - Discovery (AIM-D)* is a cloud-based version of AIM, that provides, a scalable and templated solution coupled with standardized deployment. For information on how to use AVEVA AIM-D, see [AIM Discovery](#).
- *AVEVA Asset Information Management* is the on-premise version of AIM. It can also be combined with AIM-hybrid, a cloud component for 3D visualization, providing better performance especially when managing large files. For more information on how to use AVEVA AIM, see [AIM](#).

# AIM Advanced

*AVEVA Asset Information Management Advanced (AIM-A)* is a flexible and standards driven information discovery and consolidation service. AIM-A gathers data from multiple information sources and systems to deliver intuitive access to the Digital Twin. It provides a single source of information that accurately describes the current condition of the physical asset, rather than how it was initially designed.

The solution delivers a fully scalable, predictable, and repeatable SaaS infrastructure for asset information for universal access to engineering and operations personnel. It enables customers to connect their on-premises engineering, maintenance, and operational data sources with information standards driven, non-intrusive cloud AIM portal. AIM-A configures and uploads a customer Class Library Definition and enables on-premises gateway processing for AIM family Gateways and an enhanced AVEVA Registers Gateway.

## Key Benefits

- Captures and cross-references cross-functional information in 1D, 2D, and 3D.
- Locates information rapidly to support sound decision-making.
- Visualizes data, documents, drawings, and models via preferred web browser.
- Integrates data from on-premises systems to accelerate digital transformation.
- Describes data in a compliant and standards-driven representation.

## Key Features

- Full on-premises Gateway processing capability.
- Secure, managed Asset Information Management environment.
- Information standards driven configuration.
- Enhanced registers processing.
- Intuitive user experience, with built-in 2D and optional 3D streamed visualization.
- Information from multiple sources is displayed in context.

## Product Overview

This section provides an overview of *Asset Information Management – Advanced (AIM-A)*.

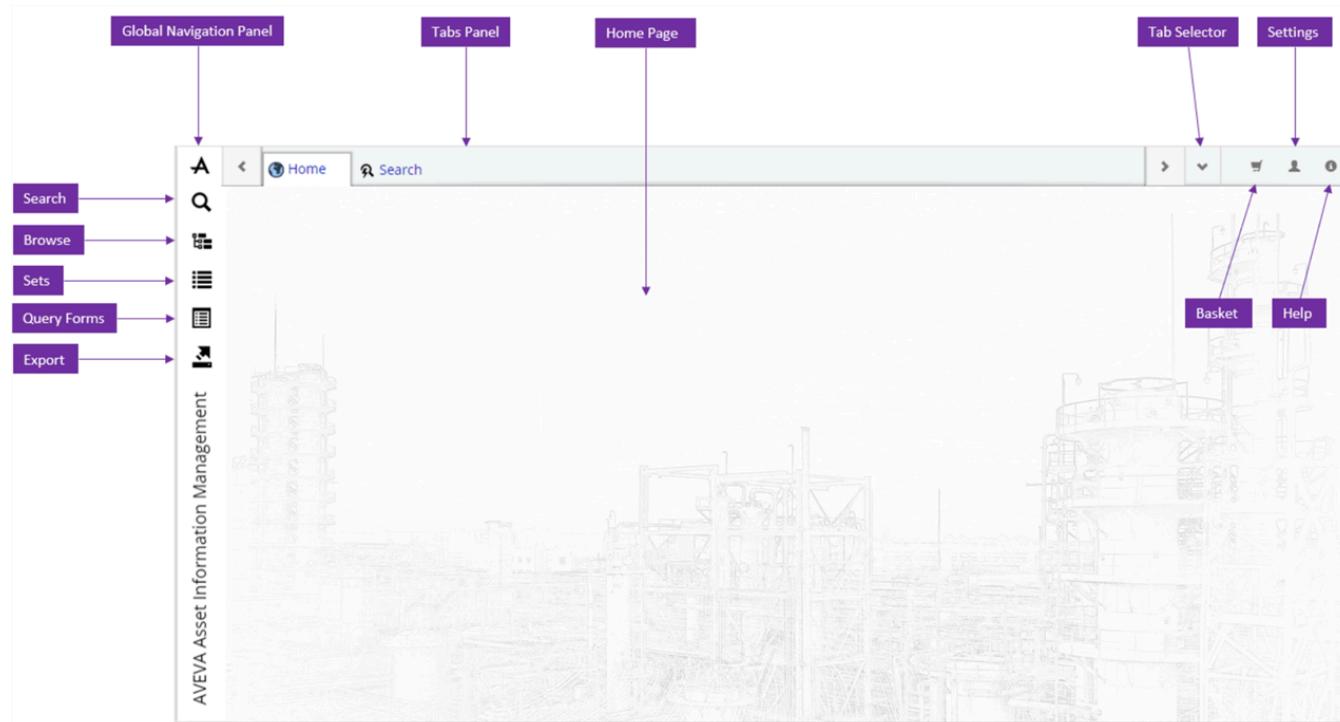
AIM-A is a powerful web-based solution that supports users in organizing, validating and collaborating on asset data and documents irrespective of source and location, providing the ability to link project teams situated in various locations via one unique application.

AIM-A enables information of any type and from any source to be stored and viewed in a secure environment. Related information is automatically linked together to add context, can be compared, navigated, visualized and reported upon to provide a single environment to view and understand information from multiple systems.

AIM-A is a necessity for any organization involved in designing, building or operating complex engineering assets. It enables organizations to maintain a digital replica of their asset throughout its lifecycle, and enables the

information therein to be accessible to support the many business processes, which make up the life cycle of such an asset.

The following illustration shows an example configuration of AIM-A.



The following table describes the panels and primary features in AIM-A:

Panel and Feature	Description
Global Navigation Panel	<p>A global side bar in the left margin that displays the following features:</p> <ul style="list-style-type: none"> <li>• Search</li> <li>• Browse</li> <li>• Sets</li> <li>• Query Forms</li> <li>• Exports</li> </ul> <p><b>Note:</b> Based on the configuration settings, any of these features can be hidden or disabled.</p>
Tabs Panel	<p>Displays tabs for the items, tags or documents you open in Dashboard.</p> <p>All the tabs in the Tabs Panel can be closed after use, except the Dashboard tab.</p>
Tab Selector	<p>A drop-down arrow, if selected displays all the open tabs.</p> <p>Enables navigating to a tab, or closing any or all of the</p>

Panel and Feature	Description
	tabs.
Custom Home Page	<p>The main area of Dashboard that is customizable, based on your organizational requirements.</p> <p><b>Note:</b> Any modifications to AIM-A must continue to display the original copyright statement, as initially displayed in the 'out of the box' home page. It must appear in the same place and in the original HTML style on any new home pages hosted in AIM-A.</p>
 Search	<p>Enables finding information using Search keywords (attributes, class, items and so on), wildcard characters, or pre-configured filters (defined in the class library). See <a href="#">Use Search</a>.</p>
 Browse	<p>Enables finding information, just by expanding the nodes, and then selecting the documents, items, or tags from the folders under it. See <a href="#">Use Browse</a>.</p>
 Sets	<p>Enables a grouped-storage of a list of items, for further use of all users. See <a href="#">Use Sets</a>.</p>
 Query Forms	<p>Enables an alternate form-based advanced search method using search keywords, wildcard characters, or pre-configured filters (defined in the class library). See <a href="#">Use Query Forms</a>.</p>
 Exports	<p>Enables creating Export Definition. Run or save exports using a specific Export Definition, for each saved search. See <a href="#">Export Data and Manage Exports</a>.</p>
 Basket	<p>Enables personalized storing of a selection of frequently used items. See <a href="#">Use the Basket</a>.</p>
 Settings	<p>Enables you to manage the configuration settings, if you have the <a href="#">ManageSettings</a> rights.</p>
 Information & Help	<p>Provides the information about Dashboard, and a link to the Help documentation.</p>

## Use AIM-A

*Asset Information Management – Advanced* enables you to:

- Browse, search, retrieve and view the data stored in multiple formats.
- Categorize and group the data for easy access later.
- Export the data and work on it from your local machine.
- Print the documents.

## Log In/Out

By default, you can log in to the *AVEVA Asset Information Management* without any prompt to enter credentials, if:

- Your organizational domain network credentials are configured by your System Administrator.
- You are accessing the Dashboard from your organization's network domain computer.

However, if you are accessing the Dashboard from outside the domain network of your organization, you must enter your domain credentials to log in.

### Sign in to CONNECT

You can sign in to CONNECT using your email address and password, using your organization's single sign on, using a sign-in link, or through a connection code.

---

**Note:** Signing in through a connection code is applicable to users who are authenticated using a federated connection. If you are a first-time user of CONNECT, you must first register yourself with CONNECT before you can sign in. For information on how to register with the CONNECT, see [Register with CONNECT](#).

---

If you attempt a sign-in ten times consecutively with a wrong password from the same location (IP address), then your login will be blocked. If this happens, contact AVEVA Global Customer Support to unlock your account.

You can sign in to only one account at a time. You must sign out from one account before signing in to another account.

To sign in to CONNECT:

1. Access the CONNECT sign in page.

If you are accessing the CONNECT sign-in page directly by following the <https://connect.aveva.com/>, select the **Sign in** option on the Home page.

2. On the **SIGN IN** tab, enter your registered email address.

---

**Note:** If your organization has opted for single sign on, then you can sign in to your CONNECT account without entering a password.

---

After a successful sign in, the list of accounts that you are a member of is displayed.

3. Select the account you want to sign in to. You are signed in to that account.

---

**Note:** If you are a member of only one account, you are signed into that account automatically. For more information, see <https://help.connect.aveva.com>.

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### Accessing AIM-A

AIM-A is compatible with the following web browsers:

Browser	Supported Version
Microsoft® Edge™	Latest (Windows)
Google Chrome™	Latest (Windows, iPadOS)
Safari	Latest (iPadOS)

Your System Administrator configures the user roles and assigns access rights. You must have appropriate access rights granted by your System Administrator to access the Dashboard features.

The minimum screen resolution for viewing AIM-A is 1024 x 768. If your system screen resolution is set to a value that is less than the minimum, contact your System Administrator to set it to 1024 x 768 or greater for optimal viewing.

## Accessing Multiple Portals

If you have access to multiple Portals, you will have the option to select a Portal after authenticating.

Alternatively, you can directly access the Dashboard for a Portal by providing the URL, for example,

[https://\[asset\].dashboard.\[account\].aveva.com/?portalId=\[folderId\]](https://[asset].dashboard.[account].aveva.com/?portalId=[folderId]), where **portalId** is the CONNECT folder ID.

Each Portal is a separate CONNECT folder with the AIM-A service enabled. Role and user management can be performed through the **Manage Roles** option in CONNECT. For a user to see multiple Portals, they should have AIM-A roles for each folder. For more information on assigning roles in CONNECT see [Assign Role to Group/User](#).

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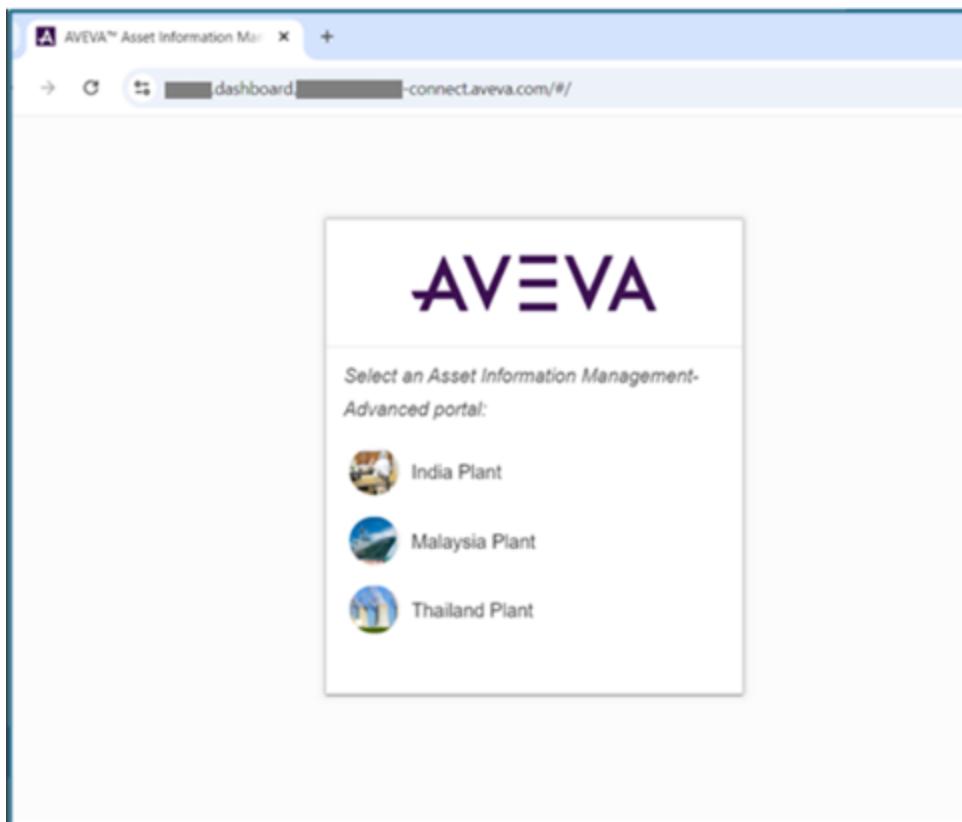
**Note:** When creating folders in CONNECT for Multiportal, ensure the region for each folder is the same region that your AIM-A service is deployed to.

After authenticating, if a user does not have access to any Portals a message will be displayed accordingly.

If the user has access to some Folders, then they will be presented. For example, a user has access to three out of the following four Folders.

Folder Name	FolderId	User has Access
Ireland Plant	d94b0dcc-fa6c-4597-8827aaaaaaaaaa	No
India Plant	02a2b3c6-3455-4b74-9452-336c49c0a7c6	Yes
Malaysia Plant	3ebe17f6-4ecb-40d8-bd72-0af3990a418a	Yes
Thailand Plant	b833571a-75c0-422d-ba35-46ef04de2838	Yes

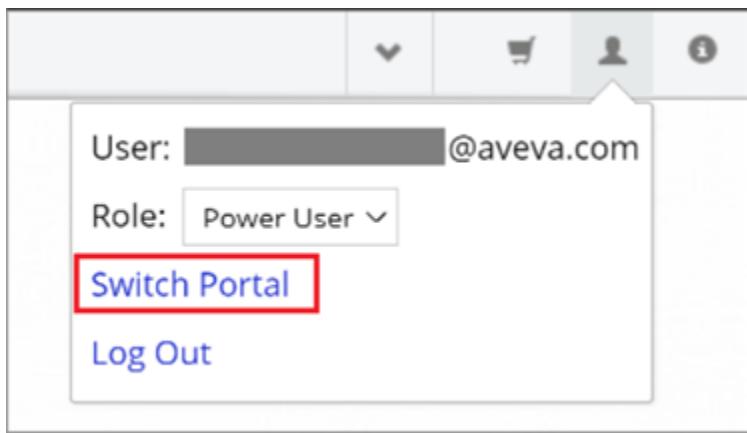
Then the following dialog will be shown when accessing the Dashboard (using a URL without a portalID). Select a Portal to continue.



If the user has access to only one Portal, then they will be automatically redirected to that Portal.

If the user has access to more than one portal, and they have previously logged in to a Portal, then they will be automatically redirected to that Portal.

After logging in to a Portal and viewing the Dashboard, then the user may switch to another Portal that they have access to by selecting the **Settings** icon in the top-right of the Dashboard, then selecting **Switch Portal**. For example:



A user can open a different Portal, that they have access to, in a separate browser (or browser tab).

## Log out of AIM-A

If the **Log Out** link is enabled during configuration, it appears under the **Settings** icon at the top-right corner

of Dashboard. Selecting the **Log Out** link enables you to exit from your current session in Dashboard.

**Note:** Logging out of AVEVA Asset Information Management does not log you out of your chosen Identity Provider or release network credentials for a domain. This means, when you log out of AVEVA Asset Information Management and try logging in again, you are not prompted for credentials. To release credentials, you must close your browser session.

## Navigate

After logging on to *Asset Information Management – Advanced*, you can navigate through its features in any sequence of your choice, starting from the *Global Navigation Panel*. The following sections explain the procedure for working with the features common to the panels that open in Dashboard:

- [Resize the Panels](#)
- [Dock/Undock Panels](#)
- [Change the View Modes](#)
- [Maximize and Minimize Viewing Area](#)
- [Open Items from Tab Panel](#)
- [Use Actions Menu in Panels](#)

**Note:** In the Dashboard, web links to objects, such as documents and tags, can be opened in a new browser tab by selecting the link and holding down the CTRL key.

## Resize the Panels

If you select any of the features from the *Global Navigation Panel*, the associated panel opens in Dashboard:

- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- *Query Form Panel*
- *Export Panel*

**Note:** The height of the panels conforms to the height of the window displaying Dashboard. However, you can resize the panel width.

To resize the panels:

1. Rest the mouse pointer on the panel border.
2. When the pointer becomes a double-headed arrow, drag the pointer left or right to move the split line.

The panel width is resized, providing you larger area for the *Summary View* or *Document View*.

**Note:** The resized panel width remains the same through a session in Dashboard, including when it is reopened. The panels have a default minimum width that cannot be reduced further.

## Dock/Undock Panels

By default, the following panels open in a docked ( unpinned) state. Undocking the panels by selecting enables a wider viewing area for an opened document. This action auto-hides the original panel through which you navigate to open a document. Docking ( pinning) enables you to keep the original navigation panel open, and view the opened document side-by-side:

- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- *Query Form Panel*
- *Export Panel*

To undock panels:

1. Select .
- The panel is expanded.

To dock panels:

1. Select .
- The panel is collapsed.



By docking a navigation panel, the tabs for opened documents shift to the right in the *Tab Panel*.

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**Note:** You can resize the docked ( pinned) navigation panel by resting the mouse pointer on the panel border. When the pointer becomes a double-headed arrow, drag the pointer left or right to move the split line. See [Resize the Panels](#).

---

## Change the View Modes

The **View** menu enables you to view the documents in any of the following modes:

- *Summary View*
- *Document View*

---

**Note:** The documents can be SVG files [Scalable Vector Graphics/two-dimensional (2D) models] or non-SVG files (for example, MS Office documents, DWGs, and PDFs).

---

Any item representing a tag, when selected from Browse, Search, Query Forms, Sets or Basket Panel automatically opens in the *Summary View* mode. The *Summary View* can be configured to display information in the zones representing relationships, metadata or characteristics. For example, it can be configured with the following zones:

- Location
- Details

- Connections
- Class
- Attributes
- Grouped Attributes
- 2D Diagrams and Documents View
- Related Documents
- Event Status
- Category
- Child Items
- Related Sets

## View Documents in Summary View

Any item representing a document selected from a **Documents** folder initially opens in the *Document View*. You can change the view mode from *Document View* to *Summary View* using the  **View** option. The *Summary View* mode enables you to get an overview of a document in zones that are configurable. For example, the zones can be:

- Key Attributes
- Class Attributes
- File Viewer
- Related Tags
- Related Sets

To view documents in the *Summary View*:

1. In the top-right of the *Document View*, select  **View**.
2. From the **View** options, select **Summary View**.

The view mode changes to *Summary View*.

## View Documents in Document View

To view documents in *Document View*:

1. In the top-right of the *Summary View*, select  **View**.
2. From the **View** options, select **Document View**.

The view mode changes to *Document View*.

## Maximize and Minimize Viewing Area

By selecting  at the top-right of the viewing areas in the *Summary View*, you can maximize or minimize the viewing area.

The screenshot shows the AVEVA AIM software interface. In the top navigation bar, there are tabs for Home, Search, and a tab labeled 'E-9001' which is currently active. Below the navigation bar, the search results for 'E-9001 (Pressure Vessel)' are displayed. The results include a summary table with columns for Name / Title, Type, Parent, Location, and Aliases. The 'Name / Title' column shows 'CO PROMOTER VESSEL'. The 'Type' column shows 'Pressure Vessel'. The 'Parent' column shows 'PU3'. The 'Location' column shows 'E9001'. The 'Aliases' column shows 'E-9001'. To the right of the search results, there is a large preview area showing a 3D model of a pressure vessel. Below the preview area, there are several tabs for different types of links: 'Equipment', 'Parts / Components', 'Documents and 3D Models', 'Events', 'Activities / Tasks', and 'Relationship Explorer'. Each tab has a list of items associated with the selected item.

## Open Items from Tab Panel

When a searched document is opened, it opens in a new tab in the *Tabs Panel*. Each tab is represented with the ID of the opened item and its associated icon. You can open multiple documents from your search results, and retain them for further viewing until you close their tabs in the *Tabs Panel*. By selecting each document's tab from the *Tabs Panel*, you can:

- View one selected document at a time.
- Return to the previously viewed documents, and work on it again.

You can close a tab and its opened document by selecting on a tab.

If you open a large number of items, navigation arrows appear at the left and right of the *Tab Panel*. Selecting the drop-down arrow at the right end of the *Tab Panel* enables you to select a document to view, from a list of all the open tabs. You can close a document from the list by selecting or you can close all open documents by selecting *Close all tabs*.

The screenshot shows the AVEVA AIM software interface. In the top navigation bar, there are tabs for Home, Search, and a tab labeled 'M-9002A' which is currently active. Below the navigation bar, the search results for 'M-9002A (Motor, Non-Electrical)' are displayed. The results include a summary table with columns for Name / Title, Type, Parent, Location, and Aliases. The 'Name / Title' column shows 'Motor'. The 'Type' column shows 'Motor, Non-Electrical'. The 'Parent' column shows 'J-9002A'. The 'Location' and 'Aliases' columns are empty. To the right of the search results, there is a 'Tabs Panel' containing three tabs: 'Home', 'Search', and 'M-9002A'. The 'M-9002A' tab is highlighted with a yellow border. On the far right of the Tabs Panel, there is a 'Close all tabs' button.

## Use Actions Menu in Panels

After you select an item (by selecting its corresponding check box), the  **Actions...** menu appears at the top-right of the respective panels:

When you	From	Displaying a list of
Select the <i>Documents, Items or Tags</i>	<i>Search Panel</i>	Search result documents, items or tags.
	<i>Browse Panel</i>	Documents, Items or tags under the break-down nodes.
	<i>Sets Panel</i>	Documents, items or tags under the <i>Content</i> tab of a set.
	<i>Related Items</i> area in <i>Summary View</i>	Related items of a Browse, Search, Query Form search result.
	<i>Related Documents</i> area in <i>Summary View</i>	Documents associated with Browse, Search, Query Form search result.
	<i>Related Query Form</i> area in <i>Summary View</i>	Related Query Form of a Browse, Search, Query Form search result.
	<i>Related Items</i> area in a <i>Document Content Card</i>	Items related to a 2D Diagrams and Documents View document.
	<i>Contents</i> tab in a <i>2D Diagrams and Documents View Document Content Card</i>	Elements contained in a 2D Diagrams and Documents View.
	<i>Related Items</i> tab in a <i>2D Diagrams and Documents View Tag Content Card</i>	Related Items of a 2D Diagrams and Documents View Tag.
	<i>Related Documents</i> tab in a <i>2D Diagrams and Documents View Tag Content Card</i>	Related Documents of a 2D Diagrams and Documents View Tag.
	<i>Basket Panel</i>	Documents, Items or tags in the Basket.

Selecting the **Actions** menu enables you to execute the following tasks with the selected items:

- Open
- Highlight
- Select in View
- Export

- Print
- Add to Basket
- Add to Set
- Clear Selections (*2D Diagrams and Documents View area does not have this option.*)

ID	Name	Type
<input checked="" type="checkbox"/>	J-9002A Life Cycle Costing	Cost And Plan Cost Report
<input type="checkbox"/>	J-9002A RCA Report	Root Cause Analysis Report

## Open Items

To open an item:

1. Select the item(s), and then select the **Actions...** menu at the top-right of the panel.
2. Select **Open**.

The *Summary View* opens with a tab in the *Tab Panel* for the selected item, displaying its details.

## Export Data

The **Export Items** option enables you to export the data of items (Documents and associated files with metadata, Tags) from Dashboard to your local machine in a **.csv** or **.xlsx** file format. If the number of items for which data is to be exported is more than 1000, a warning message appears.

By selecting the Export Items option from the **Actions...** menu, you can export data of the items selected from the following panels:

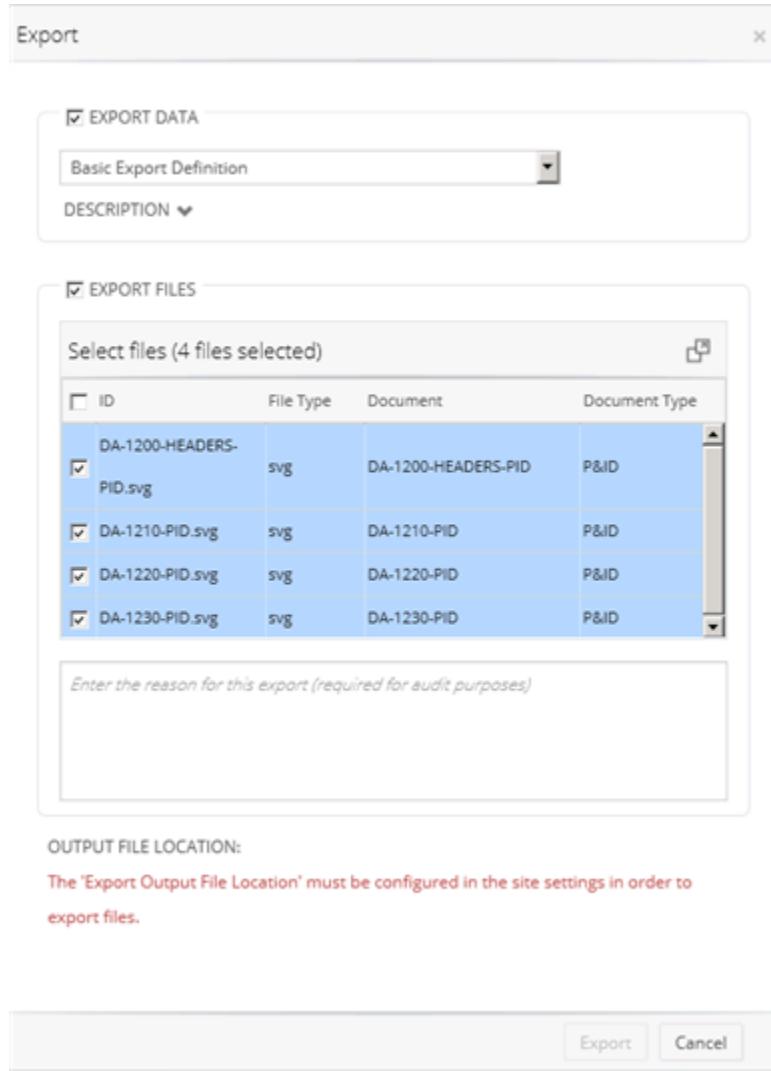
- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- **Related Items** area in the *Summary View*
- **Related Documents** area in the *Summary View*
- **Related Query Form** area in the *Summary View*
- *Query Form search results*
- **Related Items** area in a *Document Content Card*
- Items displayed under the **Contents** tab in a *2D Diagrams and Documents View Document Content Card*
- Items displayed under the **Related Items** tab in a *2D Diagrams and Documents View Tag Content Card*

- Documents displayed under the **Related Documents** tab in a *2D Diagrams and Documents View Tag Content Card*
- *Basket Panel*

To export the data of the items:

1. In the panel from which you are exporting, select the item(s).
2. Select the  **Actions...** menu, and then select **Export Items**.

The *Export* window opens.



3. In the **Export Data** box, select the drop-down arrow, and then select an Export Definition.

**Note:** If you are exporting a mixture of objects, such as Drawing metadata, Tags, Work Orders, you may want to use the **Default Definition**.

4. To expand the Select files section, select  at the top-right of the Select files section.
5. To filter the files shown in the Select files section, use the following filters:
  - File ID
  - File Type

- Document ID
- Document Type

---

**Note:** The **Select files** section displays files associated with the first 100 documents, by default. A document can have more than one associated files. Hence, a message appears at the top of the **Select files** section, displaying the number limit for documents shown.

6. Select the check boxes for the files you want to export (if you want to amend the list of pre-selected files).
7. If you have expanded the **Select files** section by selecting , select **OK** to return to the **Export** window.
8. In the **Enter the reason for this export** box, type the details.  
The pre-configured export package output path appears at the bottom of the **Export** window.
9. Choose your Export file type – **.csv** or **.xlsx**.
10. Select **Export**.  
A message displaying "The Export process has been started" appears.
  - To view the export, select **Open**.
  - To save your export in your local machine, select **Save/Save as**.
  - If you do NOT want to save your export, select **Cancel**.

---

**Note:** When running a Query Form and exporting to a CSV file, then any cells in columns that appertain to Related Items may have multiple values. However, some values for the Related Items may be blank. So, in order to correspond a value to the ID or Name of the Related Item, then delimiters are used to preserve the order. For example, if there are 4 Related Items and only the 3rd item has an attribute value of "xyz" (the others having a blank values), then the cell would contain **& & xyz &**. The 3 ampersands correspond to 4 values, where all are blank except for the 3rd value. This will correspond to the IDs of the Related Items for example, **P101 & P102 & P103 & P104**. So P103 has a value of xyz for the attribute in question.

## Get Set to Print

The Print functionality relies on the *Accusoft PrizmDoc* viewer to render printable version of different document types stored in *Asset Information Management – Advanced*.

The print option is not available in *Asset Information Management – Advanced* when:

- A document is open in its native viewer, for example, Microsoft Office.
- Accusoft PrizmDoc client is not deployed.

Selecting the **Print** option from the  menu enables you to print one or more items selected from the following panels:

- Browse Panel
- Search Panel
- Sets Panel
- **Related Items** area in the *Summary View*
- **Related Documents** area in the *Summary View*
- **Related Query Form** area in the *Summary View*
- **Related Items** area in a *Document Content Card*

- Items displayed under the **Contents** tab in a *2D Diagrams and Documents View Document Content Card*
- Items displayed under the **Related Items** tab in a *2D Diagrams and Documents View Tag Content Card*
- Documents displayed under the **Related Documents** tab in a *2D Diagrams and Documents View Tag Content Card*
- *Basket Panel*

---

**Important:** You must configure the browser pop-up blockers, to allow pop-ups from the Dashboard website before printing.

---

## Configuring Pop-up Blocker Exceptions in Chrome

To configure pop-up blocker exceptions in Chrome:

1. Open the **Chrome** browser.
2. In the top-right corner, select , and then select **Settings**.
3. Go to the bottom, and then select **Show advanced settings**.
4. Under **Privacy**, select the **Content settings** button.
5. Scroll down and under **Pop-ups**, select **Manage Exceptions**.  
The Pop-up exceptions window opens.
6. In the **Hostname** pattern box, enter the domain name for which you want to create an exception.
7. In the **Behavior** drop-down box, select the arrow and select **Allow**.
8. Select **Done**.

For more information, see <https://support.google.com/chrome/answer/95472?hl=en-GB>

## Print Items

To print items:

1. In the panel from which you want to execute print, select the item(s).
2. Select the  **Actions...** menu, and then select **Print**.

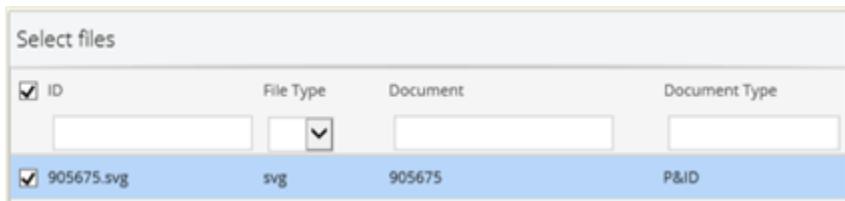
The **Select Files** window opens, listing the printable documents.

---

**Note:** The tags and datasets are NOT printable. The **Select Files** window will be empty, if the selected documents are not printable.

---

3. Select the **ID** check box for items to print, and then select **OK**.



A confirmation message displaying "**Preparing item for printing**" appears at the bottom of the screen. After the processing of items is complete and they are ready for printing, the **Print** window opens.

4. Select the printer, select the **Print Settings**, and then select **Print**.  
The documents are sent to the printer for printing.

**Notes:**

- Your System Administrator can configure a maximum limit for the number of pages that can be printed. If the limit exceeds, a warning message appears, and the print process is cancelled. Also, if your banner text is enabled during configuration, the page setup (header and footer) must be configured accordingly.
- Your System Administrator can configure background and foreground colors when printing SVG documents.

**Clear Selection**

To clear the selection:

1. Select the  Actions... menu at the top-right of the panel.
2. Select the **Clear Selection** option.

Your item selections are cancelled, clearing the item check boxes.

**Add Items to Sets/Basket**

The **Add to Basket/Sets** menu under the  Actions... menu, at the top-right of the following panels, enables you to add the documents, items or tags selected from the respective panels to Basket/Sets.

<b>When you</b>	<b>From</b>	<b>Displaying a list of</b>
Select <i>Documents, Items or Tags</i>	<i>Browse Panel</i>	Documents, items or tags under Class break-down nodes.
	<i>Search Panel</i>	Search result documents, items or tags.
	<i>Sets Panel</i>	Documents, Items, or tags under the <i>Content</i> tab of a set.
	<i>Related Items</i> area in <i>Summary View</i>	Related items of a Browse, Search, Query Form search result.
	<i>Related Documents</i> area in <i>Summary View</i>	Documents associated with Browse, Search, Query Form search result.
	<i>Related Query Form</i> area in <i>Summary View</i>	Related Query Form of a Browse, Search, Query Form search result.
	<i>Related Items</i> area in an <i>Document Content Card</i>	Items related to a 2D Diagrams and Documents View document.
	<i>Contents tab</i> in a <i>2D Diagrams and Documents View Document Content Card</i>	Elements contained in a 2D Diagrams and Documents View.

When you	From	Displaying a list of
	<i>Related Items tab in a 2D Diagrams and Documents View Tag Content Card</i>	Related Items of a 2D Diagrams and Documents View Tag.
	<i>Related Documents tab in a 2D Diagrams and Documents View Tag Content Card</i>	Related Documents of a 2D Diagrams and Documents View Tag.
	<i>Basket Panel</i>	Documents, Items or tags in the Basket.

You can also access the  menu from the top-right corner of the following areas in Dashboard:

- *Summary View* of documents and tags
- *Document View* of documents and tags
- *Query Form* in *Form View* and *Table View*

## Adding to Basket

To add to basket:

1. Select the item(s), and then select the  menu at the top-right of the panel.
2. Select the **Add to Basket** option.

The selected items are added to the Basket and a confirmation message appears.

ID	Name	Type ID
J-9002A	VERTICAL PUMP	PUMP
J-9002A/N1	FLANGED NOZZLE	NOZZLE
J-9002A/N2	FLANGED NOZZLE	NOZZLE
J-9002B	VERTICAL PUMP	PUMP
J-9002B/N1	FLANGED NOZZLE	NOZZLE
J-9002B/N2	FLANGED NOZZLE	NOZZLE
J-9005A	VERTICAL PUMP	PUMP
J-9005A/N1	FLANGED NOZZLE	NOZZLE
J-9005A/N2	FLANGED NOZZLE	NOZZLE
J-9005B	VERTICAL PUMP	PUMP
J-9005B/N1	FLANGED NOZZLE	NOZZLE
J-9005B/N2	FLANGED NOZZLE	NOZZLE
J-9007A	PEGS_ITEM_95	DCS SYSTEM

**Basket**

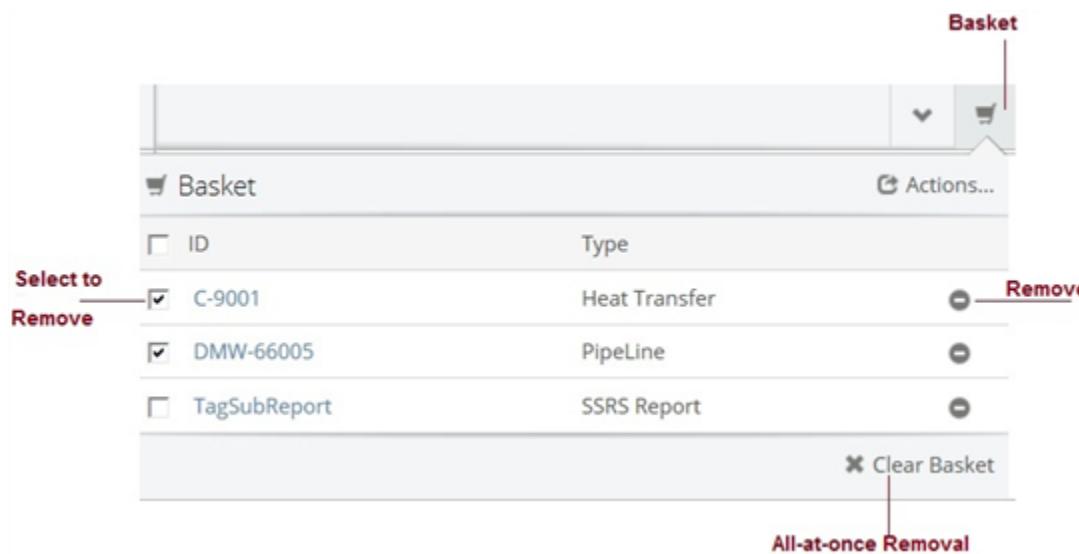
ID	Type
J-9002A	PUMP
J-9002A/N1	NOZZLE
J-9002A/N2	NOZZLE

## Removing Items/Clearing Basket

Using these features at the bottom-right corner of the *Basket Panel*, you can remove any or all items of your Basket.

Select this	To
<input checked="" type="radio"/> Remove	Remove the Basket content one by one.
<input checked="" type="checkbox"/> Clear Basket	Execute an all-at-once removal of your Basket content.

The following image depicts the procedure for removing items/clearing Basket:

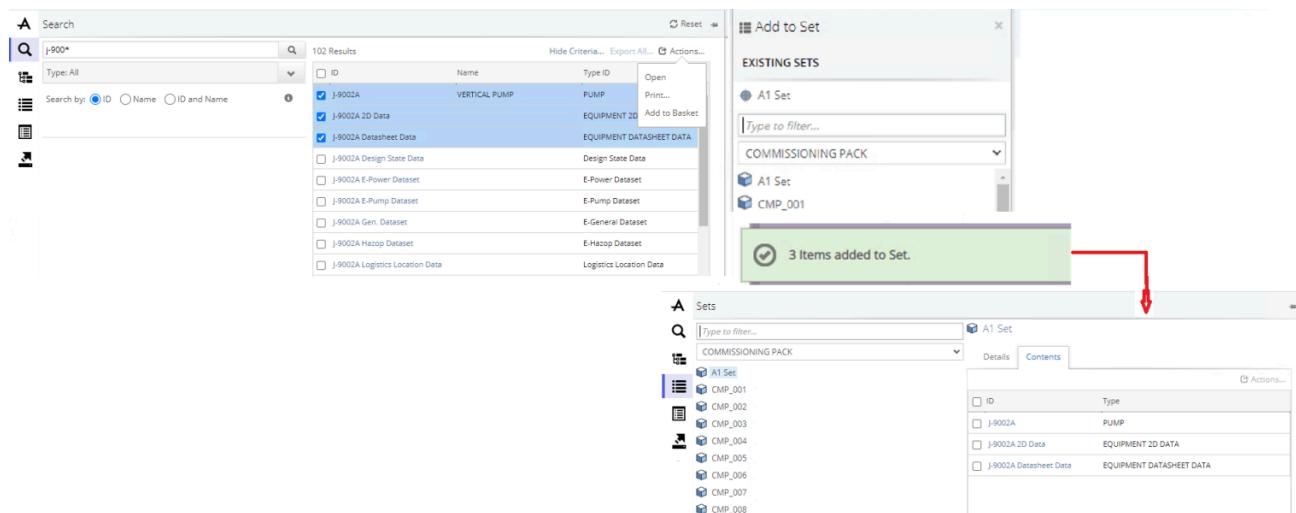


## Adding to Sets

To add to Sets:

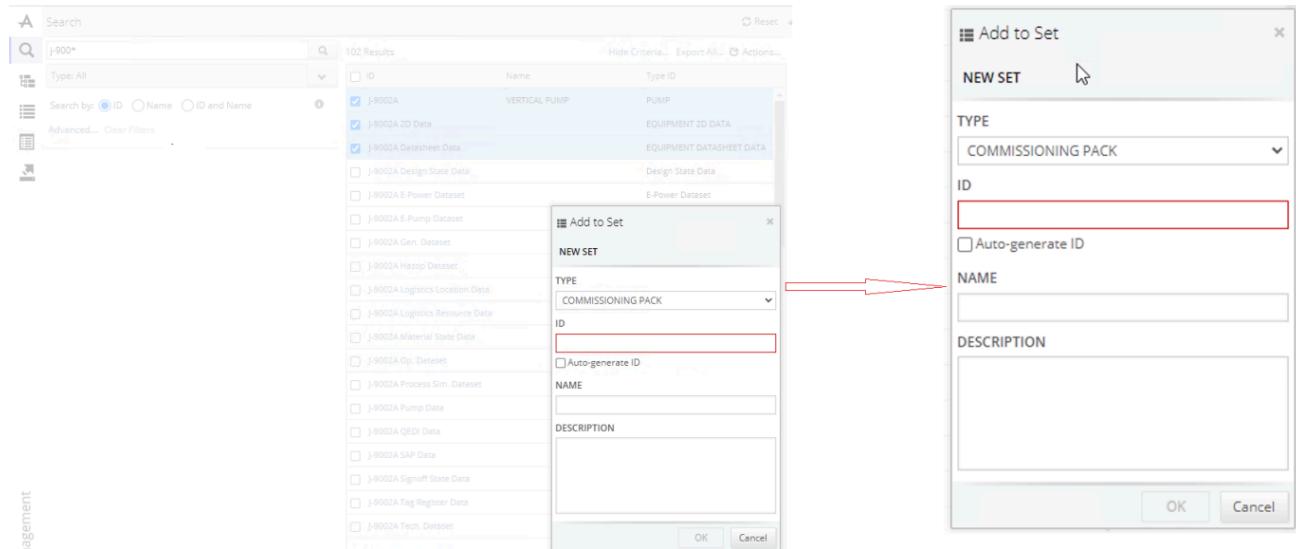
1. Select the item(s), and then select the Actions... menu at the top-right of the panel.
2. Select the **Add to Set** option.  
The recently used Sets appear.
3. Select the Set to which you want to add the items.  
The selected items are added to the Set.

**Note:** You cannot add a Set to the Set Headers. If no Set is shown by the Set icon available under the Header, you must create a new Set.



4. If you want to add the selected items to a new Set, select **Create**.

The **Add to Set** window opens.



5. In the **Type** drop-down box, select the arrow, and select a type.
  6. Select **Auto-generate ID**, or enter a unique identifier in the **ID** box.
  7. Add a **Name** and **Description** for your Set, and then select **OK**.
- A confirmation message displaying "A Set has been created, and items added to the Set" appears.
8. If you do not want to continue with creating a new Set, select **Cancel**.

## Open Documents in a new Browser Tab

The **Open in Browser Tab** option enables the user to open documents in a new browser tab alongside the top-level Dashboard tab.

Only documents that can be natively displayed by the browser will be opened in this way, for example, PDF, JPEG, and SVG files (subject to configuration).

Files that cannot be displayed in the browser are offered for download, for example, DOCX, XLSX, DGN, and DWG files (subject to configuration).

To open files in a new browser tab, the user needs to select the files and select "Open in Browser Tab" under the **Actions** menu. For example:

The screenshot shows a search interface with a search bar containing '9056'. The results grid displays 7 items, all of which have been selected (indicated by checked checkboxes). The 'Actions...' menu is open over the selected items, showing options like 'Open', 'Open In Browser Tab', 'Export...', 'Print...', 'Add to Basket', and 'Add to Set...'. The 'Open In Browser Tab' option is highlighted.

ID	Name	Type ID
905675	Piping & Instrumentation Diagram Deethaniser	P&ID
905676	Piping & Instrumentation Diagram C3 / C4 Splitter	P&ID
905677	Piping & Instrumentation Diagram Splitter Reflux Drum	P&ID
905678	Piping & Instrumentation Diagram Propane Dryer	P&ID
905679	Piping & Instrumentation Diagram Header	P&ID
905680	Piping & Instrumentation Diagram Header	P&ID
905681	Piping & Instrumentation Diagram Header	P&ID

**Note:** The Dashboard requires permission to open multiple browser tabs. For example, in Chrome, the user will need to allow popups:

The screenshot shows the same search interface and results grid as the previous one. The Actions menu is open over the selected items, with 'Open In Browser Tab' highlighted. A separate window titled 'Pop-ups blocked:' is overlaid, showing browser settings for pop-up permissions. It includes a list of blocked URLs, a radio button for 'Always allow pop-ups and redirects from http://localhost:16000', and buttons for 'Manage' and 'Done'.

Currently, a maximum of 5 files is allowed to be opened at the same time. If the user attempts to open more than 5 files, a warning message will appear.

Tags and 3D models cannot be opened in a new browser tab and, if selected, will be removed from the list of items to be opened. For example:

The screenshot shows a confirmation dialog box titled 'Confirm'. The message inside says: 'The 3D models and tags are not supported to open in the new browser. Proceeding with valid selections.' Below this, it lists 'Invalid documents: Area-15A, Area-15A-AVS'. At the bottom, there are 'Yes' and 'No' buttons.

---

**Note:** When a document has more than one file, the primary file (default file) will be opened or downloaded.

This functionality is provided in the **Actions** menu of the following functional areas:

- Browse
- Search
- Sets
- Summary View (Related Items, Related Documents, 2D View)
- Query Form search results
- Document Content Card (Related Items tab, Contents tab)
- Basket

## Find Information

Selecting the following functionalities from the *Global Navigation Panel* enables you to find information relevant to a document, item or a tag:

- Search
- Browse
- Query Forms
- Faceted Search

## Use Search

The **Search** functionality provides you with a criteria-driven ability to find information. Using search keywords, wildcard characters or pre-configured filters (defined in the class library), you can find information about items, tags or documents.



Selecting the **Search** icon from the **Global Navigation Panel** enables you perform the following types of search:

- Simple Search
- Advanced Search
- Load Search

The search results grid displays items matching the search criterion you entered in the *Search* box.

## Search with Wildcard Characters

Using the wildcard characters, you can execute search without entering the complete name or ID of the document, item or tag you are looking for. The wildcard characters compatible for search in *Asset Information Management – Advanced* are as follows:

- % (percent) and \* (asterisk)

These two wildcard characters behave similarly when used for executing a search. A wildcard can match any

number of characters.

---

**Note:** The system has been configured to append a wildcard.

- \_ (underscore)

Use \_ (underscore) to specify a single character. For instance, when you perform a search for t\_st, the results return all available instances where there is a single character between t and st.

- [ ] (square brackets)

Use the [ ] (Square brackets) when you are searching for an object that contains any of the special characters, for example, [\_] or [\*] or [%].

## Execute a CONTAINS-style Search

CONTAINS is used when the input search term is enclosed with '%' on both sides (for example, "%string%"). CONTAINS functionality primarily supports the searching for words within strings and is therefore best suited to searching text-based fields. Searching within a Tag or Document identifier is not recommended with CONTAINS. CONTAINS is based on a standard Microsoft database querying technology.

If an entire Tag ID is known, it is recommended to search without using wildcards.

During CONTAINS-style search, most of the punctuation marks, such as comma, colon, question mark, ellipsis, exclamation mark, single quotation marks, double quotes, semicolon, parentheses and apostrophe, are ignored. However, some punctuation marks, such as hyphen, underscore and forward slash, are not ignored except when used to combine words.

Examples:

- %2%" – ignores the double quotes and matches any word that contains "2".
- %area-piping% – ignores the hyphen and searches for phrases that have a word starting with "area", which is next to a word starting with "piping", for example, "area piping".
- %area piping% – searches for phrases that have a word starting with "area", which is next to a word starting with "piping", for example, "area piping".
- %\*mand\*% – searches for strings within a word, so besides bringing back "mandatory", it would also return "Command".
- %w/c% – matches any word starting with "w/c".
- %n% or %nn% – looks for one or two numbers respectively or an occurrence of "nn" in a string.

---

**Note:** For more information on the CONTAINS function, refer to the following Microsoft site:

<https://docs.microsoft.com/en-us/sql/t-sql/queries/contains-transact-sql?view=sqlserver-2017>

---

## Execute a Simple Search

*Simple Search* refers to the searches performed using a part of a keyword, pre-configured filters defined in the class library or wildcard character.

To execute a *Simple Search*:



1. In the *Global Navigation Panel*, select .  
The *Search Panel* opens, docked in *Dashboard*.

2. In the drop-down box, select the arrow to select the type of item.
3. The default **Search by** option is **ID and Name**. You can limit the search results by selecting either the **ID** option or the **Name** option as appropriate.

Search by:  ID  Name  ID and Name

4. Enter an **Item ID**, or **Name** or a **wildcard character** in the **Search** box, and then select .

The search results appear as a list.

**Note:** If you add a wildcard to the front of your search, the automatically appended wildcard is removed, and will need to be manually added if required.

## Loading Search

The *Load Search* functionality at the bottom of the *Search Panel* enables you to load the previously saved search results. By selecting  **Load Search**, you can view the saved searches by their name, and select the one to load into the *Search Panel*.

Searches loaded into the Search UI are modified to be compatible with the search UI. This means all **ItemIdentifierCriteria** are stripped from the search and the obligatory ID or NAME and CLASSID are added to the beginning of the search. This means the Search UI does not support complex criteria including **ItemIdentifierCriteria** in the search even though this can be defined in the configuration for the search itself.

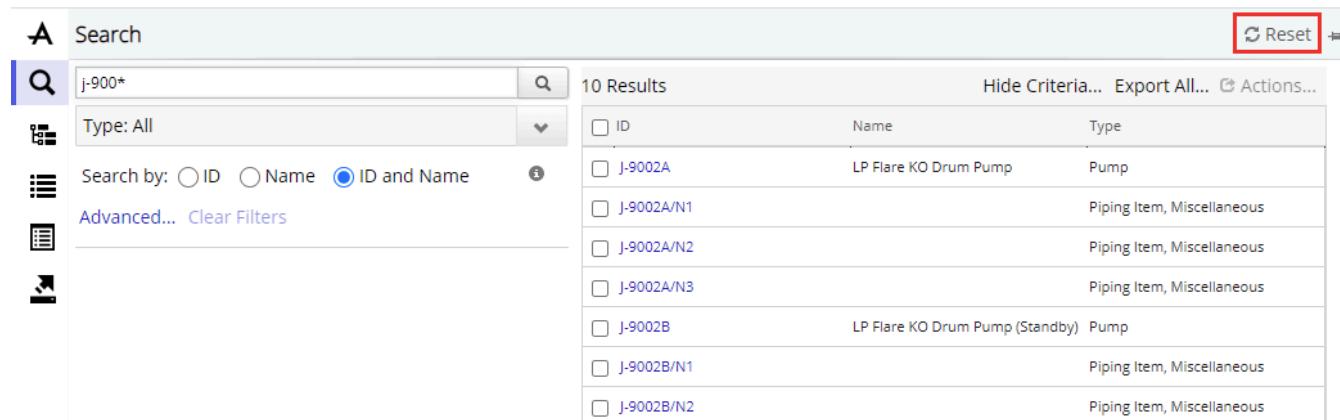
**Note:** This only applies to the Search UI and does not apply to the searches configured to run through the WebAPI.

## Resetting Search Criteria

The **Reset** option:

- Is enabled in the *Search Panel*, only after a search is executed, and the search results are displayed.
- Clears both the search criterion and its search results.
- Enables you to enter a new search criterion, and execute a fresh search.

By selecting  **Reset** in the *Search Panel* displaying search results, the search criteria as well as its search results are cleared. And, you can enter a new search criteria to perform a new search.



ID	Name	Type
J-9002A	LP Flare KO Drum Pump	Pump
J-9002A/N1		Piping Item, Miscellaneous
J-9002A/N2		Piping Item, Miscellaneous
J-9002A/N3		Piping Item, Miscellaneous
J-9002B	LP Flare KO Drum Pump (Standby)	Pump
J-9002B/N1		Piping Item, Miscellaneous
J-9002B/N2		Piping Item, Miscellaneous

## Opening a Search Item and Viewing

To open a search item and view:

1. From the search results displayed in the *Search Panel*, select an item.
2. Select  **Actions...**, and then select **Open**. You can also directly select on the item to open it.  
If the item selected to view is a tag, it opens in the *Summary View*.
3. If you select to view a 2D Diagrams and Documents View document, it opens in the *Document View*.  
You can change the view mode from *Document View* to *Summary View* using the  **View** option.

## Saving a Search

Saving a search enables you to retrieve the search results, based on a criteria of any previously executed search. Using the **Save Search** option, you can save the search results for a specific search criteria.

**Note:** To save a Search, ensure you are in a role that has the **CreateAdvancedFind** right, such as **Core Team Admin** or **Power User**.

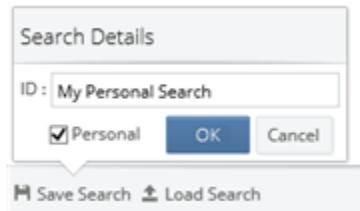
To save a search:

1. In the bottom-left of the *Search Panel* displaying the search results, select  **Save Search**.  
The **Search Details** window appears.
2. Enter a **Name** for the search results you want to save, and then select **OK**.  
A message appears confirming the Save Search success.

## Saving Personal Searches

If you have the **CreateAdvancedFind** permission, you can create **Advanced Searches**, **Save Searches** and manage the **Saved Searches**.

You can also save a search as **Personal**, which means the search can only be viewed by the author of the Saved Search.



If the **Personal** checkbox is not selected, then the **Saved Search** becomes **Public** and all users can view it.

The **Load Search** panel shows all of the Public Saved Searches and all of your Personal Saved Searches.

## Managing Saved Searches

You can use the **Manage Saved Searches** panel to modify multiple Saved Searches at once.

The **Type** column in the panel differentiates the **Personal** searches from the **Public** searches.

Icon	Description
	Represents a Personal Saved Search
	Represents a Public Saved Search

The screenshot shows the 'Manage Saved Searches' interface. It displays a list of saved searches with columns for the search name, owner, and various actions. A context menu is open over the 'All Cables' entry, showing options to set it to personal, public, or clear selections. The 'Manage Searches' button in the toolbar is also highlighted.

The following table lists the various operations that you can perform using the **Actions...** menu on the panel:

Use this option	To do this
Set to Personal	To set multiple Public Searches to Personal
Set to Public	To set multiple Personal Searches to Public
Clear Selections	To clear all the selections made in the Manage Saved Searches panel

**Note:** If you have the **CreateAdvancedFind** permission, you can set a **Public** search as a **Personal** search, after which the search is visible only to yourself.

#### Filtering Saved Searches by Type

You can use the filter icon in the **Manage Saved Searches** panel to filter the searches based on their types – **Personal** or **Public**.

The screenshot shows the 'Manage Saved Searches' interface. At the top right is a 'Actions...' button with a dropdown menu containing 'All', 'Personal', and 'Public' options. Below this is a table with five rows, each representing a saved search. The columns are 'Name' (checkbox), 'Owner' (user icon), and three icons for 'Personal', 'Public', and 'Delete'. The rows are: 'All Cables', 'All Documents', 'All Equipments', and 'All Lines'. At the bottom left are 'Save Search', 'Load Search', and 'Manage Searches' buttons.

Selecting the filter icon shows the three options: **All**, **Personal**, **Public**.

**Note:** When filtering on the Personal Saved Searches, the **Set to Personal** option in the **Actions...** menu is not visible. When filtering on the Public Saved Searches, the **Set to Public** option in the **Actions...** menu is not visible.

### Deleting a Saved Search

The **Manage Search** option enables you to delete a saved search.

**Note:** You must have appropriate rights to delete a search.

To delete a saved search:

1. In the **Manage Saved Searches** panel, select to delete the saved search. A message confirming **You are about to delete the Saved Search: <Search Name>. Do you wish to continue?** appears.
2. Select **OK** to delete. Select **Cancel** if you do not want to **Delete**.

### Execute an Advanced Search

The *Advanced Search* functionality enables you to filter your search results, based on the criteria that certain users (with appropriate rights) have created for others to execute. The criteria can be:

- Constituent class of the Items
- Attribute relationship between Items
- Lifecycle status of the Items
- Attributes of related Items

If you do not know the exact attribute value to filter your search results, you can enter an alphabet or wildcard character, and get a list of all the available values, starting with the entered term.

When a **Related Item** criteria is used, matches are made against the related objects, but the source objects are displayed in the results.

The **Like** operator has an implied wildcard on the end of the filter. For example, Like=A is interpreted as Like=A%.

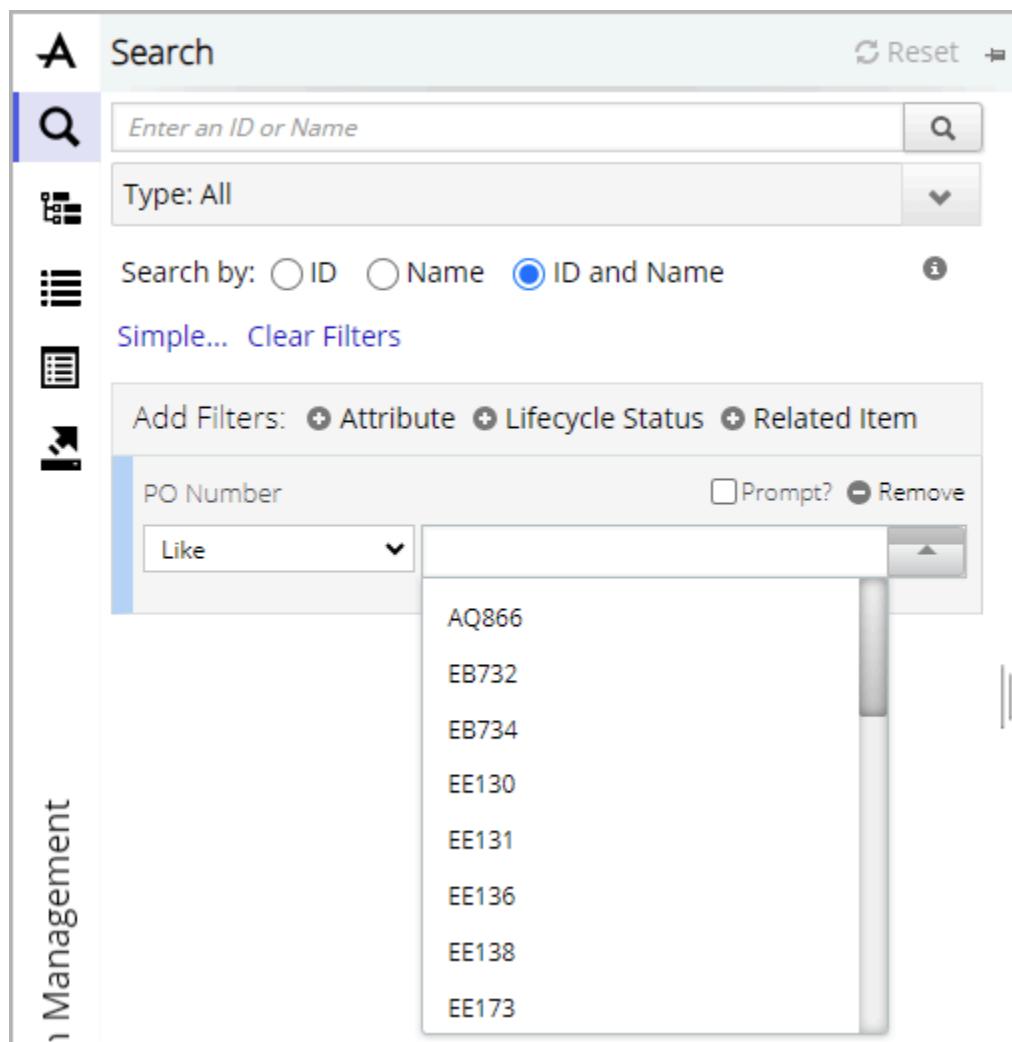
When the **Not** option is used on a **Related Item** criteria, the logic applied is NOT (association AND related type AND filter).

To execute an **Advanced Search**:

1. In the *Global Navigation Panel*, select .

The **Search Panel** opens, displaying an option under the **Search** box, to toggle between *Simple Search* and *Advanced Search*.

2. Select [Advanced...](#).
3. If you want the ID or name of the search filters to be displayed, select **Prompt**.
4. In the **Add Filters** pane, select  for each filter to add a filter criteria.
5. In the drop-down box for each filter, type an alphabet or a wildcard character, and then select the arrow. All the available filter criteria appear in a scrolling list.



6. Select a filter criteria, and then select .

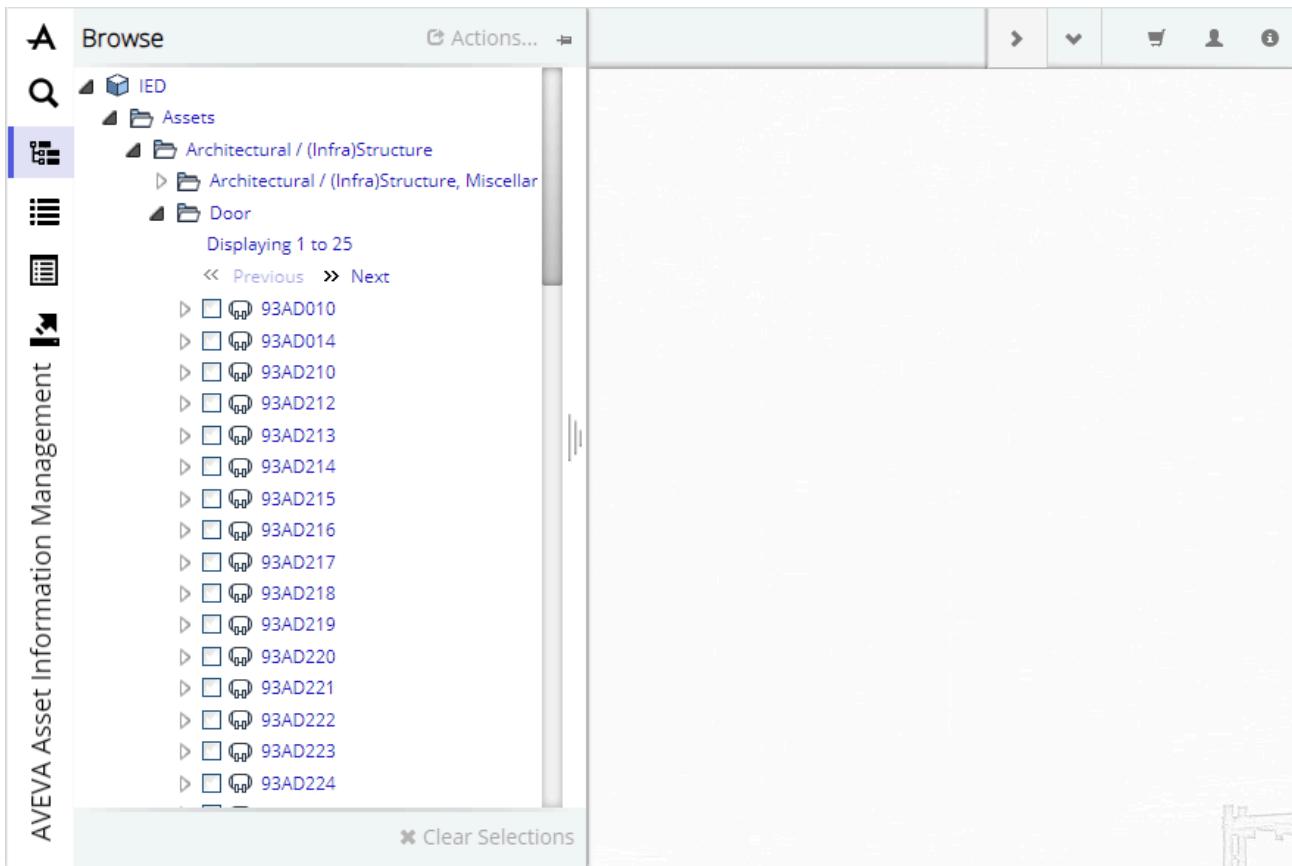
The search results are displayed in a list.

## Use Browse

The *Browse* functionality enables you to find information by navigating through the root nodes, and expanding the breakdown nodes. It helps you to instantly retrieve inter-related or independent documents, Items, or tags, without the need to specify any search criteria.

To use *Browse*:

1. In the **Global Navigation Panel**, select  .  
The *Browse Panel* opens, docked in Dashboard.
2. In the *Browse Panel*, select to expand the root node, and then select a breakdown node.  
The node expands, displaying tags, items and documents under the respective folder.
3. Select **>> Next** to view more objects, or **<< Previous** to go back.



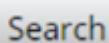
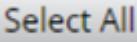
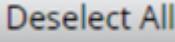
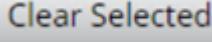
## Use Query Forms

The *Query Forms* enable you to:

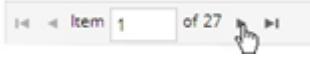
- Find information, using a form-based search mechanism.
- Further your advanced search through the database.
- Define criteria and modify it, while executing searches.

- Generate search results, listing the data related to one or more item in the database.

The following command buttons appear in the *Query Form*:

Selecting	Enables
	Executing search based on the criteria selected and entered in the box.
	Returning to the search criteria used, after the search result appears in the search criteria box.
	Auto-selecting all the search criteria check boxes.
	Deselecting all the search criteria check boxes.
	Clearing a selected search criteria check box.

The Query Form search results display the following icons:

Icon	Functionality
	Indicates the existence of multiple search results, related to a search criterion. Selecting this icon enables you to view a list of search results.
	Indicates clashing search result values, as the search criterion is fetching results of multiple datasets with differing or missing values. Selecting this icon enables you to view a list of datasets containing your search criterion and their respective values. <b>Note:</b> Clashes are case-insensitive.
	Opens the Summary View of the search result item, corresponding to the search ID.
	Enables navigating through the search results, beyond the first record of the search result displayed in the search criteria box. Displays the total number of search result records, and the record under viewing in an instance. Selecting the backward arrows enables returning to

Icon	Functionality
	the previous, or first search result record. Selecting the forward arrows enables navigating to the next, or last search result record. Entering a specific record number in the <i>Item</i> box enables viewing the record instantly in the <i>Query Form</i> .

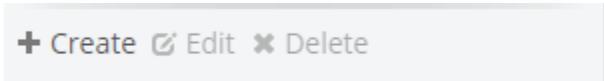
## Create Query Forms

To create a **Query Form**:

1. Ensure that you have got the **QueryFormCreation** permission.
2. Select the **Query Forms** icon in the **Global Navigation Bar**.



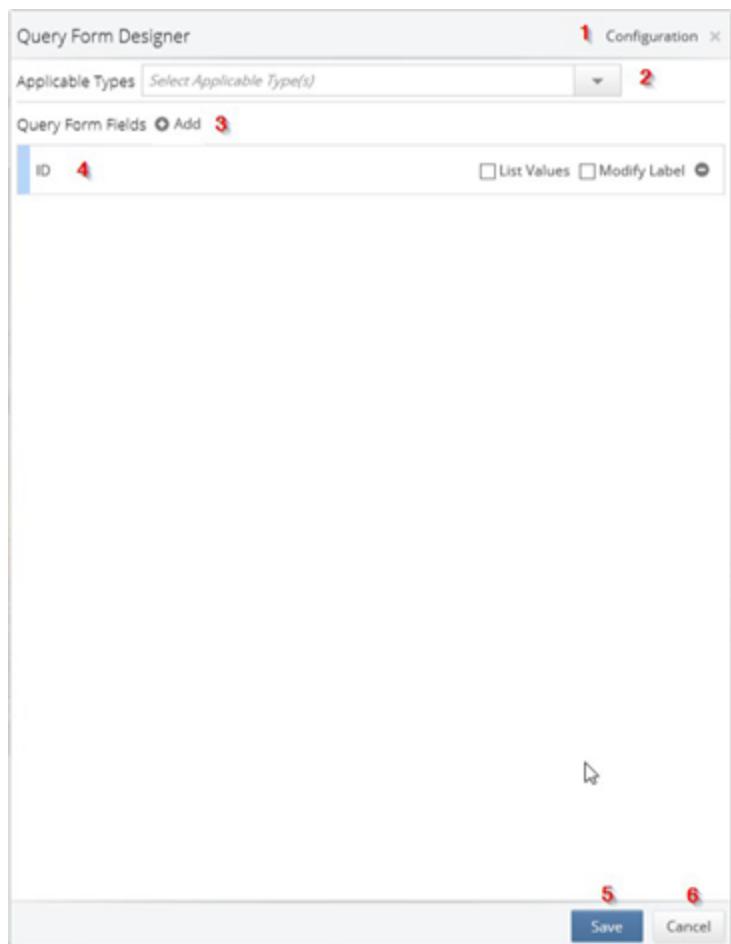
3. Select the **Create** button from the bottom of the **Query Form** dialog.



The **Query Form Designer** appears.

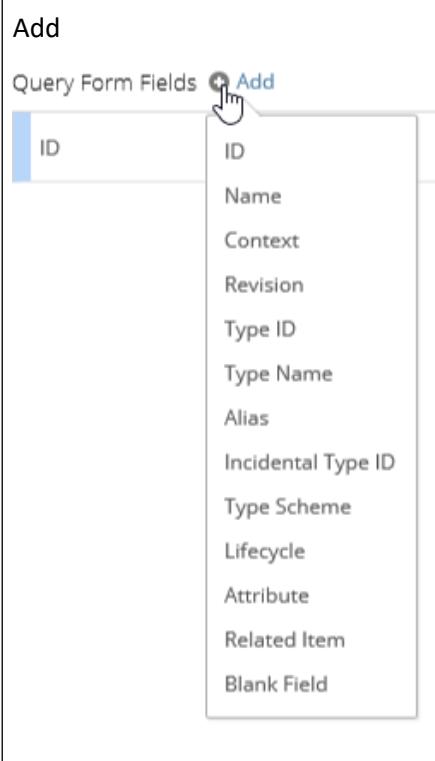
## Knowing the Query Form Designer

The **Query Form Designer** is a web-based tool built into *AIM Dashboard* that allows those with the appropriate permission to create pre-defined searches based on certain applicable types.



The following table describes the various buttons or elements available on the Query Form Designer:

Icon	Description	Function												
1	<p>Configuration</p> <table border="1"> <thead> <tr> <th>Specification</th><th>Description</th></tr> </thead> <tbody> <tr> <td>No. of Columns</td><td>The number of columns shown in the Form View</td></tr> <tr> <td>Ignore Empty Values</td><td>If this check box is selected, then the clash should not occur and empty values must be ignored.</td></tr> </tbody> </table>	Specification	Description	No. of Columns	The number of columns shown in the Form View	Ignore Empty Values	If this check box is selected, then the clash should not occur and empty values must be ignored.	<p>Enables you to set specific options for this Query Form.</p> <table border="1"> <thead> <tr> <th>Specification</th><th>Description</th></tr> </thead> <tbody> <tr> <td>No. of Columns</td><td>The number of columns shown in the Form View</td></tr> <tr> <td>Ignore Empty Values</td><td>If this check box is selected, then the clash should not occur and empty values must be ignored.</td></tr> </tbody> </table>	Specification	Description	No. of Columns	The number of columns shown in the Form View	Ignore Empty Values	If this check box is selected, then the clash should not occur and empty values must be ignored.
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No. of Columns	The number of columns shown in the Form View													
Ignore Empty Values	If this check box is selected, then the clash should not occur and empty values must be ignored.													

Icon	Description	Function
		<p>Compare as Numbers</p> <p>If this check box is selected, then the clash does not occur for 3.6 and 3.60 as both are considered as identical.</p> <p>For numbers, leading and trailing, spaces and zeros (trailing when after the decimal point) are ignored and if a number match is made, then no clash occurs.</p>
2	Applicable Class Types	Enables you to select the classes of objects this Query Form should apply to.
3	<p>Add</p>  <p>The screenshot shows a 'Query Form Fields' dialog box with an 'Add' button. A mouse cursor is hovering over the 'Add' button. Below the button is a list of field types: ID, Name, Context, Revision, Type ID, Type Name, Alias, Incidental Type ID, Type Scheme, Lifecycle, Attribute, Related Item, and Blank Field.</p>	Selecting this displays a list of possible field types that can be added to the Query Form.

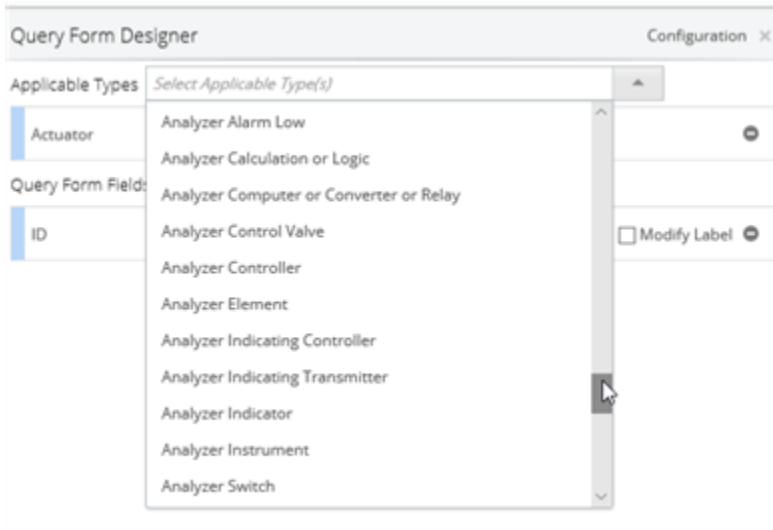
Icon	Description	Function
4	Default field	One default field is always added to a Query Form (ID). ID is the tag, document ID or other identifier used to uniquely identify an object within AIM. When you select the ID fields in a Query Form, they open a new tab within AIM Dashboard.
5	Save	Selecting this opens the <b>Save</b> Dialog.
6	Cancel	Selecting this closes the Query Form Designer without saving.

### Selecting Applicable Classes

You must select the type of objects that the Query Form should search.

To select the applicable classes for a Query Form:

1. Select the **Applicable Types** drop-down list to see all possible class types.
2. Select the appropriate class type (for example, Equipment) from the list of values.



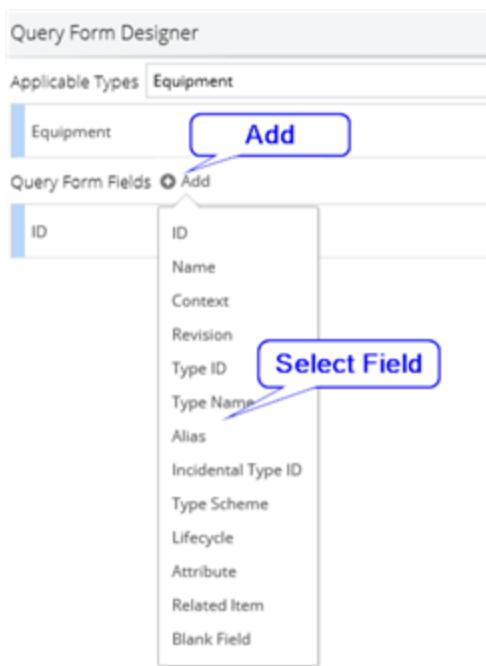
After a class has been selected, you may add others by choosing the next from the list of **Applicable Types**.

To remove a class, you may select the symbol to remove it.

### Adding Fields to a Query Form

To add a field to the query form:

1. Select the **Add** button to display possible field types.



The following table lists the **Query Form Fields** and their descriptions.

Query Form Fields	Description
ID	Object identifier which will be selectable and will open in a new tab.
Name	The object's name
Context	The object's AIM context
Revision	The object's revision label
Type ID	The object's type identifier
Type Name	The object's type name
Alias	The object's aliases
Incidental Type ID	The type ID for its incidental class.
Type Scheme	The scheme type
Lifecycle	The object's current lifecycle
Attribute	An attribute to display
Related Item	Display a related item (if present)
Blank Field	A blank space

2. After you have added a field type, it places a new field onto the **Query Form Designer**.

3. To remove a field type, select the  symbol next to it.

Every field has a label. The default label is always the individual field types identifier. For example, ID is always default to the text ID. However, you can change the label.

4. To do the label, select the **Modify Label** checkbox.

After that, the label becomes editable.



Depending on the type of field, there may be different options, as described in the following table:

Options	Description
List Values	Populates a drop-down list of values.
Modify Label	Enables you to change the displayed label.
Match All	<p>Verifies the values of all the attributes with this name that belong to an object and its datasets, and only produces a match if they all have the same value.</p> <p>For example, use this option to find all objects where the attribute does not yet have a value either on the object or in any of its dataset by specifying an empty value and the Match All option.</p>

**Note:** Different Field Types may ask for additional information.

## Lifecycle

**Lifecycle** requires the selection of a lifecycle group.



## Attribute

**Attribute** requires selecting the source of the attribute. **Item** is the currently selected object's own attributes, otherwise you must select a dataset that may be attached to the class object in which the attribute exists. Then you must select the individual attribute to display.

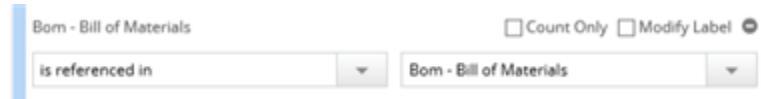
In the following example, the item's own attribute is being returned and the attribute is **Action**.



## Related Item

**Related Item** requires selection of an association type and a class of object that may be related to the current class. You will then be asked to add fields from the associated object class to display.

The **Count Only** checkbox enables you to return only the number of results rather than the values.



## Saving the Query Form

After the query form has been built to your specifications, you can save the query form.

To do so:

1. Select the button to open the **Save Query Form** dialog.



**Note:** The **Type** cannot be changed.

2. Type a unique **ID** for this query form. This is required.
3. Type a **Name** that will represent this query form in the list of Query Forms. This is optional.
4. In the **Description** text box, type a short description about this query form and its purpose. This is optional.
5. Select the button to complete the save action.

## Execute a Query Form Search

You can execute a Query Form search by entering the search criteria in the fields configured by your System Administrator. You can also include wildcard characters in the search criteria. By default, a Query Form opens under the Form View tab. Selecting the Table View enables you to view the search results in a table. For more details about the Table View, see the *Changing Search Results View to Table View* section in this topic.

When a **Related Item** criteria is used, matches are made against the related objects, but the source objects are displayed in the results.

The **Like** operator has an implied wildcard on the end of the filter. So, for example, Like=A is interpreted as Like=A%.

When **Match All** is selected in the **Query Form Designer**, then, at execution time, all associated Datasets that have that attribute are searched and all of these attribute values must match the value given in the search criteria.

When **List of Values** is selected in the **Query Form Designer**, then, at execution time, a list of all the values is provided.

To execute a Query Form search:

1. In the *Global Navigation Panel*, select .

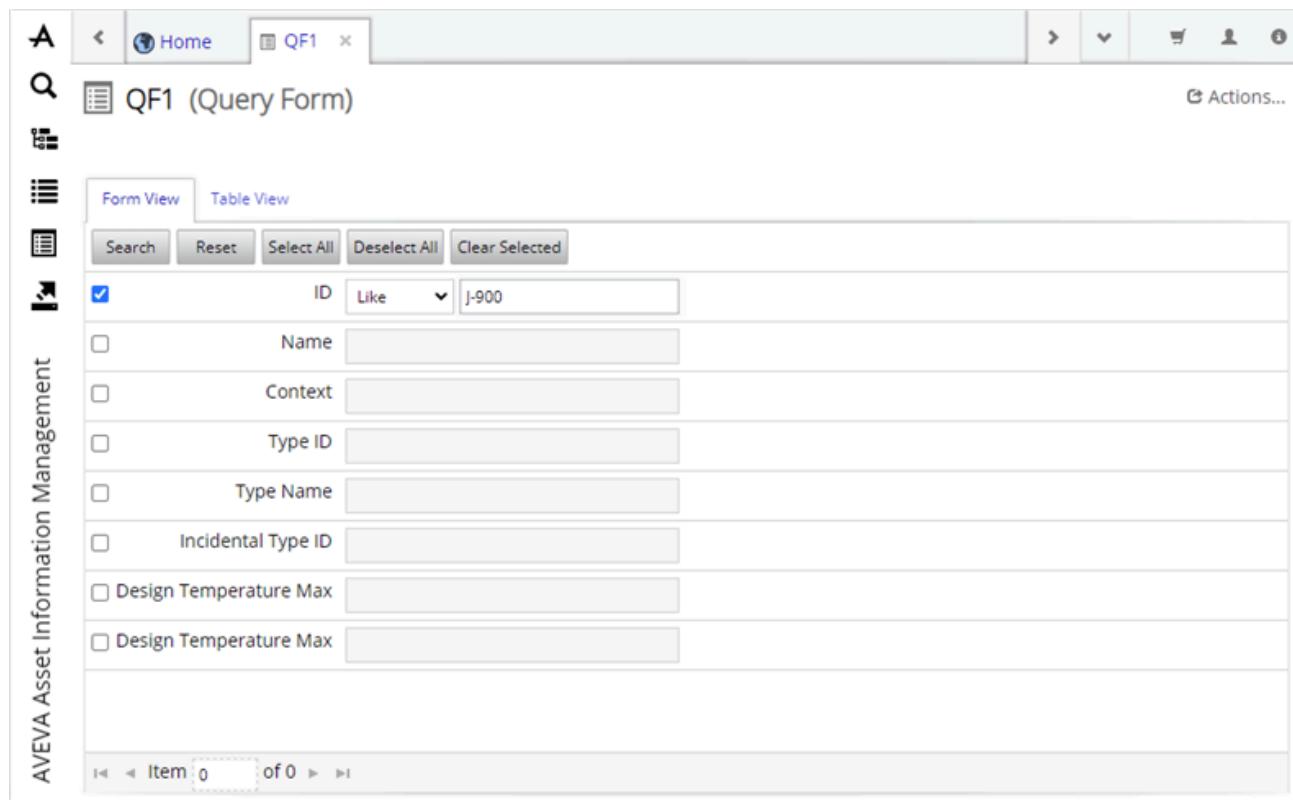
The *Query Forms Panel* opens, displaying all the pre-configured Query Forms.

2. To open a Query Form, select its name.

The Query Form of the selected name opens.



3. Select the search criteria check box, enter a keyword or wildcard character in the box.



The screenshot shows the 'QF1 (Query Form)' search interface. The search criteria section includes a checkbox for 'ID' set to 'Like' with the value 'J-900'. Other fields like 'Name', 'Context', 'Type ID', 'Type Name', 'Incidental Type ID', 'Design Temperature Max', and 'Design Temperature Min' are listed with their respective search checkboxes. The interface has a toolbar with icons for Home, Actions, and other functions. The left sidebar displays 'AVEVA Asset Information Management'.

4. Select  to see the most closely-matched search results.

5. In the **Form View**, select .

The item opens in the *Summary View*.

6. To view the next search result, select .

The search result appears in the search criteria box used while executing search.

7. To view the previously viewed search results, select the backward arrows.

### Changing Search Results View to Table View

After executing a Query Form search, selecting the **Table View** tab enables you to view the search results in a tabular format (printer-friendly view). Each row in the table represents a search result.

From the **Table View** tab, you can do the following tasks with the selected search result items:

- Open
- Add to
- Sets
- Baskets
- Export Items
- Export All Items
- Print

### Query Form CSV Export

While performing a CSV Export of the Query Forms, you must configure the following details as part of the Export Definition:

**Primary data separator:** This is the character (or characters) that will separate the columns of data in the CSV file.

**Secondary data separator:** Columns might contain many values. For example, in the Object aliases column, if one of the items in the Search results is 'V-2', then the aliases for this item could be 'SRP|VPD|/V-2' and 'SRP|PDS|Valve-2'. In the CSV file, the secondary data separator in the Object aliases column would separate these two values.

**Include Clash Information:** When choosing the primary and secondary data separators, you must ensure that the actual values that appear in the columns in the CSV file do not contain either of these separators. In this case, the user should choose a different separator and export the data again.

Selecting this option includes information at the bottom of the CSV file about any clashes detected during the creation of the file where values did contain instances of either of the separators. The line number (in the file) and the column number of any clashes are given. If no clashes were detected, then no clash information is included in the file.

**Include Column Header Information:** Select this option if the user would like an initial record in the CSV file that contains a header for each column. Selecting this option causes additional fields to be made visible on the page where the user can insert the header text for each column. If the user leaves a field blank, then a system defined header will be used which is based on the column type. A text box with the text "UOM" will be displayed next to the attribute field when this option is selected, and a Property is added in the User Defined Columns section of the Export Search Results Screen.

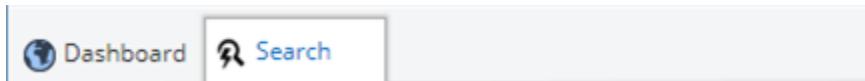
**Format for Excel:** Select this option if the user intends to view the downloaded CSV file using Microsoft Excel. Using this option prevents Excel doing its own (sometimes misleading) interpretation of the CSV data.

## Use Faceted Search

This section provides detailed description of the faceted search functionality.

### The Search Tab

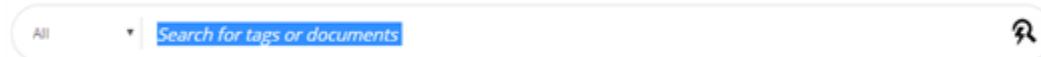
Faceted search provides a static tab named **Search**.



**Note:** The **Search** tab is only visible to an AVEVA AIM *Dashboard* user if the Faceted Search feature is enabled in their environment.

To initiate a search request:

1. Specify the search term in the search textbox.
2. Select the search icon present on the right of the textbox or press **Enter**.



3. To refine your search, you can select a high-level category – **Tags**, **Documents** and **All** – from the dropdown list.



**Note:** Selecting **All** means searching both Tags and Documents.

After a search request is issued, the search window is updated.

The search window is divided into three main sections:

Facet pane – displays names of all attributes and their values for the search criteria.

- Search results pane – displays the results for the search criteria.
- Attributes pane – displays names of the attributes and their values for a specific object.

The screenshot shows the AVEVA Asset Information Management software interface. The top navigation bar includes 'Home' and 'Search' buttons. Below the navigation is a search bar with the placeholder 'Type' and a dropdown menu set to 'j-9002'. To the right of the search bar is a magnifying glass icon.

The main area displays a search results grid for 'Pump' assets. Each result row contains a checkbox, the asset ID ('j-'), the full ID ('Asset\Visualization | ID | TAG |'), the type ('Pump'), and the name ('DEETHANIZER REFLUX PUMP').

	Full ID	Type	Name
<input type="checkbox"/>	j-9002-A-HDA	Pump	DEETHANIZER REFLUX PUMP
<input checked="" type="checkbox"/>	j-9002B	Pump	CLIC4 SPLITTER REFLUX PUMP
<input type="checkbox"/>	j-9005B	Pump	CLIC4 SPLITTER REFLUX PUMP
<input type="checkbox"/>	j-9002A	Pump	DEETHANIZER REFLUX PUMP
<input type="checkbox"/>	j-9005A	Pump	CLIC4 SPLITTER REFLUX PUMP
<input type="checkbox"/>	j-9002-B-HDA	Pump	DEETHANIZER REFLUX PUMP

On the left side of the screen, there is a sidebar with various filters and search fields:

- Area:** No Value (0), DE (0), PS (0)
- Circuitry:** No Value (0), No Value (0)
- Manufacturer:** AGO Pump (0), No Value (0)
- ModelNumber:** 473603-24 (0), 473604-12 (0), No Value (0)
- PONumber:** System, VendorName
- System:** No Value (0), No Value (0)
- VendorName:** AGO Supplier (0), No Value (0)

At the bottom of the search results grid, there are buttons for 'Showing 1-4 of 4', 'Previous', and 'Next'.

On the right side of the screen, there is a detailed view of the selected asset 'j-9002B':

Master Dataset	j-9002B
Area	DS
BSLevel0	Asset\Visualization
BSLevel1	
BSLevel2	
BSLevel3	BS3
Context	BS3
Circuitry	3
Description	DEETHANIZER REFLUX PUMP
Tag[EquipmentTechnician]	j-9002B
BSLevel4	Asset\Visualization
BSLevel5	
BSLevel6	
BSLevel7	
Bore - millimetre	
Context	BS3
Description	DEETHANIZER REFLUX PUMP
Duty	Not Set
Tag[EquipmentTechnician]	j-9002B

4. To view the search results beyond the first 50, select **Next**.

Showing 1 -50 of 927 Previous Next

## Wildcard Searches

Wildcard searching enables you to enter a search term that matches any characters.

You can use an asterisk character (\*) to specify a wildcard, which will match zero or more characters.

For example, "test\*" will match any word that starts with "test", such as "test", "test1", "testable".

However, it is NOT recommended to start a search term with a wildcard, for example "\*test", because it may impact the performance of the search operation.

## Search for a Phrase

To search for exact phrases present in tag or document data, enclose the search term within double quotes.

As shown in the following screenshot, the "ball valve" search term is enclosed within double quotes so the search results get only those values in which the whole phrase "ball valve" appears:



**Note:** Currently, it is NOT recommended to use a wildcard character (\*) inside a search phrase as it may lead to unpredictable results. Also, currently, when using a search phrase, the ordering based on relevance of individual fields is not supported.

## Compound Searches

Compound searches enables you to provide multiple search criteria within a single search term by using the plus character (+) and the vertical bar character (|). A + provides an AND operation. A | provides an OR operation.

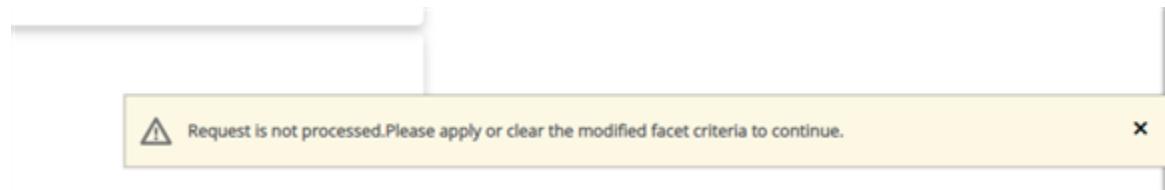
Currently, search terms support either + or | but not both at the same time.

For example, consider the case where you need to search for the exact phrase "ball valve" and results must mention the word "pump". The search term would be "ball valve" + pump.

The screenshot shows a search interface with a search bar containing the query "Tags \* ball valve\* + pump". Below the search bar, it says "Found 66 results". On the left, there are facet filters for "Area", "Manufacturer", "Vendor", and "System". A detailed result card is shown for item "BV-4550-23", which includes "Full ID: BV-4550-23", "Type: Ball Valve", and "Name: Ball Valve, Cooling Medium Pump Drain".

## Warning

If a search response has more than 50 records (and the **Next** button is visible) and you modify the facet filter criteria but do not select **Apply**, then, a warning message will be displayed and the pagination will not happen:



If you have searched for "pump" in the Tags category and selected **Apply**, but now you change the search term to "pumps12", without searching or applying, and then try to load more facets or navigate to the next page, then the search text would be modified back to "pump". This is because you did not apply the modified search term "pumps12" and the actions that you are performing now are based on the results that came when you searched for "pump".

## Search Categories

Faceted search enables you to search for any specific term which can appear in any of the below mentioned fields with respect to the category.

## Search for Tags

The search term entered in the **Tags** category will be matched against the following fields, in the given order of importance, for all tags in the system:

1. Tag name
2. Tag ID
3. Class name

Therefore, if the search term matches the tag name of a specific tag, then it will be considered as more relevant to the user when compared to other search terms, such as Class Name.

## Search for Documents

The search term entered in the **Documents** category will be matched against the following fields, in the given order of relevance, for all documents in the system:

1. File content
2. Document name
3. Document ID
4. File ID
5. Document type (class name)

The relevance order is used in calculating the relevance of a result.

## Search Tags and Documents (All)

The search term entered in the **All** category will be matched against the **Tags** and the **Documents** fields as mentioned previously.

As shown in the following screenshot:

- The search term "pacpp" will be searched in both the **Tags** and the **Documents** categories.
- The results shown match either tags or documents.

The screenshot shows the AVEVA Asset Information Management interface with a search bar at the top containing the term "pacpp". The search results are displayed in a grid format. The results are categorized into two main sections: "Tags (1)" and "Documents (3)".

- Tags (1):**
  - pacpp - Full ID: AssetVisualisation|ED|IED
- Documents (3):**
  - IED**
    - Full ID: AssetVisualisation|ED|IEDEquipmentList
    - File ID: IED\_EquipmentList.xlsx
    - Type: Es - List
    - Content: 0-30-A0-D0 100 40-RV-90010-BPL3 PIPELINE Schematic Dept PID-905675, PID-905681 RAH Process 0-20-A0-D0, 0-05-A0-D0 100 50-90623-88U3 PIPELINE Schematic Dept PID-905675, PID-905680 RCH 0-30-A0-D0 100 80-0-8000-AA83 PIPELINE Schematic Dept PID-905675, PID-905680 RAH Process 0-20-A0-D0
  - IEDPipeList**
    - Full ID: AssetVisualisation|ED|IEDPipeList
    - File ID: IED\_PipeList.xlsx
    - Type: Es - List
    - Content: 0-30-A0-D0 100 40-RV-90010-BPL3 PIPELINE Schematic Dept PID-905675, PID-905681 RAH Process 0-20-A0-D0, 0-05-A0-D0 100 50-90623-88U3 PIPELINE Schematic Dept PID-905675, PID-905680 RCH 0-30-A0-D0 100 80-0-8000-AA83 PIPELINE Schematic Dept PID-905675, PID-905680 RAH Process 0-20-A0-D0
  - PIDIED905678**
    - Full ID: AssetVisualisation|ED|PIDIED905678
    - File ID: PID-905678.xsg
    - Type: Pd - Pid
    - Name: PID Drawing PIDIED905678
    - Content: Jeremy.Calla 12/12/2013 9:03:00 AM 21 90-A0-5678 NTS L-8020 L-8020/N1 80 L-8020/N2 80 L-8020/N3
  - PIDIED905681**
    - Full ID: AssetVisualisation|ED|PIDIED905681
    - File ID: PID-905681.xsg
    - Type: Pd - Pid
    - Name: PID Drawing PIDIED905681
    - Content: 2D Drawing PIDIED905681

## Search File Content

A match within the content of a physical file is the greatest factor in calculating the relevance of a result and it

directly affects the order of relevance in the results. The order of relevance is:

- File content
- Document name
- Document ID
- File ID
- Document type (class name)

A match may be derived from each word in the search phrase, as shown in the following example:

**Note:** You can enclose the search phrase in double quotes to get a match for the exact phrase.

## Search Indexing Limitations

The maximum file size enabled for indexing is 2 GB and the file must have one of the following mime types, otherwise the file will not be indexed:

- application/msword
- application/pdf
- application/rtf
- application/vnd.ms-excel
- application/vnd.openxmlformats-officedocument.spreadsheetml.sheet
- application/vnd.openxmlformats-officedocument.wordprocessingml.document
- image/svg+xml
- image/vnd.dgn
- image/vnd.dwg
- text/plain

**Note:** The indexing of files uses the available text within the file and does not include an OCR process.

## Compound Searches

Compound searches enables you to provide multiple search criteria within a single search term by using the plus character (+) and the vertical bar character (|). A + provides an AND operation. A | provides an OR operation.

Currently, search terms support either + or | but not both at the same time.

For example, consider the case where you need to search for the exact phrase "ball valve" and results must mention the word "pump". The search term would be "ball valve" + pump.

Found 66 results

Area	BV-4550-23
Manufacturer	Full ID: <a href="#">BV-4550-23</a>
Vendor	Type: <a href="#">Ball Valve</a>
System	Name: <a href="#">Ball Valve</a> , Cooling Medium <a href="#">Pump</a> Drain

## Facets

Facets are where attribute values are grouped by their attribute names.

For example, if there are tags T1 and T2, T1 has attributes "Manufacturer" and "Area-pump room", and T2 has attributes "Manufacturer" and "Area-machinery", the facet list will appear as:

- Manufacturer (2)
- Area-pump room (1)
- Area-machinery (1)

The following are the facet views that you can see when searching for data using categories ([All](#) | [Tags](#) | [Documents](#)).

For **All**, the facet view will have an aggregated count of tags and documents, which match the specified search term.

Found 1007 results

All  
[Tags \(927\)](#)  
[Documents \(80\)](#)

The values are hyperlinks and selecting a value will help you navigate to the respective category.

See the following example of Tags facets:

The screenshot shows the search interface with four facets:

- Manufacturer:** testmanufacturer1 (1), testmanufacturer10 (1), testmanufacturer100 (1), testmanufacturer101 (1), testmanufacturer102 (1), testmanufacturer103 (1), testmanufacturer104 (1)
- Vendor:** fgfdhgddg345454 (1), vendor1 (1), vendor10 (1), vendor100 (1), vendor101 (1), vendor102 (1), vendor103 (1)
- System:** PX->CO2: CO2 REMOVAL (414)
- Criticality:** 10 (1), 100 (1), 101 (1), 102 (1), 103 (1), 104 (1), 105 (1)

At the bottom are two buttons: **Apply** and **Clear**.

---

**Note:** Only facets with results are shown.

---

## Load More Facets

The system is configured to initially show a maximum of 10 facets sorted alphanumerically.

If available, more facets can be dynamically loaded by scrolling down to the bottom of the list. The text **Loading...** will be displayed.

Found 2018 results

Manufacturer

- testmanufacturer10 (1)
- testmanufacturer100 (1)
- testmanufacturer101 (1)
- testmanufacturer102 (1)
- testmanufacturer103 (1)
- testmanufacturer104 (1)
- testmanufacturer105 (1)
- testmanufacturer106 (1)

Loading...

To search for the attribute value, type in the text box provided under each facet.

For example, enter "baldor" to find the "Baldor" value.

Manufacturer

- Baldor (248)

---

**Note:** The search term is case-insensitive.

---

## Facet Filter

Faceted search enables you to further narrow down the search results based on the required attribute values.

In the example below, the results are filtered based on the **Manufacturer** attribute having values of "[testmanufacturer1](#)" or "[testmanufacturer10](#)" and with a Vendor of "[vendor10](#)".

When you select **Apply**, the results are updated accordingly.

The screenshot shows the search interface with four facets:

- Manufacturer:** Displays two selected facet values: "testmanufacturer1" and "testmanufacturer10". Below them is a list of facet values:
  - testmanufacturer1 (1)
  - testmanufacturer10 (1)
  - testmanufacturer100 (1)
  - testmanufacturer101 (1)
  - testmanufacturer102 (1)
  - testmanufacturer103 (1)
  - testmanufacturer104 (1)
- Vendor:** Displays one selected facet value: "vendor10". Below it is a list of facet values:
  - vendor1 (1)
  - vendor10 (1)
  - vendor100 (1)
  - vendor101 (1)
  - vendor102 (1)
  - vendor103 (1)
  - vendor104 (1)
  - vendor105 (1)
- System:** No facet values are listed.
- Criticality:** No facet values are listed.

At the bottom are two buttons: **Apply** (blue background) and **Clear**.

Selecting **Clear** removes all the selected facet values and takes you back to the full list.

---

**Note:** The **Apply** button is enabled if there is at least one selected or modified facet value. The **Clear** button will be enabled if there is at least one filter applied.

When selecting the "X" next to an attribute, it removes the search criteria (update with the **Apply** button).

The facets that are shown to you are strongly coupled with the search results and applied filter criteria (if any). if you do not see all the facets in the system, you must do one of the following:

- clear the facet criteria applied
- modify the criteria by clearing the checkbox
- closing the filter cards as needed

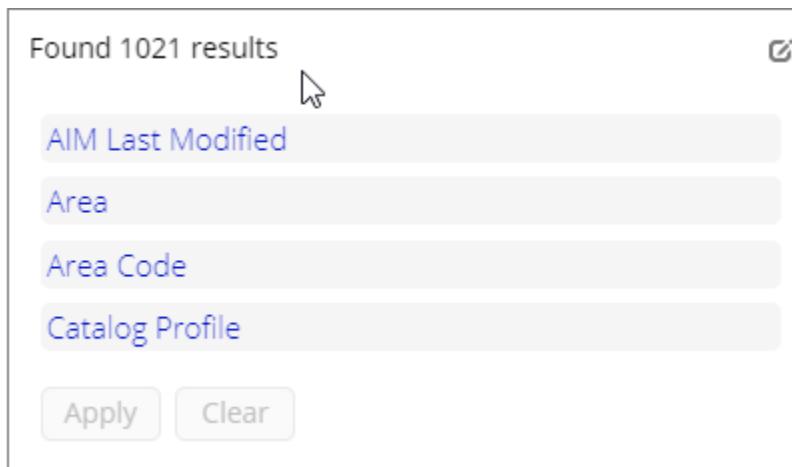
---

**Note:** Facets are combined with an AND operation, for example, Manufacturer and Vendor. Attribute values within a facet are combined with an OR operation, for example, testmanufacturer1 or testmanufacturer10.

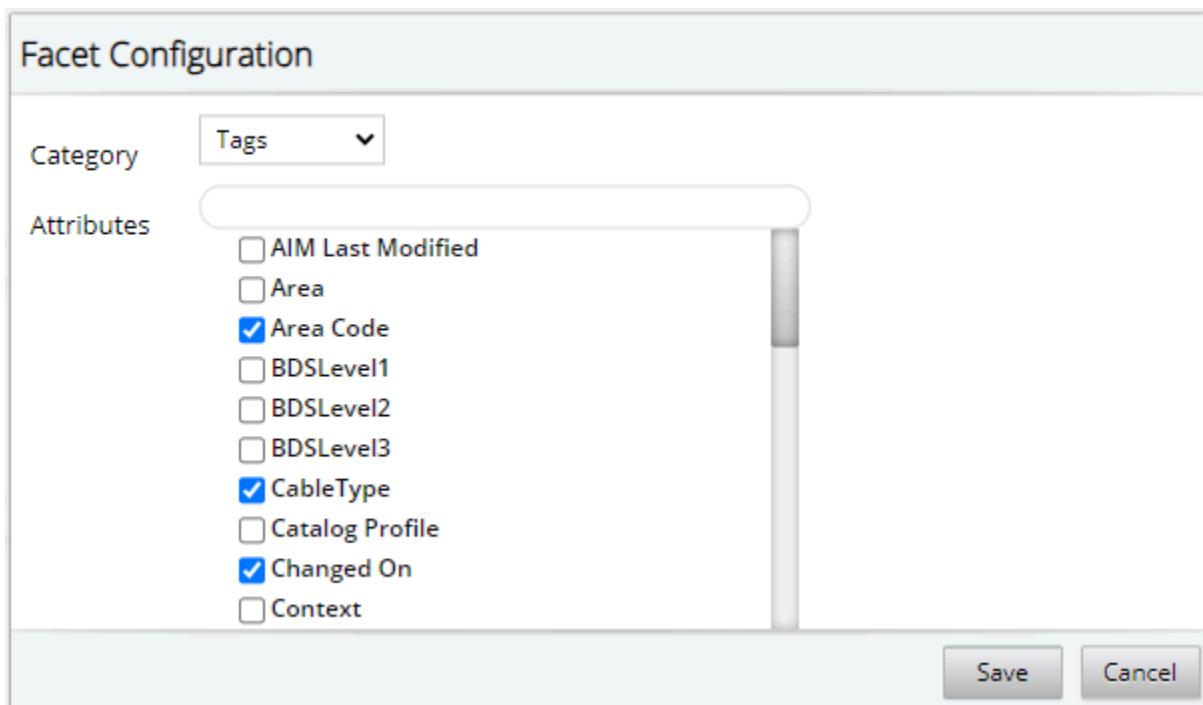
## Facet Configuration

After running a search, if a user is in the **Core Team Admin** role, and selects **Tags** or **Documents** at the top of the

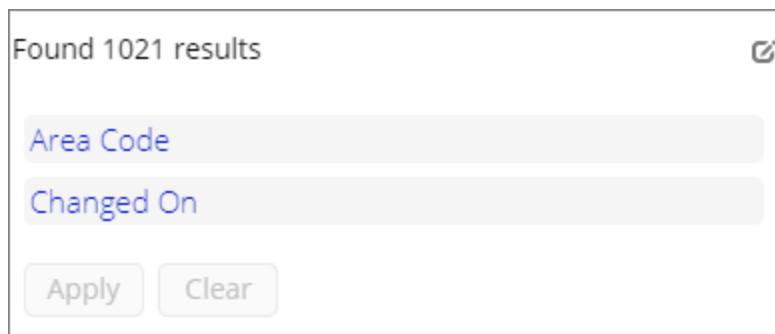
search page, a **Configure facets** icon  will be available in the results panel.



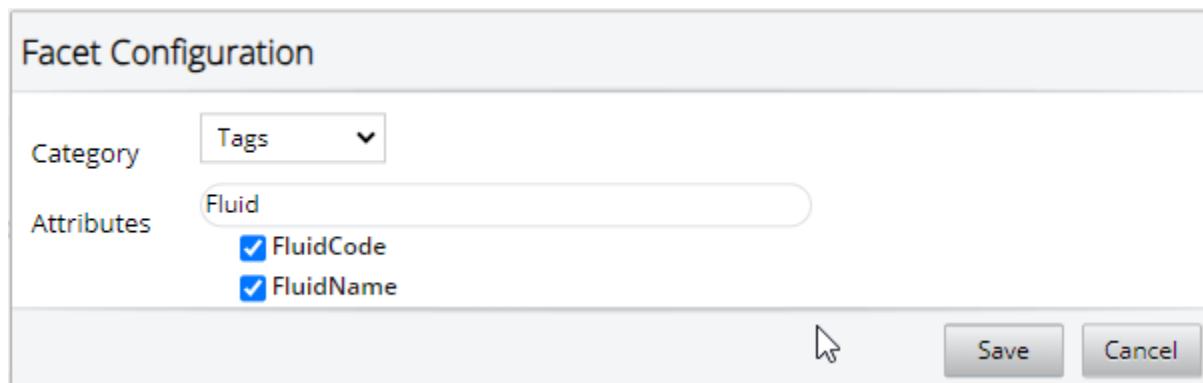
Selecting the icon will show a dialog that allows the user to add and remove **Attributes** for each **Category** selected. For example, set the category to **Tags** and choose the following three attributes. Select **Save**.



In this case, facet attributes will be available for any of the three attributes chosen and that have values within the set of search results. So, if there are no results with the CableType attribute, the following two attributes will be listed.



In the **Facet Configuration** dialog, the field at the top of the **Attributes** list allows the list to be filtered. For example:



## Attributes

If an object card is selected, all attributes and their values are displayed in the object's attributes panel on the right of the search window.

**Attributes** are grouped under their data set.

Master Dataset V-5399	
Area	
BDSLevel0	AssetVisualisation
BDSLevel1	
BDSLevel2	
BDSLevel3	IED
Context	IED
Criticality	
Description	

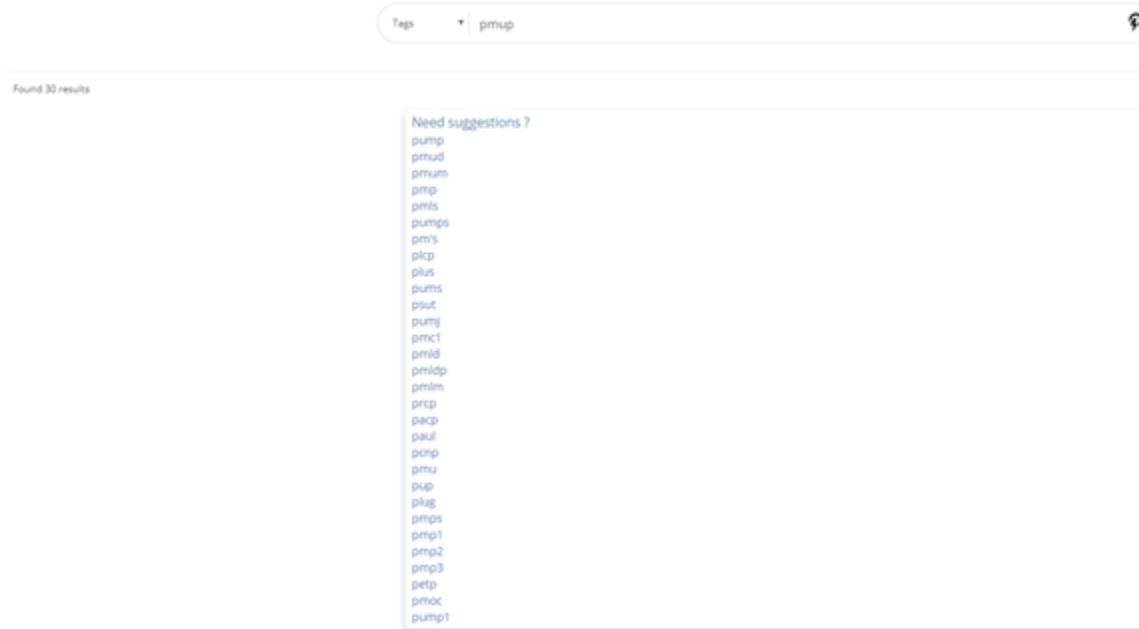
## Suggestions

**Suggestions** is a way of finding similar search values.

You can use this to account for variations or mistakes in spellings. For example, as shown below, if you enter "pmup" instead of "pump", it brings in zero search results along with an option asking you whether you are interested in knowing the possible suggestions for the search term.



If you select on **Need suggestions?**, then suggestions will be retrieved for the text "pmup" as shown in the following screenshot:



## View Information

The information you select to view can constitute a document, item or tag, independent or inter-related to each other. The following sections explain the procedures for:

- [View Tags](#)
- [View Content Cards](#)
- [View 2D Documents](#)
- [View 3D Models using 3DVIs](#)
- [View AVEVA Point Cloud Manager files](#)
- [Highlight Tag IDs from Related Items](#)
- [Expand Tags and Interpolate Them](#)

## View Tags

To view information for a tag, select the tag from the **Browse** tree or from the **Search** results. Its **Summary View** opens displaying the information in the panels configured.

For example, available panels are:

- Details Header
- Attributes panel
- Links panel
- Tags panel
- Equipment panel
- Parts / Components panel
- Documents and 3D Models panel
- Events panel
- Activities / Tasks panel
- Relationship Explorer

---

**Note:** 3D views are not supported on Tag Summary Views.

---

To maximize or minimize a panel, select .

For the **Attributes** panel, attributes can be filtered by typing into the **Filter** text box. And when ticking the **Hide Empty** checkbox, all attribute rows with empty values are removed and the counts on the attribute groups updated accordingly.

For **2D Views**, use the mouse wheel to zoom the document in and out.

## View Content Cards

A **Content Card** displays all the information known about a document or tag.

To open a **Document Content Card**, view a document and select the  icon that appears after the name of the document in the top-left of the document viewer.

To open a **Tag Content Card**, select a hot-spotted tag in the document and the **Tag Content Card** appears in the top-right of the document viewer.

The following table lists the various tabs that can be shown in a **Content Card**.

Properties	Description
Details	Lists the basic information for a tag or document.
Attributes	Lists the attributes and their values for a tag or document. Attribute names can be filtered by typing into the <b>Filter</b> text box. When the <b>Hide Empty</b> checkbox is selected, all attribute rows with empty values are removed and the

Properties	Description
	Counts on the attribute groups updated accordingly.
Related Items	Lists the items associated to a tag or document.
Files	Lists the actual files that can be rendered to display a document (Document Content Cards only).
Contents	Displays the tags that are related to a document (Document Content Cards only).
Related Documents	Lists the documents associated to a tag (Tag Content Cards only).
Views	Displays the external views that can be shown for a document (Document Content Cards only).

An example of a Document Content Card:

The screenshot shows the AVEVA AIM software interface. At the top, there's a navigation bar with icons for Home, Back, and a search bar containing the identifier "100-15A-O-90013-AAB3001". Below the navigation bar is a toolbar with various icons. The main area is divided into sections: "Related Items" on the left, a table for "ERCTION MATERIALS" in the center, and a detailed "Drawing, Isometric" view on the right.

**Related Items:**

- is a part of - (1)
  - Discipline - (1)
    - L
      - Certificate - (14)
      - Datasheet - (93)
      - Drawing / Diagram - (30906)
      - Instruction / Manual - (8)
      - Procedure - (17)
      - Report - (1)
- is fulfilled by - (1)
  - Artefacts - (1)
    - Files - (1)
- references - (3)
  - Duct / Line / Riser / Umbilical - (1)
  - Line - (1)
  - Instrument - (2)
    - Sight Glass - (2)

**ERCTION MATERIALS Table:**

PT NO	COMPONENT DESCRIPTION	N.S. (INS)	ITEM CODE	QTY
	ERECTION MATERIALS			

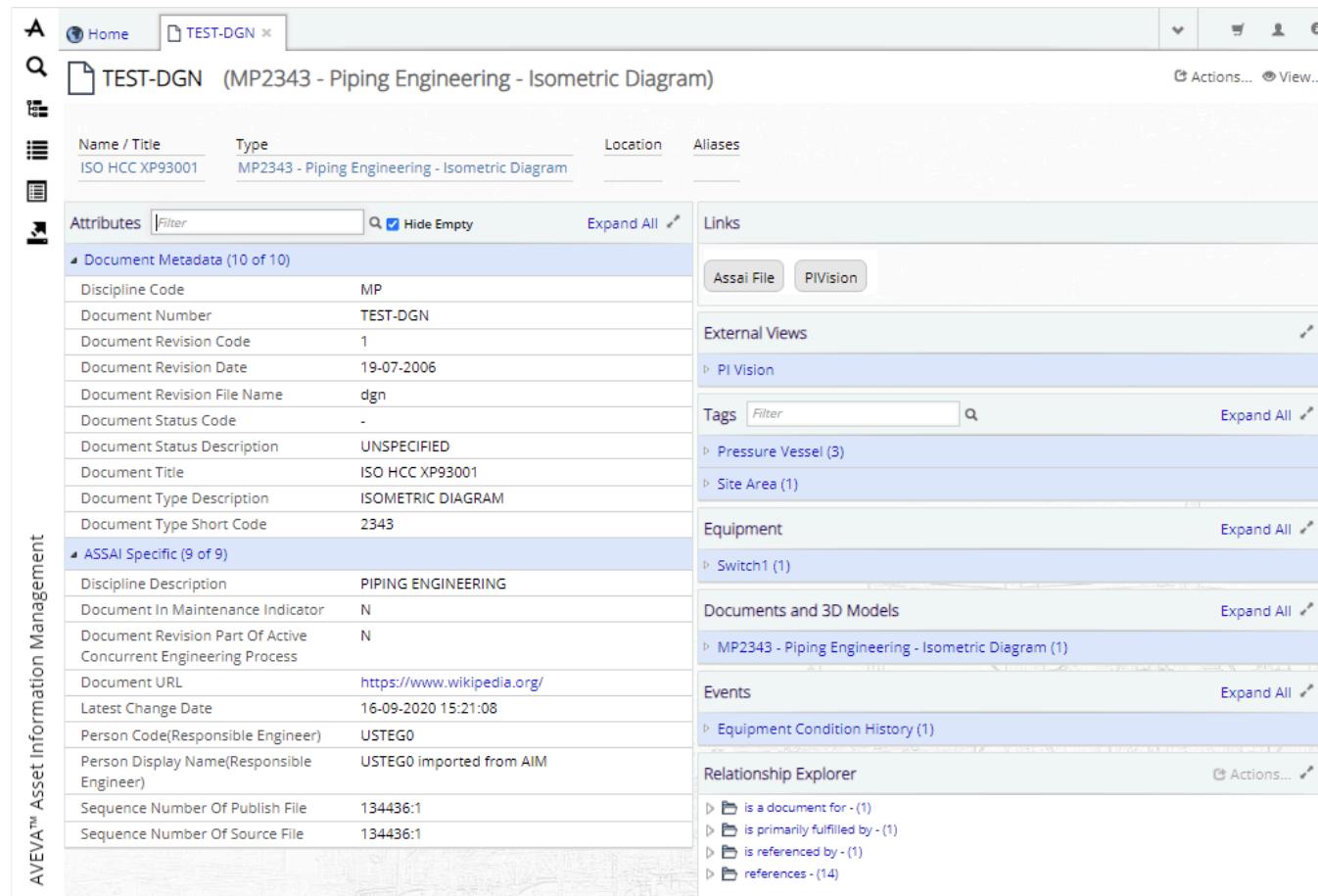
**Drawing, Isometric View:**

The drawing shows a flange assembly with various components labeled with codes like TG-602, F8 G10, E 9245, N 49185, EL +13462, and dimensions like 188, 796, and 3" x 1.1/2" NS. A legend indicates "N" for North and "FAI" for Front Axial Isometric.

## View 2D Documents

Selecting a two-dimensional vector-based graphic from a 2D Documents folder enables you to view these drawings rendered in the SVG file format (**.svg**). By default, the selected 2D Document opens in the *Document View*. Using the  **View** menu at the top-right of the *Document View* area, you can change the view to a *Summary View*.

An example of a Document's Summary View:



The screenshot shows the AVEVA AIM software interface. On the left, there is a vertical sidebar labeled "AVEVA™ Asset Information Management". The main area displays a "TEST-DGN" document summary. At the top, there is a navigation bar with icons for Home, TEST-DGN, Actions..., and View... . Below the navigation bar, the document title is shown as "TEST-DGN (MP2343 - Piping Engineering - Isometric Diagram)". The summary view is organized into several sections:

- Attributes:** A table showing document metadata such as Discipline Code (MP), Document Number (TEST-DGN), Document Revision Code (1), and Document Revision Date (19-07-2006).
- Links:** A section showing links to "Assai File" and "PIVision".
- External Views:** A section showing external views, specifically "PI Vision".
- Tags:** A section showing tags like "Pressure Vessel (3)" and "Site Area (1)".
- Equipment:** A section showing equipment like "Switch1 (1)".
- Documents and 3D Models:** A section showing documents and 3D models, specifically "MP2343 - Piping Engineering - Isometric Diagram (1)".
- Events:** A section showing events, specifically "Equipment Condition History (1)".
- Relationship Explorer:** A section showing relationships, including "is a document for - (1)", "is primarily fulfilled by - (1)", "is referenced by - (1)", and "references - (14)".

## General 2D Viewing

### Navigate in 2D Documents

Selecting the **Navigation** menu at the *2D Document View* provides you with the following options to navigate in a 2D drawing:

Use this mode	To
 Pan	Move the model anywhere inside the <i>Document Viewing</i> area.
 Marquee Zoom	Mark a rectangular area of the model to be magnified.

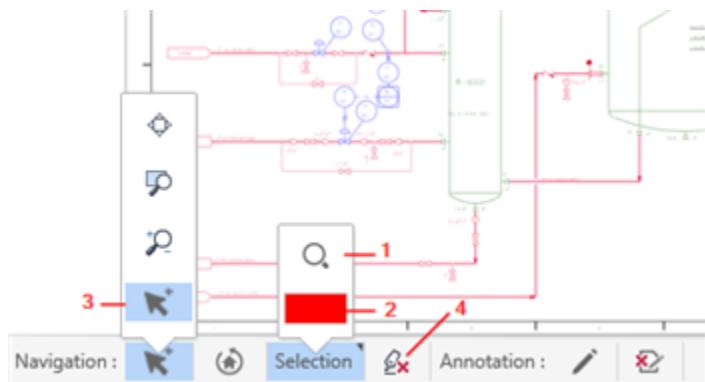
Use this mode	To
 Zoom	Magnify the model size by selecting the mouse and moving upward. Reduce the model size by selecting the mouse and moving downward.

The  icon enables you to restore the drawing to its original form and position.

## Highlight Elements in 2D Drawing

To highlight collections of elements:

1. Open the **2D Document Viewer** and make selections using any of the following:
  - Search results
  - Browse tree
  - Content card
  - Sets

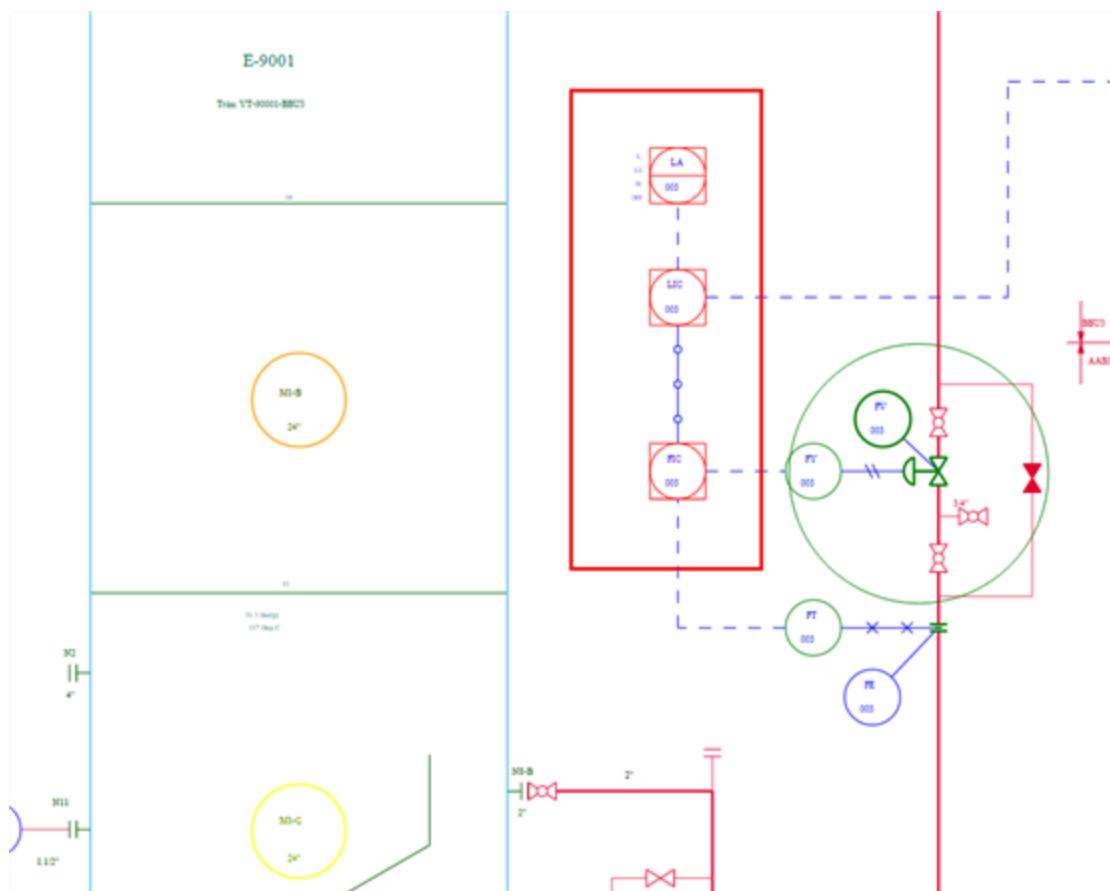


2. Select the **Selection** menu in the toolbar.
3. Select a highlight colour (2) to change the colour of the selected items.

**Note:** You can pick multiple items in the viewer either by holding down **Ctrl** while selecting on the items or by using the **Add to Selection** icon (3) from the **Navigation** menu.

4. Select the **Zoom to Selection** icon (1) to see a closer view.

**Note:** You can subsequently save (as Markup), print or export any modifications to the document in the viewer. The modifications can be annotations, highlighting or a combination of both (see the example below). For information on Markup, see [Marking up 2D Documents](#).



5. Select the **Clear All Highlighting** icon to clear any highlighting modifications.

## Visual Reporting

The  Tools menu in the SVG viewer provides a Visual Reporting option.

Visual Reporting enables you to implement visual changes to your search results, comprising of 2D Drawing components.

It enables you to:

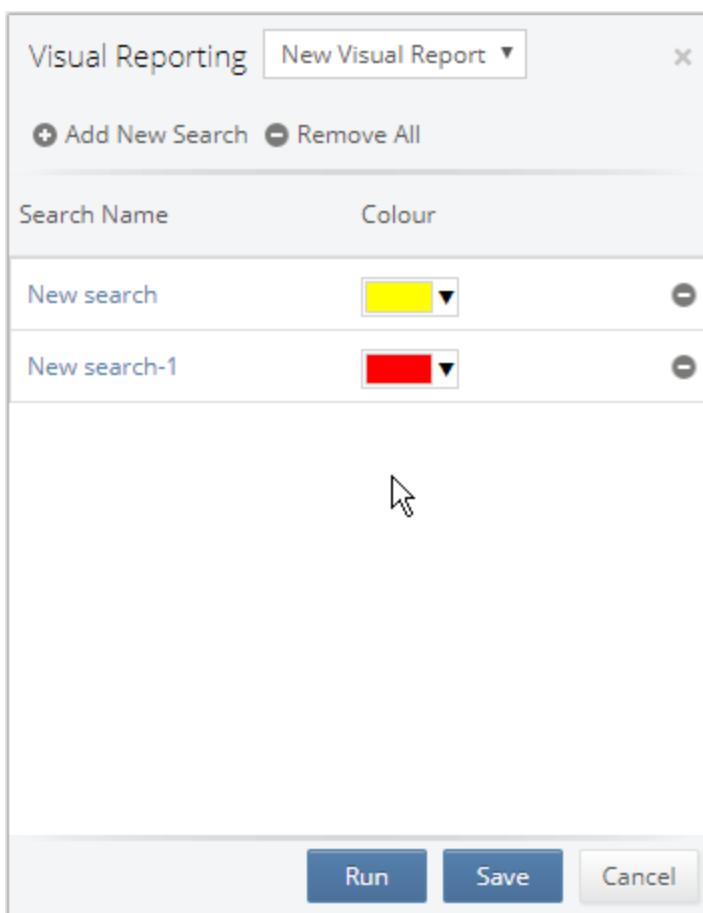
- Categorize 2D Drawing components and alter their colours.
  - Save the Visual Report to re-use later.

By default, you will be able to apply visual changes to the search results; but the **Save** button will be enabled only if you have appropriate rights granted by your System Administrator.

To apply visual changes to the search results:

1. In the **SVG viewer**, select the  Tools menu, and then select **Visual Reporting**.

The Visual Reporting pane opens.



2. In the drop-down box, select the arrow to select **New Visual Report**.  
The searches saved under the selected Visual Report appear as a list.
3. In the **Colour** box, click the arrow to select the colour, and then select **Set Colour**.
4. Select **Apply**.

The visual changes are applied to the 2D Drawing components in that saved search.

---

**Note:** If the search criteria used in a saved search finds more results than the limits configured under: **Settings Panel > Site > General > Visual Reports (Max list items for Visual Reports)** (the default limit is set as 25000), a warning message appears. If this happens, consider changing this setting; but be careful to not exceed the combined performance of the system, the hardware and the network latency.

---

The following functionality of Visual Reporting for 2D Drawings works the same as for Visual Reporting for 3D models (see Visual Reporting):

- **Visual Reporting** drop-down to create a new visual report (select **New Visual Report**) or to load an existing visual report
- **Add New Search** link to add new search
- **Remove All** link to remove all searches
- **New Search** link to open prompt
- Colour picker to select colour of search result
- **Run** button to apply highlight with selected colour on search results

- **Save** button to save a new visual report with ID and description

## View 3D Models using 3DVis

This section describes the various actions that you can perform while viewing 3D Models, such as:

- General 3D Viewing
- Visual Reporting

### General 3D Viewing

#### Demo of 3DVis Cloud Streaming Service

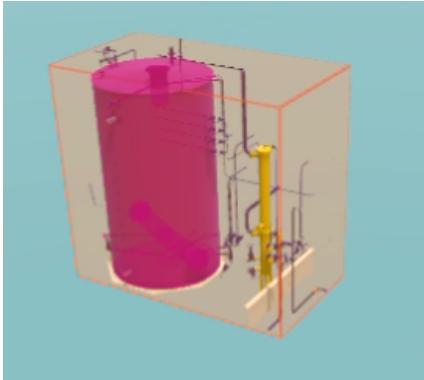
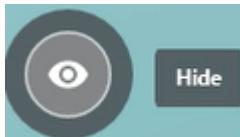
[https://player.vimeo.com/video/1027670401?badge=0&autoplay=0&player\\_id=0&app\\_id=58479](https://player.vimeo.com/video/1027670401?badge=0&autoplay=0&player_id=0&app_id=58479)

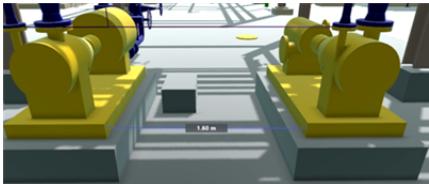


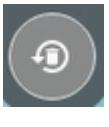
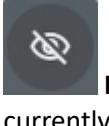
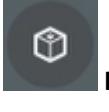
You can use the following actions when viewing 3D models:

Name	Action/Button	Description
Select	Click an item with the left mouse button	Selects an item in the model. For example, used with opening the Content Card or selecting an item to rotate around.
Pan	Drag with the right mouse button	Pans the model in all directions.
Zoom	Scroll the mouse wheel	Zooms the model in and out.
Undo		The application automatically saves the camera position every time a user performs certain actions, such as rotating or panning the model. This action steps back through previous camera positions.
Redo		The application automatically saves the camera position every time a user performs certain actions, such as rotating or panning the model. This action steps forward through saved camera positions.

Name	Action/Button	Description
Reset		Resets the model to its initial load state.
Rotate	Select the button, then drag with the left mouse button	Rotate navigation mode (default). When an item is selected, the view will orbit around the selected item. When no item is selected and the cursor is over a model element, the view will orbit around the initial cursor position. When no item is selected and the cursor is not over a model element, the view will orbit around the centre of the model's bounding box.
Fly	Select the button, then drag with the left mouse button	Fly navigation mode. Move forwards through the model, with a fixed velocity, in the direction of the cursor.
Walk	Select the button, then drag with the left mouse button	Walk navigation mode. Move forwards and backwards through the model at a fixed elevation, using the cursor to steer left and right. Velocity is determined by how far the cursor is dragged up/down the screen. Best used after teleporting to a position in the model.
Clip		This tool is only active when an item is selected. The Clip tool isolates the selected element by creating a 6-plane clipping box around it. The sides of the clipping box can be dragged to modify the clipping volume. When the Clip tool is active, a Hide button  is

Name	Action/Button	Description
		<p>displayed, allowing the visibility of the clipping box to be toggled on or off.</p> 
Section		<p>The Section tool takes a 3-plane slice out of the model. Each plane can be selected and dragged to change the position of the sections. Each of the 3 planes is notionally infinite in size.</p> <p>When the Section tool is active, a  is displayed, allowing the visibility of the section planes to be toggled on or off.</p> 
Measure		<p>The Measure tool displays the distance between selected points in the model.</p> <p>When active, a side bar menu</p>

Name	Action/Button	Description
		<p>appears providing access to the following measure tools:</p>  <p><b>Point to Point.</b> This is the default mode. It displays the distance between two consecutively chosen points in the model.</p>   <p><b>Path.</b> A continuous string of measurements. It displays the distance between each consecutively chosen point in the model as well as a total for the complete path.</p> <p>Disabling the measure tool by clicking the Measure button on the main menu will confirm the measurement.</p>   <p><b>Delete.</b> When this mode is active, select an existing measure line to remove it from the view.</p>  <p><b>Units.</b> Repeatedly select to cycle the units between metres (m), centimetres (cm), inches (in) and feet (ft). Changing the units</p>

Name	Action/Button	Description
		<p>only affect subsequent measurements.</p>  <p><b>Lock.</b> Allows measure lines to be optionally constrained to certain axis.</p> <ul style="list-style-type: none"> <li> <b>No lock.</b> Draw measure lines using all the axes.</li> <li> <b>Z lock.</b> Draw measure lines only on the Z-axis.</li> <li> <b>XY lock</b> - Draw measure lines only on the XY plane.</li> </ul>  <p><b>Delete All.</b> Removes all measurements from the view. When using the Measure tool rotating the model is disabled.</p>
Hide & Isolate		<p>The Hide &amp; Isolate tool opens a side menu giving control over the visibility of objects in the scene.</p>  <p><b>Hide.</b> Removes the currently selected objects from the scene.</p>  <p><b>Isolate.</b> Removes all</p>

Name	Action/Button	Description
		elements except the currently selected objects from the scene.   <b>Show All.</b> Redisplays all previously hidden objects.
Views		The Views tool displays a popup menu giving access to tools that affect the appearance of the model in the display.  <b>X-Ray:</b> Turn X-Ray mode on/off. Turning on makes the model translucent, so highlighted objects become more visible.  <b>Shadows:</b> Turn Shadows on/off. Turning off shadows can help make dark areas of the model more visible.  <b>Insulation&amp;Ob:</b> Toggles the visibility of any insulation and obstruction volumes in the model. This only applies to AVEVA E3D models that contain INSU or OBST elements.
Teleport	 Drag the icon with the left mouse button	When dropped over the model, the view teleports to that position 1.8m above the surface.
Collapse		Collapses the toolbar.
Expand		Expands the toolbar.

You can use the following touch actions when viewing 3D models:

Name	Action	Description
Select	Tap with one finger	Selects an item in the model.
Zoom	Pinch in and out	Draw fingers together to zoom out, draw fingers apart to zoom in.
Rotate	 Tap the button, then drag with one finger	Rotate navigation mode (default). Drag finger over the model to orbit around a selected item.
Fly	 Tap the button, then drag with one finger	Fly navigation mode. Move forwards through the model, with a fixed velocity, in the direction of the finger contact.
Walk	 Tap the button, then drag with one finger	Walk navigation mode. Move forwards and backwards through the model at a fixed elevation, using the finger contact to steer left and right. Velocity is determined by how far the finger contact is dragged up/down the screen. Best used after teleporting to a position in the model.
Teleport	 Drag the icon with one finger	Release the teleport icon over the model, the view teleports to that position 1.8m above the surface.

## Visual Reporting

Visual Reporting enables you to implement visual changes to your search results, comprising of 3D Model components.

It enables you to:

- Categorize 3D Model components, altering its colours and transparency levels.
- Save the changes after adding description, enabling quick identification of those components later.

### Applying Visual Changes to Search Results

With default permissions, you can apply visual changes to the search results, but the **Save** button is only enabled

if you have a role with appropriate rights granted by your System Administrator.

To apply visual changes to search results:

1. In the *3D Model View* area, select the  Tools menu, and then select Visual Reporting.  
The **Visual Reporting** pane opens.
2. In the drop-down box, select the arrow to select the Visual Report.  
The Searches saved under the selected Visual Report appears as a list.
3. In the Colour box, select the arrow to select the colour, and then select Set Colour.
4. In the Transparency box, select the arrow to select the transparency rate.
5. Select the way that objects which are not satisfied by any of the search criteria are shown:
  6. **Show All** – objects are opaque.
  7. **X-ray Mode** – objects are translucent.
  8. **Isolate Results** – objects are removed from the view.
9. Select Run.

The visual changes are applied to the 3D Model components in that saved search.

---

**Note:** If the search criteria used in a saved search finds more results than the limits configured under: **Settings Panel > Site > General > Visual Reports (Max list items for Visual Reports)** (the default limit is set as 25000), a warning message appears. If this happens, consider changing this setting; but be careful to not exceed the combined performance of the system, the hardware and the network latency.

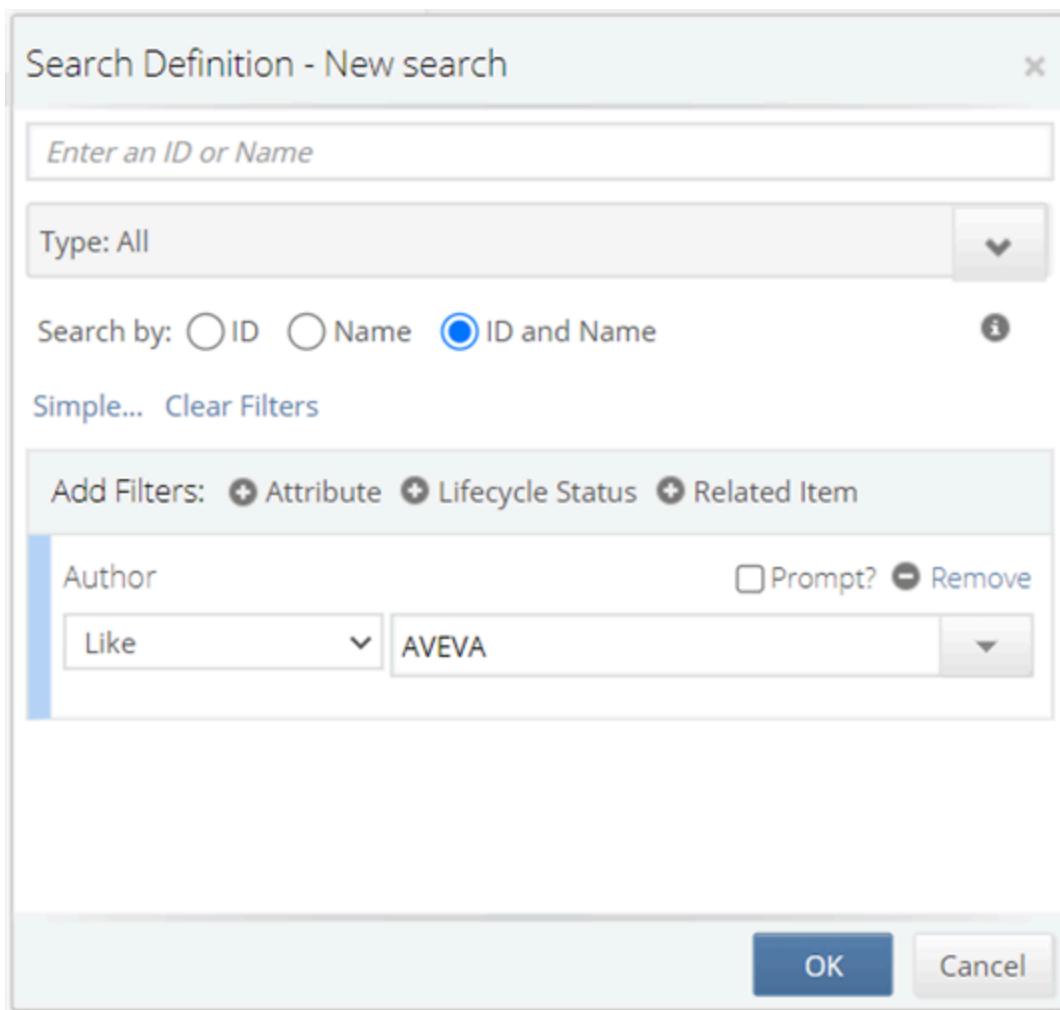
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## Adding New Search to a Visual Report

To add new search to a Visual Report:

1. In the Visual Reporting drop-down box, select the arrow to select a Visual Report.
2. Select  Add New Search.  
The newly added search appears.
3. Select **New Search**.

The following **Search Definition - New search** window appears (an example attribute has been added):

**Notes:**

- If you select the **Prompt?** check box under the **Add Filters:** section, a text box is displayed where you can enter a new label for the search criteria.
  - In *Simple Search* mode, for each search criteria that has been marked as **Prompt?**, you are prompted to enter the value for the criteria. Any search criteria that has not been marked as **Prompt?** is hidden.
  - By default, Search Definitions of Visual Reports open in *Simple Search* mode.
4. Select **OK**.

### Removing Searches from a Visual Report

To remove searches from a Visual Report:

1. In the Visual Reporting drop-down box, select the arrow to select a Visual Report.
2. To remove all the searches under a Visual Report, select **Remove All**.
3. To remove the searches one at a time, select **-** at the right-end of each search name.

### Saving a Visual Report

You must have appropriate rights for saving a Visual Report. If not, the *Save* button will not be available in the

Visual Reporting pane.

To save a Visual Report:

1. In the Visual Reporting drop-down box, select the arrow and select New Visual Report.
2. If you want to create new searches to implement the new Visual Report, select  Add New Search.
3. To apply visual changes to the searches, select the colour and transparency rate, and then select **Apply**.
4. Select **Save**.

**Note:** The Save button will be available, only if you have the rights granted by your System Administrator.

The Save Visual Report Definition window opens.

5. Enter a unique identifier for the new Visual Report in the ID box, a Name and Description, and then select Save.
6. If you do not want to continue saving the new Visual Report, select Cancel.
7. To view the newly created Visual Report, select the arrow in the Visual Reporting drop-down box.

## View AVEVA Point Cloud Manager files

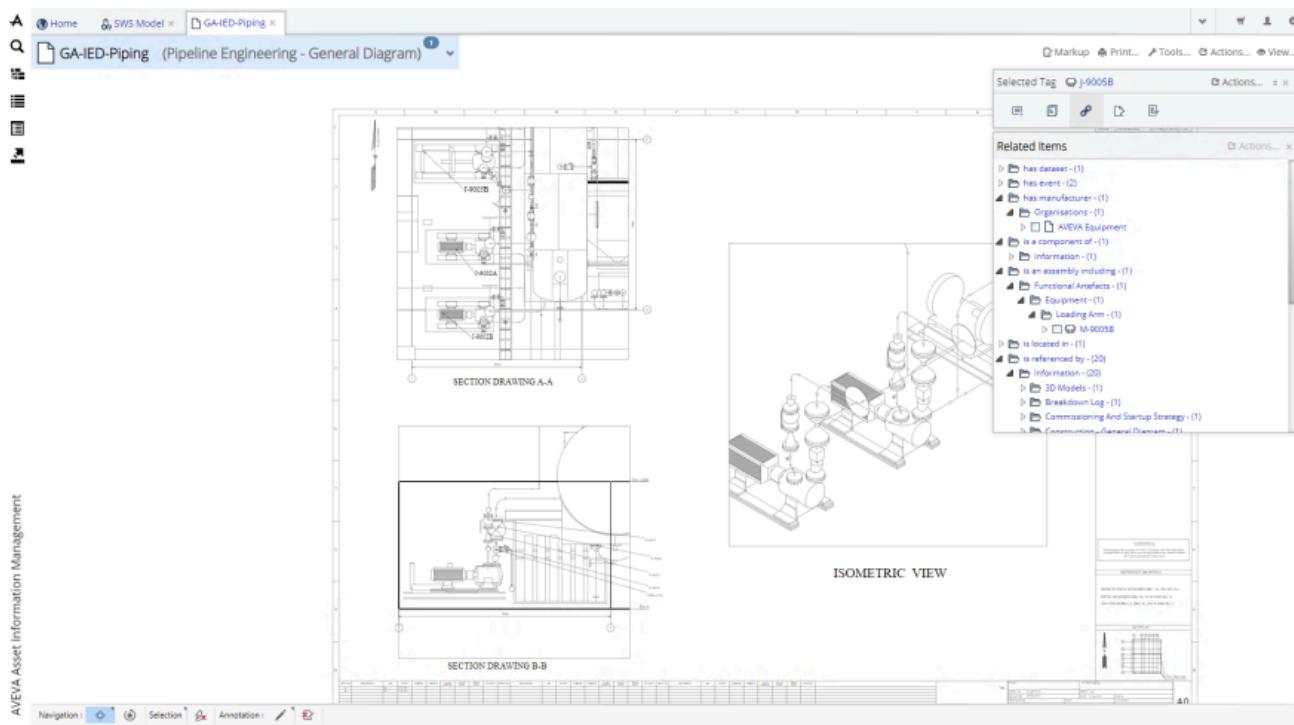
AVEVA Point Cloud Manager files can be viewed in the *AVEVA Point Cloud Manager Viewer*.

For more information, see [AVEVA Point Cloud Manager - Viewer](#).

## Highlight Tag IDs from Related Items

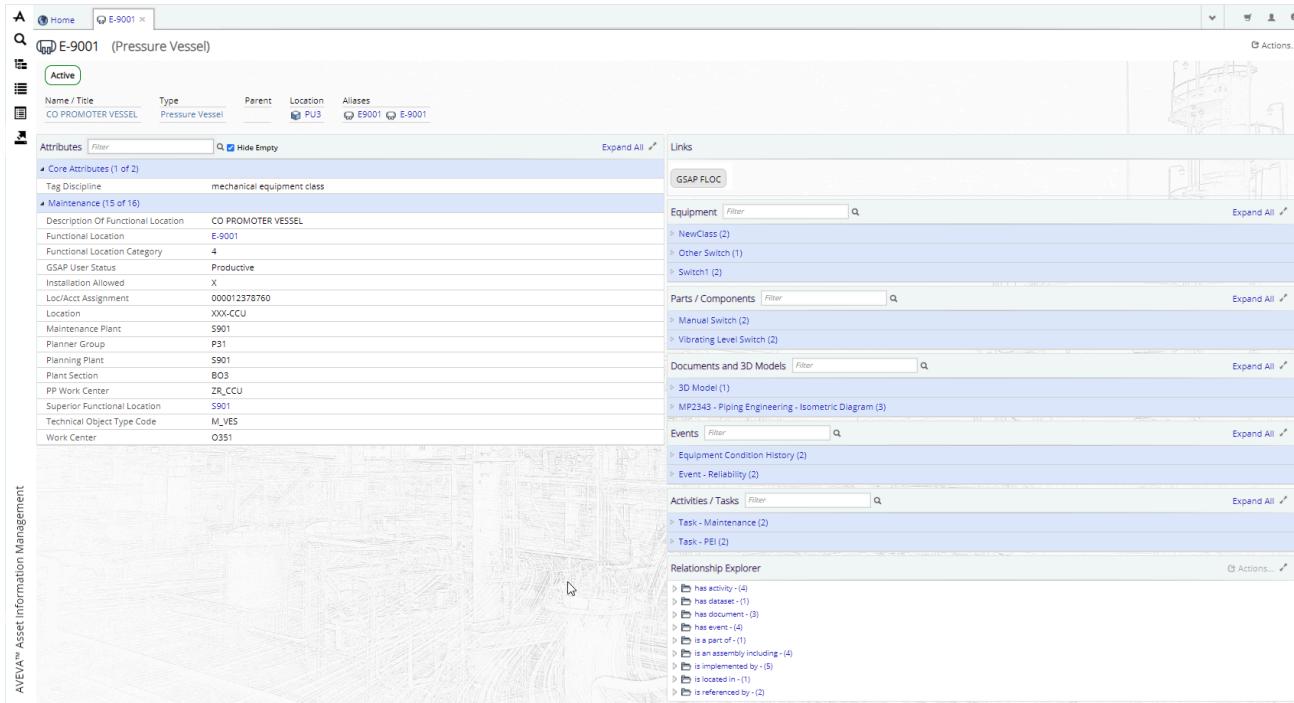
You can highlight tag IDs via the **Related Items** panel in a Content Card for a selected item.

1. While viewing a P&ID, open a document by selecting it from **Selected Tag > Content Card > Related Items** tab.



A new tab opens in the Accusoft Viewer with the selected tag ID Content Card open and the tag ID highlighted in the document. All instances of the tag ID are highlighted throughout the document. Selecting on the highlighted tag ID pops up the selected tag Content Card if the tags to document associations have been processed.

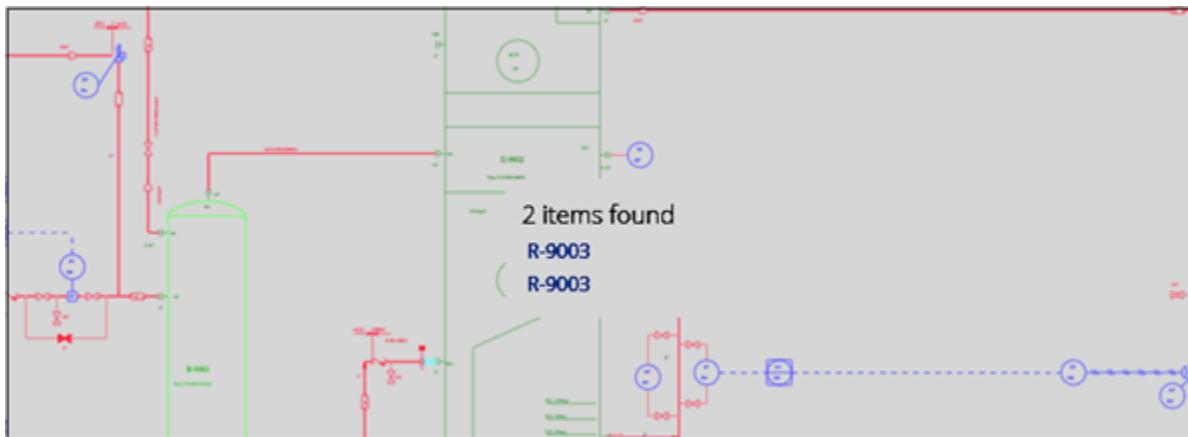
2. Select the results to open the related tag and view the Tag Summary. Tag Summary also shows the various components, models, events and activities related to this tag.



## Expand Tags and Interpolate Them

Many drawings (2D) contain tag references that use a shorthand notation to reference more than one object, for example J-9002A/B. AVEVA Gateways provides support to split labels with the information on all referenced items that are embedded within the SVG (drawing).

The following example shows an image of how the screen looks when you select on a split label in the **2D File Viewer**:



Using the returned list of matches, a pop-up list of real objects is presented, from which you can view the details of the selected tag in the item's Content Card.

In the following example, selecting on R-9003 from the pop-up dialog in the **File Viewer** updates the Content Card accordingly:

Details	
ID	R-9003
Name	HORIZONTAL VESSEL
Type ID	HEAT TRANSFER
Lifecycle Statuses	
Aliases	/R-9002 /R-9003

## Use Markup to Collaborate

The *Markup* functionality enables you to collaborate through annotating the 2D Diagrams and Documents, displayed in:

- Asset Information Management – Advanced File Viewer
- Accusoft Viewer

## Understand User Rights for Markup

As a default user, you can:

- Mark up 2D Diagrams and Documents View documents, using the Annotation tools.
- Select and load the Markups created and saved by the other users.

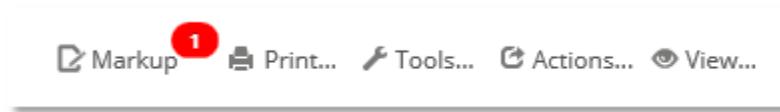
However, you must have the appropriate rights granted by a user with administrative privileges, to execute the following actions:

To do this action	You must have this right
Create a Markup	CreateMarkup
Save a Markup	
Edit your own Markup	
Delete your own Markup	
Edit other users' Markup	EditMarkup
Export a Markup	ExportMarkup

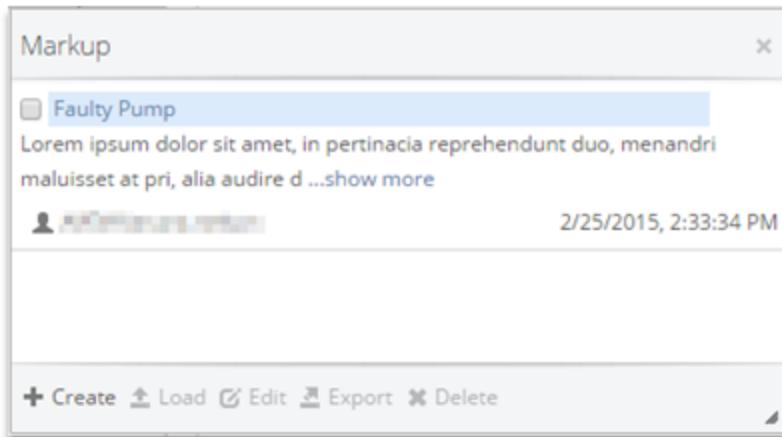
## View the Markups

As a default user, you can view the Markup created and saved by the other users.

- The number of saved Markups pertaining to an opened document appears as a superscript of the Markup icon in a red circle.



- Selecting the Markup icon opens the Markup panel, listing the name and description of all the saved Markups, with the saved date and time.



- Selecting a Markup's name displays that Markup on the opened document.

## Create, Edit and Delete Markups

You must have the **CreateMarkup** right to create, edit or delete your Markups in the documents. If not, these command buttons will be unavailable.

To create, edit and delete Markups:

1. Add a Markup in the document.
2. Select the **Markup** icon.  
The **Markup** panel opens.
3. To create a Markup, select the **Create** icon.
4. In the **New Markup** panel, enter the **Name** and **Description** and then select **Save**.

After the information is saved, the message "**Markup has been created**" appears at the bottom-right corner. The new Markup Name, Description, Saved Date and Time, appear in the Markup Panel. Also, the number in the red circle, appearing as a superscript of the Markup icon, increases with every new Markup creation.

5. To edit a Markup, select the check box next to the Markup you want to edit.  
The **Edit** button is enabled.
6. Select the **Edit** icon.  
When a Markup is selected for editing, its annotations are loaded into the viewer, replacing any existing annotations.
7. In the **Edit Markup** Panel, make the updates, and then select **Save**.
8. If you do not want to save the edits, select **Cancel**.
9. To delete a Markup, select the check box next to the Markup you want to delete.
10. Select the **Delete** icon.  
A confirmation message displaying, the number of Markups you are deleting and if you would wish to continue, appears.
11. To confirm the deletion, select **OK**. If not, select **Cancel**.

Upon your confirmation to delete, a message "**Markup has been deleted**" appears at the bottom-right corner.

## View the Markup Descriptions

The Markup description can be expanded or collapsed as follows:

- If the Markup description is more than 100 characters, selecting the **...show more** link expands the remaining text visibility.
- Selecting the **show less...** link collapses the expanded description.

## Resize the Markup Panel

To resize the **Markup Panel**:

1. Rest the mouse pointer on the panel border.
2. When the pointer becomes a double-headed arrow, drag the pointer left or right to move the split line.  
The panel height or width is resized, providing a larger area for *document viewing*.

## Preserve the Markup State

The state of the **Markup Panel** and the annotations (saved or otherwise) in a document model are preserved, while navigating around *Asset Information Management – Advanced*. Therefore, you can add some annotations to a document, navigate away from the page to view a different document, and then navigate back to the File Viewer to finalize your Markup, without losing your work. The state of the Markup in an open document is persisted, until the document's tab is closed.

## Relocate and Resize Markups

To relocate and resize Markups:

1. To move a Markup to another area in the drawing, select the Marked up shape, and then drag it.
2. To increase or decrease the Markup size, select the **Markup**, and then rest the mouse pointer on the border.
3. When the pointer becomes a double-headed arrow, drag the pointer inward or outward.

## Load Markups

You can load the Markups saved by you or the other users, into an opened document.

To load Markups:

1. Select the **Markup** icon.  
The **Markup** panel opens, displaying all the saved Markups relevant to the opened document.
2. Select the check boxes next to the Markups you want to load.
3. At the bottom of the Markup panel, select the **Load** icon.

All the selected Markups appear in the opened document.

---

**Important:** This action will clear all the other Markups under viewing, and will show only the Markups you selected to load.

---

## Merge Markups

To merge Markups:

1. Select the **Markup** icon.

The **Markup** panel opens, displaying all the saved Markups relevant to the opened document.

2. Select the check boxes next to the Markups you want to load.

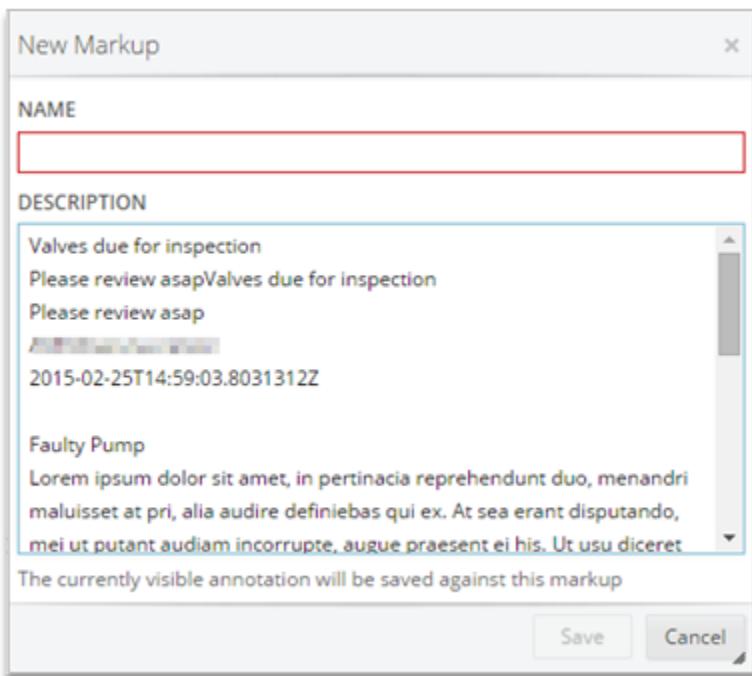
3. At the bottom of the **Markup** panel, select the **Load** icon.

All the selected Markups appear in the opened document.

**Important:** This action will clear all the other Markups under viewing, and will show only the Markups you selected to load.

4. Create a new Markup from the merged result.

The **New Markup** panel opens, displaying the merged result of all the loaded Markups.



5. To save the merged Markup, select **Save**. If not, select **Cancel**.

## Distribute Markup URLs

Each Markup is identified by a unique URL in your browser's address bar. You can share this URL with the other users, who can directly navigate to that document's Markup. Sharing the Markup URLs enables instantaneous collaboration.

**Note:** If you are a default user without the rights assigned to create, edit, save or export Markups, you can add the Markups and send the URL to the other users.

For example, the following URL enables you to directly navigate to the Markup with the **ID, VN**ET **System|Markup|MARKUP\_00009**, added for the item with the **ID, IPE|C905677**.



## Mark up Documents in File Viewer

You can mark up documents opened in **File Viewer**, using the Annotation tools at the bottom-left corner of the **File Viewer**.

### Mark up 2D Documents

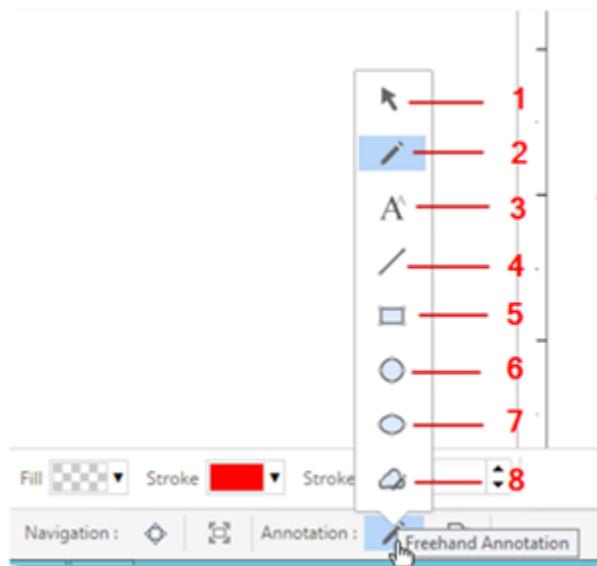
The Annotation tools at the bottom-left of the **2D File Viewer** enables you to mark up the 2D Documents.



To mark up 2D Documents:

1. Select the Freehand Annotation icon.

**Note:** The freehand pencil icon is the default annotation tool. However, from the expanded Annotation toolbar, if you select any Annotation tool, that icon is displayed in the place of the freehand pencil.



2. From the expanded **Annotation** toolbar, select any of the following as required, and then go to the 2D Document:

Icon	Description	Select this Icon to
1	Select Annotation	Select one or more Markups
2	Freehand Annotation	Draw freehand Markup
3	Text Annotation	Add a text Markup
4	Line Annotation	Draw a line Markup
5	Rectangle Annotation	Draw a rectangular (filled) Markup

Icon	Description	Select this Icon to
6	Circle Annotation	Draw a circular (filled) Markup
7	Ellipse Annotation	Draw an elliptical (filled) Markup
8	Cloud Annotation	Draw a cloud (filled) Markup

3. Rest the mouse pointer in the area you want to mark up, and then draw the shapes.

### Adjust the Markup Texture

You can format the appearance of a Markup shape, using the following tools at the bottom-left of the **File Viewer** of an opened document:



Use this Tool	To
Fill	Select a colour to fill a Markup. <b>Note:</b> The default Fill is transparent.
Stroke	Select a colour to draw the Markup outline.
Stroke Width	Define the thickness of the Markup outline.

### Adjust the Markup Layout

When you add a Markup, or select a Markup drawn in a document, the following layout options appear at the bottom-left of the **File Viewer**:



Select any of the following, as required:

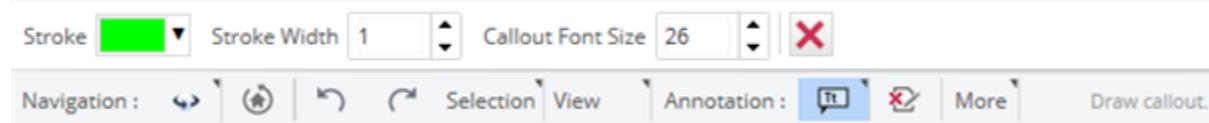
Select this Icon	To
1	Bring a selected Markup element in the drawing, to the front in the order stack.
2	Send a selected Markup element in the drawing, to the back in the order stack.
3	Duplicate a selected Markup, so that the same Markup shape appears twice.
4	Delete a selected Markup. <b>Note:</b> If you have duplicated a Markup, and then immediately selecting the Delete icon, the duplicated Markup will be removed.

## Format Text Markups

When you perform any of the following actions, the **Text Annotation Styles** toolbar appears at the bottom-left corner of the **File Viewer**:

- Select the Text Markup icon from the **Annotation** toolbar.
- Add a Text Markup in a document.
- Select an already added Text Markup.

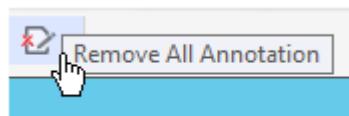
You can format the Markup text styles, adjusting the settings here:



**Note:** Changing the **Markup Callout Font Size** also changes the size of the text added by the Dimensioning tools.

## Remove All Markups

When you add a Markup, or select a Markup drawn in a document, the **Remove All Annotation** icon appears at the bottom-left of the **File Viewer**:

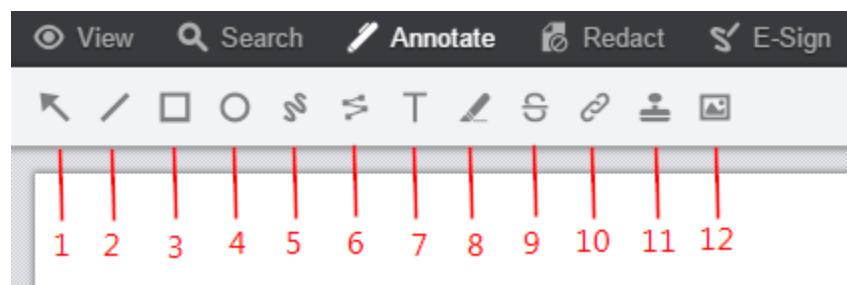


Selecting the **Remove All Annotation** icon enables you to remove all the Markups currently added in an opened document.

**Note:** This does not delete a markup already saved; it merely hides it from view.

## Mark up Documents in Accusoft Viewer

The Annotation tools, available under the Annotate tab at the top-left corner of the **Accusoft Viewer**, enable you to mark up the documents.



**Note:** For more information about the Accusoft Markup toolbars and menus, refer to the PrizmDoc help link [https://help.accusoft.com/PrizmDoc/PrizmDoc\\_EndUserGuide.pdf](https://help.accusoft.com/PrizmDoc/PrizmDoc_EndUserGuide.pdf).

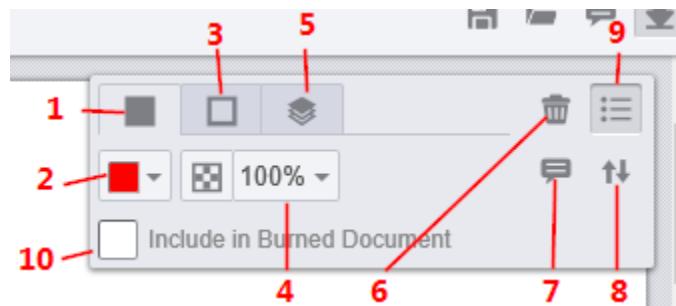
The following table describes the usage of Annotation tools in the **Accusoft Viewer**:

Icon	Description	Select this icon to
1	Arrow Annotation	Draw an arrow Markup.
2	Line Annotation	Draw a line Markup.

Icon	Description	Select this icon to
3	Rectangle Annotation	Draw a rectangular or square Markup.
4	Ellipse Annotation	Draw an elliptical or circular Markup.
5	Freehand Annotation	Draw freehand Markup.
6	Polyline Annotation	Draw polyline Markup.
7	Text Annotation	Add a text Markup.
8	Highlight Annotation	Highlight text.
9	Strikethrough Annotation	Add strikethrough Markup.
10	Text Hyperlink Annotation	Add text hyperlink Markup.
11	Stamp Annotation	Create a stamp Markup.
12	Image Stamp Annotation	Create image stamp Markup.

### Use the Annotation Context Menu

When you select an Annotation tool, or a Markup drawn, a context menu appears at the top-right with the options specific to the selected Annotation.



The following table describes the icons on the Annotation context menu:

Icon	Description
1	Displays the currently selected Annotation tool icon.
2	Fill colour picker.
3	Border colour tab.
4	Opacity Selector.
5	Layer menu tab for Text annotation.
6	Deletes the selected annotation.

Icon	Description
7	Enables adding comment for a selected annotation.
8	Moves the context menu location up and down.
9	Collapses or expands the context menu.
10	If selected, chosen annotations will be burned in the document when downloading by selecting chosen option in the Annotation dropdown under the Download option.

### Work with the Common Toolbar

When you select the **Annotate**, **Redact**, or **E-sign** tabs, a common toolbar appears at the top-right of the **Accusoft Viewer**.



Icon	Description	Select this icon to
1	Comment Panel	View comments added to an annotation, in a separate pane at the right.
2	Download	Download the original/PDF, redacted, signed or redacted and signed document.  <b>Note:</b> You must have the appropriate rights to download. If not, the Download icon is unavailable.

### Redact Documents

The Redact toolbar provides tools for highlighting and blocking text within a document, as well as applying text based stamps. These redaction annotations are only available as Markup layers within *Asset Information Management – Advanced* and do not redact the default document view presented to the user. However, redactions are applied to documents when exported or printed from the Markup tool.



Icon	Description	Select this Icon to
1	Filled Rectangle	Draw opaque, black rectangular redactions.
2	Text Redaction	Write text redactions.
3	Text Selection Redaction	Select and redact text blocks. <b>Note:</b> When text is selected, the highlight converts to rectangular redactions. If multiple lines of text are selected, each line is redacted with a rectangular redaction.
4	Stamp Redaction	Add redactions using the stamp tool.
5	Image Stamp Redaction	Add redactions using a stamp showing a particular image.
6	Redact Full Pages	Add redactions to full pages.
7	Redaction View Mode	Show the redaction view mode.

### E-sign Documents

The E-Signature tools under the E-Sign tab enable you to sign and manage the signatures on an opened document.



Icon	Select this icon to
1	Create new e-signatures, or manage the existing ones.
2	Insert a freehand signature.
3	Sign with texts.
4	Place a signature on the document.
5	Place the current date on the document.
6	Place the text input signature in the document.

## Categorize and Group Items

You can categorize and group a collection of items based on any specific criteria, and view it later using the following features:

- Sets
- Basket

### Use Sets

The **Sets** functionality enables you to categorize and group a selection of items, and store it with unique identifiers for future use. Using the **Add to** option under the  **Actions...** menu, you can include items to Sets from the following areas in Dashboard:

- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- **Related Items** area in the *Summary View*
- **Related Documents** area in the *Summary View*
- **Related Query Form** area in the *Summary View*
- **Related Items** area in a *Document Content Card*
- Items displayed under the **Contents** tab in a *2D Diagrams and Documents View Document Content Card*
- Items displayed under the **Related Items** tab in a *2D Diagrams and Documents View Tag Content Card*
- Documents displayed under the **Related Documents** tab in a *2D Diagrams and Documents View Tag Content Card*
- *Basket Panel*

---

**Note:** The areas in the Summary View, Document Content Card, and Tag Content Card are configurable to include Relationships, Metadata or Characteristics. Hence, the naming of the areas can differ based on the configuration.

---

You can execute the following actions with Sets:

- Create a new Set
- Add items from one Set to the other
- Edit Sets
- Delete Sets
- Exports items in Sets
- Print items in Sets

### View Sets

To view Sets:



1. On the *Global Navigation Panel*, select . The *Sets Panel* opens docked in the *Dashboard*.
2. In the drop-down box, select the arrow to select a **type of Set**. If any **Sets** have been created of that type, they are displayed as a list.
3. Select a **Set** to see its content.

ID	Name	Type
A-66003	80-A-66003-AFU3	PIPELINE
C-9007	AIR BLOWN COOLER (FORCED)	HEAT TRANSFER
DS-50004	200-DS-50004-AFU3	PIPELINE
DW-50101	20-DW-50101-BFU3	PIPELINE
E-9002	HORIZONTAL VESSEL	COLUMNS AND TOWERS
FG-633		FLOW GAUGE
FT-008	PEGS_ITEM_118	FLOW TRANSMITTER
FV-006		FLOW CONTROL VALVE
FV-10039		UNKNOWN
FV-11032		UNKNOWN
FV-11932		UNKNOWN
FV-12733		UNKNOWN
FV-15408		UNKNOWN

4. Select the **Details** tab, to view the description of the **Set**.
5. Select the **Contents** tab, to view the items of the **Set**. For each item in the set, its **ID**, **Name** and **Type** are displayed.
6. Select to dock the *Sets Panel*.

## Create Sets

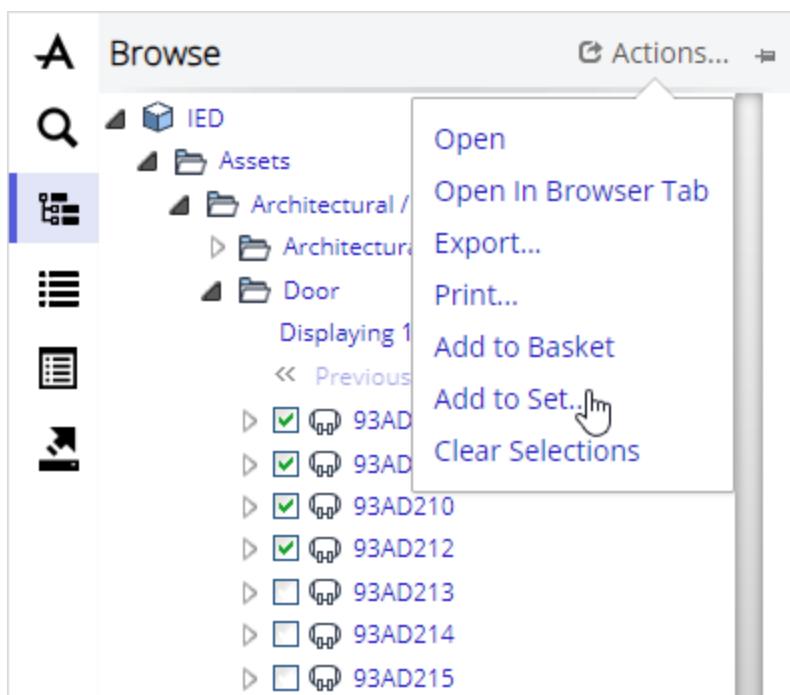
You must have appropriate rights ([SetCreation](#)) granted by your System Administrator for creating Sets.

To create Sets:

1. In the *Sets Panel*, select the arrow to select a Type of Set from the drop-down box.
2. Go to the bottom-left corner, and then select . The **New Set** dialog appears in the expanded right panel.

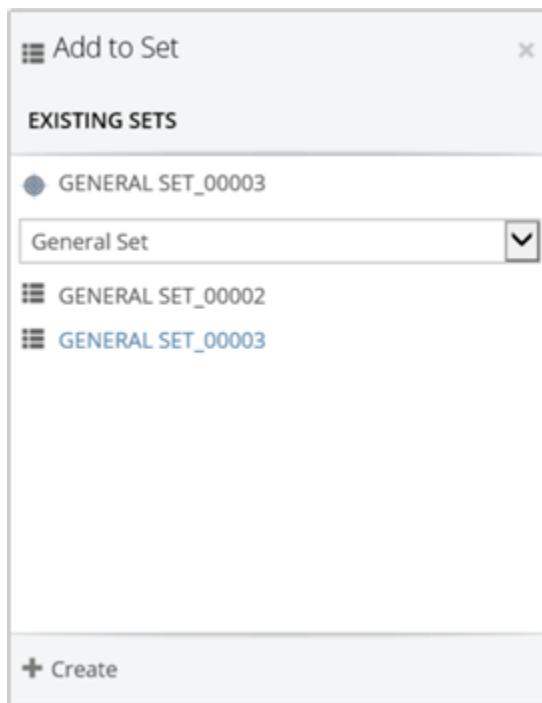
The screenshot shows the 'New Set' dialog box. The 'Details' tab is active. The 'ID' field is empty and has a red border around it. There is a checkbox labeled 'Auto-generate ID' next to it. The 'NAME' field contains the text 'NAME'. The 'TYPE' field is a dropdown menu currently showing 'Maintenance Work Pack'. The 'DESCRIPTION' field is empty. The 'AUTHOR' field shows a small user icon followed by a grayed-out name. At the bottom right are 'Save' and 'Cancel' buttons.

3. Select the **Details** tab, and select **Auto-generate ID**, or enter a unique identifier in the **ID** box.
4. Type the Set name in the **Name** box.
5. In the **Type** drop-down box, select a type.
6. In the **Description** box, type a note that describes the new Set, and then select **Save**.
7. To add items to the new **Set**, select **Actions...**, and then select **Add to Set**.



The *Add to Set* panel opens.

8. In the drop-down box, select the arrow, and choose the type of Set to include the selected Items.



All the Sets under the selected type appears.

9. Select the newly created Set.

The items are added to the Set, and a message displaying the number of items successfully added to the Set appears.

## Edit Sets

To edit Sets:

1. In the *Sets Panel*, select the arrow to select a **type of Set** from the drop-down box.  
The **Sets** of the selected type appear in a list.
2. Select the **Set** you want to edit, and in the bottom-left corner, select **Edit**.
3. Edit the details, and if you want to remove items from the **Set**, select the **Contents** tab.
4. Select for each item you want to remove.

ID	Name	Type
A-66003	80-A-66003-AFU3	Pipeline
C-9007	AIR BLOWN COOLER (FORCED)	Heat Transfer
DS-50004	200-DS-50004-AFU3	Pipeline
DW-50101	20-DW-50101-BFU3	Pipeline
E-9002	HORIZONTAL VESSEL	Columns and Towers
FG-633		Flow Gauge
FT-008	PEGS_ITEM_118	Flow Transmitter
FV-006		Flow Control Valve
FV-11932		Unknown
FV-12733		Unknown
FV-15408		Unknown
FV-2571		Unknown
FV-4436		Unknown

**Clear Set**

**Save**   **Cancel**

5. To remove all the items in the Set, select **Clear Set**.
6. Select **Save**.  
Your edits to the details and contents of the Set are saved.
7. If you do not want to save the changes, select **Cancel**.

## Delete Sets

To delete Sets:

1. In the *Sets Panel*, select the arrow to select a **type of Set** from the drop-down box.  
The **Sets** of the selected type appear in a list.

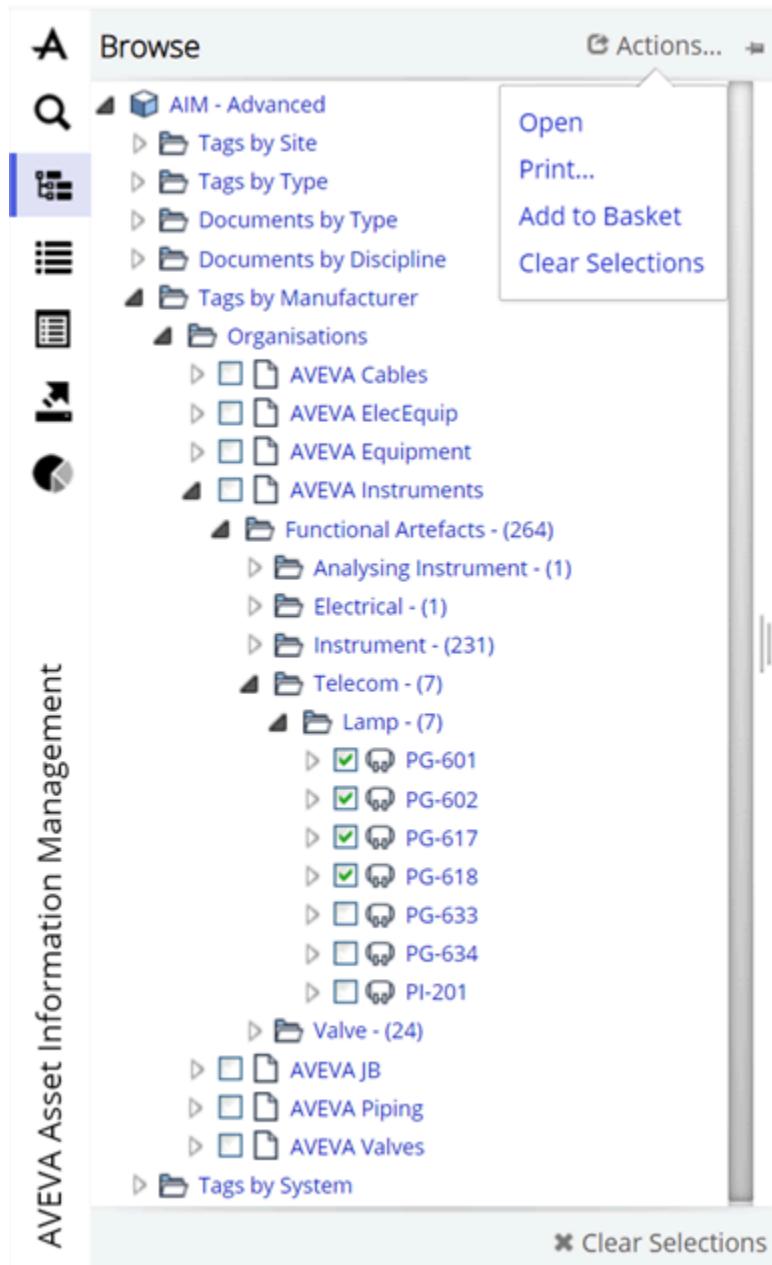
2. Select the *Set* you want to delete, and in the bottom-left corner, select  **Delete**.  
A message "You are about to delete the Set: {Set Name}. Do you wish to continue?" appears.
3. Select **Yes** to delete or **No** to cancel the action.

## Use the Basket

The Basket functionality enables a personalized grouping and storing of frequently used items, for using it later.

To use Basket:

1. Select the item(s), and then select the  **Actions...** menu.



2. Select the **Add to Basket** option.

The selected items can be added to Basket from the following areas in *Asset Information Management – Advanced*:

- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- **Related Items** area in the *Summary View*
- **Related Documents** area in *Summary View*
- **Related Query Form** area in *Summary View*
- **Related Items** area in an *Document Content Card*
- Items displayed under the **Contents** tab in a *2D Diagrams and Documents View Document Content Card*
- Items displayed under the **Related Items** tab in a *2D Diagrams and Documents View Tag Content Card*
- Documents displayed under the **Related Documents** tab in a *2D Diagrams and Documents View Tag Content Card*

Selecting the **Add to Basket** option from the top-right of the following areas also enables you to add items to the Basket:

- *Summary View* of documents, tags
- *Document View* of documents, tags
- *Query Form*

---

**Note:** The areas in the **Summary View**, **Document Content Card**, and **Tag Content Card** are configurable to include Relationships, Metadata or Characteristics. Hence, the naming of the areas can differ based on the configuration.

---

## Manage Exports

---

**Important:** The maximum limit for the number of items that can be exported at a time is set during configuration (for example, 10000 items). If you are exporting more than the limit set, a warning message appears.

---

The Export functionality enables you to export one or more items, tags, or documents selected from the following panels:

- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- **Related Items** area in the *Summary View*
- **Related Documents** area in the *Summary View*
- **Related Query Form** area in the *Summary View*
- **Related Items** area in a *Document Content Card*
- Items displayed under the **Contents** tab in a *2D Diagrams and Documents View Document Content Card*
- Items displayed under the **Related Items** tab in a *2D Diagrams and Documents View Tag Content Card*
- Documents displayed under the **Related Documents** tab in a *2D Diagrams and Documents View Tag Content Card*
- *Basket Panel*

---

**Note:** The areas in the **Summary View**, **Document Content Card** and **Tag Content Card** are configurable to include Relationships, Metadata or Characteristics. Hence, the naming of the areas can differ based on the configuration.

---

## Create Export Definitions

The Export Definition selected while executing an export determines the column headings and data elements, to be included in the Export. The exported items displayed or saved in the .csv or .xlsx file format include only the data elements, defined in the Export Definition. *Asset Information Management – Advanced* provides you with a default Export Definition. However, creating new Export Definitions enables you to have a more customized export.

---

**Note:** You must have the [CreateExports](#) rights to create Export Definitions. If not, the **Create** option will not be available in the Export Panel.

---

You can add or remove any of the following columns available by default, while creating an Export Definition:

- Object ID
- Object context
- Object name
- Object aliases
- Class IDs
- Class names
- Incidental class IDs
- Incidental class names
- Class Scheme
- Life-Cycle Status

Additionally, you can create new columns as follows:

- Object attribute for a source class
- Associated attribute
- Number of associated items

To create Export Definitions:

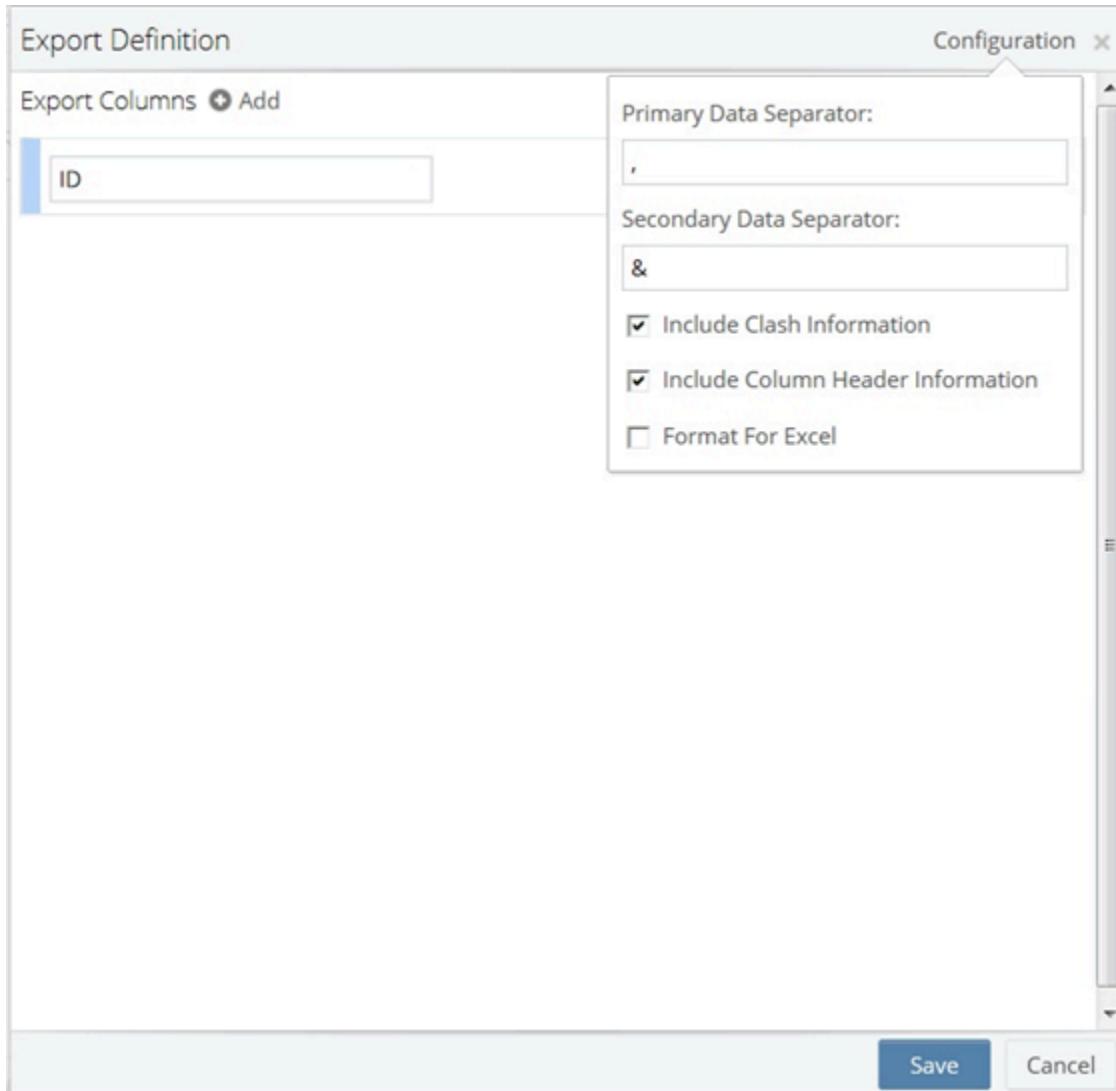


1. In the *Global Navigation Panel*, select . The *Export Panel* opens, docked in Dashboard.
2. In the drop-down box, select the arrow to select an Export Definition.
3. Go to the left-bottom corner, and select  **Create**. The **Export Definition** window opens.
4. Select  **Add** for Export Columns, and then select the new Export Columns. The newly added Export Columns appear as a list.

5. To edit the name of the Export Columns, select **Modify Label**.
6. To remove the newly added Export Columns, select .
7. To save the Export Definition, select **Save**. If you do not want to save the new Export Definition, select **Cancel**.

### Configure the Export Data Display

If you have the [CreateExport](#) appropriate rights, you can configure how the exported data should be displayed in the file exported in the CSV file format (.csv), as shown in the following figure:



### Edit Export Definitions

Selecting an Export Definition, and selecting  from the bottom-left corner of the *Export Panel* enables you to modify and save the Export Definition.

**Note:** You must have appropriate rights ([CreateExport](#) rights) to save the edited Export Definitions. If you do not have [CreateExport](#) rights, you can only edit the Export Definition, but cannot save it.

To edit an Export Definition:



1. In the *Global Navigation Panel*, select .  
The Export Panel opens, docked in Dashboard.
2. In the drop-down box, select the arrow to select the **Export Definition**.  
The Export Definitions appears in a list.
3. **Select an Export Definition**.
4. Go to the left-bottom corner, and then select .  
The **Export Definition** window opens.
5. Edit the Export Definition.
6. To save the updates, select **Save**. If you do not want to save the updates, select **Cancel**.

## Delete Export Definitions

By selecting at the bottom-left of the *Export Panel*, you can delete the Export Definitions. You must have appropriate rights ([CreateExport](#) rights) to execute a deletion.

To delete an Export Definition:



1. In the Global Navigation Panel, select .  
The Export Panel opens, docked in Dashboard.
2. In the drop-down box, select the arrow to select the Export Definition.  
The Export Definitions appears in a list.
3. **Select an Export Definition**.
4. Go to the left-bottom corner, and select .  
A message displaying "**You are about to delete the Export Definition. Do you want to continue?**" appears.
5. To continue with deletion, select **OK**. If you do not want to delete, select **Cancel**.

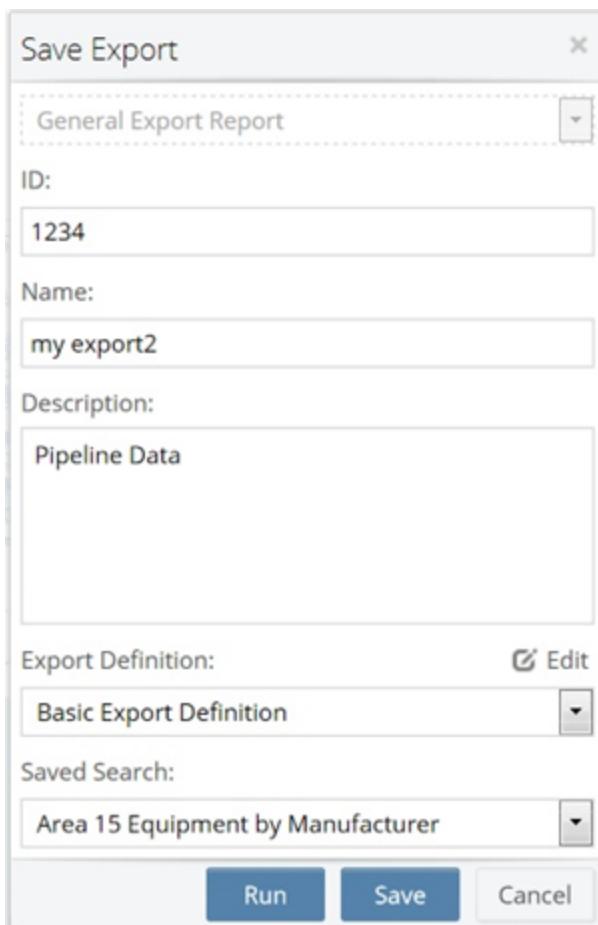
## Create Exports to Save

You can create and save exports of your saved searches with a unique ID, Name, Description and Export Definition. Saving the exports enables you to instantly export data at a later time. You must have the appropriate right (CreateExport rights) to save your exports.

To create exports to save:



1. In the *Global Navigation Panel*, select .  
The *Exports Panel* opens, docked in Dashboard.
2. In the drop-down box, select the arrow to select the export.
3. Go to the left-bottom corner of the *Export Panel*, and select .  
The **Save Export** window opens.



4. In the **ID** box, enter a unique identifier, and in the **Name** box, type a name.
5. In the **Description** box, enter details about the export.
6. In the **Export Definition** box, select the arrow, and select an Export Definition.
7. In the **Saved Search** box, select the arrow, and select a Saved Search.
8. To save the export, select **Save**.
9. To open and view the export, select **Run**.
10. Go to the panel at the bottom displaying **Do you want to open or save the .csv and .xlsx file:**
  - **Open:** Select this to view the export.
  - **Save:** Select this to save the export in your local machine.
  - **Cancel:** Select this if you do NOT want to save your export.A message displaying "**The Export process has been started**" appears.

## Run a Saved Export

To run a saved export:



1. In the Global Navigation Panel, select .

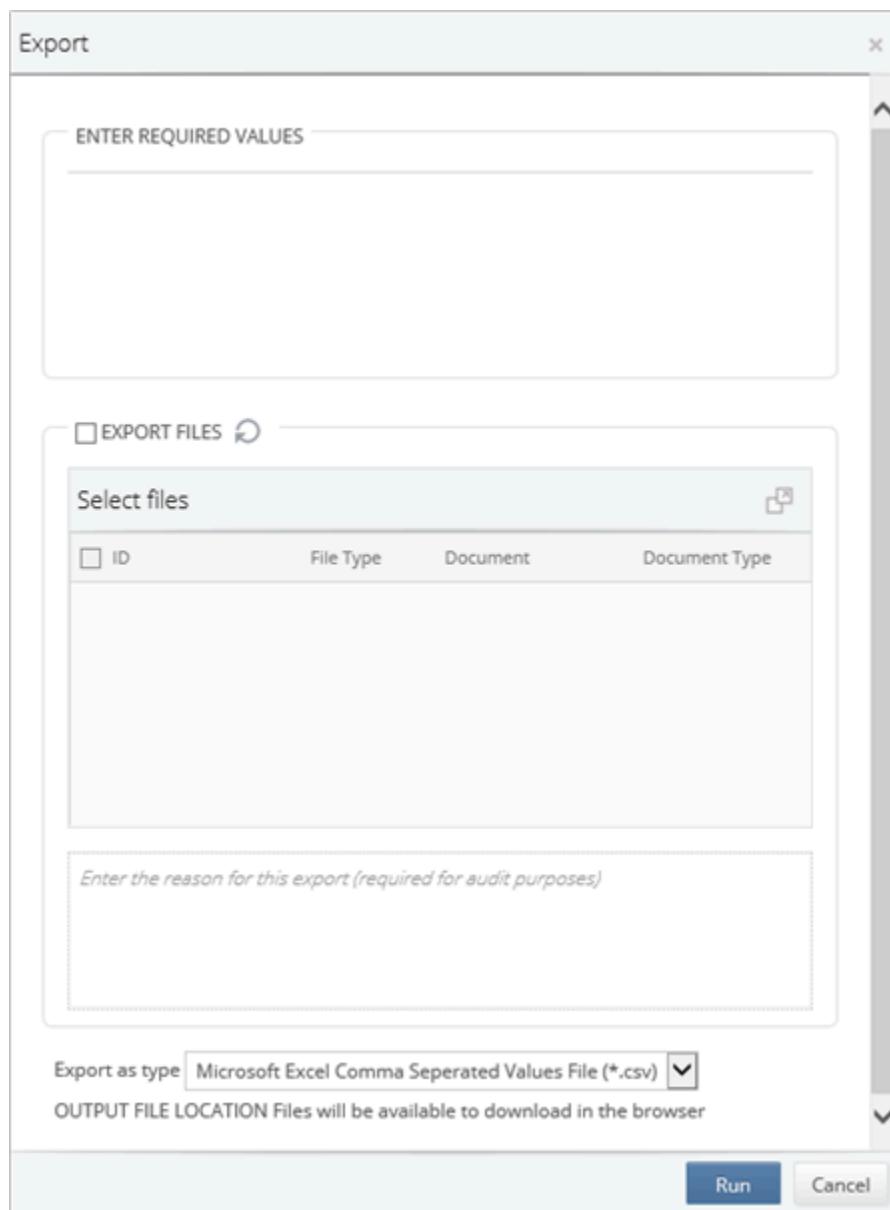
The *Export Panel* opens, docked in Dashboard.

2. In the drop-down box, select the arrow to select the export.

The saved exports are displayed in a list.

3. Select a saved export.

The Export window opens.



4. In the Enter the reason for this export box (required for audit purposes), type the details.

The pre-configured export package output path appears at the bottom of the Export window.

5. Select the appropriate file format from the **Export as type** drop-down list.

6. Select Run.

A message displaying "**The Export process has been started**" appears.

7. In the panel at the bottom displaying Do you want to open or save the .csv or .xlsx file:

- **Open:** Select this to view the export.
- **Save:** Select this to save the export in your local machine.

- **Cancel:** Select this if you do NOT want to save your export.

---

**Note:** When running a Query Form and exporting to a CSV file, then any cells in columns that appertain to Related Items may have multiple values. However, some values for the Related Items may be blank. So, in order to correspond a value to the ID or Name of the Related Item, then delimiters are used to preserve the order. For example, if there are 4 Related Items and only the 3rd item has an attribute value of "xyz" (the others having a blank values), then the cell would contain & & xyz &. The 3 ampersands correspond to 4 values, where all are blank except for the 3rd value. This will correspond to the IDs of the Related Items for example, P101 & P102 & P103 & P104. So P103 has a value of xyz for the attribute in question.

---

### Export of Records

This executes a query and downloads a file that contains the results to the client machine.

- The data is downloaded into a **.csv** or **.xlsx** file.
- If the data results are < 1,000, the output file is generated without any prompts.
- If the data results are >= 1,000 and < 10,000, then the following message is displayed: **Your Export report is greater than 1,000 items. Do you wish to continue?**
- If the data results are >= 10,000, then the following message is displayed: **You Export exceeds the maximum size of 10,000 items. Data beyond the first 10,000 items will be excluded from this export. Do you wish to continue with the Export?**

### Export of Files

This executes a query that creates a **.zip** file that is downloaded to the client machine. The **.zip** file contains:

- The downloaded files that are stored in a Files subfolder.
  - A Manifest file that contains a list of all the downloaded files.
  - The results of the query in a downloaded **.csv** or **.xlsx** file.
- For each export, a maximum of 100 files is downloaded.

### Edit Saved Exports

Selecting a saved export, and selecting  **Edit** from the bottom-left corner of the Export Panel enables you to modify your saved export.

To edit saved exports:



1. In the *Global Navigation Panel*, select .
2. The *Export Panel* opens, docked in Dashboard.
3. In the drop-down box, select the arrow to select the export.
4. The saved exports are displayed in a list.
5. Select a saved export.
6. Go to the bottom-left corner, and select  **Edit**.
7. The **Save Export** window opens.
8. Make updates, and then select **Save**.

Your updates are saved.

6. To open and view the updated export, select **Run**.
7. Go to the panel at the bottom displaying "Do you want to open or save the .csv file:"
  - **Open:** Select this to view the export.
  - **Save:** Select this to save the export in your local machine.
  - **Cancel:** Select this if you do NOT want to save your export.

A message displaying "The Export process has been started" appears.

## Delete Saved Exports

Selecting a saved export, and then selecting  **Delete** at the bottom-left of the *Export Panel* enables you to delete your saved exports. You must have appropriate rights to execute this action.

To delete saved exports:

1. In the *Global Navigation Panel*, select .
- The *Export Panel* opens, docked in Dashboard.
2. In the drop-down box, select the arrow to select the export.
- The saved exports are displayed in a list.
3. Select a saved export.
4. Go to the bottom-left corner, and select  **Delete**.
- A message displaying **You are about to delete the Export. Do you want to continue?** appears.
5. To continue with deletion, select **OK**. If you do not want to delete, select **Cancel**.

## Administer AIM-A

Administrators can load data into AIM-A and monitor progress of the loads; integrate with other systems; generate reports; and configure the AIM-A Dashboard.

## System Requirements

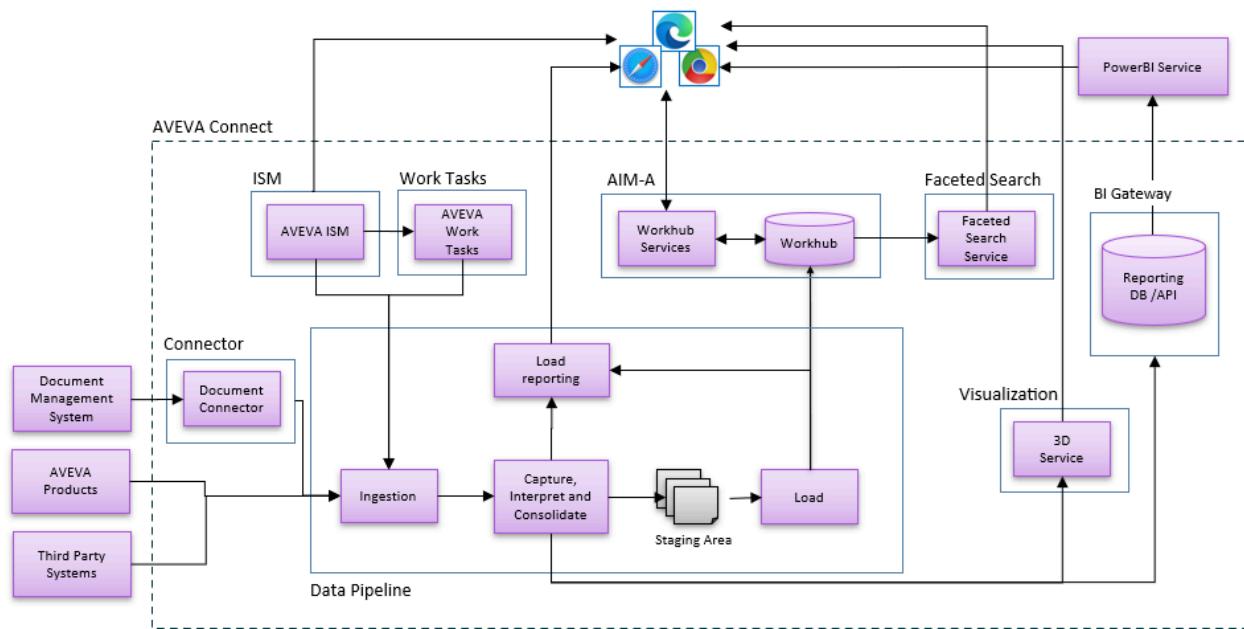
### Prerequisites

AIM-A's end-user Dashboard site is supported to run on the following browsers and operating systems:

Browser	Supported Version
Microsoft® Edge™	Latest (Windows 10, Windows 11)
Google Chrome™	Latest (Windows 10, Windows 11, iPad OS 13)
Safari	Latest (iPad OS 13)

## Architectural Overview

The functional architecture for the AIM-A service is shown in the following diagram:



AIM-A is a standards-driven information management solution. It's built from the following set of optional and mandatory components that are deployed in the cloud:

- AVEVA Asset Information Management - Advanced (mandatory)
- AVEVA 3D Visualization Service (mandatory)
- Faceted Search (mandatory)
- AVEVA Data Pipeline (mandatory)
- AVEVA Information Standards Manager (mandatory)
- AVEVA Document Connector (optional)
- AVEVA Insight BI Gateway (optional)
- AVEVA Work Tasks (optional)

The Data Pipeline is used to capture, interpret and consolidate data from either AVEVA products or third-party systems. This data can consist of 3D models, documents and drawings and engineering metadata.

A dedicated Document Connector can easily transfer documents and corresponding metadata from a Document Management System (DMS) to the AIM-A solution (see the current component release for the DMS systems supported).

The capture, transformation and loading process can be organized and orchestrated easily using AVEVA Work Tasks, allowing notifications and easy scheduling of those activities.

Once the data has been uploaded to the cloud and processed by the AVEVA Data Pipeline service, it is automatically loaded into AIM-A. This consists of the Workhub persistent store and Workhub services which provide data to the AIM-A web application.

The Faceted Search component provides the ability to search keywords, and item, tag and document names in

the content of the document files.

The rules that drive the capture, interpret and consolidation processes are defined using AVEVA Information Standards Manager. These processes allow the data to be presented in a common data model using consistent naming conventions that can be uploaded to the cloud.

AVEVA BI Gateway can be used to generate reports around data quality, consistency and completeness of the project based on rules defined in AVEVA Information Standards Manager as well as reporting against any type of data available in the AIM database.

The 3D service provides the web application access to interactive video streaming of uploaded 3D models. The 3D service provides translation services that transform the uploaded 3D models into GPU optimized cached files which are used during the video streaming.

## Configure AIM-A

The configuration of AIM-A is created using ISM and when the configuration of the class library is complete, it is exported in XML format and pushed to the cloud to be processed by the Registers Gateway (component part of the AVEVA Data Pipeline).

The class library can be divided into two main fragments:

- Standard Class Library
- Registers Gateway Class Library

These two fragments are merged into one single fragment called a composition. This is what completes the class library that will be pushed to the cloud containing all the necessary configurations.

### **Standard Class Library fragment**

This level will contain the configuration of the data model, including classes, attributes, attribute groups, enumeration lists, measure classes and units, permissible attributes on classes, AIM-A namespace, nomenclatures, class contexts, system required AIM-A classes, AIM-A upper ontology mapping, units of measure mappings, attribute level associations.

### **Registers Gateway Class Library fragment**

This level will contain the configuration needed for the Registers Gateway to process the data, including info interface namespace, registers configurations, query form configurations, summary view configurations, breakdowns and embedded Power BI Reports.

## ISM Data Model for AIM-A

The Standard Class Library fragment is created using ISM and contains all configurations needed for the data model.

### **Classes**

A Class is an object that identifies the requirements of data attributes or elements with their relationships and interpretations applied.

For further details, refer to the section [Use Classes](#).

### **Attributes**

An attribute is any piece of information needed for an object.

For further details, refer to the section [Work with Attributes](#).

### Enumerations

An enumeration is a look-up list that defines permissible values for an attribute. Used wherever possible to achieve data consistency within the database for the end user.

For further details, refer to the section [Handle Enumerations](#).

### UoMs

Measure units is a definition of individual units of measure and measure classes are a definition of baskets for units of measures. Used for measuring the same kind of quantity.

For further details, refer to the section [Manage Units of Measure](#).

### Standards & extension namespaces

Standards are a way to communicate with other systems which define a naming convention to be able to add a specific identifier to each object.

Extension namespaces are standard schema to communicate with different applications like AIM-A and the Registers Gateway.

Namespace name	Description
Info Interface	Contains rules for capturing and interpreting data using the Registers Gateway. For example, attribute mappings, class mappings classification logic, register configuration and so on.
Anet	Used for describing behaviour specific to AIM-A. For example, defining associations, hiding classes from the UI, and so on.

For further details, refer to the sections [Implement Corresponding Identifiers](#) and [Implement Configuration Schema](#).

### Compositions

A composition is a collection of independent Standards that make up a complete Class Library.

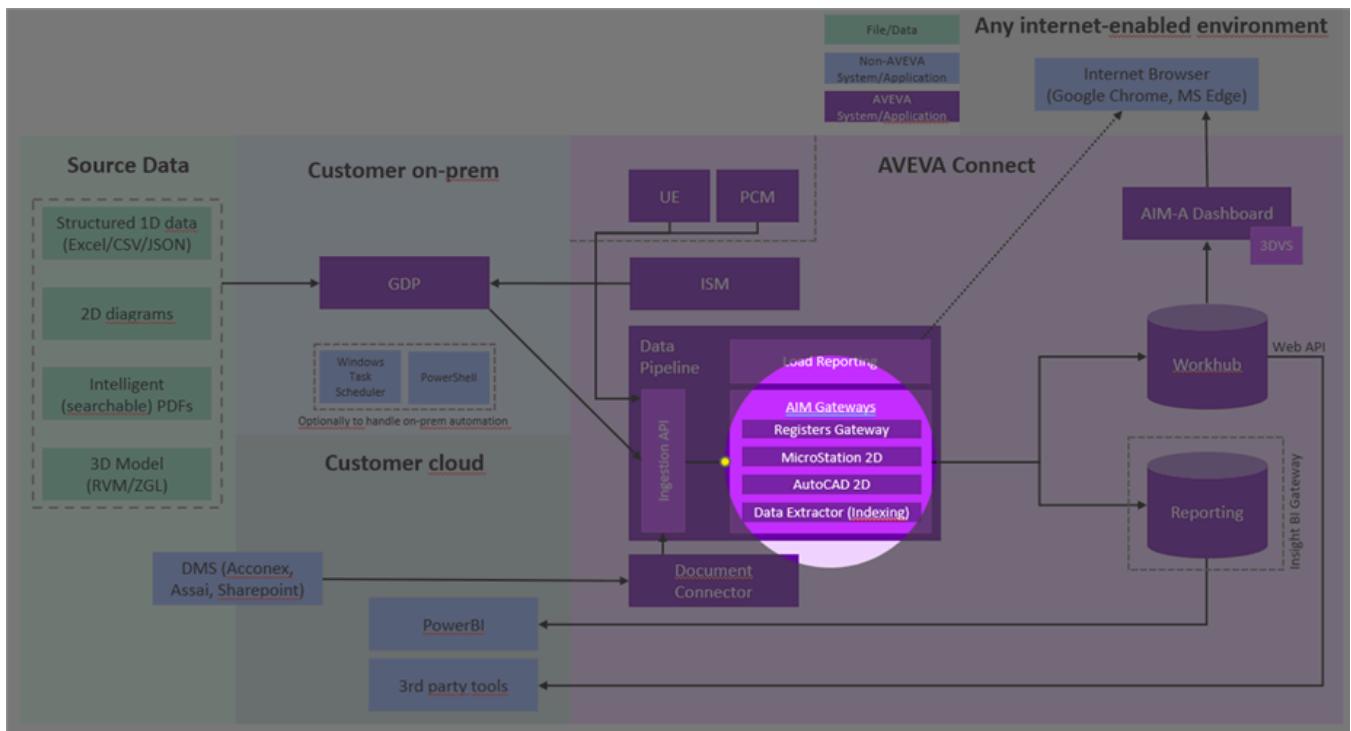
For further details, refer to the section [Create or Manage Compositions](#).

## Data Source Configuration

### 1D Data Configuration

#### Registers Gateway overview

The Registers Gateway is a command line tool, part of the AIM-A solution.



There are several components to the Registers Gateway:

- Input components:
  - GEICL (Generic Engineering Information Class Library) class library. This is a single source of configuration for the entire solution, this configuration is created using ISM. It is divided into two parts:
    - The first part is related to the data model. For more information, see the section ISM data model for AIM-A.
    - The second part is related to the registers configuration. Refer to below sections for further information.
  - 1D data: data to be processed.
- Reporting Database
- Technical configuration based on standards
- Command line tool (Registers Gateway)
- Output components:
  - EIWM (Enterprise Information and Workflow Model) Class library.
  - EIWM 1D data.
  - AIM-A Summary Views & breakdown configuration.
  - AIM-A Query Form configuration.

## Registers Gateway Capabilities

The Registers Gateway has four main processes that happen whenever the system is triggered, and input components (complete class library with data model and registers configuration and 1D data) are sent to it. These processes are based on register configurations provided within the class library, as an input for the Registers Gateway:

- Captures: capture columns from data sources.
- Interprets: Map column data to attributes, classify objects, validate them, and annotate.
- Consolidates: Combine all attribute data.
- Publishes: Publish consolidated data to staging area that will be read by AIM-A.

The Registers Gateway command pipeline will start by receiving the inputs, then it will read data from sources and convert it into a record. Those streams of records will be interpreted based on ISM instructions (data model and registers configurations standard driven), the Registers Gateway will apply a sequence of commands (operations) and data expressions to take and convert the records into the desired form for AIM-A as modelled in ISM.

The Registers Gateway has several capabilities, among them we can find the following:

- Mapping classes, attributes, and units of measure.
- Classification of objects.
- Validation against rules defined in ISM and/or results recorded in the Reporting Database.
- Extraction and consolidation of 1D data.
- Modification of data via a dynamic expression language.
- Delta processing: only changes what has changed from last load.

### ISM Pre-requisite: Mapping Data between ISM and AIM-A

Before starting any Registers Gateway configuration, ensure that the data model is built and ISM pre-requisites explained below are completed in the fragment of data model.

#### Namespace

Extension namespaces are standard schemas to enable the communication between applications.

- Standard schema to communicate from AIM-A to Anet - this namespace should be created in fragment one: Data model Standards.
- Standard schema to communicate from the Registers Gateway to Info Interface - this namespace should be created in fragment two: Registers Gateway fragment.

Namespace name	Description
<b>Info Interface</b>	Contains rules for capturing and interpreting data using the Registers Gateway. For example, attribute mappings, class mappings classification logic, register configurations etc.
<b>Anet</b>	Used for describing behaviour specific to AIM-A. For example, defining associations, hiding classes from the UI – for example anet: visible, etc.

Namespaces are added in ISM on the general configuration menu, on the extension namespaces tab.

Details	Composition	Approved By	Extension Namespaces	Extensions	Class Library Policy Config...	Naming Conventions
Prefix	URI			Name	Description	
schema	http://schemas.aveva.com/GEICL/Extension/Schema/2...			Schema Definitions	AVEVA ISM Extension Schemas definitions for desc...	
schemainstance	http://schemas.aveva.com/GEICL/Extension/Schema/In...			Schema Instances	AVEVA ISM Extension Schema Instances	
nmcldr	http://schemas.aveva.com/Generic/Engineering.Inform...			Naming Conventions	AVEVA ISM Extensions for mapping entity identifie...	
anet	http://schemas.aveva.com/Generic/Engineering.Inform...			AIM	Namespace for AIM Master Reference and Visualis...	
InfoInterface	http://schemas.aveva.com/InformationInterfaces/Exte...			Information Interface	Register Gateway - Data Interpretation And Mappi...	

## Nomenclature

Nomenclatures are considered alternate identifiers, similar in nature to IDs. They are used to map incoming data to systems, industry standards and local standards when naming conventions used by source systems are drastically different in order to have a common terminology. For example, source-1 uses length while source-2 uses len, but both systems mean the attribute length present in ISM. Therefore, each source will have its own nomenclature.

ISM uses nomenclature to interpret terminology from multiple source systems into a common language (semantic harmonization).

Nomenclatures are added in ISM on the global toolbar menu, on the Naming conventions tab. This nomenclature should be created in fragment one Data model Standards.

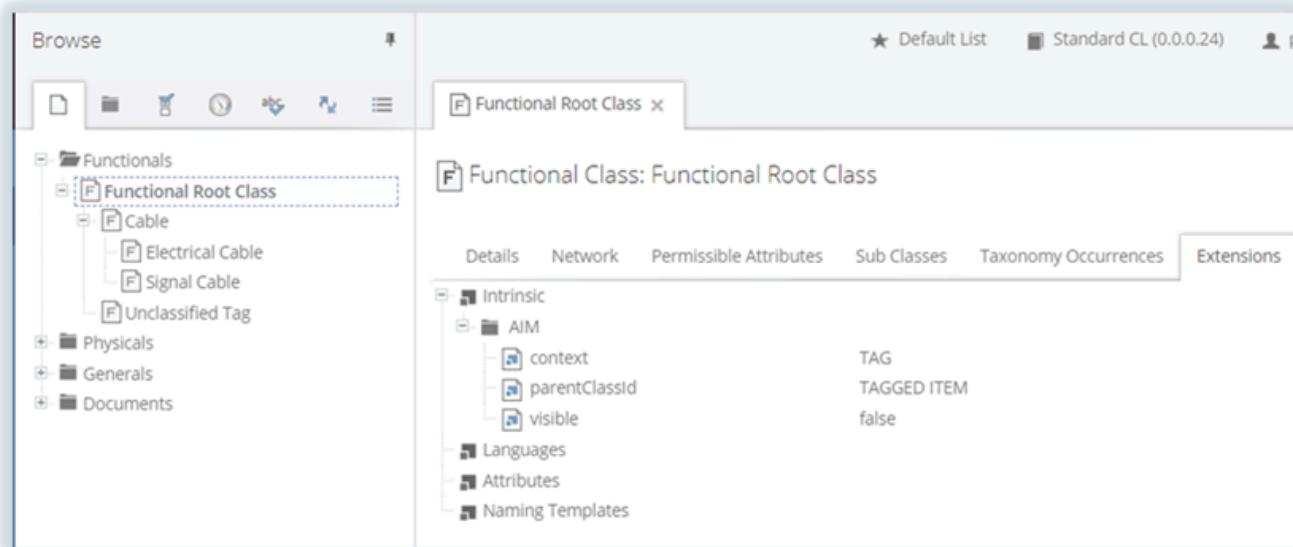
■ Standard CL (0.0.0.39)						
Details	Composition	Approved By	Extension Namespaces	Extensions	Class Library Policy Config...	Naming Conventions
ID	Name			Description	Separator	Sort Ord...
LoadTemplate	LoadTemplate			Nomenclature used to map incoming data.		

## Contexts

Contexts are used to uniquely identify an object. When the Registers Gateway classifies each object, it picks up the context defined on the class and appends it for that object.

Contexts are defined on the class level using anet:context as an extension on any class, subject to standard inheritance rules. The specified context will then be applied to any IDs and references to an object, where the classification is known.

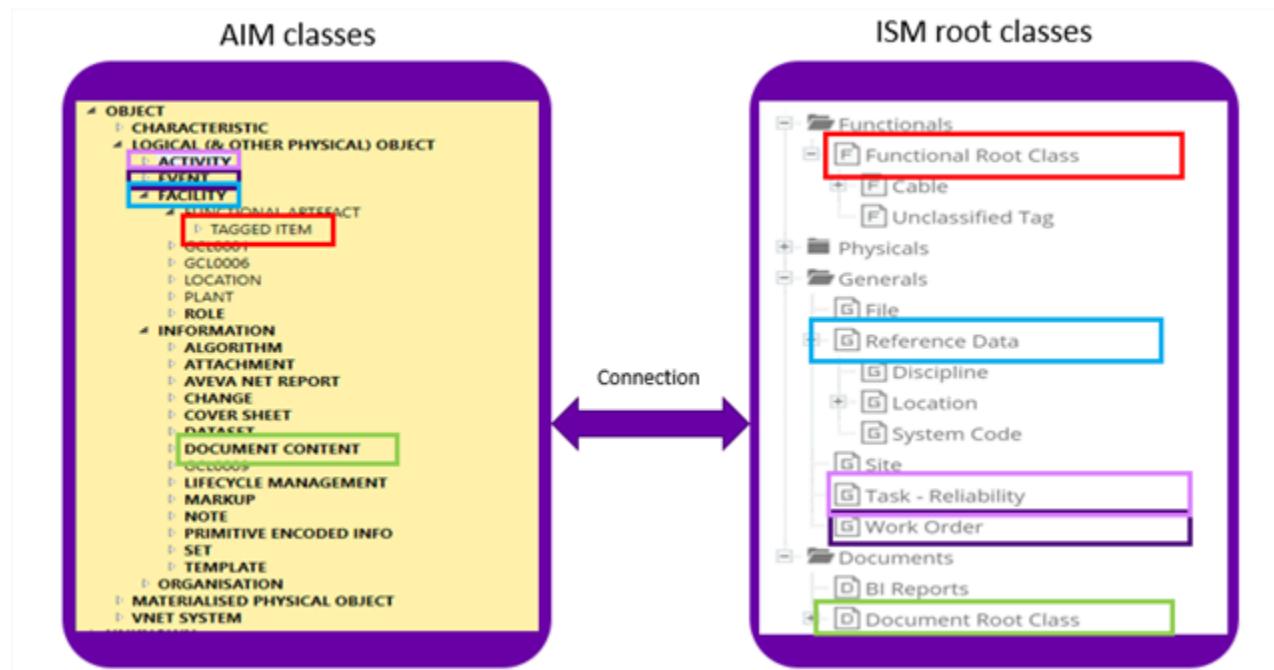
Contexts are added in ISM on the Extension tab of each class. These contexts should be created in fragment one Data model Standards.



For example, all objects classified as Electrical Cable will get the context TAG as it will be inherited from the Functional Root class. So, when the Registers Gateway finishes processing, it will append the context it picks from its class and create an object called Root|TAG|PU202143A in the database.

### Upper ontology mapping

Upper ontology is a set of built-in classes in AIM-A that will connect the AIM-A upper ontology classes to ISM root classes, establishing a connection between ISM & AIM-A. The upper ontology should be created in fragment one Data model Standards.



1. If it is related to the root functional class's parent and its attributes, then it will go on class level.

Add node = parentClassId and property = TAGGED ITEM for Functional Root Class

Add node = parentClassId and property = DOCUMENT CONTENT for Document Root Class

Add node = parentClassId and property = FACILITY for General Root Class

**F Functional Class: Functional Root Class**

Details	Network	Permissible Attributes	Sub Classes	Taxonomy Occurrences	Extensions	Languages
<ul style="list-style-type: none"><li>- Intrinsic</li><li>- AIM<ul style="list-style-type: none"><li>context TAG</li><li>parentClassId TAGGED ITEM</li><li>visible false</li></ul></li></ul>						

**D Document Class: Document Root Class**

Details	Network	Permissible Attributes	Sub Classes	Taxonomy Occurrences	Extensions	
<ul style="list-style-type: none"><li>- Intrinsic</li><li>- AIM<ul style="list-style-type: none"><li>context DOC</li><li>parentClassId DOCUMENT CONTENT</li><li>visible false</li></ul></li></ul>						

**G General Class: Reference Data**

Details	Network	Permissible Attributes	Sub Classes	Taxonomy Occurrences	Extensions	
<ul style="list-style-type: none"><li>- Intrinsic</li><li>- AIM<ul style="list-style-type: none"><li>parentClassId FACILITY</li></ul></li></ul>						

2. If it is related to upper ontology classes, properties, etc, then it will go on global extension level.

Standard CL (0.0.0.24)

Details    Composition    Approved By    Extension Namespaces    Extensions

- Intrinsic
- AIM
  - Classes
    - FACILITY
      - classId      FACILITY
      - visible      false

Regarding classes of activities/tasks and events, in AIM-A the class for activities/tasks is ACTIVITY and the class for Events is EVENT and we are connecting our ISM class Task – Reliability with AIM-A class ACTIVITY and ISM class "Work Order" with the AIM-A class EVENT.

Once we have created the class accordingly, parentClassId must be added, parentClassId=ACTIVITY for activities/tasks and parentClassId=Event for Events. And finally, both classes and their attributes should be mapped.

General Class: Task - Reliability

Details    Network    Permissible Attributes    Sub Classes    Taxonomy Occurrences    Extensions    Languages

Identification

ID: GCL12236    Name: Task - Reliability

Description: Task - Reliability

Corresponding Identifiers

Synonyms:

CFIROS 1.4:

CFIROS 1.5:

ISO 15926 part4:

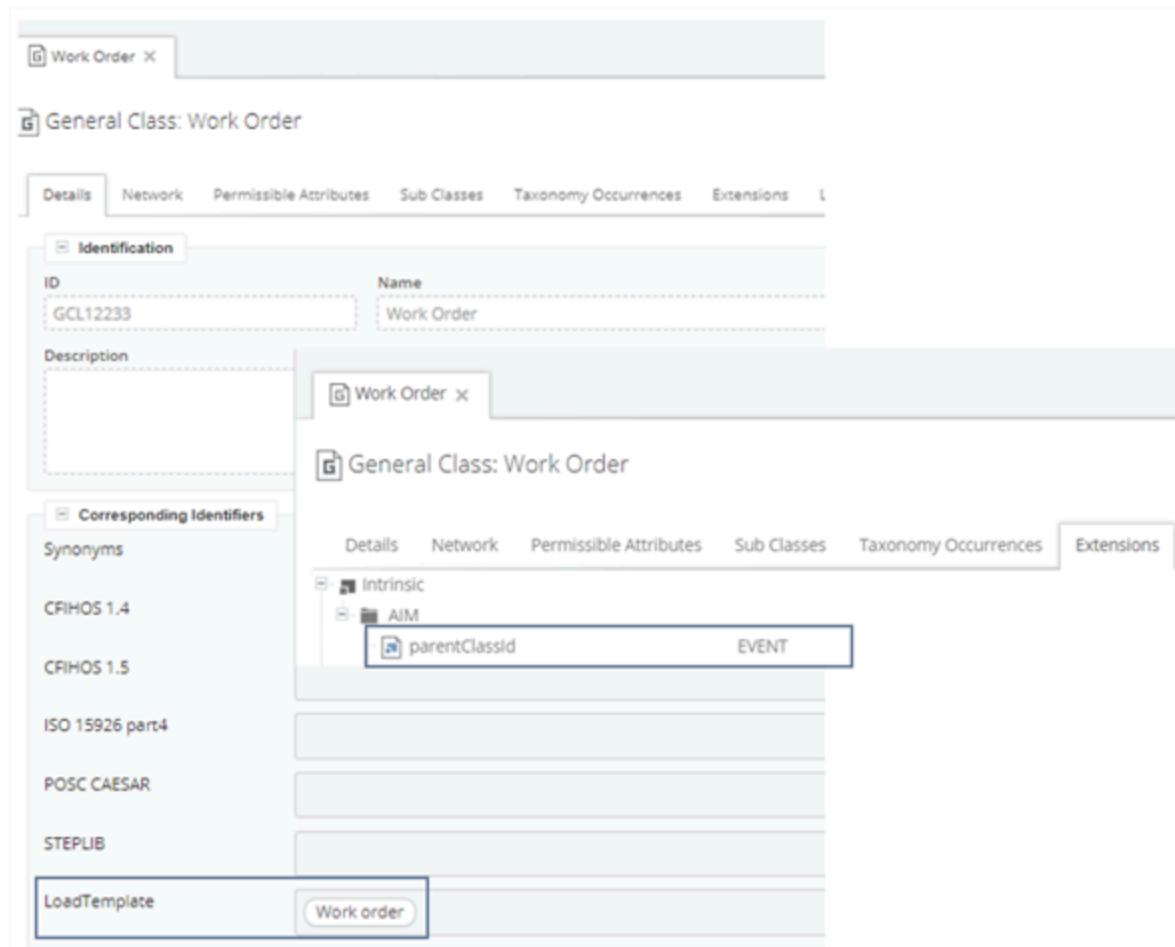
POSC CAESAR:

STEPLIB:

LoadTemplate: Task

Reporting:

parentClassId: ACTIVITY



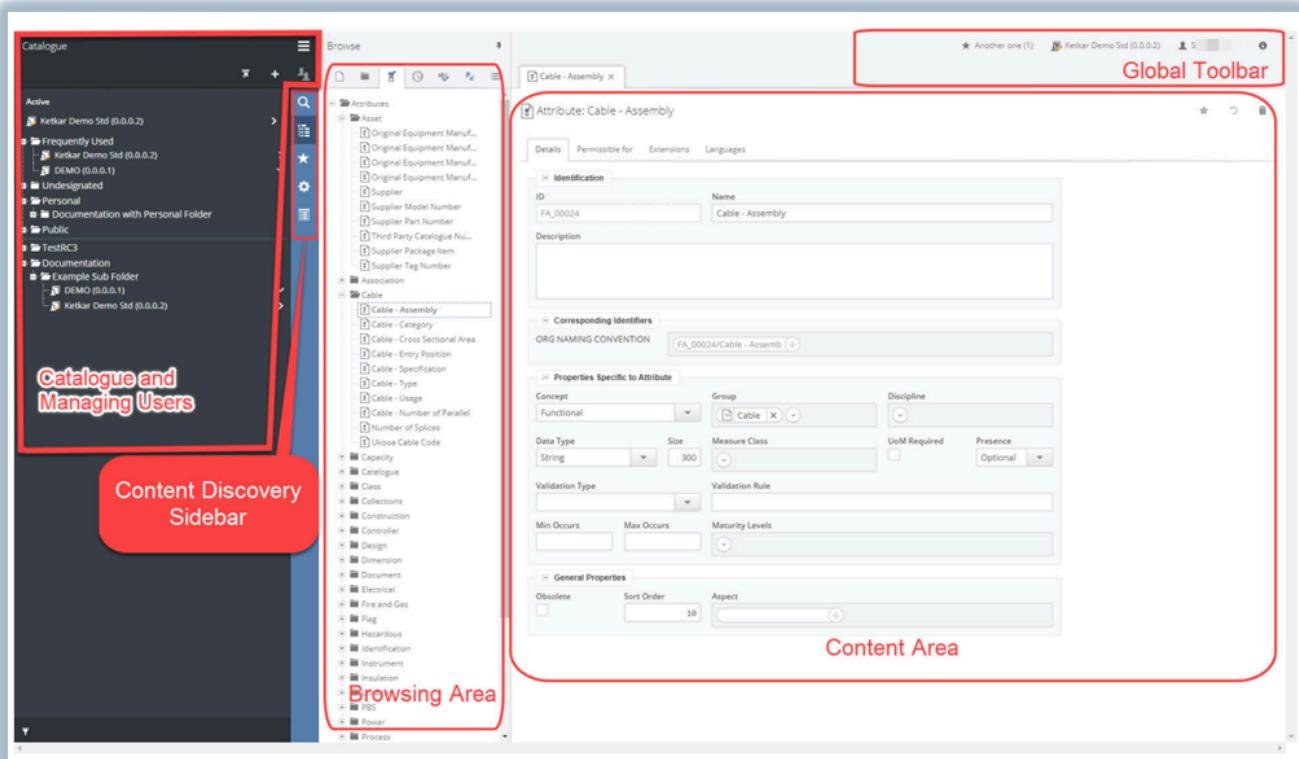
## Registers configuration for 1D data load

### Register's structure

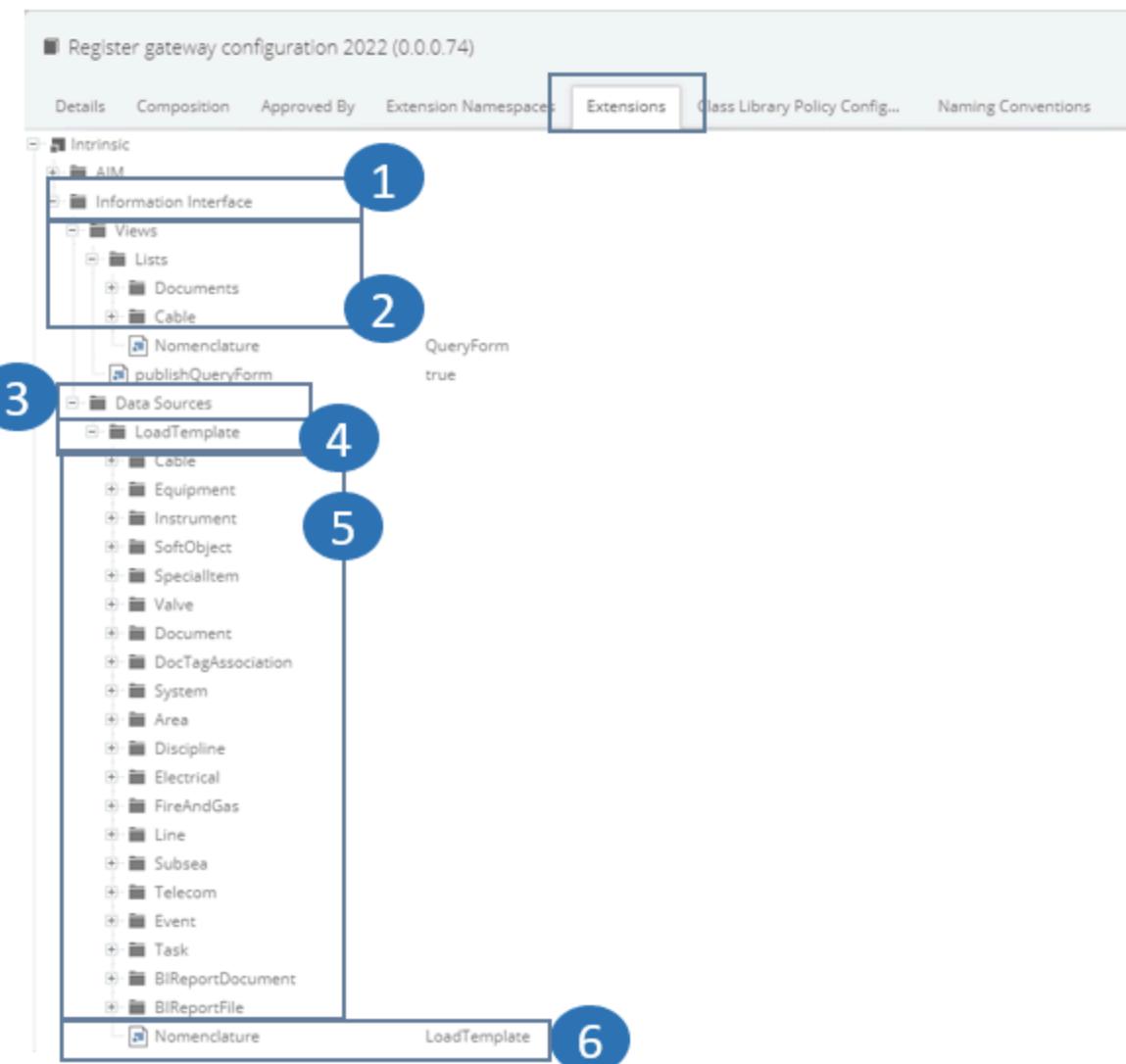
Class library will be divided into two parts (fragments):

1. Data model, upper ontology and mapping
2. Registers gateway configuration and AIM-A dashboard configuration.

This section describes all the configurations necessary to complete part two of the class library (fragment two). Configuration will be done on Extensions tab of the global toolbar of ISM.

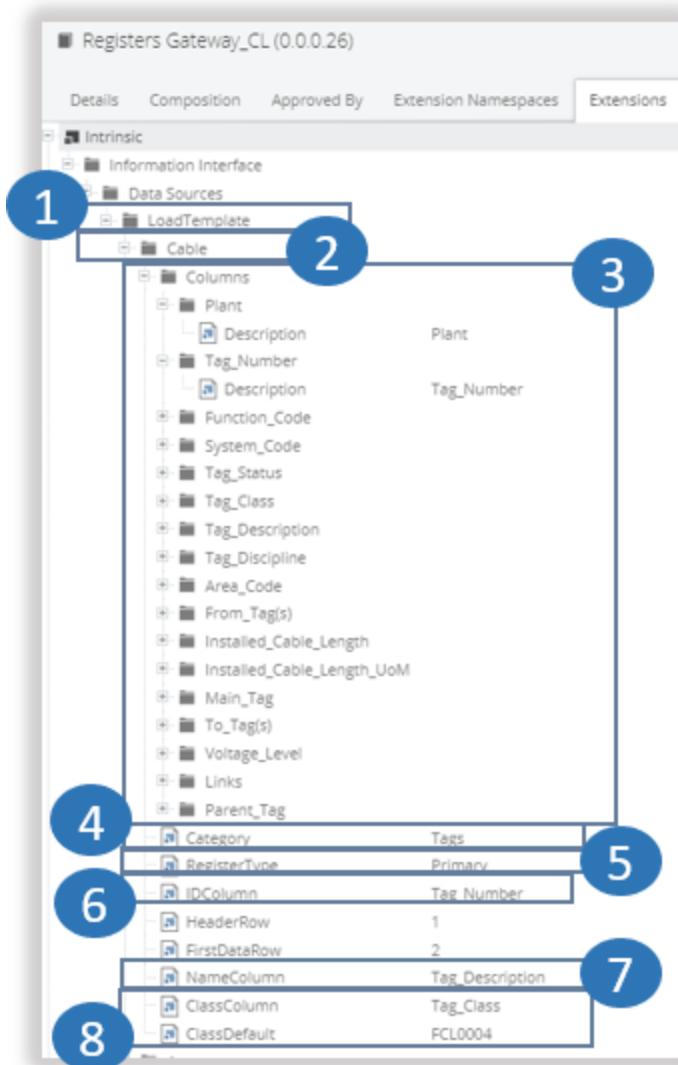


In the Registers Gateway configuration, fragment two is composed of these different parts:



1. Node Information Interface: configurations related to the Registers Gateway.
2. Views node: configuration of query forms.
3. Data Sources node: list of source systems.
4. Load Template node: Name of the data source systems. This is an example name, it will depend on the data sources system you are planning to use.
5. Cable, Equipment, Instrument, SoftObjects and all nodes below Load Template: Registers configurations for the system Load Template you are importing data from. Here is where each register needs to be defined.
6. Nomenclature: property of registers that indicates which nomenclature this register should follow for the mapping.

Each register has their own structure, as explained below:



1. Load Template node: Under Data Source node, add a node for each system you are importing data from.
2. Registers. For example, Cable: Definition of Registers node.
3. Columns node: list of column names present in the input sheet which you would want to add to the output XML file. Each column node must have a property or else ISM will not export the node if the node is coming from a composition.  
Each column also represents captured and interpreted attribute data based on mapped columns.  
Columns can be either property, characteristic or association.
4. Category: parameter of a register that groups data from different interfaces into a set.
5. RegisterType: parameter of a register that defines how a register should be read.
6. IDColumn: parameter of a register that creates an object with this ID.
7. NameColumn: parameter of a register that refers to a description column in the source file so that the tag will have a name in the EIWM XML file.
8. ClassColumn or ClassDefault: parameter of a register that specifies a column in the captured data to determine the class of each record.

More parameters can be added into the register's configuration. Please refer to specific topics to see further details about parameters.

## Mapping

Mappings are done in the Standards fragment in ISM.

Once register columns are added to InfoInterface, they can be mapped to attributes, classes and UoMs in ISM.

These may be considered alternate identifiers, similar in nature to an ID, and relate an attribute to standards and systems.

Nomenclature mapping in ISM for the Registers Gateway can hold multiple values for classes.

### Attribute mapping example

The diagram illustrates the mapping process between a database column and an ISM attribute. On the left, the 'Registers\_Gateway\_CL' table is shown with its columns. The 'Tag\_Number' column is highlighted with a blue box. A blue line extends from this box to the 'Attribute: Tag Number' dialog on the right. The dialog shows the 'Identification' tab with 'ID: AT0012' and 'Name: Tag Number'. Below it, the 'Corresponding Identifiers' tab lists 'LoadTemplate' and 'Tag\_Number'.

Plant	Tag_Number	Function_Code	System_Code	Tag_Class	Tag_Description	Tag_Discipline
IED	PU202143A	PU	20	Electrical Cab	POWER CABLE, PRI EL	

**Cable register**

**Attribute: Tag Number**

**Details** **Permissible for** **Extensions** **Languages**

**Identification**

ID: AT0012 Name: Tag Number

Description:

**Corresponding Identifiers**

LoadTemplate Tag\_Number

Attribute mapping

### Class mapping example

**Cable register**

A	B	E
Plan	Tag_Number	Tag_Class
IED	PU202143A	Electrical Cable
IED	20XSV2130-Z	Signal Cable

**Functional Class: Electrical Cable**

ID	Name
FCL0002	Electrical Cable
Description	A wire, or a group of wires inside a rubber or plastic covering, which is used to carry electricity.

**Functional Class: Signal Cable**

ID	Name
FCL0003	Signal Cable
Description	A wire, or a group of wires inside a rubber or plastic covering, which is used to carry electronic signals.

### UoM mapping example

Configuration is specified in the columns listing as a property. Units of measure provide context to the values captured from the source data.

The screenshot illustrates the configuration of a Register and its associated Measure Unit in the AVEVA Asset Information Management (AIM) software.

**Registers Configuration:**

- From Tag(s):** V-5482, 20XSV2130
- Installed\_Cable\_Length:** 23 m
- Installed\_Cable\_Length\_UoM:** 2 m

**Measure Unit Configuration:**

- Measure Unit: meter**
- Identification:**
  - ID:** UOM\_m
  - Name:** meter
  - Description:** length
- Corresponding Identifiers:**
  - LoadTemplate:** m

**Tag classification:**

Classifications are done in the Registers configuration fragment in ISM as part of the parameters of each register.

The Registers Gateway will classify tags based on the following parameters:

- **ClassExpression:** this parameter will enable a class creation using value expressions that will change the result. For example, merging the value of different columns to create the class or creating the value following a condition.

## Tag classification

Class Classifications are done in the Registers configuration fragment in ISM as part of the parameters of each register.

The Registers Gateway will classify tags based on the following parameters:

- **ClassExpression:** this parameter will enable a class creation using value expressions that will change the result. For example, merging the value of different columns to create the class or creating the value following a condition.

The screenshot shows the AVEVA AIM interface. On the left, the 'SourceSystem1' configuration is displayed, including 'GeneralTag' settings like 'Category', 'Priority', 'Register Type', 'File Name', 'IDColumn', 'HeaderRow', 'FirstDataRow', 'NameColumn', 'ClassExpression' ({{@[Plant]}}-{{@[Category]}}-{{@[Function]}}, {{@[SheetName]}} in [Sheet1]), 'IncludeSheet', 'DeleteWhere' ({{@[Action]} starts any ['Del','Rem']}), 'ClassDefault', and 'CaptureMethod'. Below this is a table of object records:

A	Tag	Plant	Category	Function	Description	Status	System	vePress	DryWeight	LoopNumber	ParentTag	MainTag	Class	Action
1	43-VD-673	IED	EQ	VD	HP Flare Knock-Out Drum	Active	43	23500 kg			43-VD-673	Vessel	CreateOrUpdate	
2	43-BOV-2518	IED	IN	BDV	Blowdown Valve, HP Flare I A		43	CLASS 030C 75 kg	43B2518		43-VD-673	Control valve	CreateOrUpdate	
3	43-BOV-2518	IED	IN	BDY	Solenoid Valve, HP Flare Kr ACTIVE		43		43B2518		43-VD-673	Solenoid valve	CreateOrUpdate	
4	43-ZSO-2518	IED	IN	ZSO	Position Switch Open, HP F A		43		43B2518		43-VD-673	Instrument switch	CreateOrUpdate	
5	43-ZSC-2518	IED	IN	ZSC	Position Switch Closed, HP Active		43		43B2518		43-VD-673	Instrument switch	CreateOrUpdate	
6	43B003	IED	JB	JB	Junction Box, HP Flare Knot Void		43	1.5 kg				Electrical Junction box	Delete	
7	43B003	IED	EQ	VD	HP Flare Knock-Out Drum	Active	25	23500 kg				Vessel	CreateOrUpdate	
8	25-VD-673	IED	EL	HVTR	High voltage transformer A Active		82	50000 kg				Transformer	CreateOrUpdate	
9	82-HVTR-001A	IED	EL	HVTR	High voltage transformer B Active		82	50000 kg				Transformer	CreateOrUpdate	
10	82-HVTR-001B	IED	EL	HVTR										

On the right, the 'Functional Class: Vessel' details are shown, including 'Identification' (Id: FCL002, Name: Vessel) and 'Corresponding Identifiers' (Source System 1: IED-EQ-VD).

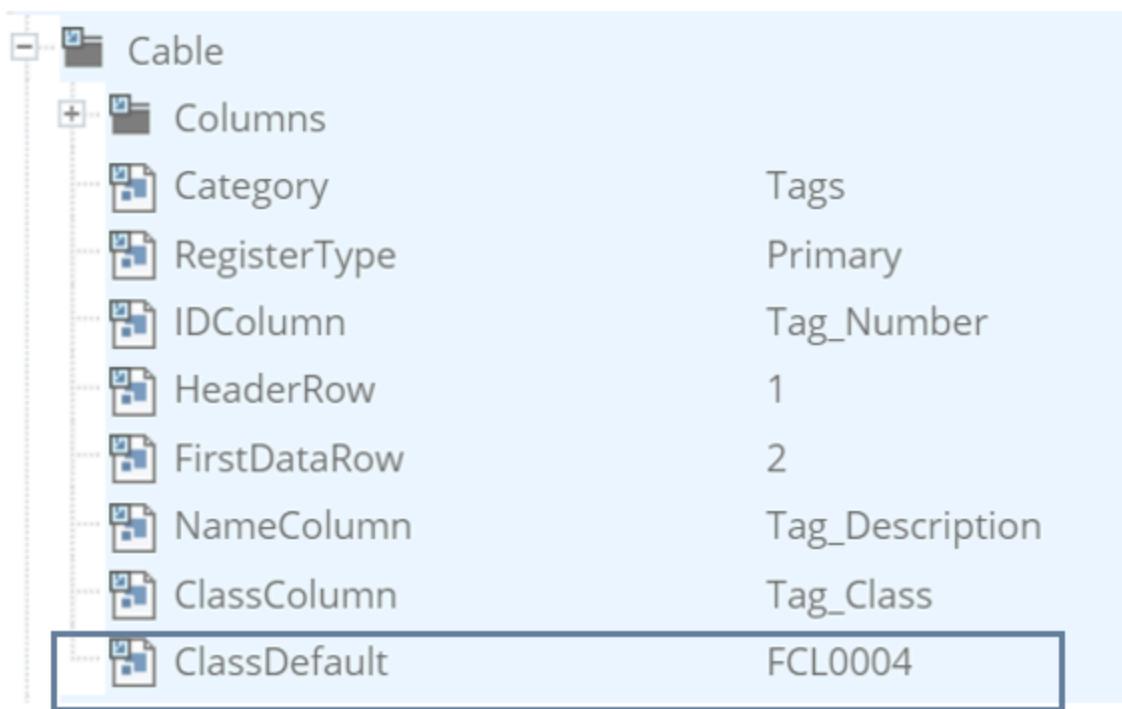
- **ClassColumn:** this parameter specifies a column to determine the Class of each object record.

The screenshot shows the 'SourceSystem1' configuration for a 'Cable' object. The 'ClassColumn' setting is highlighted as 'Tag\_Class'. Below is a table of object records:

Plant	Tag_Number	Function_Code	System_Code	Tag_Class
IED	PU202143A	PU	20	Electrical Cable

On the right, the 'Functional Class: Electrical Cable' details are shown, including 'Identification' (Id: FCL0002, Name: Electrical Ca) and 'Corresponding Identifiers' (LoadTemplate: Electrical Cable).

- **ClassDefault:** this parameter specifies a default class to assign to an object record when ClassColumn or ClassExpression does not assign a class.



**Note:** ClassExpression parameter has the highest priority, followed by ClassColumn and finally ClassDefault.

## Registers type

Registers are defined within ISM to capture structured data from source systems. They define how the data is captured and interpreted by the Registers Gateway when loading into AIM-A, therefore a single data source system can have multiple registers of varying types.

Registers type is included in the Registers configuration fragment in ISM as part of the parameters of each register.

There are four register types:

### Primary

Standard register that creates an object using an ID column (Tags/Documents), classifies objects, captures, and interprets attributes based on a column listing, and data conditioning rules. For example:

#### Input file

A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	IED	CA	Z	43-ZSO-2518	43-ZSO-2518	43-BDV-2518	25 m		1 43-VD-673	INSTR_CABLE	Active	/43-ZSO-2518-201,45ZSO2518Z01	
2	IED	CA	Z	43-ZSC-2518-201	43-ZSC-2518	43-BDV-2519	25 m		1 43-VD-673	INSTR_CABLE	A	/43-ZSC-2518-201,45ZSC2518Z01	
Sheet1													

### Register configuration

The screenshot shows the AVEVA AIM-A Practice Training interface. The top navigation bar includes 'Details', 'Composition', 'Approved By', 'Extension Namespaces', and 'Extensions'. The 'Extensions' tab is selected. The left sidebar shows a tree structure under 'Information Interface' and 'Data Sources', with 'SourceSystem1' and 'SourceSystem2' expanded. Under 'SourceSystem2', there is a 'Cable' node with various sub-items like 'Columns', 'Tag', 'Plant', etc. Below this is a table with four numbered rows:

1	Category	Tags
2	Priority	1
3	Register Type	Primary
4	NameColumn	Class

1. Category = Tags will group data from different interfaces into a set and you can see it in the Tags output folder of the staging area.
2. Register Type = Primary defines how a register should be captured and interpreted. Primary Register classifies an object and creates the ID in AIM-A.
3. ClassColumn = Class specifies a column in captured data to use in determining the Class of each record.
4. NameColumn = Class refers to some description column in source file so that tags will have a name in the EIWM XML file.

## Secondary

Standard register used to provide additional information (enriches data). It captures all fields from source files as attributes, does not define classification. You can add attributes or associations as part of this register. For example:

### Input file

NominalCurrentData.xlsx - Excel												
File	Home	Insert	Draw	Page Layout	Formulas	Data	Review	View	Developer	Help	Power Pivot	Search
Cut	Copy	Font	Wrap Text	General	Conditional	Format as	Cell	Styles	Insert	Del		
Paste	Format Painter	Font	Wrap Text	Number	Formatting	Table	Styles					
Clipboard		Font	Wrap Text									
L11												
1	A	Tag		B	NominalCurrent							
2 43-ZSO-2518-Z01				23 A								
3 43-ZSC-2518-Z01				1.5 A								
	Sheet1											

### Register configuration

	Description
1 NominalCurrent	Description
2 Register Type	Secondary
3 IDColumn	Tag
Filename	NominalCurrentData.xlsx
Category	Tags
Priority	2
PropertyValue	<code>{{ \$[attr.value].replace(/^(\\d*?[.]?\\d)\\s*([a-zA-Z]*)\$/,'\$1') }}</code>
PropertyUom	<code>{{ \$[attr.value].replace(/^(\\d*?[.]?\\d)\\s*([a-zA-Z]*)\$/,'\$2') }}</code>

1. Adding Nominal current property (new attribute) to the existing primary register which has classified objects.
2. Register type = Secondary captures all fields from source files as attributes.
3. IDColumn = Tag specifies a column to determine the ID of each record.

## Attribute

Special register only used for loading attribute data in name-value pair format. It is used where incoming data specifies a single object attribute per record in source files, and hence are required to specify Attribute Name, Value and (optionally) Unit columns in addition to an ID.

### Input file

A	B	C	D	E	F	G	H	I	J	K	L	M	N	
1	Tag	Plant	Category	Function	System	FromTag	ToTag	CableLength	CableLength(UoW)	RatedCurrentAmperes	MainTag	Class	Status	Aliases
2	43-ZSO-2518-201	IED	CA	Z		43-ZSO-2518	43-BOV-2518	25 m		1 43-VD-673	INSTR_CABLE	Active	/43-ZSO-2518-201,43ZSO2518Z01	
3	43-ZSC-2518-201	IED	CA	Z		43-ZSC-2518	43-BOV-2519	25 m		1.5 43-VD-673	INSTR_CABLE	A	/43-ZSC-2518-201,43ZSC2518Z01	

A	B	C
1	Tag	AttrName
2	43-ZSO-2518-201	Description
3	43-ZSC-2518-201	Description

Tags which are present inside the file (second image) are already classified using the primary register (first image).

### Register configuration

AIM-A Practice Training (0.0.0.73)

Details Composition Approved By Extension Namespaces Extensions

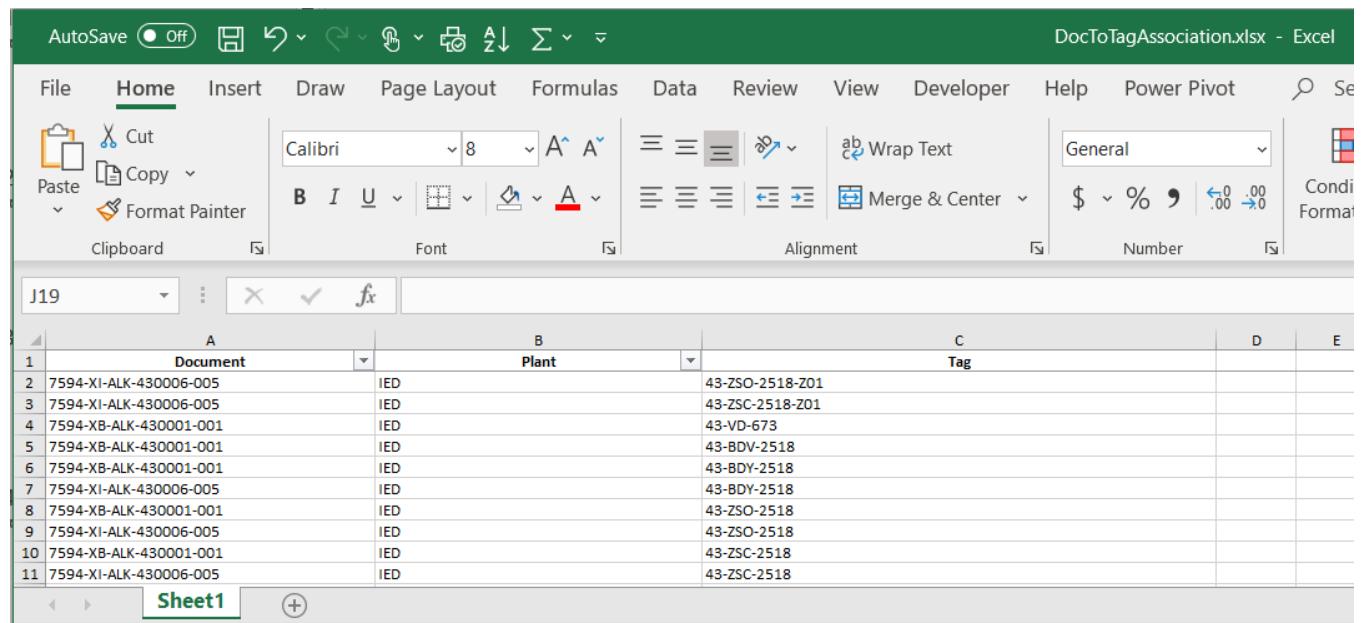
	Register Type
	Filename
	Category
	IDColumn
	AttributeNameColumn
	AttributeValueColumn
	Priority
	Nomenclature

1. Register Type = Attributes specifies type of register to load attributes in name-value pair format.
2. AttributeNameColumn = AttName specifies the column used to determine attribute name for each attribute record.
3. AttributeValueColumn = AttValue specifies the column used to determine attribute value for each attribute record.

## Association

Special register only used for loading or removing object associations within an interface.

## Input file



The screenshot shows a Microsoft Excel spreadsheet titled "DocToTagAssociation.xlsx - Excel". The table has columns labeled "Document", "Plant", and "Tag". The data consists of 11 rows of information, all of which have "IED" listed under "Plant". The "Tag" column contains various identifiers such as "43-ZSO-2518-Z01", "43-ZSC-2518-Z01", etc.

	A Document	B Plant	C Tag	D	E
1					
2	7594-XI-ALK-430006-005	IED	43-ZSO-2518-Z01		
3	7594-XI-ALK-430006-005	IED	43-ZSC-2518-Z01		
4	7594-XB-ALK-430001-001	IED	43-VD-673		
5	7594-XB-ALK-430001-001	IED	43-BDV-2518		
6	7594-XB-ALK-430001-001	IED	43-BDY-2518		
7	7594-XI-ALK-430006-005	IED	43-BDY-2518		
8	7594-XB-ALK-430001-001	IED	43-ZSO-2518		
9	7594-XI-ALK-430006-005	IED	43-ZSO-2518		
10	7594-XB-ALK-430001-001	IED	43-ZSC-2518		
11	7594-XI-ALK-430006-005	IED	43-ZSC-2518		

Documents and Tags are already existing and classified in the system by other primary registers.

#### Register configuration

■ AIM-A Practice Training (0.0.0.73)

Details    Composition    Approved By    Extension Namespaces    Extensions

1

Description	Description
associationType	is a document for
AssociationClass	GEN_ROOT_FUNCTIONAL

2

Register Type	Associations
Category	Docs
IDColumn	Document
HeaderRow	1
FirstDataRow	2
Priority	2
Filename	DocToTagAssociation.xlsx

1. New association between Documents and Tags to be added to existing data.
2. Register Type = Associations adds new association to existing data.

## Capture method

Captured method is included in the Registers configuration fragment in ISM as part of the parameters of each register. It specifies how data is captured.

### Partial

Data is captured as partial updates and will only add or update data. Any deletes must be explicit. By default, Capture Method is set to Partial load. For example:

**Register configuration**

Category	Value
Physical	
1	
Primary	
Physicals.xlsx	
Equipment	
1	
2	
Type	
Partial	
SourceSystem4	

When CaptureMethod = Partial, the Registers Gateway will add new records and update existing ones with any modification done. In other words, it will update deltas. However, deletion of records will need to be specified.

**Full**

Data is captured as full updates and any missing data will be marked deleted until subsequently updated. For example:

**Register configuration**

The screenshot shows the 'Information Interface' configuration for 'SourceSystem4'. The 'CaptureMethod' field is set to 'Full', which is highlighted with a blue selection bar. Other fields shown include 'Physical', '1', 'Primary', 'Physicals.xlsx', 'Equipment', '1', '2', 'Type', and 'SourceSystem4'. The 'Columns' section lists 'Category', 'Priority', 'Register Type', 'File Name', 'IDColumn', 'HeaderRow', 'FirstDataRow', and 'ClassColumn'.

When CaptureMethod = Full, the Registers Gateway will remove existing data and load the data sent to the cloud on the new transaction. In other words, it will overwrite existing data.

## How to Delete Objects using Capture Methods

### Partial method

Use Action column and "delete where" parameter. With DeleteWhere the object will be deleted permanently. It will not be found in the database. If the object is gone from XML it means it will be removed from AIM-A as well. For example:

### Register configuration

Action	Description	Description
Model		
Area		
HasMainTag		
Category	Tags	
Priority	10	
Register Type	Primary	
File Name	GeneralTag.xlsx	
IDColumn	Tag	
HeaderRow	1	
FirstDataRow	2	
NameColumn	Description	
ClassExpression	<code>{{{@[Site]}}}-{{{@[Category]}}}-{{{@[Function]}}}</code>	
IncludeSheet	<code>{{{\${sheet.name}}}} in ['Sheet1']</code>	
DeleteWhere	<code>{{{@[Action]}}} starts any ['Del', 'Rem']</code>	
ClassDefault	TAGGED ITEM	
CaptureMethod	Partial	
ExcludeRecords	<code>{{{@[Description]}}} equals 'High voltage transformer A'</code>	
IncludeRecords	<code>{{{@[Action]}}} equals 'CreateOrUpdate'</code>	
Nomenclature	SourceSystem1	

1. DeleteWhere scans the Action column and if any of the column value starts with Del, Rem then it deletes that record based on the Value Expression put on the configuration (bullet 2).
2. When using DeleteWhere parameter, you must specify a value expression with a condition to be followed. For Microsoft Excel (xls or xlsx) data sources specifies a rule which limits sheets to be processed. In this case, the Registers Gateway will remove all objects that have, in column Action, a value that starts with Del or Rem.

## Prioritizations

Prioritization is included in the Registers configuration fragment in ISM as part of the parameters of each register. Priority is used to prioritize one of same objects coming from various sources (classification prioritization) and control the attribute values population (attribute prioritization). Lower the priority number, higher the importance (0 is the highest value and 999999999 is the default value for the priority). When priority is not set, then the last changed is taken.

- Attribute Prioritization:** Tag V-5096 is present in Source System1 and Source System2. The attribute "Description" has different values in both source systems. Source System1 register configuration will have Priority = 10 and Source System2 register configuration will have Priority =20. This means that the Registers Gateway will pick up Description attribute value from SourceSystem1 since it has the lowest number, therefore the highest priority.
- Classification Prioritization:** Tag 43-BDV-2519 is present in Source System1 and Source System2 with different classifications in both source systems. Source System1 register configuration will have Priority = 10 and Source System2 register configuration will have Priority =20. This means that the Registers Gateway will pick up classification from SourceSystem1 since it has the lowest number, therefore the highest priority.

```
<SourceSystem1 gecl:id="SourceSystem1" Nomenclature="SourceSystem1">
<GeneralTag gecl:id="GeneralTag" Category="Tags" Priority="10" Register_x0020_Type="Primary" File_x0020_Name="GeneralTag.xlsx" IDColumn="Tag" HeaderRow="1" FirstDataRow="2" NameColumn="Description" ClassExpression="({@Plant})-({@Category})-({@Function})" IncludeSheet="({$sheet.name} in ['Sheet1'])" DeleteWhere="({@[Action] starts any ['Del','Rem'])}" ClassDefault="TAGITEM" CaptureMethod="Partial" ExcludeRecords="({@Description} equals 'High voltage transformer A' )" IncludeRecords="({@[Action] equals 'CreateOrUpdate'})">
<Columns gecl:id="Columns">
</GeneralTag>
</SourceSystem1>
<SourceSystem2 gecl:id="SourceSystem2" Nomenclature="SourceSystem2">
<Table gecl:id="Cable" Category="Tags" Priority="20" Register_x0020_Type="Primary" File_x0020_Name="Cable.xlsx" IDColumn="Tag" HeaderRow="1" FirstDataRow="2" ClassColumn="Class" NameColumn="Class">
<Columns gecl:id="Columns">
</Cable>
```

## UoMs Configuration and Mapping

UoMs Interpretation is included in the Registers configuration fragment in ISM.

UoMs can be found in different places, depending on which, we will use one parameter or other:

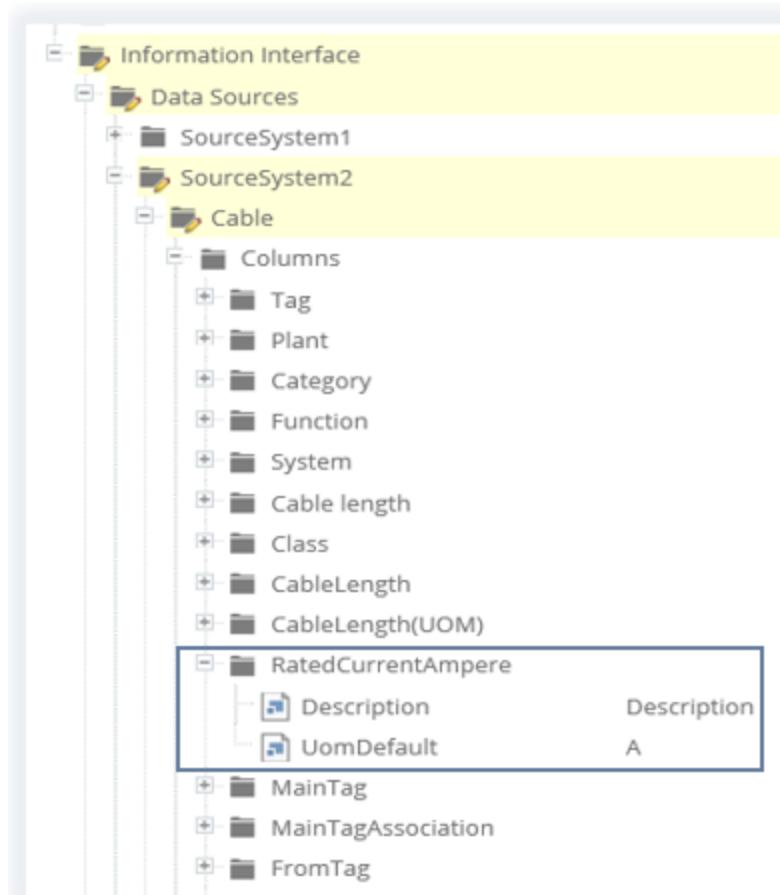
### UomDefault

Used when value is mentioned in one column and default unit is based on the column of the input file. For example:

### Input file

	Tag	Plant	Category	Function	System	FromTag	ToTag	CableLength	CableLength(UoN)	RatedCurrentAmpere	MainTag	Class	Status	Aliases
1	43-ZSO-2518-201	IED	CA	Z		43-ZSO-2518	43-BDV-2518	25 m		1.5	43-VD-673	INSTR_CABLE	Active	/43-ZSO-2518-201,43ZSC2518Z01
2	43-ZSC-2518-201	IED	CA	Z		43-ZSC-2518	43-BDV-2519	25 m		1.5	43-VD-673	INSTR_CABLE	A	/43-ZSC-2518-201,43ZSC2518Z01

### Register configuration



UomDefault property is used to configure the value of the unit of measure of all data by default.

### **UomColumn**

Used when values and units are mentioned in separate columns of the input file. For example:

#### **Input file**

	A	B	C	D	E	F	G	H	J	K	L	M	N	
1	Tag	Plant	Category	Function	System	FromTag	ToTag	CableLength	CableLength(UOM)	RatedCurrentAmpere	MainTag	Class	Status	Aliases
2	43-ZSO-2518-Z01	IED	CA	Z		43-ZSO-2518	43-BDV-2518	25 m		1 43-VD-673	INSTR_CABLE	Active	/43-ZSO-2518-Z01,43ZSO2518Z01	
3	43-ZSC-2518-Z01	IED	CA	Z		43-ZSC-2518	43-BDV-2519	25 m		1.5 43-VD-673	INSTR_CABLE	A	/43-ZSC-2518-Z01,43ZSC2518Z01	

### **Register configuration**

The screenshot shows the AVEVA AIM software interface. The main window title is "AIM-A Practice Training (0.0.0.73)". The top navigation bar includes "Details", "Composition", "Approved By", "Extension Namespaces", and "Extensions". The "Extensions" tab is active. The left sidebar shows a tree structure under "Intrinsic": "Information Interface" -> "Data Sources" -> "SourceSystem1" -> "SourceSystem2" -> "Cable" -> "Columns". Under "Columns", the "CableLength" node is selected and highlighted with a blue border. Its properties are displayed in a details pane: "Description" (Description), "UomColumn" (CableLength(UOM)), and another "Description" (Description).

UomColumn property is the name of the column of the input file which has the units. In this case, it is CableLength.

## UomExpression

Value expression used when values and units are mentioned in the same column of the input file. For example:

### Input file

The screenshot shows a Microsoft Excel spreadsheet titled "GeneralTag.xlsx". The table has the following columns: Tag, Plant, Category, Function, Description, Status, System, verPress, DryWeight, LoopNumber, ParentTag, MainTag, Class, Action, and Model. The "DryWeight" column is highlighted with a yellow background. The data in the table is as follows:

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Tag	Plant	Category	Function	Description	Status	System	verPress	DryWeight	LoopNumber	ParentTag	MainTag	Class	Action	Model	
2	43-VD-673	IED	EQ	VD	HP Flare Knock-Out Drum	Active	43		23500 kg			Vessel	CreateOrUpdate			
3	43-BDV-2518	IED	IN	BDV	Blowdown Valve, HP Flare I/A		43	CLASS 0300	75 kg	43B2518	43-VD-673	Control valve	CreateOrUpdate		576434347	
4	43-BDV-2518	IED	IN	BDY	Solenoid Valve, HP Flare Kr ACTIVE		43			43B2518	43-VD-673	Solenoid valve	CreateOrUpdate			
5	43-ZSO-2518	IED	IN	ZSO	Position Switch Open, HP F.A		43			43B2518	43-VD-673	Instrument switch	CreateOrUpdate			
6	43-ZSC-2518	IED	IN	ZSC	Position Switch Closed, HP Active		43			43B2518	43-VD-673	Instrument switch	CreateOrUpdate			
7	43JB003	IED	JB	JB	Junction Box, HP Flare Knot Void		43		1.5 kg			Electrical Junction box	Delete			
8	25-VD-673	IED	EQ	VD	HP Flare Knock-Out Drum	Active	25		23500 kg			Vessel	CreateOrUpdate			
9	82-HVTR-001A	IED	EL	HVTR	High voltage transformer A Active		82		50000 kg			Transformer	CreateOrUpdate			
10	82-HVTR-001B	IED	EL	HVTR	High voltage transformer B Active		82		50000 kg			Transformer	CreateOrUpdate			

## Register configuration

UomExpression/ValueExpression are properties that will contain value expression to transform the data coming from the input file into the desired results. In this case, we will create a value expression to obtain from the same field as the value, and another value expression to only obtain the unit of measure (unit symbol).

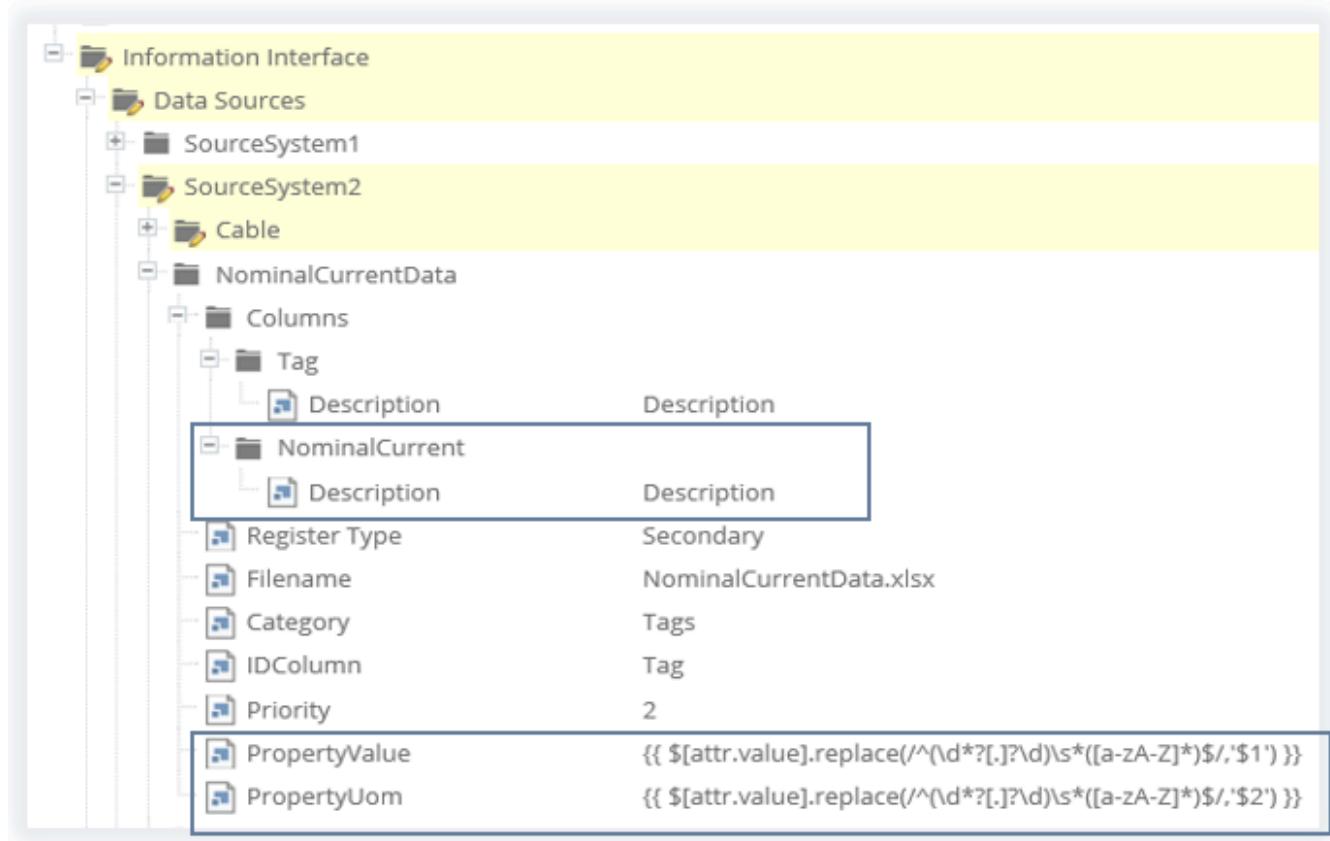
### PropertyValue and PropertyUom

Used on the global configuration. It assumes all units are provided in the same way. For example:

#### Input file

Tag	NominalCurrent
43-ZSO-2518-Z01	23 A
43-ZSC-2518-Z01	1.5 A

### Register configuration



The configuration is set at a register level. The highest level at which this can be configured is at the Data Sources level. Since this configuration setting is inherited, you should be able to define them on the Source Systems level and will be inherited on each of the registers which are under it.

## Customized Associations

The Registers Gateway is capable of creating new associations. Those customized associations will be defined in the extensions tab of the global toolbar in ISM in the Registers Gateway fragment.

### Register configuration

The screenshot shows the AVEVA Asset Information Management (AIM) software interface. The top navigation bar includes tabs for Details, Composition, Approved By, Extension Namespaces, Extensions, Class Library Policy Config..., and Naming Conventions. The Extensions tab is currently selected.

The main content area displays a tree structure of classes and associations under the 'Intrinsic' category. The 'AIM' class is expanded, showing its subclasses: 'FUNCTIONAL\_ROOT', 'PHY', 'PAR', and 'DOC'. The 'FUNCTIONAL\_ROOT' class is highlighted with a blue circle labeled '1'. Its properties include:

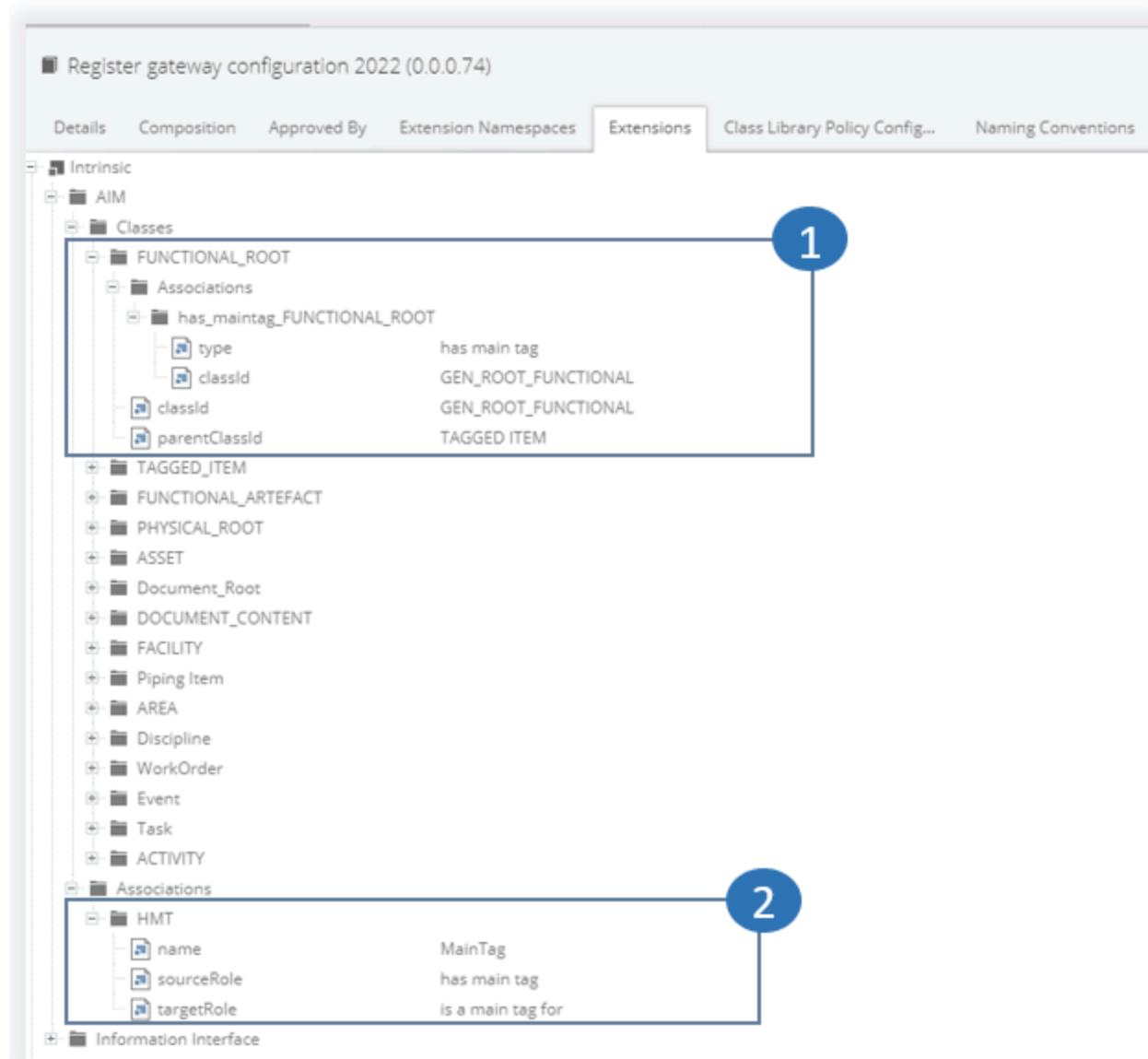
- Associations:
  - has\_parent\_FUNCTIONAL\_ROOT
  - is\_connected\_to\_FUNCTIONAL\_ROOT
  - has\_document\_FUNCTIONAL\_ROOT
  - has\_physical\_FUNCTIONAL\_ROOT
  - is\_upstream\_of\_FUNCTIONAL\_ROOT
  - is\_downstream\_of\_FUNCTIONAL\_ROOT
  - is\_part\_of\_GENERAL\_ROOT
  - has\_Procurement\_Package\_GENERAL\_ROOT
  - has\_PO\_GENERAL\_ROOT
  - has\_Commissioning\_Sub\_System\_GENERAL\_ROOT
    - type: has Commissioning Sub System
    - classId: GEN\_ROOT\_GENERAL
  - has\_Commissioning\_System\_GENERAL\_ROOT
    - type: has Commissioning System
    - classId: GEN\_ROOT\_GENERAL
- classId: GEN\_ROOT\_FUNCTIONAL
- hidden: false
- parentClassId: TAGGED ITEM

The 'DOC' class is expanded, showing its subclasses: 'HCSS' and 'HCS'. These are highlighted with a blue circle labeled '2'. Their properties include:

- HCSS:
  - name
  - sourceRole
  - targetRole
- HCS:
  - name
  - sourceRole
  - targetRole

Descriptions for the HCSS and HCS properties are provided:

- HCSS:
  - name: hasCommissioningSubSystem
  - sourceRole: has Commissioning Sub System
  - targetRole: is a Commissioning Sub System for
- HCS:
  - name: hasCommissioningSystem
  - sourceRole: has Commissioning System
  - targetRole: is a Commissioning System for



1. Define the permissibility of new associations. In this case, the association is permissible for Functional Classes.
2. Define new associations: sourceRole, targetRole and association name.

### Create a New Association

Add the entry for newly created Association "has main tag" under the enumeration of the association list to be used within the configuration (optional). Association lists are done in the Standards fragment in ISM.

The screenshot shows the AVEVA AIM software interface. On the left, there is a navigation tree under 'Browse' with several categories expanded, including 'Enumerations', 'Area', 'Association Types', 'Attribute Disciplines', 'Attribute Groups', 'Category', 'Contractor', 'Document Status', 'Document Type', 'Document Types', 'Function', 'Plant', 'Reason For Issue', 'System', 'Tag Status', and 'Valve Pressure Rating'. The 'Association Types' node is highlighted with a blue border. On the right, the main window displays the 'Lookup List: Association Types' configuration page. It includes tabs for 'Details', 'Attributes Using', 'Items', 'Extensions', and 'Languages'. The 'Details' tab is selected. Under 'Description', there is a large text area. Below it is a section titled 'Corresponding Identifiers' which lists four reporting systems: 'Reporting', 'Source System 1', 'Source System 2', and 'Source System 3', each with a button labeled 'Association Types:Associatic'. There is also a section for 'Source System 4'. At the bottom, there is a section titled 'Properties Specific to Lookup List' with a 'Provider' field and a 'General Properties' section containing fields for 'Obsolete' (checkbox), 'Sort Order' (text input), and 'Aspect' (dropdown menu set to 'Enumerations.AssociationTypes').

## Adding Associations on the Permissible Attributes

Make the new association permissible for the attribute to be used on the desired class that has the association and configure the association on the desired classes. Associations on permissible attributes are done in the Standards fragment in ISM.

**Functional Class: Instrument Cable**

Details Network Permissible Attributes Sub Classes Taxonomy Occurrences Extensions Languages

ID	Name	Dat...	Uo...	Measur...	Validati...	Validation R...	Disc...	Pres...
AT...	Category			Enum...	Cate...			
AT...	Function Code			Enum...	Func...			
AT...	Main Tag			h...	Root ...			
AT...	Parent Tag							
AT...	Plant			Enum...	Plant			
AT...	System			Enum...	Syste...			
AT...	Tag Description							
AT...	Tag Number							
AT...	Tag Status			Enum...	Tag S...			
<b>Group: Details</b>								
AT...	Cable Length	Dec...	✓	(M...)				
AT...	From Tag			h...	Root ...			
<b>+ Add Maturity Level: Default</b>								

**Permissible Attribute: Main Tag**

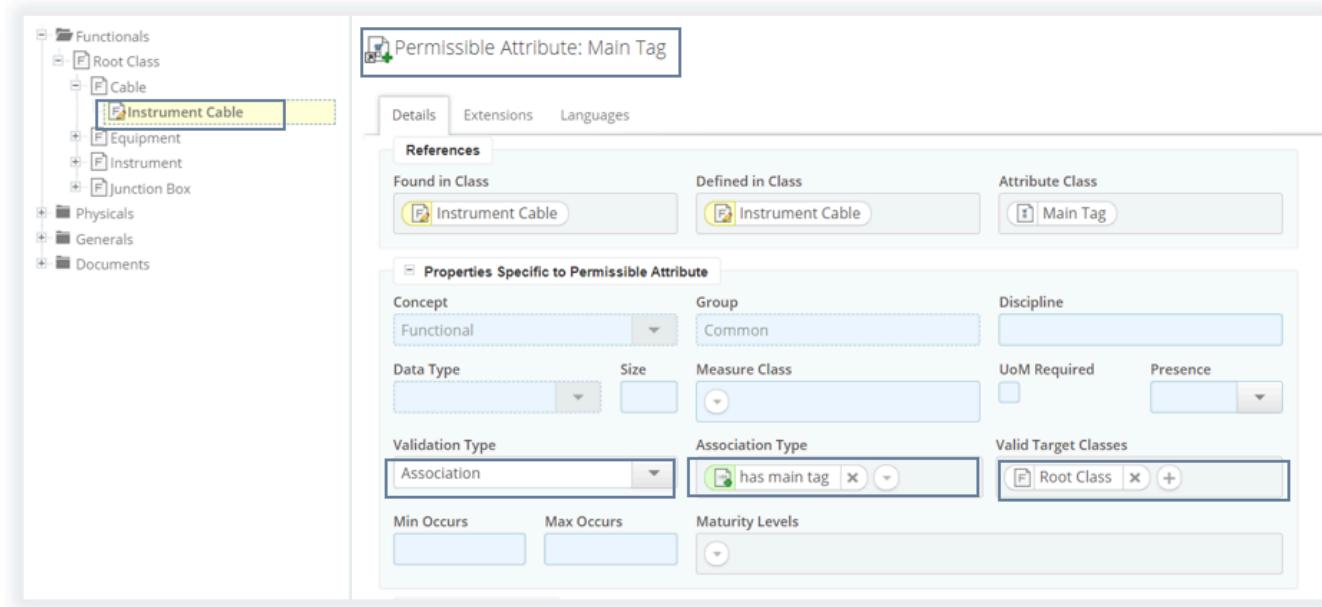
Details Extensions Languages

**References**

Found in Class	Defined in Class	Attribute Class
Instrument Cable	Instrument Cable	Main Tag

**Properties Specific to Permissible Attribute**

Concept	Group	Discipline
Functional	Common	
Data Type	Size	Measure Class
Validation Type	Association Type	Valid Target Classes
Association	has main tag	Root Class
Min Occurs	Max Occurs	Maturity Levels



## 2D Data Configuration

### 2D Gateway Configuration

When loading 2D files into AIM-A, the Gateways used may be configured by modifying certain known files. The areas covered by each file and how to modify the files are outlined below. For more information on loading these files, see [Ingestion API Request Parameters](#).

## Patterns 2D

This configuration applies to the contents of the following files:

- AutoCAD: drawingfile-ac2d-patterns2d.xml
- MicroStation: drawingfile-ms2d-patterns2d.xml

The Patterns2d configuration allows you to select, via **Conditions**, which type of graphical objects to amend so that tags can be associated or disassociated with graphical elements using the **Group** and **Ungroup** functions and add new **Attributes** to the grouped and ungrouped objects. The Patterns2d extension is similar to base mapping of engineering objects but allows transformations related to graphical objects.

It is possible to filter objects by attributes and associations kept in engineering data associated to graphical elements. Select types of graphical objects that will be grouped in the defined area around a selected object.

The following is the complete set of configuration settings supported by the Patterns2d extension:

```
<Patterns2d xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" guid="1c606204-2b64-4e39-927c-048892ca33f0" sourceProductName="AVEVA™ Gateway for 2D Data" componentName="Patterns2d" componentVersion="2.3.0.0.0" creationDate="2022-03-04" createdBy="[author]">
<Object>
<Conditions>
<ObjectType ObjectType="
```

```
symbol,
symbol_single,
symbol_single_textonly,
symbol_nested,
symbol_nested_textonly,
table,
dimension,
mleader,
mtext,
oval,
circle,
ellipse,
arc_closed,
arc_open,
all_lines_closed,
polyline_closed,
spline_closed,
region,
text,
line,
all_lines_open,
polyline_open,
spline_open,
point,
3dsolid,
leader,
fill"
/>
<Attribute Name="handle"
Value=".*" />
<Association Type="is a part of"
TargetAttributeName=".*"
TargetAttributeValue=".*" />
<Size min="0"
max="30" />
<NumberOfObjects min="1" max="80000" />
</Conditions>
<Group Separator="-" JoinTextFrom="topleft" IncludeParts="false" GrabTypes="
all,
symbol,symbol_single,
symbol_single_textonly,
symbol_nested,
symbol_nested_textonly,
table,
dimension,
mleader,
mtext,
oval,
circle,
ellipse,
arc_closed,
arc_open,
all_lines_closed,
polyline_closed,
spline_closed,
region,
```

```

text,
line,
all_lines_open,
polyline_open,
spline_open,
point,
3dsolid,
leader,
fill"
OrderByGroup="true"
KeepTextOnly="true" >
<IncludeArea allDirections="1.1"
top="0.6"
bottom="5.0"
right="1.5"
left="0.9"
/>
</Group>
<Attribute Name="grouped" Value="" />
<Attribute Special="ExtentCoordinates" />
<Ungroup KeepSingleSymbols="true" />
</Object>
</Patterns2d>
```

Graphical types from AutoCAD and MicroStation drawings are extracted as the following Patterns 2D types (for the purpose of grouping):

Patterns 2D type	AutoCAD type (attribute)	MicroStation type (attribute)
text	Text (text)	Text (text)
mtext	MText (mtext)	Node (mtext)
symbol	Block Reference (blockreference) Proxy (proxyentity)	Cell (cell) Shared Cell (cell) Smart Solid (cell) Tagged object + Tags (cell) Complex Shape (complexshape)
point	Dot (point)	Multi-Line (point) Line - zero length (point)
line	Line (line) MLine (line)	Line (line)
circle	Circle (circle)	Circle (circle)
ellipse	Ellipse (ellipse)	Ellipse (ellipse)
polyline	Polyline (polyline)	Complex Chain (polyline)
arc	Arc (arc)	Arc (arc)

spline	Spline (spline)	Bspline Curve (spline)
region	Region (region)	Associative Region (region) Shape (region)
table	Table (table)	Table (table)
leader	Leader (leader)	
mleader	Multileader (mleader)	Note (mleader)
dimension	Dimension - all types (dimension)	Dimension (dimension)
fill	Hatch (hatch)	Graphics with Fill set to Opaque or Outlined (hatch)
3dsolid	3DSolid (3dsolid)	

## Conditions

Conditions: **ObjectType**, **Attribute**, **Association**, **Size**, **NumberOfObjects**.

Attribute and Association conditions can be used multiple times  
and **ObjectType**, **Size**, **NumberOfObjects** conditions can be used only once.

Due to Regular expressions used for **Attribute** and **Association** settings, specify multiple values to extend the range of selected objects.

When multiple criteria are used in a **Condition** only objects that satisfy all the criteria are selected for the subsequent actions.

The **Patterns2d Conditions** are as follows:

- **ObjectTypes**: This is mandatory and allows selection by object type, where at least one type must be provided. Some keywords represent a few types:
    - **all**: all object types
    - **symbol**: symbol\_single, symbol\_single\_textonly, symbol\_nested, symbol\_nested\_textonly
    - **symbol\_single**: symbol\_single\_textonly
    - **symbol\_nested**: symbol\_nested\_textonly
    - **oval**: circle, ellipse, arc\_closed
    - **allLines\_open**: polyline\_open, spline\_open
    - **allLines\_closed**: polyline\_closed, spline\_closed, region

---

**Note:** **symbol** is the generic term for a block reference, cell, symbol or shape, depending on the source system.

  - **Attribute**: (optional) Same condition as in Base Mapping.
  - **Association**: (optional) Same condition as in Base Mapping. Additionally, this parameter allows filtering by **TargetAttributeName** and/or **TargetAttributeValue**.
  - **Size**: (optional) Refers to size of the object in comparison to the drawing's size. Default =100 (%) values: from 0.0 to 100.0.
- Specify the minimum and maximum (**min** and **max**) size of the objects that should be selected for grouping

or ungrouping. Values provided denote the percent range within which a given object must fit in relation to the entire square area of the drawing.

For example: <Size min="3" max="10"/> means that objects whose rectangular area takes at least 3% and not more than 10% of the whole drawing area will take part in the selected action (Group or Ungroup).

- **NumberOfObjects:** This parameter allows you to select graphical objects based on the number of elements. For example, if the ObjectType is **mtext** and NumberOfObjects has **min = "3"** and **max = "3"** then only tuples (tags consisting of 3 lines) will be selected. (optional) default =1000000000, values: from 0 to 1000000000.

## Grouping

- **Group:** This action aggregates all the objects selected by the **Conditions** into a single grouped object with **ObjectID** formed from the concatenation of its text elements from the labels belonging to the objects included in this group. When a Group is created then regardless of what types of objects belong to that group, it contains only one tag and does not contain any child objects. This way of storing data is adjusted to rendering systems like Asset Information Management and will provide proper tagging and highlighting of tagged objects.

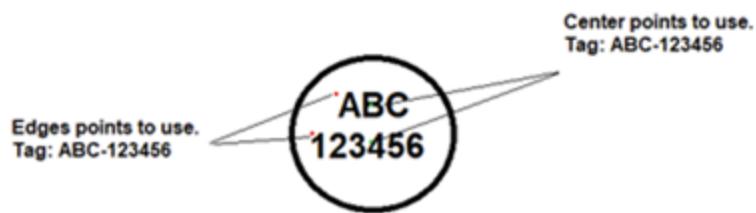
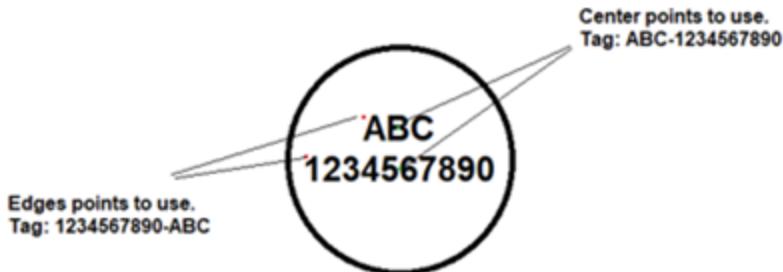
---

**Note:** The minimum number of objects in a Group is one single text object. A Group can contain any number of primitives. After an object is assigned to a Group, it won't be subject to any subsequent Group or Ungroup actions.

---

## Settings

- **Separator:** Any string. Default '-'. Used for concatenating text items into a common ID.
- **JoinTextFrom:** Default: topleft. Used for setting from which direction text will be concatenated. Values:
  - top
  - bottom
  - right
  - left
  - topleft
  - topright
  - bottomleft
  - bottomright
- **Note:** If the text is rotated from the horizontal it is first unrotated before the **JoinTextFrom** directions are applied. If grouped text objects are rotated from the horizontal and the maximum difference between all texts angles is less than 5%, then they are first unrotated before the **JoinTextFrom** directions are applied.
- **TextControlPoint:** The order of concatenation is determined by the position defining the location of each text element. Values:
  - Center (Default)
  - Edges (which is the start position in X, Y of each text element).

**Example 1:****Example 2:**

- **IncludeParts:** If set to **true**, then any object that is partly within the selected object's extents will be included in the group, otherwise, if **false** (default) only objects that are fully enclosed in the selected objects extents will be grouped.
- **GrabTypes:** Filters which type of objects will be grouped together. The default is text and mtext and all other object types are allowed (see example above).

Objects of types selected for GrabTypes are collected into one tagged group.

---

**Note:** If there is no text object in the group, then the ID is not set, but objects are still grouped. Use Base mapping to tag these objects, therefore, it's best to apply Pattern2D mapping before Base mapping.

- **KeepTextOnly:** If true, then regardless of what types of objects are selected by **Conditions**, **GrabTypes** and **IncludeArea**, only text objects are selected. This way of tagging can be useful in the systems where during selection only highlighting of the text is expected.
- **IncludeArea:** Allows you to vary the search area of the object's extents by changing its overall size either symmetrically (if **allDirections** parameter is used) or in each orientation direction (if **top**, **bottom**, **left** or **right** is used, including combinations of these).

Examples:

- **allDirections=2.5**
- **left=0.5 right=2.3 top=2.0 bottom=0.1**

For example, **left=0.5** and **bottom=2.0** means searching for objects in 50% of horizontal length of the object (right-half of the original extent), additionally, this extent area will be extended into the bottom direction; and the vertical length will be extended to 200% of the original length.

- When **left+right<1.0** or **top+bottom<1.0** or **allDirections<0.5**, then a configuration error is generated.
- Therefore, the minimal settings will provide at least a single common point (**allDirections=0.5**) or a single line (**right+left=1** or **top+bottom=1**), if **IncludeParts="true"**, and will result in including all objects crossing that common point or that single line.



**Note:** By default, if the **IncludeArea** setting is not used, then all values are set to 0 for Object the types **symbol**, **table**, **dimension**, **text**, **mtext**, **mleader**; so only child objects that belong to the main object are grouped regardless of their location. You may include objects which do not belong to the main object by increasing values in the **IncludeArea** setting. This will add some objects placed within the main object's extent or also add some objects which are placed out of the main object's extent.

For the rest of the Object types that do not have any child objects, default value of **IncludeArea** parameter for each of these attributes is set to 1.0 (100%). This means grouping all child objects from the extent of the main object. This range can be reduced by using values less than 1.0 or can be extended by setting more than 1.0.

- **Attribute:** Adds an attribute to a grouped object. **Name** is mandatory, **Value** is optional. Add any number of attributes, including attributes normally set in the Base mapping, such as **ClassID**.
- **Attribute Special="ExtentCoordinates":** If specified, then the grouped object's extents are added as four attributes containing the coordinates of the minimum and maximum positions: **#Xmin#**, **#Xmax#**, **#Ymin#**, **#Ymax#**.

## Ungrouping

- **Ungroup:** Works in the opposite way to grouping by splitting structured data into smaller chunks so they can be used as single independent objects or single symbols, depending on the setting. It uses the same conditions for grouping but uses a different (shorter) list of **objectTypes** for filtering (only those objects having structure to ungroup):
  - symbol
  - symbol\_Single
  - symbol\_Single\_TextOnly
  - symbol\_Nested
  - symbol\_Single\_TextOnly
  - table
  - dimension

- mtext
- mleader

#### Settings:

- **KeepSingleSymbols:** If this option is set to **true**, then symbols are not ungrouped completely to separate objects level but ungrouping stops when each symbol no longer contains any nested symbol. In other words, with this option all nested symbols are moved to the root level.

---

#### Notes:

- This setting does not have an effect on other structured data that does not contain symbols.
- Any number of **Object** nodes can be defined.
- In each **Object** node, you only use a **Group** or **Ungroup** node but not both.
- Do not group the same object twice.
- If you ungrouped **symbol\_nested** objects into multiple **symbol\_single** objects, you must still use another Object node to ungroup **symbol\_single** objects into separate primitives.
- Using multiple **Patterns2d** extension configurations provide the same effect like using multiple **Object** nodes in one **Patterns2d** extension configuration.

## Presentation Mapping

This configuration applies to the contents of the following files:

- AutoCAD: drawingfile-ac2d-presentationmapping.xml
- MicroStation: drawingfile-ms2d-presentationmapping.xml

Presentation Mapping configuration is used to adjust the output of SVG and EIWM properties, such as **materials** and **colors**. Use of the Presentation Mapping extension in the main Transform Configuration file is optional.

The following example shows all the parameters of the presentation mapping configuration.

### Materials mapping

This section is used to map the material used in the model in *AIM Dashboard*. These values can then be used with the 2D Materials functionality in *AIM Dashboard*, for example, to highlight or hide all objects in the model that have the same material value. The syntax allows you to map any attribute to any **toMaterial** value.

```
<materials>
<material fromAttribute="ClassId" fromValue="Wall" toMaterial="Walls"/>
<!-- Other example expressions for setting 2D materials:
&lt;material fromAttribute="ClassId" fromValue="OPENINGELEMENT" toMaterial="OPENINGS"/&gt;
&lt;material fromAttribute="ClassId" fromValue="DOOR" toMaterial="DOORS"/&gt;
&lt;material fromAttribute="ClassId" fromValue="WINDOW" toMaterial="WINDOWS"/&gt;
--&gt;
&lt;/materials&gt;</pre>
```

### Colors mapping

This section is used to model colors in *AVEVA AIM Dashboard*. The syntax contains two ways to map colors: **fromAttribute** and **fromColor**. It is possible to map colors from any attribute value, or from a specific *color* attribute value, to a **toColor** attribute.

- The **fromColor** method maps the input color to a new color.
- The following methods can affect the coloring used in Gateway renditions:
  - RGB, for example, 128, 0, 128.
  - Known colors (HTML color standard), for example, Red.
  - HTML hexadecimal: #E3D3D3.
- Wildcard "\*" in **fromColor** attribute to map all colors not affected by previous Color mapping items.
- AutoCAD 2D DWG AutoCAD Color Index (ACI) mapping colors can be specified, for example, <color fromAttribute="autocad color index" fromValue="71" toColor="red"/>
- MicroStation 2D DGN Color Table (DCT) mapping colors can be specified in the **fromColor** attribute in the format **DCT<colorIndex>**, for example, <color fromColor="DCT170" toColor="blue"/>.

```
<colours>
<colour fromAttribute="Name" fromValue="P100" toColour="green"/>
<!-- Other example expressions for custom colours changes:
&lt;colour fromAttribute="ClassId" fromValue="PART" toColour="#008000"/&gt;
&lt;colour fromColour="magenta" toColour="130,100,130"/&gt;
&lt;colour fromColour="#455050" toColour="blue"/&gt;
&lt;colour fromColour="255,10,0" toColour="#F3F3F3"/&gt;
--&gt;
&lt;/colours&gt;</pre>
```

## Rescale 2D

This configuration applies to the contents of the following files:

- AutoCAD: drawingfile-ac2d-rescale2dunitsdef.xml
- MicroStation: drawingfile-ms2d-rescale2dunitsdef.xml

Scales factors – Rescale2dTransformation

Adjusting drawing, OLE object resolution and line thickness

The transformation extension **Rescale2dTransformation** enables you to scale the output SVG graphics. This may be needed when the drawing's resolution is not matched to the resolution of the monitor or printer where the SVG will be viewed.

Scale resolution can be provided for three elements:

- **Drawing resolution:** Rescales the entire drawing.
  - **OLE resolution:** Manipulates the resolution of embedded elements. This is applicable for both MicroStation and AutoCAD input files.
- Limitation:** Raster images in MicroStation drawings that are rotated are not rotated in the output SVG file.
- **Line resolution:** Manipulates line thickness.

For Example:

```
<rescale2dTransformation guid="00000000-0000-0000-0000-000000000000"
sourceProductName="AVEVA™ Gateway for 2D Data" componentName="Rescale2dTransformation"
componentVersion="2.2.0.0.0" creationDate="1900-01-01" createdBy="[author]"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema">
```

```
<resize>
<drawingResolution factor="1.0" />
<OLEResolution factor="automatic" />
<lineResolution factor="2.5" type="text"/>
<lineResolution factor="automatic" type="lines"/>
</resize>
</rescale2dTransformation>
```

The three scale resolution elements are as follows:

- **<drawingResolution>** (required): Rescales the drawing according to the factor. Default value is 1.0.
- **<OLEResolution>** (optional): Manipulates the resolution of embedded objects, either explicitly by a numeric value or a value of automatic (default). The automatic mode derives the factor from the drawing resolution factor.
- **<lineResolution>** (optional): Sets the line widths used for text and line types. They can be used together, for example, **type="text|lines"** as well as two separate line resolution settings. The factor value is used to multiply the line thickness. Only text lines generated as polylines (mapped from SHX fonts) are affected by this function and it is not applicable to TTF fonts from input files. When set to automatic (default), it derives the value from the drawing resolution factor.

When the drawing scale changes, the line scale will also change if both are set to be rescaled, for example you can use automatic for the line scale.

---

**Note:** SVG line thicknesses may be observed to be different when zoomed in compared to the original application view because they automatically update the line weight in real time. Rendering of SVGs does not have this feature, so thin lines appear to get thinner (or thicker) after zooming out (or in). In this case, automatic or manual line scaling in the Gateway can help to ensure the drawing content is still visible.

---

## Text Modifications

This configuration applies to the contents of the following files:

AutoCAD:

- drawingfile-ac2d-textmapping1.xml
- drawingfile-ac2d-textmapping2.xml

MicroStation:

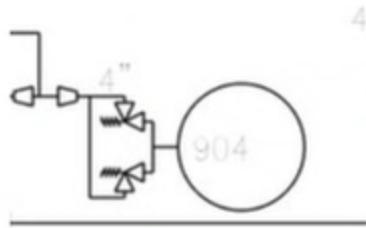
- drawingfile-ms2d-textmapping.xml

## Manage Fonts

When viewing **AutoCAD 2D** drawings in the **AIM Dashboard**, if any font used in the drawing does not exist on the machine running the browser, then you may see representations of text and graphical objects that differ to that of the original drawing.

Consider the following examples:

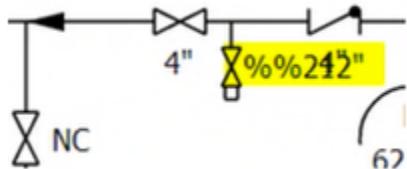
- Some text renders in a lighter color than the original drawing:



- Some graphical objects are wrongly positioned:



- Some text is wrongly encoded:



- Some characters are wrongly positioned:

FINISH MARKS =500 =250 =125 =32 RMS.

Such rendering issues can be improved by mapping the fonts involved. Font mapping can be performed in the **drawingfile-ac2d-textmapping1.xml** file. The following example modifications to the file must be added just before the end of the closing **</fonts>** element.

- To map **simprac.shx**, **romans.shx** and **romanc.shx** to the AutoCAD 2D Gateway's default polylines and map all other **.shx** fonts to **Tahoma.ttf**.
 

```
<font from="^(?!simpfrac.shx$)(?!romans.shx$)(?!romanc.shx$).*.shx" to="Tahoma" regEx="true" />
```
- If you don't want **Romans** and **Romanc** to map to polylines then replace the above line with this:
 

```
<font from="^(?!simpfrac.shx$).*.shx" to="Tahoma" regEx="true" />
```
- To not map standard **Windows ttf** fonts but replace all others with **Tahoma.ttf**:
 

```
<font from="^(?!Arial$)(?!Arial Narrow$)(?!Arial Unicode  
MS$)(?!Calibri$)(?!Candara$)(?!Corbel$)(?!Consolas$)(?!Courier New$)(?!Lucida Sans Unicode$)(?!  
Microsoft Sans Serif$)(?!Segoe UI$)(?!Trebuchet MS$)(?!Verdana$).*.ttf" to="Tahoma" regEx="true" />
```

## Text Mapping

This configuration applies to the contents of the following files:

This configuration applies to the contents of the following files:

AutoCAD:

- drawingfile-ac2d-textmapping1.xml
- drawingfile-ac2d-textmapping2.xml

MicroStation:

- drawingfile-ms2d-textmapping.xml

This section describes the transformation settings for manipulating the Text objects in the 2D Graphics.

Text Mapping is used in 2D drawings to customize textual objects visible in the drawing, either by varying the font that is used or mapping specific characters or text to alternative values.

---

**Note:** Unlike Base mapping, text mapping changes the displayed content of the output drawing.

---

Example of **drawingfile-ac2d-textmapping1.xml** and **drawingfile-ms2d-textmapping.xml**

```
<textMapping xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema" guid="00000000-0000-0000-0000-000000000000"
  sourceProductName="AVEVA™ Gateway for 2D Data" componentName="TextMapping"
  componentVersion="1.0.0.0.0" creationDate="2021-01-01" createdBy="[author]">
  <texts>
    <text from="1" to ="±" font="ANSI_SYMBOLS" />
    <text from "%" to="^" font="*" regEx="false" />
    <text from="colour" to="colour" font=".*" regEx="true" />
    <text from="1024" to="0x400" font="*" />
    <text from="0x400" to="1 kilo" font="*" />
  </texts>
  <fonts>
    <font from="Courier" to ="Arial,Lucida Console" />
    <font from="SansSerif" to="Lucida Console" italic="false" bold="true"/>
    <font from="#missingFonts#" to="Consolas"/>
  </fonts>
</textMapping>
```

Example of **drawingfile-ac2d-textmapping2.xml**

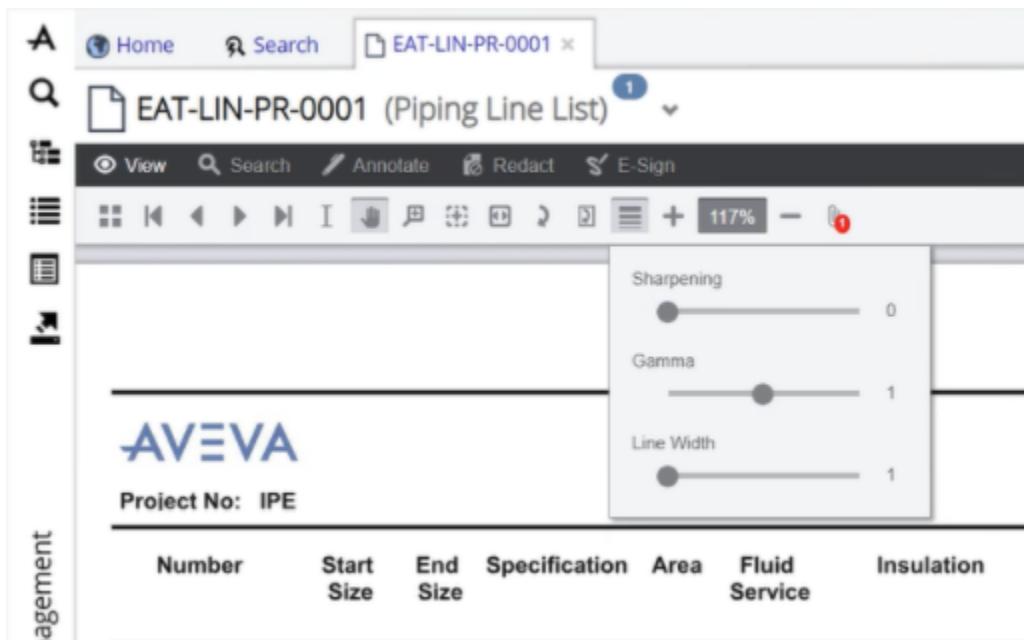
```
<textMapping xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema" guid="00000000-0000-0000-0000-000000000000"
  sourceProductName="AVEVA™ Gateway for 2D Data" componentName="TextMapping"
  componentVersion="1.0.0.0.0" creationDate="2021-01-01" createdBy="[author]">
  <texts>
    <text from="1" to ="±" font="ANSI_SYMBOLS" />
    <text from "%" to="^" font="*" regEx="false" />
    <text from="colour" to="colour" font=".*" regEx="true" />
    <text from="1024" to="0x400" font="*" />
    <text from="0x400" to="1 kilo" font="*" />
  </texts>
  <fonts>
    <font from="Courier" to ="Arial,Lucida Console" />
    <font from="SansSerif" to="Lucida Console" italic="false" bold="true"/>
    <font from="#missingFonts#" to="Consolas"/>
  </fonts>
</textMapping>
```

---

**Note:** When text for an imported file appears too faint, the text's appearance can be improved by applying a font

---

mapping. Alternatively, adjust the Gamma value in the Toolbar when viewing the file in the Dashboard. This change is not stored permanently.



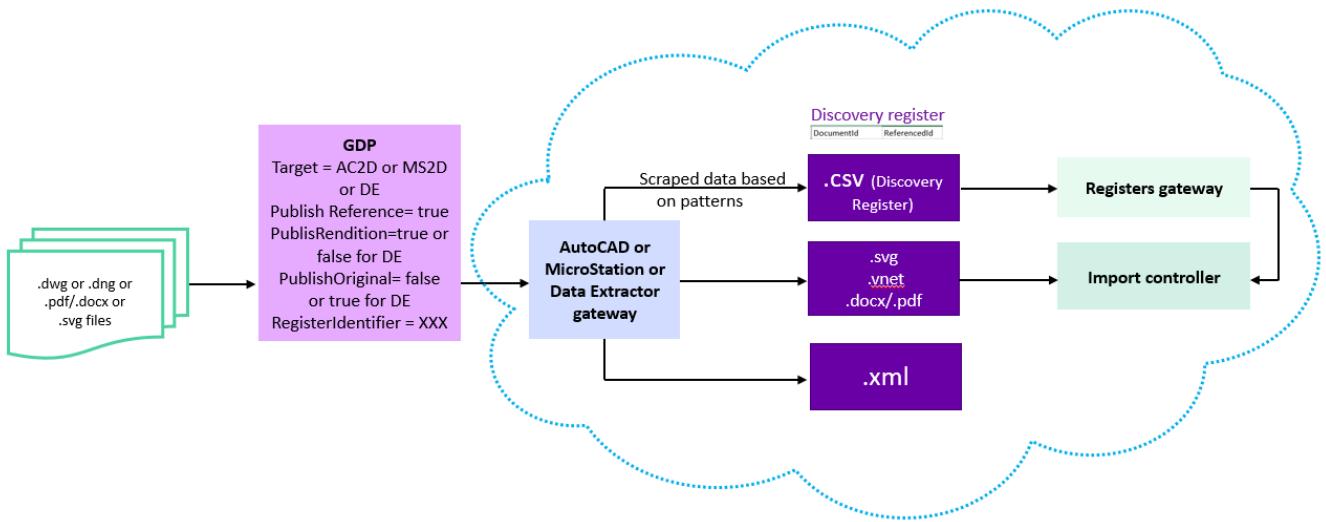
## 2D Hotspotting Configuration

The Gateway for 2D Data is used to process 2D data, such as AutoCAD or MicroStation. However, in order to be able to display the hotspotting in them, we need to prepare a configuration accordingly using the Registers Gateway.

Whenever 2D documents are uploaded, data is scraped from these drawings as per the out of the box patterns file present in the cloud.

If we need to push special custom pattern files, please refer to the section **Gateway for 2D Data**.

### Workflow



There are two ways to generate associations between documents and tags. First one is by using the Discovery register and second one is by using the explicit doc-tag association register.

**Note:** generally, we use both registers to create the document-tag associations. However, we can also use Discovery or Explicit register alone.



When pushing 2D data to the cloud, we use the GDP:

- .dgn, .dwg and/or .pdf, docx files.
- The ingestion parameters related to MicroStation, AutoCAD, Data Extractor or 2D document gateways are:
  - PublishReference= true: Scrapes the data present on drawing file and generates the csv file in the cloud that has the scraped content, it also has columns documentid and referenceid (scraped content as per patterns). Whenever you set this as true, also pass the registerId in the Ingestion parameter.
  - Publishrendition = true: Convert the processed file into a simpler form like .svg. When using the Data Extractor, set this parameter to false.
  - PublishOriginal = false: the Gateway for 2D Data will not produce the original file. When using The Data Extractor set this parameter to true.
- The configurations to create associations between docid and referenceid will be supplied on the clib and it will work against the register ID (Discovery).
- The explicit doc tag association register configuration on the class library, also called Engineered register.
- DocTagAssociation.xlsx input file supplied through GDP that contains the list of documents and tags.

## Registers Gateway Configuration

### Discovery register

```
<Discovery geicl:id="Discovery" IDCOLUMN="DocumentId" Category="Docs" RegisterType="Secondary" DuplicateAttribute="AppendValue"
ResolveReferences="try" Priority="5" CaptureMethod="Partial">
  <Columns geicl:id="Columns">
    <DocumentId geicl:id="DocumentId" Description="Description" />
    <ReferencedId geicl:id="ReferencedId" Description="Description" associationType="refers to" AssociationClass=
      "GEN_ROOT_FUNCTIONAL" />
  </Columns>
</Discovery>
```

The discovery Register is a register which gets created in the cloud after scraping the data based on patterns. The input for this register, generated due to scraping will be automatically picked up from the cloud and passed on to the Registers Gateway as an input register.

The Registers Gateway will use the document and tags primary registers as input to create the association. Before you create the association ensure that Tags and docs are already classified and loaded in system.

```
<Document geicl:id="Document" Category="Docs" RegisterType="Primary" IDColumn="Document_Number" HeaderRow="1" FirstDataRow="2" NameColumn="Document_Title" ClassColumn="Document_Class" ClassDefault="DCL12227">
<Columns geicl:id="Columns">
</Document>
```

```
<Instrument geicl:id="Instrument" Category="Tags" RegisterType="Primary" IDColumn="Tag_Number" HeaderRow="1" FirstDataRow="2" NameColumn="Tag_Description" ClassColumn="Tag_Class" ClassDefault="FCL12226">
<Columns geicl:id="Columns">
</Instrument>
```

Parameter PublishReference needs to be set to true and a registerId needs to be given to use the Discovery register and specify a register identifier in GDP. For example:

```
{
  "FilterId": "2dDataMicroStationFilesFilter",
  "Actions": [
    "SetValue('Target', 'MS2D')",
    "SetValue('Source', 'DocumentFiles')",
    "SetValue('PublishOriginal', false)",
    "SetValue('PublishRendition', true)",
    "SetValue('PublishReference', true)",
    "SetValue('DocumentIdentifier', '905675_Inst')",
    "SetValue('RegisterIdentifier', 'LoadTemplate/Discovery')"
  ]
},
```

#### *Engineered list (explicit association)*

This register will create an association between documents and tags. Before you create the association ensure that Tags and docs are already classified and loaded in system.

```
<DocTagAssociation geicl:id="DocTagAssociation" Category="Docs" RegisterType="Secondary" IDColumn="Document_Number" HeaderRow="1" FirstDataRow="2" DuplicateAttribute="AppendValue">
<Columns geicl:id="Columns">
  <Plant geicl:id="Plant" Description="Plant" />
  <Document_Number geicl:id="Document_Number" Description="Document_Number" />
  <Tag_Number geicl:id="Tag_Number" Description="Tag_Number" associationType="is a document for" AssociationClass="GEN_ROOT_FUNCTIONAL" />
</Columns>
</DocTagAssociation>
```

	A	B	C
1	Plant	Document_Number	Tag_Number
2	IED	905675_Inst	090004

	A	B	C
1	Plant	Document_Number	Tag_Number
2	IED	905675_Inst	090004

DocTagAssociation.xlsx input file supplied through GDP must have the document and Tag ID.

For more information on loading files, see [Ingestion API Request Parameters](#).

## 3D Data Configuration

### 3D Gateway Configuration

Gateway for 3D Data files used by AIM-A, that can be configured, are listed below. For more information on modifying these files, see [Appendix A: Mapping Configuration](#).

#### AC3D Configurable Files

modelfile-ac3d-basemapping.xml  
modelfile-ac3d-extractconfiguration.xml  
modelfile-ac3d-loadconfiguration.xml  
modelfile-ac3d-loadcsvconfiguration.xml  
modelfile-ac3d-loadeiwmconfiguration.xml  
modelfile-ac3d-loadzglconfiguration.xml  
modelfile-ac3d-presentationmapping.xml  
modelfile-ac3d-transformconfiguration.xml  
modelfile-ac3d-transformgeometry.xml

#### IFC Configurable Files

modelfile-ifc-basemapping.xml  
modelfile-ifc-extractconfiguration.xml  
modelfile-ifc-loadconfiguration.xml  
modelfile-ifc-loadcsvconfiguration.xml  
modelfile-ifc-loadeiwmconfiguration.xml  
modelfile-ifc-loadzglconfiguration.xml  
modelfile-ifc-presentationmapping.xml  
modelfile-ifc-propertysetmapping.xml  
modelfile-ifc-transformconfiguration.xml  
modelfile-ifc-transformgeometry.xml

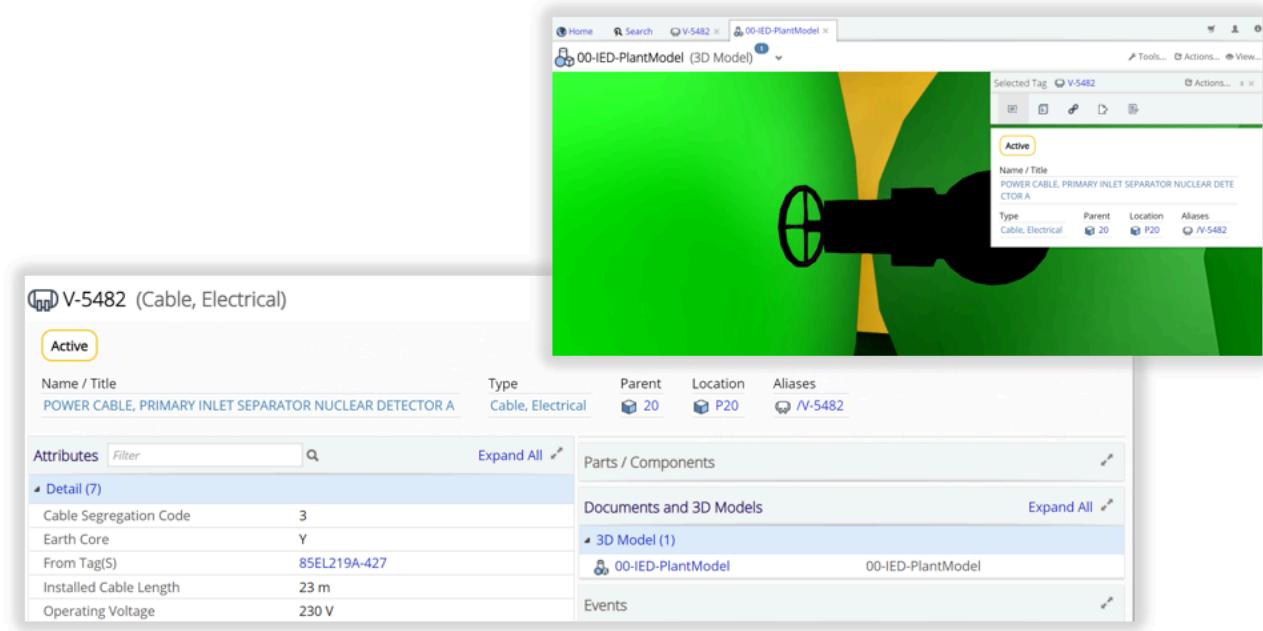
#### NAV Configurable Files

modelfile-nav-basemapping.xml  
modelfile-nav-extractconfiguration.xml  
modelfile-nav-loadconfiguration.xml  
modelfile-nav-loadcsvconfiguration.xml  
modelfile-nav-loadeiwmconfiguration.xml  
modelfile-nav-loadzglconfiguration.xml  
modelfile-nav-presentationmapping.xml  
modelfile-nav-transformconfiguration.xml

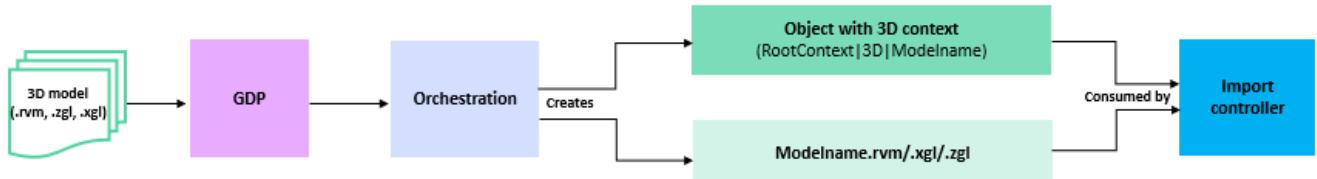
modelfile-nav-transformgeometry.xml

### 3D Hotspotting Configuration

Whenever processed 3D models are loaded in the cloud, the orchestration process creates Objects with 3D context and the model itself.



### Workflow



In order to create the hotspots for 3D model objects, two associations need to be created: "is identified by" and "is referenced in".

- Is identified by association is used to create aliases in the context of the tag.
- Is referenced in association is used to load the content card of the object within the 3D model and hotspots.

For example:

**AVEVA|TAG|V-5482:** Input cable tag.

**AVEVA|3D|00-IED-PlantModel.rvm:** 3D model object created with 3D context after orchestration.

**AVEVA|/V-5482:** Object present in the 3D model.

**AVEVA|TAG|V-5482:**

- is identified by AVEVA|V-5482|/V-5482: Alias in the context of the tag.
- is referenced in AVEVA|3D|00-IED-PlantModel.rvm: For content card and hotspotting.

For **.rvm** models it is necessary to always use two associations. As in the model name the tag name is always present with /. For **.zgl/.xgl** models only one association may be needed except if the name is not proper then you can use aliasing.

### Registers Gateway configuration

```
<Tag3DModelAssociation geicl:id="Tag3DModelAssociation" Category="Tags" RegisterType="Secondary" IDColumn="Tag_Number" HeaderRow="1"
FirstDataRow="2" ClassDefault="TAG" ResolveReferences="try" DuplicateAttribute="AppendValue">
<Columns geicl:id="Columns">
<Tag_Number geicl:id="Tag_Number" Description="Tag_Number" />
<Model geicl:id="Model" Description="Model" />
<Ref3D geicl:id="Ref3D" AssociationType="is referenced in" ValueExpression="{{ concat('3D', @[Model]) }}"/>
<Aliases geicl:id="Aliases" Description="Aliases" AssociationType="is identified by" ValueExpression="{{ concat(@[Tag_Number], '|',
@[Aliases]) }}" AssociationClass="GEN_ROOT_FUNCTIONAL" />
</Columns>
</Tag3DModelAssociation>
```

Two associations are added using the Registers Gateway configuration.

- **Is identified by** for aliasing in the context of the tag.
- **Is referenced in** for concatenating 3D model objects.

---

**Note:** this is a secondary register. Please make sure tags are already loaded using primary register configuration. This secondary register will add the attributes Model, aliases to existing register and associations to the tags.

---

### Tag Scraping

Tag scraping is when a document is scanned for tags that represent engineering objects. The tags are gathered in readiness for creating objects in AIM-A, and those objects will be associated to the document.

Tag scraping is supported for the following file types: **dwg, dxf, nwd, ifc**.

The following Register must be added to the class library, so that associations can be made between the tags and the 3D model:

```
<ModelDiscovery geicl:id="ModelDiscovery" RegisterType="Associations" Category="Tags"
DuplicateAttribute="AppendValue" IDColumn="ReferencedId" >
<Columns geicl:id="Columns">
<ReferencedId geicl:id="ReferencedId" Description="ReferencedId" />
<ModelId geicl:id="ModelId" Description="ModelId" AssociationType="is referenced in"
ValueExpression="{{ $[attr.value].replace(/(&lt;[^|,|;]+|;)([^,;]+)/, '|'.join('3D',
'$1')).splitAny(',') }}" />
</Columns>
</ModelDiscovery>
```

## Dashboard Configuration

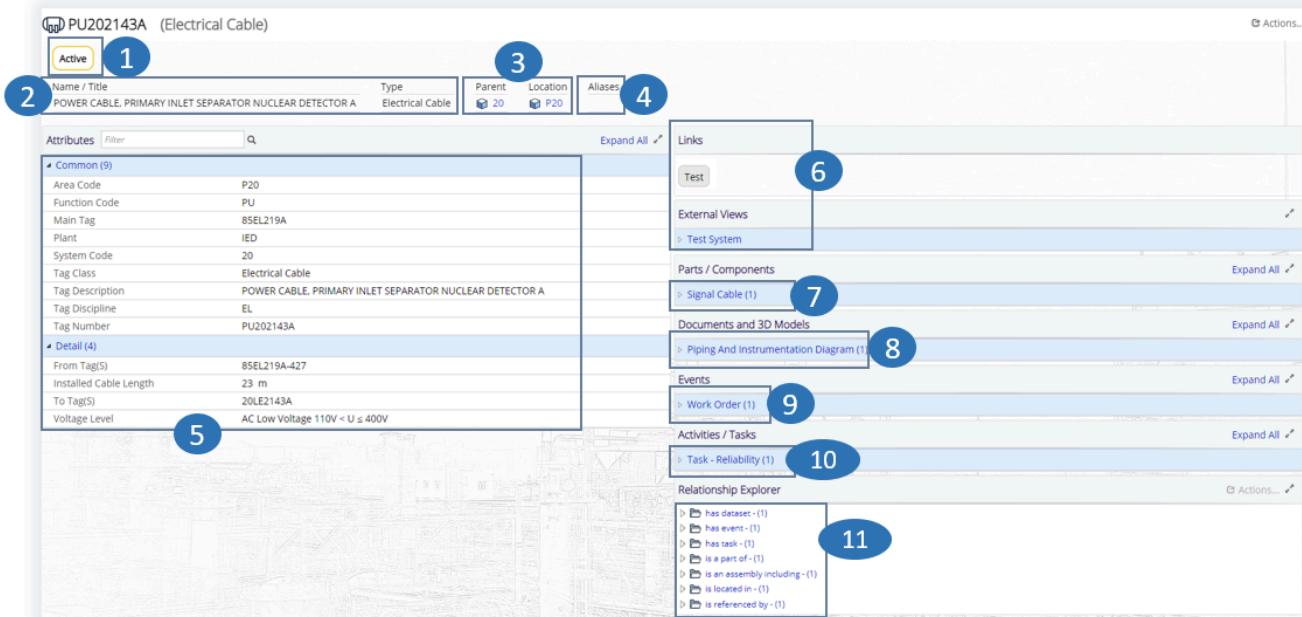
The Registers Gateway has many capabilities. For example, AIM-A Summary Views, breakdown configurations, query forms configurations, and reports from the Reporting Database.

### Summary Views

Regarding summary view configurations, we will describe how it is possible to customize summary views for **Tags**

and Documents, as well as, for Activities and Events.

## Tags and Documents



Using the Registers Gateway configuration, we can customize summary views for tags and documents in AIM-A.

1. Status Badge can be created thanks to addition of statusCategory = TAGOPS on the extension of the Status Enumeration list.
2. Headers Name/Title and Type are populated from Name & ClassID of the EIWM XML file.
3. Parent and Location Headers are populated thanks to "is a part of" & "is located in" associations.
4. Aliases are populated thanks to "is identified by" association.
5. Attributes appear under different sub heads in the attributes section thanks to attribute grouping in ISM.
6. Links are populated thanks to addition of AIM-A extension properties on Links Attribute.
7. Parts/Components are populated thanks to "is an assembly including" association.
8. Documents and 3D Models are populated thanks to "is referenced by" association.
9. Events are populated thanks to "has event" association.
10. Activities and Tasks are populated thanks to "has task" association.
11. Relationship explorer is populated thanks to the different associations utilized.

## Populate Name and Type

Headers Name/Title and Type are picked up from Name & ClassID of the EIWM XML file.

In order to publish, Name header, NameColumn property (parameter of each register) needs to be configured. Likewise, if we want to display Type Header, you need to configure ClassID property.

Name and type configuration should be done in the Registers configuration fragment in ISM.

43-BDV-2518 (Control Valve)

**Active**

2

Name / Title	Blowdown Valve, HP Flare Knock-Out Drum	Type	Control Valve
Parent	43 43-VD-673	Location	P10
Aliases			

Attributes Filter Q Expand All ↗

Details (4)

Area	P10
Dry Weight	75 kg
Loop Number	43B2518
Valve Pressure Rating	CLASS 0300

Common (9)

Category	IN
Function Code	BDV
Main Tag	43-VD-673
Model	976434347
Parent Tag	43-VD-673
Plant	IED
System	43
Tag Description	Blowdown Valve, HP Flare Knock-Out Drum
Tag Number	43-BDV-2518

Parts / Components Filter Q Expand All ↗

- Instrument Switch (2)
- Solenoid Valve (1)

Documents and 3D Models Expand All ↗

- Piping And Instrumentation Diagram (P And ID) (1)

Events

Activities / Tasks

Relationship Explorer

- has dataset - (1)
- has document - (1)
- has main tag - (1)
- has physical - (1)
- is a part of - (2)
- is a tag for - (1)
- is an assembly including - (3)
- is located in - (1)

## Input file

1	Tag	Plant	Category	Function	Description	Status	System	ValvePressureRating	DryWeight	LoopNumber	ParentTag	MainTag	Class	Action	Model
2	43-BDV-2518	IED	IO	BDV	Blowdown Valve, HP Flare Knock-Out Drum	Active	43	CLASS 0300	23500 kg	43B2518	43-VD-673	43-VD-673	Control valve	CreateOrUpdate	976434347
3	43-BDV-2518	IED	IN	BDV	Blowdown Valve, HP Flare Knock-Out Drum	Active	43	43B2518	43B2518	43-VD-673	43-VD-673	43-VD-673	Vessel	CreateOrUpdate	
4	43-BDV-2518	IED	IN	BDV	Solenoid Valve, HP Flare Knock-Out Drum Blowdown Valve	ACTIVE	43			43B2518	43-VD-673	43-VD-673	Solenoid valve	CreateOrUpdate	
5	43-ZSD-2518	IED	IN	ZSD	Position Switch Open, HP Flare Knock-Out Drum Blowdown Valve	Active	43			43B2518	43-VD-673	43-VD-673	Instrument switch	CreateOrUpdate	
6	43-ZSC-2518	IED	IN	ZSC	Position Switch Closed, HP Flare Knock-Out Drum Blowdown Valve	Active	43			43B2518	43-VD-673	43-VD-673	Instrument switch	CreateOrUpdate	
7	43-BJ-18	IED	JB	JB	Junction box, HP Flare Knock-Out Drum Blowdown	Void	43		1.5 kg				Electrical Junction box	Delete	
8	43-VD-673	IED	IN	BDV	HP Flare Knock-Out Drum	Active	43		23500 kg				Vessel	CreateOrUpdate	
9	82-HVTR-001A	IED	EL	HVTR	High voltage transformer A	Active	82		50000 kg				Transformer	CreateOrUpdate	
10	82-HVTR-001B	IED	EL	HVTR	High voltage transformer B	Active	82		50000 kg				Transformer	CreateOrUpdate	
11	43-BDV-2519	IED	IN	BDV	Blowdown Valve, HP Flare Knock-Out Drum	A	43	CLASS 0300	75 kg	43B2518	43-VD-673	43-VD-673	Control valve	CreateOrUpdate	

## Register configuration

The screenshot shows the 'Information Interface' configuration in the AVEVA AIM software. The 'GeneralTag' node under 'SourceSystem1' is selected. The 'Columns' section is expanded, displaying various attributes such as Tag, Plant, Category, Function, Description, System, ValvePressRating, DryWeight, LoopNumber, Class, Status, MainTag, ParentTag, Action, Model, and Area. The 'Area' section is also expanded, showing Category, Priority, Register Type, File Name, IDColumn, HeaderRow, and FirstDataRow. The 'FirstDataRow' row is highlighted with a blue border. The 'NameColumn' and 'ClassExpression' columns are also highlighted with a blue border. The 'Description' column for 'FirstDataRow' contains the value {{@[Plant]}}-{{@[Category]}}-{{@[Function]}}.

In this case, a value expression is used to combine column Plant, Category and Function on the Name column.

## Attribute grouping

Attribute's grouping configured in ISM will be displayed in the AIM-A dashboard on the summary views of tags.

The screenshot shows the AVEVA AIM software interface for managing asset information. The main view displays the details of an asset named "PU202143A (Electrical Cable)". The asset is categorized as an "Electrical Cable" and is associated with "Area Code P20", "Function Code PU", and "Main Tag 8SEL219A". The "Attributes" section lists various properties such as "Plant IED", "System Code 20", "Tag Class Electrical Cable", "Tag Description POWER CABLE, PRIMARY INLET SEPARATOR NUCLEAR DETECTOR A", "Tag Discipline EL", and "Tag Number PU202143A". Below this, a "Detail" section provides specific details like "From Tag(S) 8SEL219A-427", "Installed Cable Length 23 m", "To Tag(S) 20LE2143A", and "Voltage Level AC Low Voltage 110V < U ≤ 400V". A blue circle labeled "5" is overlaid on the interface, pointing to the "Attributes" section.

Attributes

Name / Title	Type	Parent	Location	Aliases
POWER CABLE, PRIMARY INLET SEPARATOR NUCLEAR DETECTOR A	Electrical Cable	P20	P20	

Common (9)

Area Code	P20
Function Code	PU
Main Tag	8SEL219A
Plant	IED
System Code	20
Tag Class	Electrical Cable
Tag Description	POWER CABLE, PRIMARY INLET SEPARATOR NUCLEAR DETECTOR A
Tag Discipline	EL
Tag Number	PU202143A

Detail (4)

From Tag(S)	8SEL219A-427
Installed Cable Length	23 m
To Tag(S)	20LE2143A
Voltage Level	AC Low Voltage 110V < U ≤ 400V

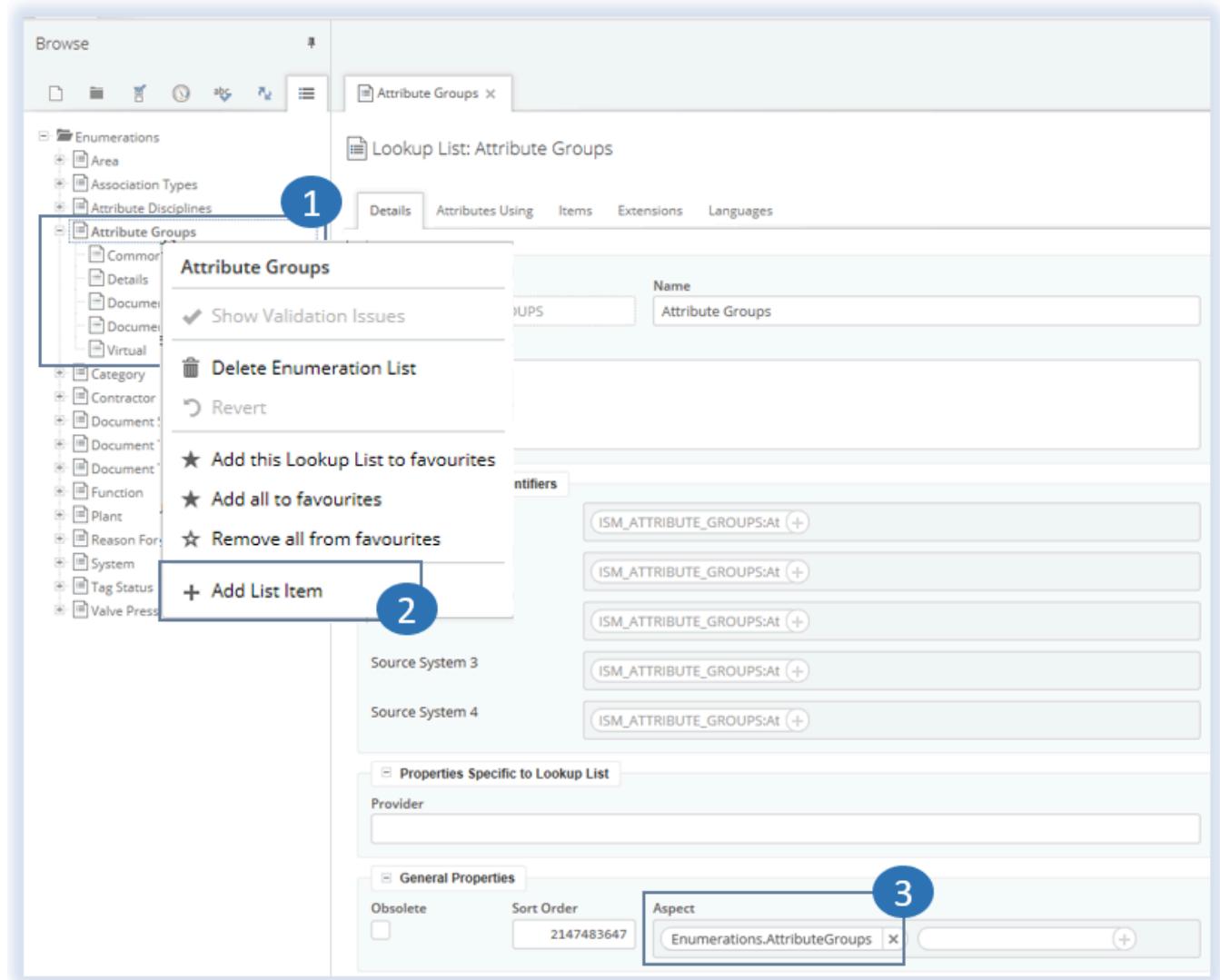
Links

- Test
- External Views
- Parts / Components
  - Signal Cable (1)
- Documents and 3D Models
  - Piping And Instrumentation Diagram (1)
- Events
  - Work Order (1)
- Activities / Tasks
  - Task - Reliability (1)

Relationship Explorer

- Has dataset - (1)
- Has event - (1)
- Has task - (1)
- Is a part of - (1)
- Is an assembly including - (1)
- Is located in - (1)
- Is referenced by - (1)

Attributes groups are done in the Standards fragment in ISM.



1. Look up list of attributes groups (enumeration tab).
2. Adding new group to the list.
3. Aspect = `Enumerations.AttributeGroups` defined.

Equipment Number X

Attribute: Equipment Number

Details Permissible for Extensions Languages

Identification

Id: AT034 Name: Equipment Number

Description:

Corresponding Identifiers

Reporting: AT034:Equipment Number +

Source System 1: AT034:Equipment Number +

Source System 2: AT034:Equipment Number +

Source System 3: AT034:Equipment Number +

Source System 4: Equipment X +

Properties Specific to Attribute

Concept: Physical

Data Type: String

Group: Common X +

Discipline: (unchecked)

UoM Required: (unchecked)

Presence: (unchecked)

4. Assign the desired group to each attribute.

The screenshot shows the AVEVA AIM software interface. On the left, there's a 'Browse' sidebar with a tree view of functional classes: Functionals (Root Class, Equipment, Instrument, Junction Box), Physicals, Generals, and Documents. The main workspace is titled 'Functional Class: Cable'. It has tabs for Details, Network, Permissible Attributes (which is selected), Sub Classes, Taxonomy Occurrences, Extensions, and Languages. Below the tabs is a table with columns for ID, Name, Data..., UoM..., Measure..., Validatio..., Validation Rule, Disci..., and Pres... . The table is divided into two sections: 'Group: Common' and 'Group: Details'. The 'Common' group contains attributes like Category, Function Code, Parent Tag, Plant, System, Tag Description, Tag Number, and Tag Status. The 'Details' group contains attributes like Cable Length, Decl..., and M... . At the bottom of the table, it says 'Maturity Level: Default'. A blue circle with the number 5 is overlaid on the top right corner of the interface.

- Groups and their attributes will be displayed at a class level in ISM.

## Populate Parent header and parts components

Parent Header is populated thanks to "is a part of" association.

Parts/Components are populated thanks to "is an assembly including" association.

Parent Header and Parts/Components configurations should be done in the Registers configuration fragment in ISM.

PU202143A (Electrical Cable)

**Attributes**

- Name / Title: POWER CABLE, PRIMARY INLET SEPARATOR NUCLEAR DETECTOR A
- Type: Electrical Cable
- Parent: P20
- Location: P20
- Aliases:

**Links**

- Test
- External Views
  - > Test System
- Parts / Components
  - > Signal Cable (1) **7**
- Documents and 3D Models
- Piping And instrumentation Diagram (1)
- Events
- Work Order (1)
- Activities / Tasks
- Task - Reliability (1)

**Relationship Explorer**

- > Has dataset - (1)
- > Has event - (1)
- > Has task - (1)
- > Is a part of - (1)
- > Is an assembly including - (1)
- > Is located in - (1)
- > Is referenced by - (1)

## Input file

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Tag	Plant	Category	Function	Description	Status	System	Vessel	DryWeight	LoopNumber	ParentTag	MainTag	Class	Action	Model
43-VD-673	IED	EQ	VD	HP Flare Knock-Out Drum - Active	43	23500 kg				43-VD-673		Vessel	CreateOrUpdate	
43-BOV-2518	IED	IN	BOV	Blowdown Valve, HP Flare A	43	CLASS 3000 75 kg	43B2518			43-VD-673		Control valve	CreateOrUpdate	976434347
43-BOV-2518	IED	IN	BOV	Solenoid Valve, HP Flare Kr ACTIVE	43		43B2518			43-VD-673		Solenoid valve	CreateOrUpdate	
43-ZSO-2518	IED	IN	ZSO	Position Switch Open, HP F A	43		43B2518			43-VD-673		Instrument switch	CreateOrUpdate	
43-ZSC-2518	IED	IN	ZSC	Position Switch Closed, HP Active	43		43B2518			43-VD-673		Instrument switch	CreateOrUpdate	
43-JB8003	IED	JB	JB	Junction Box, HP Flare Knock Void	43	1.5 kg						Electrical Junction box	Delete	
25-VD-673	IED	EQ	VD	HP Flare Knock-Out Drum - Active	25	23500 kg						Vessel	CreateOrUpdate	
82-HVTR-001A	IED	EL	HVTR	High voltage transformer A Active	82	50000 kg						Transformer	CreateOrUpdate	
82-HVTR-001B	IED	EL	HVTR	High voltage transformer B Active	82	50000 kg						Transformer	CreateOrUpdate	

## Register configuration

The screenshot shows the AVEVA AIM software interface. On the left, there is a tree view of a 'SourceSystem1' structure. Under 'GeneralTag', there are several nodes: 'Columns', 'Tag', 'Plant', 'Category', 'Function', 'Description', 'System', 'ValvePressRating', 'DryWeight', 'LoopNumber', 'Class', 'Status', 'MainTag', and 'ParentTag'. The 'ParentTag' node is expanded, showing its properties:

Description	Description
associationType	is a part of
ValueExpression	<code>{{{ If @([ParentTag] IsUnset then concat('SYSTEM   ',@([System])) else concat('TAG   ',@([ParentTag])) }}}}</code>

Below this, other properties of the 'ParentTag' node are listed:

- Action
- Model
- Area
- Category
- Priority
- Register Type
- File Name
- IDColumn
- HeaderRow
- FirstDataRow
- NameColumn
- ClassExpression
- IncludeSheet
- DeleteWhere
- ClassDefault
- CaptureMethod
- ExcludeRecords
- IncludeRecords
- Nomenclature

Each property has a corresponding value or expression.

In this case, there is a ParentTag column that has the parent of each tag. In order to display the parents on the header of the summary views, we need to build associationType = is a part of. In addition, we could put a ValueExpression with the condition If ParentTag column is blank, then set it to System else set it to ParentTag (optional).

In order to publish Parts/Components, we would need to use opposite direction of the association of parent header, is an 'assembly including'. This association needs to be configured within each register on a column level.

## Populate location

Location Headers are populated thanks to "is located in" association.

Location headers configurations should be done in the Registers configuration fragment in ISM.

The screenshot shows the AVEVA AIM software interface. At the top, it displays the tag name "PU202143A (Electrical Cable)". Below this, there are tabs for "Active", "Parent" (set to 20), "Location" (set to P20), and "Aliases". The main area shows attributes for the tag, grouped under "Common (9)" and "Detail (4)". The "Common" group includes fields like Area Code (P20), Function Code (PU), Main Tag (8SEL219A), Plant (IED), System Code (20), Tag Class (Electrical Cable), Tag Description (POWER CABLE, PRIMARY INLET SEPARATOR NUCLEAR DETECTOR A), Tag Discipline (EL), and Tag Number (PU202143A). The "Detail" group includes fields like From Tag(S) (8SEL219A-427), Installed Cable Length (23 m), To Tag(S) (20LE2143A), and Voltage Level (AC Low Voltage 110V < U ≤ 400V). To the right of the attribute table is a large thumbnail image of a piping and instrumentation diagram (P&ID) showing various process equipment and piping. Further down the page, there are sections for "Links", "Relationship Explorer", and two tables.

**Links**

- Test
- External Views
  - Test System
- Parts / Components
  - Signal Cable (1)
- Documents and 3D Models
- Piping And Instrumentation Diagram (1)

**Relationship Explorer**

- has dataset - (1)
- has event - (1)
- has task - (1)
- is a part of - (1)
- is an assembly including - (1)
- is located in - (1)
- is referenced by - (1)

### Input file

Plant	Tag_Number	Tag_Class	Tag_Description	Area_Code
IED	PU202143A	Electrical Cable	POWER CABLE, PRIM	P20

Plant	Area_Code	Tag_Description
IED	P20	Process Lower Deck

### ISM configuration

An association between tag object and general object (for example, area) need to be created but both objects need to be created by a primary register. For example, Attribute Area code is permissible for Cable (electrical and signal cable ).

Attribute: Area Code

Details   Permissible for   Extensions   Languages

Identification

ID	AT0001	Name	Area Code
Description			

Corresponding Identifiers

LoadTemplate	Area_Code
--------------	-----------

Properties Specific to Attribute

Concept	Functional General	Group	Common	Discipline	
Data Type	String	Size	Measure Class	UoM Required	Presence
Validation Type	Association	Association Type	is located in	Valid Target Classes	Area

## External links and views

Links are populated due to addition of AIM-A extension properties on the Links Attribute.

Links configurations should be done in the Registers configuration fragment in ISM.

Under External Views you can embed the content of the URL in the iframe. It streams and displays the image specified in the URL.

The screenshot shows the AVEVA AIM Advanced interface. At the top, it displays the tag name "PU202143A (Electrical Cable)". Below this is a navigation bar with tabs: Active, Name / Title, Type, Parent, Location, and Aliases. The "Type" tab is selected, showing "Electrical Cable". The main content area shows attributes for the tag, grouped under "Common (9)" and "Detail (4)". The "Links" section in the sidebar is highlighted with a blue circle labeled "6". This section contains a list of links associated with the tag, including "Test" and "External Views (Test System)". Other sections visible include "Parts / Components", "Documents and 3D Models", "Events", "Activities / Tasks", and "Relationship Explorer".

## Input file

The screenshot shows a Microsoft Excel spreadsheet titled "Cable.xlsx". The table has columns: Plant, Tag\_Number, Installed\_Cable\_Length\_UoM, Main\_Tag, Parent\_Tag, To\_Tag(s), Voltage\_Level, and Links. The "Links" column contains a single URL: <https://mf-chorris.s3.amazonaws.com/assets/uploads/2016/10/19123509/timeline-05.jpg>. The rest of the table rows show various IED components and their connections.

	A	B	L	M	N	O	P	Q	R	S	T	U	V	W
1	Plant	Tag_Number	Installed_Cable_Length_UoM	Main_Tag	Parent_Tag	To_Tag(s)	Voltage_Level	Links						
2	IED	PU202143A	m	8SEL219A		2OLE2143A	AC Low Voltage 110V	<a href="https://mf-chorris.s3.amazonaws.com/assets/uploads/2016/10/19123509/timeline-05.jpg">https://mf-chorris.s3.amazonaws.com/assets/uploads/2016/10/19123509/timeline-05.jpg</a>						
3	IED	20XSV2130-Z12	m		PU202143A	871FE1010F								
4	IED	V-5096		8SEL219A		2OLE2143A								
5	IED	V-5482	m	8SEL219A		2OLE2143A	AC Low Voltage 110V < U ≤ 400V							
6	IED	V-5483	m	8SEL219A		2OLE2143A	AC Low Voltage 110V < U ≤ 400V							
7	IED	V-5484	m	8SEL219A		2OLE2143A	AC Low Voltage 110V < U ≤ 400V							

In this case, just read the links directly from the input register column.

## ISM configuration

You must raise a CDO ticket to whitelist the URLs.

Attribute: Links

Details   Permissible for   Extensions   Languages

Identification

ID: AT0003   Name: Links

Description:

Corresponding Identifiers

LoadTemplate: Links

Properties Specific to Attribute

Concept: Functional Document   Group: Common   Discipline:

Data Type: Uri   Size:   Measure Class:   UoM Required:   Presence: Optional

Validation Type:   Validation Rule:

Min Occurs:   Max Occurs:   Maturity Levels:

General Properties

Obsolete:   Sort Order:   Aspect:

In order to configure the links, select DataType = Uri on the specific attribute that contains the links for tags.

The name given against the Link Button is what you will see in the AIM-A dashboard.

Hide Attribute will hide the attribute from the attributes panel, avoiding duplicating the attribute display in two places, that is, in the attribute panel and in the external view and links.

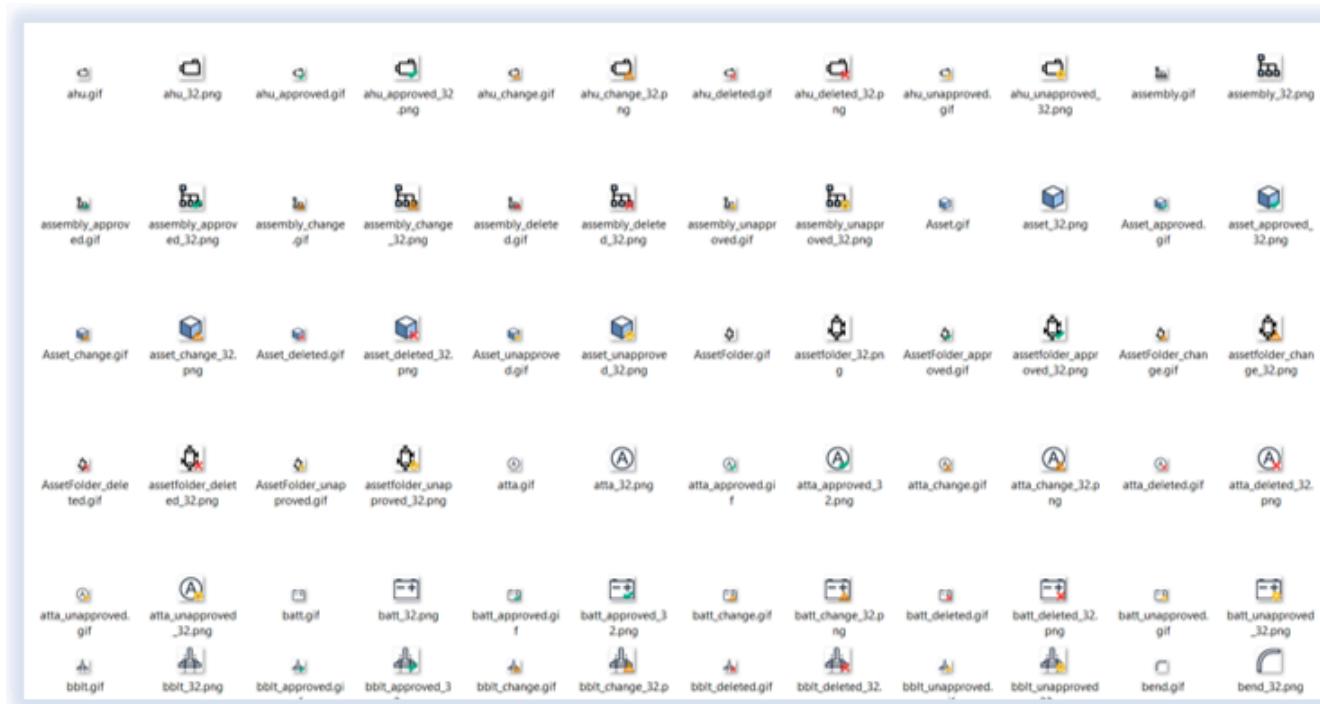
ExternalViewName gives you the flexibility to stream the contents of the URL in an embedded iframe in AIM-A. It is the name you see in the external view.

These three settings alone will take care of adding the new link button and external link.

## Icons

The symbol used to represent objects can be changed. AIM-A has a repository of icons that can be used to customize the summary views of tags and documents. Icons configurations are done in the Standards fragment in ISM.

For example, list of icons to be used to customise summary views.



## ISM configuration

**F Functional Class: Signal Cable**

Details	Network	Permissible Attributes	Sub Classes	Taxonomy Occurrences	Extensions	Languages
<ul style="list-style-type: none"> <li>Intrinsic</li> <li>AIM           <ul style="list-style-type: none"> <li>ClassIcon: pipe.gif</li> <li>context: TAG</li> </ul> </li> <li>Languages</li> <li>Attributes</li> <li>Naming Templates</li> </ul>						



In order to change default icon of a specific class type, it is necessary to use property `ClassIcon = iconname.gif` on a class level configuration within Extension tab.

## Status badges

Status badges is a flag within the summary view of tags or documents that display the current status of the object. Value of the flags can be modified. For example, status of tags can be Active or Void. Or status for documents can be Current or Historical.

The values of these flags are not fixed. Each AIM-A dashboard can use the most appropriate ones according to the needs.

Status badges can also be used to show important information.

Part of Status Badge configurations should be done in the Registers configuration fragment and the other part should be done in the Standard fragment in ISM.

### Input file

	A	B	C	D	E	F	G	H	I
1	Tag	Plant	Category	Function	Description	Status	System	vePress	DryWeight
2	43-VD-673	IED	EQ	VD	HP Flare Knock-Out Drum	Active	43	23500 kg	
3	43-BDV-2518	IED	IN	BDV	Blowdown Valve, HP Flare Knock-Out	A	43	CLASS 0300	75 kg
4	43-BDY-2518	IED	IN	BDY	Solenoid Valve, HP Flare Knock-Out	ACTIVE	43		
5	43-ZSO-2518	IED	IN	ZSO	Position Switch Open, HP Flare Knock-Out	A	43		
6	43-ZSC-2518	IED	IN	ZSC	Position Switch Closed, HP Flare Knock-Out	Active	43		
7	43JB003	IED	JB	JB	Junction Box, HP Flare Knock-Out Drum	Void	43	1.5 kg	
8	25-VD-673	IED	EQ	VD	HP Flare Knock-Out Drum	Active	25	23500 kg	
9	82-HVTR-001A	IED	EL	HVTR	High voltage transformer A	Active	82	50000 kg	
10	82-HVTR-001B	IED	EL	HVTR	High voltage transformer B	Active	82	50000 kg	

Status information can come in many forms – Active, A, ACTIVE. In this case, valueExpressions will be used to set the status attribute to Active or void instead of having Active, A, ACTIVE, Void statuses.

### ISM configuration

The screenshot shows the AVEVA AIM interface. On the left, the 'Browse' pane displays a tree view of enumerations. A specific node, 'Tag Status' under 'System', is selected and highlighted with a dashed border. This selection is also reflected in the main content area, which shows the 'Lookup List: Tag Status' page. The 'Extensions' tab is active, showing the 'Intrinsic' section expanded to reveal the 'AIM' category. Within 'AIM', the 'statusCategory' item is selected and highlighted with a blue box. To the right of this item, the value 'TAGOPS' is displayed. Other tabs in the header include 'Default List', 'Tag Status', 'Equipment', 'Vessel', 'Tag Status', and 'Control Valve'. The top right corner shows user information: 'Default List', 'AIM-A Practice Training (0.0.0.51)', and 'pooja.var'.

For the Badge to get populated, on the Tag Status enumeration, under Extensions Tab -> under Intrinsic -> AIM-> add statusCategory = TAGOPS.

---

**Note:** If you want to change the colour of the status badge then you can specify colour = red, green, yellow, orange, etc for each list item. For example, for list item Active add under extensions-> AIM-> colour = green.

---

Map the list items in the lookup list against the Nomenclatures found on your input data.

The screenshot shows the AVEVA AIM software interface. On the left, there is a navigation tree under 'Browse' labeled 'Attributes'. Under the 'Common' category, 'Tag Status' is selected and highlighted with a blue border. The main workspace is titled 'Attribute: Tag Status'. It contains several tabs: 'Details', 'Permissible for', 'Extensions', and 'Languages'. The 'Details' tab is active. Below the tabs, there is a section titled 'Corresponding Identifiers' which lists three source systems: 'Source System 1' (Status), 'Source System 2' (Status), and 'Source System 3' (AT004:Tag Status). There is also a section titled 'Properties Specific to Attribute' which includes fields for 'Concept' (Functional), 'Group' (Common), 'Discipline' (empty), 'Data Type' (empty), 'Size' (empty), 'Measure Class' (empty), 'UoM Required' (unchecked), and 'Presence' (empty). Below these, there is a 'Validation Type' dropdown set to 'Enumeration' and an 'Enumeration List' field containing 'Tag Status'. There are also fields for 'Min Occurs' and 'Max Occurs' (both empty) and 'Maturity Levels' (empty). At the bottom, there is a section titled 'General Properties'.

Adding Validation Type = Enumeration and enumeration list = Tag Status is necessary in order to complete the configuration. Doing this, the attribute that contains the values to be displayed in the badge will be connected to the enumeration list.

#### Register configuration

The screenshot shows the AVEVA AIM software interface. The top navigation bar includes tabs for Details, Composition, Approved By, Extension Namespaces, Extensions (selected), and Class Library Policy Config... . The main content area displays a hierarchical tree structure under the 'GeneralTag' node. A specific node, 'Status', is selected and expanded, showing its properties:

Property	Value
Description	Description
ValueExpression	<code>{if @[Status] contains any ['ACTIVE','Active','A'] then 'Active' else 'Void' }</code>

Other visible nodes include GeneralTag, Columns, Tag, Plant, Category, Function, Description, System, ValvePressRating, DryWeight, LoopNumber, Class, Status, MainTag, ParentTag, Action, Model, Category, Priority, Register Type, File Name, IDColumn, HeaderRow, FirstDataRow, NameColumn, ClassExpression, IncludeSheet, DeleteWhere, ClassDefault, CaptureMethod, and Nomenclature.

In this case, a ValueExpression property under the Status column node of GeneralTag register was added. This ValueExpression reads the column Status and if it finds the status is ACTIVE/Active/A, then it sets to Active, otherwise it sets it to Void. Thanks to the previous configuration, the badge will be printed on the summary view.

## Configure hyperlinks on attributes

The screenshot shows the AVEVA AIM interface for an object named "PU202143A (Electrical Cable)". The top navigation bar includes tabs for "Active", "Inactive", and "Deleted". Below the navigation bar, there is a summary row with fields: Name / Title (POWER CABLE, PRIMARY INLET SEPARATOR NUCLEAR DETECTOR A), Type (Electrical Cable), Parent (P20), Location (P20), and Aliases. The main content area is divided into two panels: "Attributes" and "Links". The "Attributes" panel contains a table of common and detailed attributes. The "Links" panel lists various objects that can be linked from the current object, such as Test, External Views, Parts / Components, Documents and 3D Models, Piping And Instrumentation Diagram (1), Events, Work Order (1), Activities / Tasks, and Task - Reliability (1). The "From Tag(S)" attribute in the Attributes panel is highlighted with a blue border, indicating it is selected or being configured.

Attributes with clickable hyperlinks can be created on the attributes panel of tag and document summary views. These links will connect an attribute with another object so it will simply redirect you to another object summary view.

Attributes hyperlinks configurations should be done in the Standard fragment in ISM.

### ISM configuration

The screenshot shows the AVEVA Standard fragment in ISM for an attribute named "From Tag(s)". The top navigation bar includes tabs for "Details", "Permissible for", "Extensions", and "Languages". The "Extensions" tab is selected. The left sidebar shows a tree structure with nodes: Intrinsic, AIM, linkClass, Languages, and Maturity Levels. The "linkClass" node is expanded, and its value is set to "GEN\_ROOT\_FUNCTIONAL".

Hyperlinks on attributes will be created with a linkClass property on an attribute level within the Extension tab. LinkClass makes a clickable reference to another object without making an actual association in the data model between them. It will point the class ID as the root class which the attribute belongs to instead.

## Activities/Tasks and Events/Work Orders

Activities/Tasks and Events/Work orders summary views has the same structure as Tags and Documents ones. However, they are detailed in their own section due to their differences.

The screenshot shows the 'Task2004 (Task - Reliability)' summary view. It includes:

- Header:** Task2004 (Task - Reliability) (1)
- Header Sub-fields:** Name / Title (Task description test), Type (Task - Reliability), Aliases (2)
- Attributes Table:** A table showing task attributes like Approved (Yes), Consequence Economic (M), Criticality (Medium), etc. (3)
- Relationship Explorer:** A tree view showing relationships such as 'is a part of' (IED, Task - Reliability, Task2004), 'is a task on' (Cable, Cable, Electrical), and specific items like PU202143A (4, 5).
- Chart:** A bar chart at the bottom right showing data over time.

The screenshot shows the 'PV200486 (Work Order)' summary view. It includes:

- Header:** PV200486 (Work Order) (1)
- Header Sub-fields:** Name / Title (Test event), Type (Work Order), Aliases (2)
- Attributes Table:** A table showing event attributes like Area Code (P20), System Code (20), Basic Finish Date (2.3.2021), etc. (3)
- Event Tags:** A table showing event tags like 'Cable, Electrical (1)' with item 'PU202143A' (6)
- Relationship Explorer:** A tree view showing relationships such as 'is a part of' (IED, Work Order, PV200486), 'is an event on' (Cable, Cable, Electrical), and specific items like PU202143A (4).

1. PV200486 (Work Order)

2. Name / Title Type Aliases  
Test event Work Order

3. Attributes

4. Relationship Explorer

5. Event Tags

6. PU202143A

1. Task & Event ID and its classification.
2. Populated from Name & ClassID of the EIWM XML file.
3. Attributes appear under different sub heads in the attributes section due to attribute grouping in ISM.
4. Is a part of site association is used for building the breakdown structure for Tasks and Events.
5. Is a task on Tags is an association used to populate the Activities/Tasks section on the Tag summary view. Since this association is used, the Activities/Tasks section is populated on the tag summary view because of the other side of the association created between Tags and Tasks has task.

1. Active

2. Attributes

3. Links

6. Event Tags populated thanks to the is an event on association. Since this association is used, the Events section is populated on the tag summary view because of the other side of the association created between Tags and Tasks has event.

## Register configuration

The screenshot shows a registration configuration interface with a tree view of associations. Two specific associations are highlighted:

- Association 1:** Task is a part of Plant. The details are as follows:
 

Description	Plant
associationType	is a part of
ValueExpression	<code>{{ @[Plant] }}</code>
AssociationClass	GCL12231
- Association 2:** Task is a task on Tag\_Number. The details are as follows:
 

Description	Tag_Number
AssociationType	is a task on
AssociationClass	GEN_ROOT_FUNCTIONAL
ValueExpression	<code>{{ @[Tag_Number] }}</code>

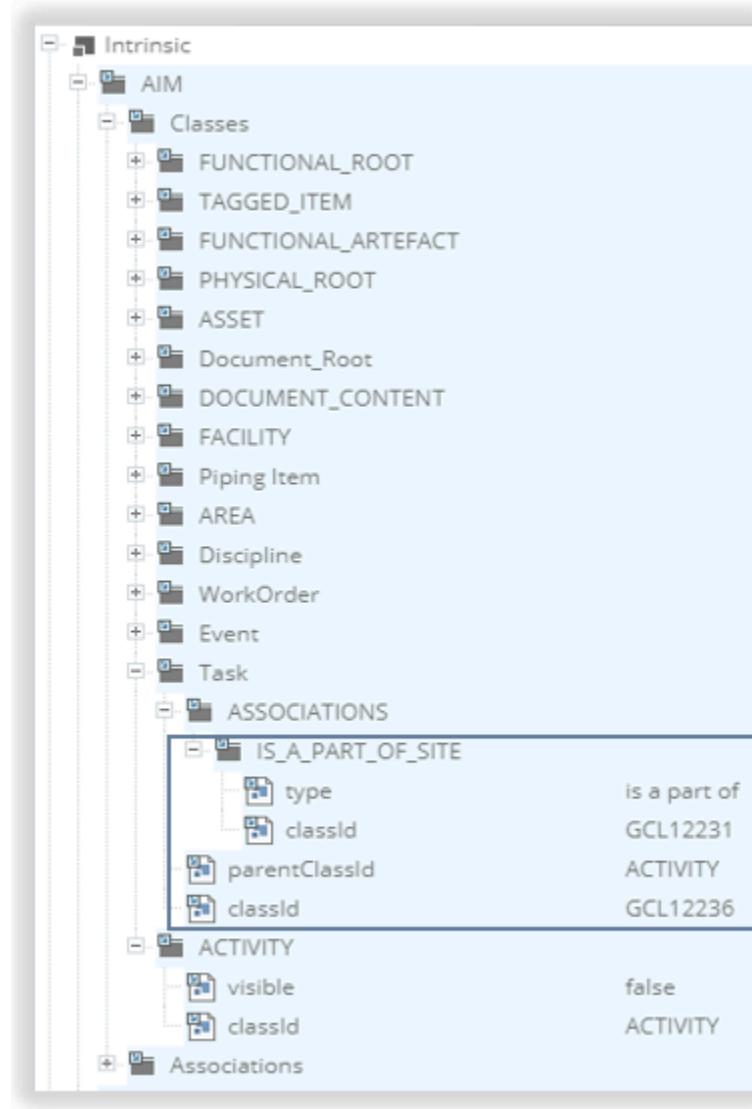
1. Association for forming the breakdowns – Task is a part of plant and association for forming the breakdowns – Event is a part of Plant.
2. Association for populating the Activities/Tasks Section on the Tag Summary view – Task is a task on GEN\_ROOT\_FUNCTIONAL and association for populating the Events Section on the Tag Summary view – Event is an event on GEN\_ROOT\_FUNCTIONAL.

## ISM Configuration

Permissibility for associations related to Activities/Tasks and Events/Work orders needs to be added.

Association between Site and Task is not present by default in AIM-A. So, its permissibility needs to be added. Define permissibility for is a part of associations related to Task objects and add visibility = false for the ACTIVITY class such that the Activity class node doesn't appear in the AIM-A dashboard (optional).

Association between Site and Event is not present by default in AIM-A. So, its permissibility needs to be added. Define permissibility for associations related to event objects is a part of and add visibility = false for EVENT class such that the Event class node doesn't appear in the AIM-A dashboard (optional).



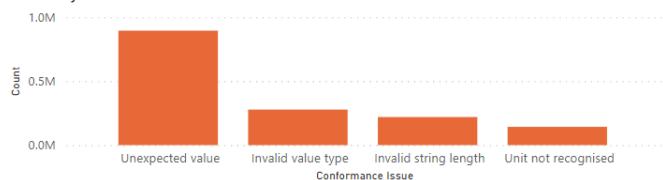
## Embedding Power BI Reports

AIM-A has the capability of creating reports based on data processed by the gateways. For example, a conformance issue report, completeness of the information report or consistency on data report.

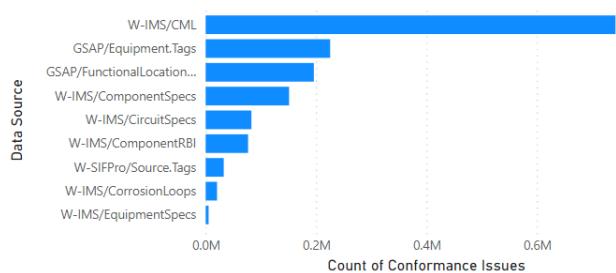
## Data Sources

**9**  
**1.53M**  
Number of Conformance Issues

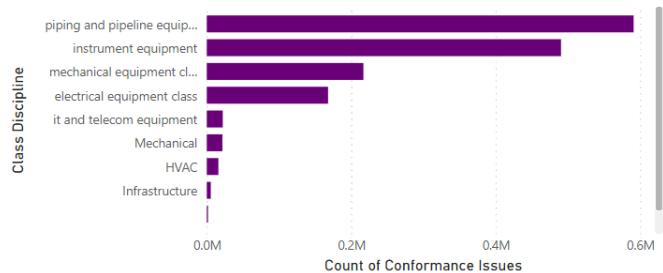
## Count by Conformance Issue



## Count of Conformance Issues by Data Source



## Count of Conformance Issues by Class Discipline



Discipline	Tag Class	Tag Name	Attribute Name	Attribute Value	Attribute UoM	Conformance Issue	Expected Items	Data Source
Tag	ML-010	Plant Code	C320-ARCHIVE			Invalid string length		W-IMS/CircuitSpecs
Tag	ML-011	Plant Code	C320-ARCHIVE			Invalid string length		W-IMS/CML
Tag	VEH-101	Plant Code	C320-ARCHIVE			Invalid string length		W-IMS/CML
Tag	VEH-103	Plant Code	C320-ARCHIVE			Invalid string length		W-IMS/CML
Tag	VEH-104	Plant Code	C320-ARCHIVE			Invalid string length		W-IMS/CML
Tag	VEH-105	Plant Code	C320-ARCHIVE			Invalid string length		W-IMS/CML
Tag	VEH-106	Plant Code	C320-ARCHIVE			Invalid string length		W-IMS/CML
Tag	VEH-108	Plant Code	C320-ARCHIVE			Invalid string length		W-IMS/CML
Tag	VFH-109	Plant Code	C320-ARCHIVE			Invalid string length		W-IMS/CML

**186.65K**

Total Number of Tags

Total Attribute Completeness (%)

**19.35****2.18M**

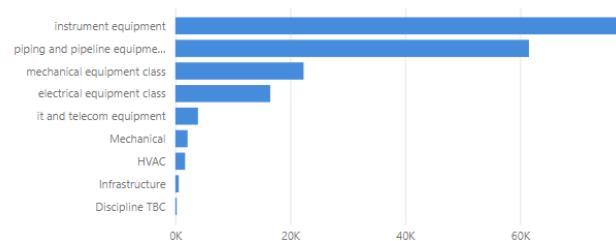
Expected Number of Attributes

**421.63K**

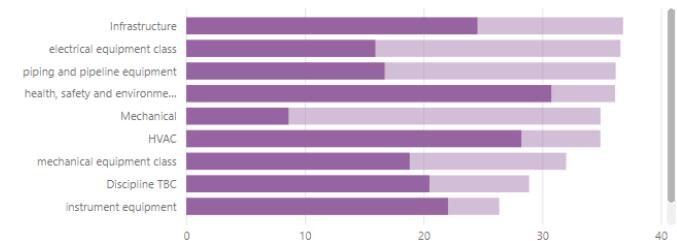
Actual Number of Attributes



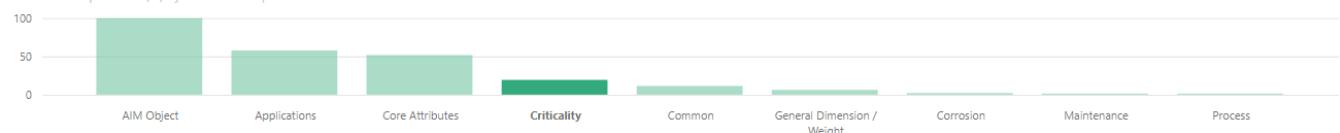
## Number of Tags by Class Discipline



## Attribute Completeness (%) by Class Discipline



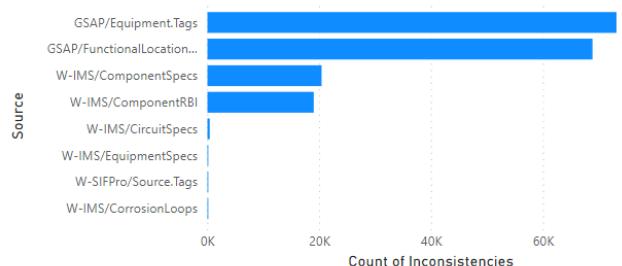
## Attribute Completeness (%) by Attribute Group



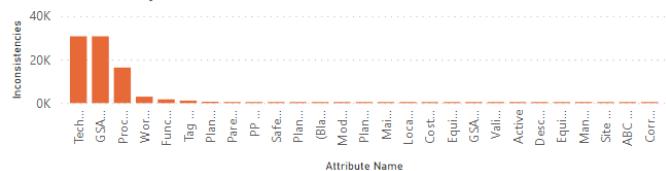
# 86.87K

Total Number of Attribute Inconsistencies

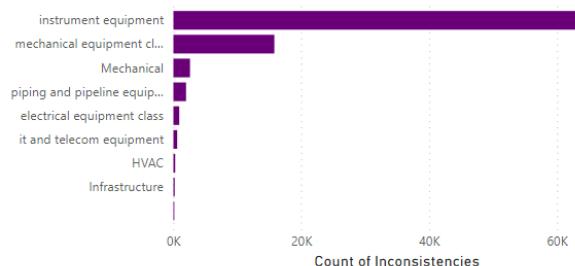
Count of Inconsistencies by Source



Inconsistencies by Attribute Name



Count of Inconsistencies by Tag Discipline



Tag Name	Tag Class	Attribute Name	Attribute Value	Source
ZTE-24A26	Position Switch	GSAP System Status	CRTE	GSAP/FunctionalLocations.Tags
ZTE-24A26	Position Switch	GSAP System Status	INST	GSAP/Equipment.Tags
ZTE-24A26	Position Switch	Technical Object Type Code	L_SWI_POS	GSAP/Equipment.Tags
ZTE-24A26	Position Switch	Technical Object Type Code	I_X	GSAP/FunctionalLocations.Tags
ZTE-22F83	Positioner	GSAP System Status	CRTE	GSAP/FunctionalLocations.Tags
ZTE-22F83	Positioner	GSAP System Status	INST	GSAP/Equipment.Tags
ZTE-22F83	Positioner	Technical Object Type Code	LCVL_POSI	GSAP/Equipment.Tags
ZTE-22F83	Positioner	Technical Object Type Code	I_SWI	GSAP/FunctionalLocations.Tags
ZTF-22F82	Positioner	GSAP System Status	CRTF	GSAP/FunctionalLocations.Tags

Data loaded through the AVEVA Data Pipeline is loaded into:

- AIM-A database
- Reporting Database

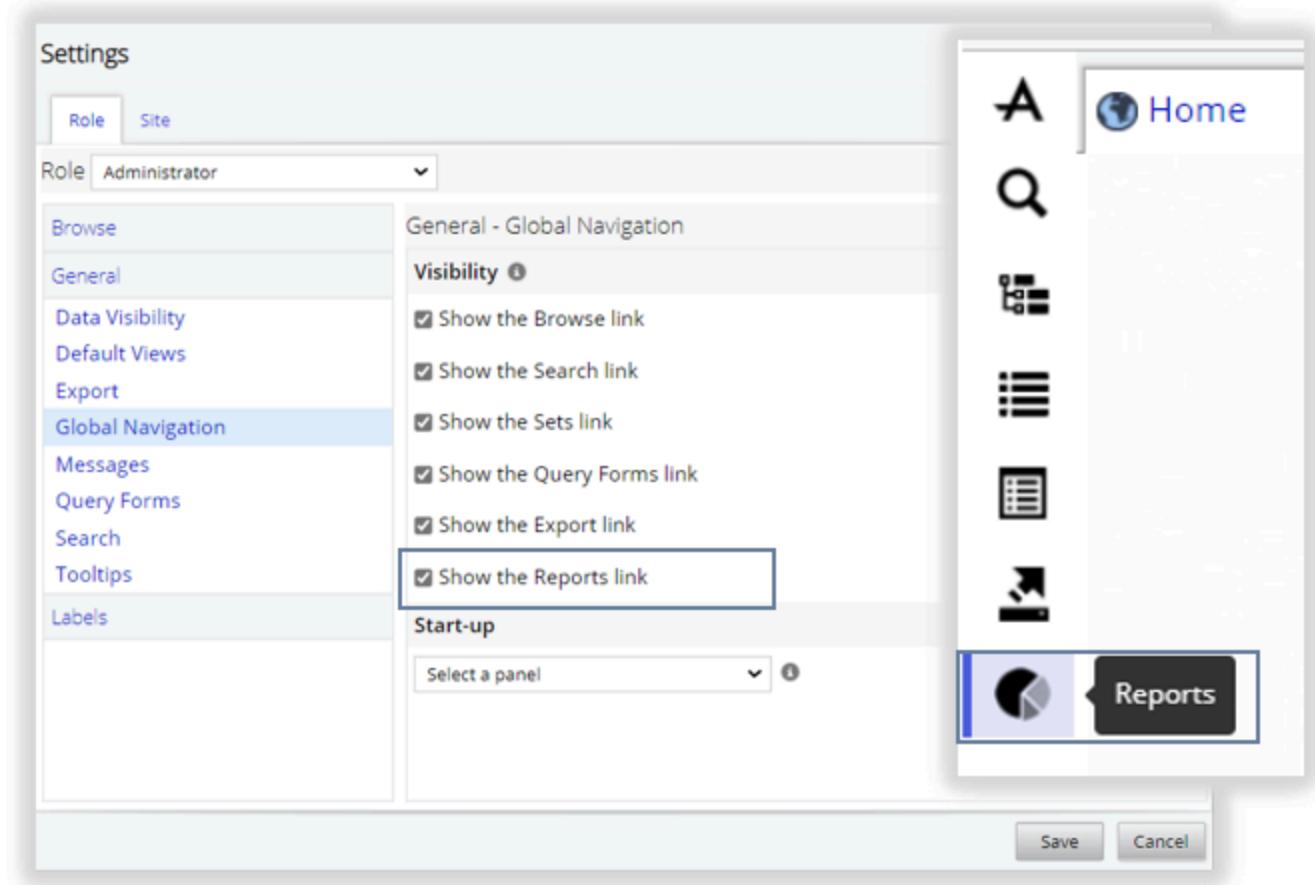
The Business Intelligence Gateway cloud service hosts the SQL Reporting Database which can be used to generate Microsoft Power BI reports. This database is fed by the Registers Gateway with data requirements such as, source system, historical database, etc. Clients must have their own Power BI platform / service (for example, ssrs / powerbi, etc).

**Note:** Accessible from on-prem client (client IP white-listing required for access).

- + AIM.EDW\_Document
- + AIM.EDW\_Document\_Associations
- + AIM.EDW\_Document\_Associations\_History
- + AIM.EDW\_Document\_Attributes
- + AIM.EDW\_Document\_Attributes\_History
- + AIM.EDW\_Document\_Hierarchies
- + AIM.EDW\_Document\_History
- + AIM.EDW\_Functional
- + AIM.EDW\_Functional\_Associations
- + AIM.EDW\_Functional\_Associations\_History
- + AIM.EDW\_Functional\_Attributes
- + AIM.EDW\_Functional\_Attributes\_History
- + AIM.EDW\_Functional\_Hierarchies
- + AIM.EDW\_Functional\_History
- + AIM.EDW\_Functional\_Infointerface
- + AIM.EDW\_Functional\_Infointerface\_Attributes
- + AIM.EDW\_General
- + AIM.EDW\_General\_Associations
- + AIM.EDW\_General\_Associations\_History
- + AIM.EDW\_General\_Attributes
- + AIM.EDW\_General\_Attributes\_History
- + AIM.EDW\_General\_Hierarchies
- + AIM.EDW\_General\_History
- + AIM.EDW\_Physical
- + AIM.EDW\_Physical\_Associations
- + AIM.EDW\_Physical\_Associations\_History
- + AIM.EDW\_Physical\_Attributes
- + AIM.EDW\_Physical\_Attributes\_History
- + AIM.EDW\_Physical\_Hierarchies
- + AIM.EDW\_Physical\_History
- + AIM.ISM\_All\_Attributes
- + AIM.ISM\_All\_Attributes\_Extensions
- + AIM.ISM\_All\_Attributes\_History
- + AIM.ISM\_All\_Attributes\_Insight
- + AIM.ISM\_Attribute\_Associations
- + AIM.ISM\_Attribute\_Values\_Insight\_Mapping
- + AIM.ISM\_Class\_Library
- + AIM.ISM\_Class\_Library\_Extensions
- + AIM.ISM\_Class\_Library\_History
- + AIM.ISM\_Disciplines
- + AIM.ISM\_Document\_Attributes
- + AIM.ISM\_Document\_Attributes\_Completeness
- + AIM.ISM\_Document\_Attributes\_Extensions
- + AIM.ISM\_Document\_Classes
- + AIM.ISM\_Document\_Classes\_History
- + AIM.ISM\_Enumeration\_Extensions
- + AIM.ISM\_EnumerationItem\_Extensions
- + AIM.ISM\_Enumerations
- + AIM.ISM\_Functional\_Attributes
- + AIM.ISM\_Functional\_Attributes\_Completeness
- + AIM.ISM\_Functional\_Attributes\_Extensions
- + AIM.ISM\_Functional\_Classes
- + AIM.ISM\_Functional\_Classes\_History
- + AIM.ISM\_General\_Attributes
- + AIM.ISM\_General\_Attributes\_Completeness
- + AIM.ISM\_General\_Attributes\_Extensions
- + AIM.ISM\_General\_Classes
- + AIM.ISM\_General\_Classes\_History
- + AIM.ISM\_Hierarchies
- + AIM.ISM\_Infointerface
- + AIM.ISM\_Infointerface\_Field
- + AIM.ISM\_Lifecycles
- + AIM.ISM\_NamingTemplate
- + AIM.ISM\_NamingTemplate\_Element
- + AIM.ISM\_Physical\_Attributes
- + AIM.ISM\_Physical\_Attributes\_Completeness
- + AIM.ISM\_Physical\_Attributes\_Extensions
- + AIM.ISM\_Physical\_Classes
- + AIM.ISM\_Physical\_Classes\_History
- + AIM.ISM\_Plant\_Breakdown\_Structure
- + AIM.ISM\_UoM\_Measures
- + AIM.ISM\_UoM\_MeasureUnits
- + AIM.ISM\_UoM\_Units

Before configuring any reports, administrators need to ensure that the Business Intelligence Gateway cloud service is available on CONNECT. Refer to the section on [Reporting](#) for further details.

We also need to enable the **Reports** icon in the AIM-A dashboard. Use the AIM-A **Settings** dialog (administrator role required), and for each role, go to the **Global Navigation** tab and select **Show the Reports link**.



## Register configuration

Use the Registers Gateway to create the report objects to store the link and then GDP to upload them and create associations between Report Document and Report File register.

```
<BIReportDocument geicl:id="BIReportDocument" Category="Docs" RegisterType="Primary" IDColumn="Object_Id" NameColumn="Object_Id" ClassDefault="Reports" ClassColumn="Doc_Class">
  <Columns geicl:id="Columns">
    <Object_Id geicl:id="Object_Id" Description="Object_Id" />
    <Doc_Class geicl:id="Doc_Class" Description="Doc_Class" />
    <LNK_00001 geicl:id="LNK_00001" Description="LNK_00001" />
    <Association_ID geicl:id="Association_ID" AssociationType="is fulfilled by" AssociationClass="FILE" ValueExpression="{{ @[Association_ID] }}" />
  </Columns>
</BIReportDocument>
```

```
<BIReportFile geicl:id="BIReportFile" Category="General" RegisterType="Primary" IDColumn="Object_Id" NameColumn="Object_Id" ClassDefault="FILE" ClassColumn="File_Class">
  <Columns geicl:id="Columns">
    <Object_Id geicl:id="Object_Id" Description="Object_Id" />
    <File_Class geicl:id="File_Class" Description="File_Class" />
    <Info_Locator geicl:id="Info_Locator" Description="Info_Locator" />
    <Info_Type geicl:id="Info_Type" Description="Info_Type" />
  </Columns>
</BIReportFile>
```

## ISM configuration

**Document Class**

```
<Class id="Reports" name="Reports">
  <Extension anet:context="VISUAL" anet:parentClassID="AVEVA NET REPORT" nmcltr:LoadTemplate="{geicl:notderivable}Reports" />
</Class>
```

**General Class**

```
<Class id="FILE" name="File">
  <Extension nmcltr:LoadTemplate="{geicl:notderivable}File" anet:context="FILE" />
</Class>
```

**Important Attributes**

```
<Attribute id="Primary_Link" name="Primary Link" groupId="Document" dataType="Uri">
  <Extension nmcltr:LoadTemplate="LNK_00001" />
</Attribute>
<Attribute id="InfoType" name="InfoType" groupId="Document">
  <Extension nmcltr:LoadTemplate="Info_Type" />
</Attribute>
<Attribute id="InfoLocator" name="InfoLocator" groupId="Document">
  <Extension nmcltr:LoadTemplate="Info_Locator" />
</Attribute>
```

In case, you have raised a request for enabling the Business Intelligence Gateway cloud service, then you will also need to request that the AVEVA Cloud DevOps team add the Power BI workspace URL (app.powerbi.com) as portal safe domain/white list.

Any info locator attribute (which has a URL) needs to be whitelisted/ included in safe domain.

PrimaryLink attribute displays the Power BI report link in the UI and InfoLocator takes us to the actual Power BI report link. Give the attribute IDs as InfoType and InfoLocator.

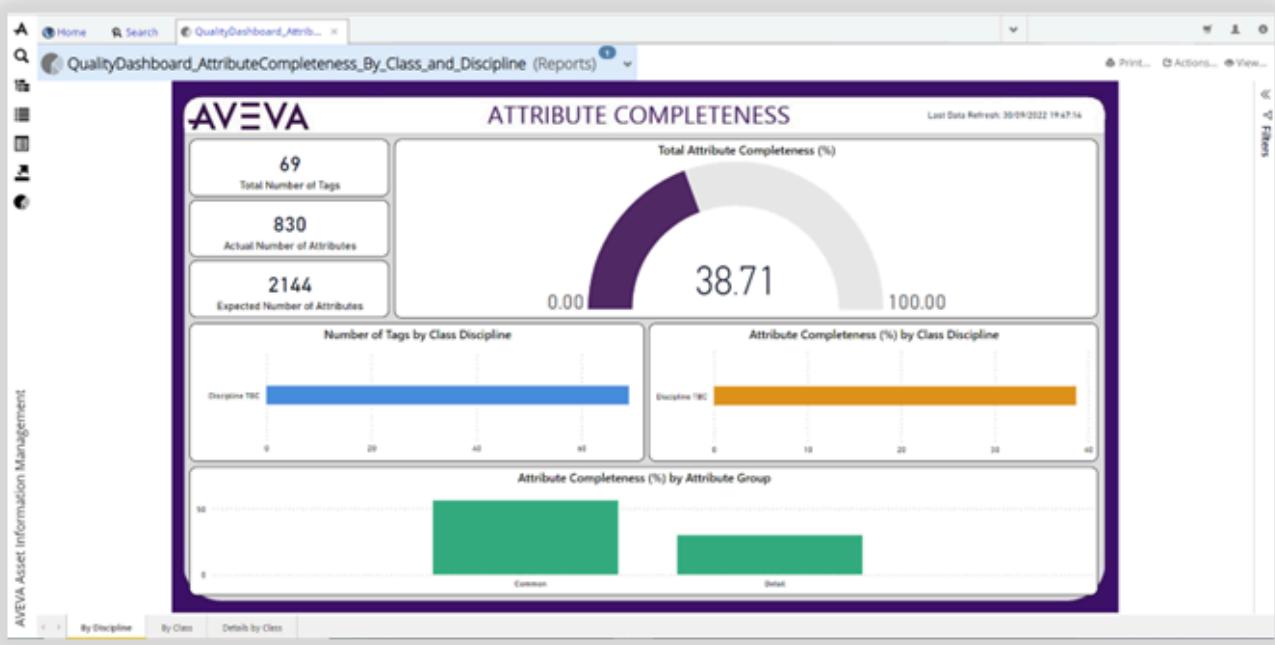
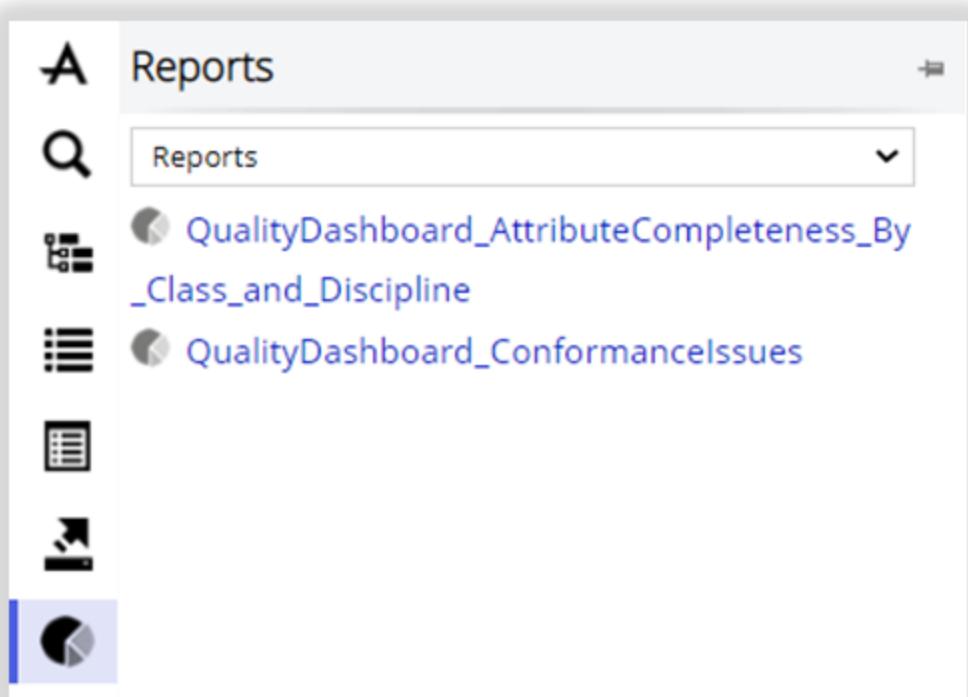
**Input files**

A	B	C	D
Object_Id	File_Class	Info_Locator	Info_Type
1	AttributeCompletenessReport_File	<a href="https://app.powerbi.com/reportEmbed?reportId=5a0a0c12-1389-4e16-a465-9c01cd1ae933&amp;autoAuth=true&amp;ctid=425a5546-5a6e-4f1b-ab62-23d91d07d893">https://app.powerbi.com/reportEmbed?reportId=5a0a0c12-1389-4e16-a465-9c01cd1ae933&amp;autoAuth=true&amp;ctid=425a5546-5a6e-4f1b-ab62-23d91d07d893</a>	text/html
2	ConformanceReport_File	<a href="https://app.powerbi.com/reportEmbed?reportId=36e9450f-d932-4e39-ab79-aae52ec769dc&amp;autoAuth=true&amp;ctid=425a5546-5a6e-4f1b-ab62-23d91d07d893">https://app.powerbi.com/reportEmbed?reportId=36e9450f-d932-4e39-ab79-aae52ec769dc&amp;autoAuth=true&amp;ctid=425a5546-5a6e-4f1b-ab62-23d91d07d893</a>	text/html

A	B	C	D
Object_Id	Doc_Class	LNK_00001	Association_ID
1	QualityDashboard_AttributeCompleteness_By_Class_And_Discipline	<a href="https://app.powerbi.com/reportEmbed?reportId=5a0a0c12-1389-4e16-a465-9c01cd1ae933&amp;autoAuth=true&amp;ctid=425a5546-5a6e-4f1b-ab62-23d91d07d893">https://app.powerbi.com/reportEmbed?reportId=5a0a0c12-1389-4e16-a465-9c01cd1ae933&amp;autoAuth=true&amp;ctid=425a5546-5a6e-4f1b-ab62-23d91d07d893</a>	AttributeCompletenessReport_File
2	QualityDashboard_Conformances	<a href="https://app.powerbi.com/reportEmbed?reportId=36e9450f-d932-4e39-ab79-aae52ec769dc&amp;autoAuth=true&amp;ctid=425a5546-5a6e-4f1b-ab62-23d91d07d893">https://app.powerbi.com/reportEmbed?reportId=36e9450f-d932-4e39-ab79-aae52ec769dc&amp;autoAuth=true&amp;ctid=425a5546-5a6e-4f1b-ab62-23d91d07d893</a>	ConformanceReport_File

Feed the Registers Gateway with the information required for your info\_locators and links to your Power BI reports. Once this is processed, it will appear under the Reports menu in AIM-A dashboard.



## Query Forms

Query forms can be created either directly in the AIM-A dashboard or using ISM. For the ISM option, please define a nomenclature for query forms, add node views under information interface, add node lists under views, add node for query forms under the lists which you wish to be displayed in AIM-A, configure query forms and do the class and attribute mappings.

The screenshot shows the AVEVA AIM interface. On the left, there is a sidebar with various icons and labels: 'Query Forms' (selected), 'Documents', 'Electrical', 'Equipment', 'Event', 'FireAndGas', 'Instrument', 'Line', 'SoftObject', 'SpecialItem', 'Subsea', 'Task', 'Telecom', and 'Valve'. The main area is titled 'Cable (Query Form)'. It has two tabs: 'Form View' (selected) and 'Table View'. Under 'Form View', there are four search criteria: 'Tag\_Number' (Like V-5482), 'Tag\_Class' (Electrical Cable), 'Plant' (Like IED), and 'System\_Code' (Like 20). Under 'Table View', the results are displayed in a table with columns 'Tag\_Number' and 'Tag\_Class', showing one row for 'V-5482' and 'Electrical Cable'.

## Register configuration

Query Forms go inside Views >> Lists.

```
<InfoInterface:Views geicl:id="Views" publishQueryForm="true" xmlns="http://schemas.aveva.com/InformationInterfaces/Extension/Schema/2017/04">
  <Lists geicl:id="Lists" Nomenclature="QueryForm">
    <Cable geicl:id="Cable" ClassCriteria="FCL00014" Dataset="Operational Dataset">
      <Columns geicl:id="Columns">
        <Tag_Number geicl:id="Tag_Number" Metadata="id" />
        <Tag_Class geicl:id="Tag_Class" Metadata="class" />
        <Plant geicl:id="Plant" Dataset="Description" />
        <System_Code geicl:id="System_Code" Dataset="Description" />
      </Columns>
    </Cable>
  </Lists>
</InfoInterface:Views>
```

For tag query forms, Dataset = "Operational Dataset" needs to be specified and use the dataset and metadata. In this case, we can simply reuse the columns of the tags primary register which are present under InfoInterface->DataSources. ClassCriteria="FCL00014" will take care to bring all the sub classes present under FCL00014 (cable) as well.

```
<InfoInterface:Views geicl:id="Views" publishQueryForm="true" xmlns="http://schemas.aveva.com/InformationInterfaces/Extension/Schema/2017/04">
  <Lists geicl:id="Lists" Nomenclature="QueryForm">
    <Documents geicl:id="Documents" ClassCriteria="GEN_ROOT_DOCUMENT">
      <Columns geicl:id="Columns">
        <Document_Number geicl:id="Document_Number" Metadata="id" />
        <Document_Class geicl:id="Document_Class" Metadata="class" />
        <Document_Title geicl:id="Document_Title" Metadata="name" />
        <System_Code geicl:id="System_Code" Description="Description" />
        <Plant geicl:id="Plant" Description="Description" />
      </Columns>
    </Documents>
  </Lists>
</InfoInterface:Views>
```

For document query forms, use publishQueryForm="true" at the parent level to publish the query forms, use Nomenclature as "QueryForm" for identification purpose. The node names which appear under Lists are the query forms which appear in the AIM-A dashboard. In this case, a query form called "Documents" would appear in AIM-A. Columns may optionally specify Metadata = "id|class|name". ClassCriteria must be set to a class ID otherwise the query form will not be instantiated. In this case, we can simply reuse the columns in the tags primary register which are present under InfoInterface->DataSources. ClassCriteria="GEN\_ROOT\_DOCUMENT" will bring all of the classes present under GEN\_ROOT\_DOCUMENT as well.

### Example Configuration for Events and Task Query forms:

```
<InfoInterface:Views geicl:id="Views" publishQueryForm="true" xmlns="http://schemas.aveva.com/InformationInterfaces/Extension/Schema/2017/04">
    <Lists geicl:id="Lists" Nomenclature="QueryForm">
        <Event geicl:id="Event" ClassCriteria="GCL12233" Dataset="Operational Dataset">
            <Columns geicl:id="Columns">
                <Event_ID geicl:id="Event_ID" Metadata="id" />
                <Event_Class geicl:id="Event_Class" Metadata="class" />
                <Plant geicl:id="Plant" Dataset="Description" />
                <System_Code geicl:id="System_Code" Dataset="Description" />
            </Columns>
        </Event>
        <Task geicl:id="Task" ClassCriteria="GCL12236" Dataset="Operational Dataset">
            <Columns geicl:id="Columns">
                <Task_ID geicl:id="Task_ID" Metadata="id" />
                <Task_Class geicl:id="Task_Class" Metadata="class" />
                <Plant geicl:id="Plant" Dataset="Description" />
            </Columns>
        </Task>
    </Lists>
</InfoInterface:Views>
```

### ISM configuration

For each query form, have a class mapping. In the configurations of the query form we have given classCriteria=classId. Go to the same classId and map QueryForm nomenclature with this classId.

We have given the classId of the Document class and cable class as part of the configurations in the ClassCriteria. With the same classId we are doing the class mappings against the QueryForm Nomenclature.

Document Class: Document Root Class		Functional Class: Cable																																	
ID	GEN_ROOT_DOCUMENT	ID	FCL00014																																
Name	Document Root Class	Name	Cable																																
Description	Document Root Class	Description																																	
<b>Corresponding Identifiers</b> <table border="1"> <tr><td>Synonyms</td><td></td></tr> <tr><td>CFIHOS 1.4</td><td></td></tr> <tr><td>CFIHOS 1.5</td><td></td></tr> <tr><td>ISO 15926 part4</td><td></td></tr> <tr><td>POSC CAESAR</td><td></td></tr> <tr><td>STEPLIB</td><td></td></tr> <tr><td>LoadTemplate</td><td></td></tr> <tr><td>QueryForm</td><td>GEN_ROOT_DOCUMENT</td></tr> </table>		Synonyms		CFIHOS 1.4		CFIHOS 1.5		ISO 15926 part4		POSC CAESAR		STEPLIB		LoadTemplate		QueryForm	GEN_ROOT_DOCUMENT	<b>Corresponding Identifiers</b> <table border="1"> <tr><td>Synonyms</td><td></td></tr> <tr><td>CFIHOS 1.4</td><td></td></tr> <tr><td>CFIHOS 1.5</td><td></td></tr> <tr><td>ISO 15926 part4</td><td></td></tr> <tr><td>POSC CAESAR</td><td></td></tr> <tr><td>STEPLIB</td><td></td></tr> <tr><td>LoadTemplate</td><td></td></tr> <tr><td>QueryForm</td><td>FCL00014</td></tr> </table>		Synonyms		CFIHOS 1.4		CFIHOS 1.5		ISO 15926 part4		POSC CAESAR		STEPLIB		LoadTemplate		QueryForm	FCL00014
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LoadTemplate																																			
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POSC CAESAR																																			
STEPLIB																																			
LoadTemplate																																			
QueryForm	FCL00014																																		

Attributes you want to bring out in the Query forms need to be mapped too.

The screenshots show the 'Attribute' configuration for four asset types:

- Attribute: Tag Number**: ID: AT00002, Name: Tag Number. Description: Unique Identification code for an item.
- Attribute: Tag Class**: ID: AT10004, Name: Tag Class. Description:
- Attribute: Plant**: ID: AT00001, Name: Plant. Description: The identification code of the asset.
- Attribute: System Code**: ID: AT00005, Name: System C. Description: Code uniquely identifying the system.

Each screen also includes a 'Corresponding Identifiers' section with various synonym and reference entries.

## Manage Data

### Data Pipeline Overview

The AVEVA Data Pipeline is a multi-tenant SaaS solution, which processes the data into the AIM database. It primarily performs three functions: extracts the data, translates them into suitable 2D and 3D renditions, and uploads the data into the advanced visualization search platform. The Data Pipeline has two major components: Ingestion API and orchestration. Ingestion API uploads the file. After the data is uploaded, based on the type of input file (1D, 2D and 3D data), the orchestration gets triggered. After the orchestration is over, the output EIWM file gets stored in the import folder along with Manifest file.

**Note:** For 1D, data is processed into a Reporting database.

### Setup

The AVEVA Data Pipeline is enabled by default when the AIM-A solution is available.

To ensure that each asset is integrated, perform the following steps:

1. Navigate to **CONNECT > Folder Management**.
2. Select the respective folder.
3. The AVEVA Data Pipeline service must be enabled.
4. Open **Manage Integrations**.
5. Integration for the respective asset must be enabled.

To access the AVEVA Data Pipeline, assign the **AVEVA Data Pipeline User** role using the following steps:

1. Log in to **CONNECT**.
2. Navigate to **User Management > Filter the user > Select Assign role**.
3. Assign the following roles, as needed, for the respective folders.
  - **AVEVA Data Pipeline User** for a user who has to ingest data only.
  - **AIM Configuration** for a user who has to perform administrative tasks (update gateway configurations, apply homepage, modify UI settings and so on.)

## Add an AIM-A Tenant to the Data Pipeline

This section describes the information required to get a new AIM tenant onboarded into the AVEVA Data Pipeline as an asset. This is a mandatory step and is required before the AVEVA Data Pipeline can be used to publish data into any AIM environment.

---

**Note:** For APCM integration with AIM-A, the target AIM environment must be added as an asset to the respective deployment of the AVEVA Data Pipeline. Without this information, the integration does not work and Ingestion API does not accept any data from APCM.

---

### Request Details:

For adding a new asset to the AVEVA Data Pipeline, you need to provide the following information:

Parameter	Required?	Description
AIM ASSET TYPE	Yes	AIM-A
AIM STAGE NAME (OR URL)	Yes	Identifier of the AIM deployment. If you can't find the stage, share the AIM website URL.
CONNECT ACCOUNT NAME	Yes	Name of the CONNECT Account for the AIM environment.
CONNECT FOLDER NAME	Yes	Name of the CONNECT Folder for the AIM environment. If the AIM environment is enabled at account level, provide CONNECT Account Name in this field as well.
ROOT CONTEXT	Yes	The Root Context for all the data in the target AIM environment. This should be the fixed part of the Context, which does not change for any data.
AIM BUSINESS UNIT	Yes	The name of the business unit stated in the request to AVEVA to create the AIM environment. This corresponds to the top-level

Parameter	Required?	Description
		root (context) of all the data that will populate the AIM instance.
REPORTING REQUIRED?	No	Yes, if you need reporting database to be enabled for this asset and you already have an Azure reporting database connection string. <b>Default: No.</b>
REPORTING DATABASE CONNECTION STRING	No	If reporting database is required, specify the reporting database connection string. Solution Delivery can obtain this value from CDO.
REPORTING INTERVAL	No	If reporting database is required, the amount of time in minutes after which you want the AVEVA Data Pipeline to publish to the reporting database. <b>Default: 240 min.</b>
APCM INTEGRATION REQUIRED?	No	If APCM integration is required for the target AIM environment.
AIM PUBLISH INTERVAL	No	The amount of time in minutes after which you want the AVEVA Data Pipeline to publish to the target AIM environment. <b>Default: 120 min.</b>

## Features of the Ingestion API

This section describes the features of the Ingestion API.

### Multi-Tenancy

The Ingestion API is a multi-tenant application. Each API endpoint can enable uploads for multiple assets belonging to multiple customers. In CONNECT terminology, the tenancy is maintained at Connect-Account-Name/Connect-Folder-Name level.

#### Example:

Consider the following scenario:

We have two customers CUST1 and CUST2 with their CONNECT accounts set up.

- CUST1 has three folders (or assets) named FOLDER1, FOLDER2, FOLDER3.
- CUST2 has two folders (or assets) named FOLDER1, FOLDER2.

These two customers can use the same set of API endpoints for uploading files. The final tenancy mapping is maintained as follows:

Tenant 1:	CUST1/FOLDER1
Tenant 2:	CUST1/FOLDER2
Tenant 3:	CUST1/FOLDER3
Tenant 4:	CUST2/FOLDER1
Tenant 5:	CUST2/FOLDER2

Each tenant is authenticated and authorized independently and is able to use the API for uploading files.

## Transaction

Every file upload using Ingestion API runs as a part of a transaction. So a transaction can have one or more files that is orchestrated together. Each init API call opens a new transaction and each complete API call closes this transaction. After a transaction is marked completed, only then any file in that transaction is processed.

## Authentication

The Ingestion API supports CONNECT Authentication. The API support Bearer token mechanism for authenticating any user. The token can be a User Access Token (UAT) or an Account Access Token (AAT). In case, the customer wants to use an AAT, it must be generated beforehand by the CONNECT Administrator.

Once the CONNECT account is setup and respective UAT or AAT is generated, the user can get authenticated by passing the token as a Bearer token in the Authorization header of the request. More information about which endpoint should be used for authentication is available [here](#).

## Authorization

A CONNECT authenticated Ingestion API user is authorized to upload files to any asset it can access in CONNECT. Any attempt to access any other asset is not entertained by the API and result in an error.

In case an UAT is used, the user's access is restricted to all the assets the user has access to within the current CONNECT account.

In case an AAT is used, the user can access any asset in the current CONNECT account.

## File Upload

The Ingestion API utilizes the concept of AWS S3 pre-signed URLs to enable upload of files of all sizes to the orchestration input bucket. Each file format requires a specific set of request parameters to make sure orchestration understands what needs to be done with this file and how it must be processed.

The request parameters are described in the section [Ingestion API Request Parameters](#).

The Ingestion API supports all file formats for upload and returns specific messages to notify success or failure.

## Batch Upload

The Ingestion API also supports batch upload of files in case the user doesn't want to make too many API calls. Each file in a batch upload requires its own set of request parameters.

## Multipart Upload

For files larger than 5GB, AWS S3 doesn't support a direct upload. Instead these files must be uploaded using Multipart uploads. The file must be first divided into smaller parts and these parts must be uploaded one by one and then combined again by AWS S3. This process is fully supported by the Ingestion API's multipart upload endpoints (See here).

## Cancel an Upload

Any transaction can be cancelled in case the user has accidentally uploaded the wrong files/wrong request parameters.

## Ingestion API Request Parameters

For orchestration to understand how a specific file is processed, a set of pre-defined parameters must be passed from the API. These parameters are passed independently for each file in the API calls. The set of parameters in an API call either depends on the type of the file or the processing required for the file.

The following are the API parameters that are currently supported by the AIM Ingestion/Orchestration system:

- target
- source
- publishOriginal
- publishRendition
- publishReference
- documentIdentifier
- context
- fileName
- registerIdentifier
- fileRevisionKey
- configId
- action

## Parameter Definitions

### target

- This API parameter specifies which processing unit needs to act on the current file and how the

orchestration must be carried out.

- Target is a mandatory API parameter and must be provided for any file.
- The possible values for this parameter are:

Parameter Value	Description
DE	For any 2D file that requires scraping using the Data Extractor gateway (PDF, DOC, DOCX, XLS, XLSX, PPT, PPTX). For supported file types, see <a href="#">Limitations</a> .
AC2D	For any 2D file that requires scraping and conversion to a rendition using the Gateway for 2D Data (DWG, DXF). For supported file types, see <a href="#">Limitations</a> .
MS2D	For any 2D file that requires scraping and conversion to a rendition using the Gateway for 2D Data (DGN). For supported file types, see <a href="#">Limitations</a> .
AC3D	For any AutoCAD 3D files that require scraping and conversion to a rendition using the Gateway for 3D Data (e.g. DWG, DXF).
IFC	For any Industry Foundation Classes 3D files that require scraping and conversion to a rendition using the Gateway for 3D Data (e.g. IFC).
NAV	For any Navisworks 3D files that require scraping and conversion to a rendition using the Gateway for 3D Data (e.g. NWD).
CL	For an ISM class library. Only XML format for a Class Library is currently supported by the Registers Gateway.
Regi	For any 1D data file (register) that requires Registers Gateway processing (CSV, JSON, XML). For supported file types, see <a href="#">Limitations</a> .
Model	For any 3D model file that requires AIM-hybrid processing (RVM, ZGL). For supported file types, see <a href="#">Limitations</a> .
Custom	The file is a custom Gateway pattern file, homepage, bootstrap XML or Facet Register csv that needs to be applied to the AIM-A environment.

#### source

This is an optional parameter that denotes the actual source system where the file originated from. This is not currently used by orchestration.

#### publishOriginal

- This is a Boolean flag that instructs the orchestration to process the input file as it is. The file is not converted into any rendition if the flag is set to true.
- Default value is false.
- This is a required parameter for every 2D file. Only applicable to files that are supported by the orchestration's Gateway capabilities.
- For 3D files, this should be set to "false".

#### **publishRendition**

- This is a Boolean flag that instructs the orchestration to convert the input file into its rendition (for example, DWG to SVG) before publishing the rendition to the AIM-A system. The file is converted into any rendition if the flag is set to true.
- Default value is false.
- This is a required parameter for every 2D file. Only applicable to files that are supported by the orchestration's Gateway capabilities.
- For 3D files, this should be set to "true".

#### **publishReference**

- This is a Boolean flag that instructs the orchestration to scrape references (both tags and documents) from the input file and publish these references to the AIM-A system. The file is scraped if the flag is set to true.
- Default value is false.
- This is a required parameter for every 2D and 3D file (that requires processing via their respective gateways). Only applicable to files that are supported by the orchestration's Gateway capabilities.

#### **documentIdentifier**

- This is a unique identifier for the document object in the AIM-A UI. The input file is associated to the document object with this identifier.
- This is a required parameter for every 2D file.

#### **context**

- If provided, this parameter represents the sub-context under which the file object is added. The sub-context represents a sub-system within an asset.

#### **fileName**

- The name of the file to be uploaded into the AIM-A system. For supported file types, see [Limitations](#).

#### **registerIdentifier**

- This is the ISM Class Library Register path to be used for data processing through Register Gateway.
- Every 1D file requires some instructions on how the information must be translated to an EIWM object and imported into AIM-A. RegisterIdentifier allows orchestration to look at the Class Library and find the rules it needs to apply to transform a 1D register into meaningful EIWM data for import.
- For example, if your InfoInterface hierarchy is System >> Register1, your registerIdentifier would be System/

Register1.

#### fileRevisionKey

- This parameter helps the orchestration maintain a consistent data model when more than one revision of a file is loaded from the API or the document is updated. To make sure that we only show the latest revision of any file for any document, this value is used.
- When provided, fileRevisionKey overrides documentIdentifier value and add an extra (unclassified) identifier for the document. Orchestration then creates an association between the document object and the fileRevisionKey.

#### configId

- This parameter is used to specify what type of customization is being performed by the target "Custom".
- Any customization to target AIM environments can only be performed by tokens with the "AIM Configuration" role assigned to them. This is an administrative task so cannot be performed by account access tokens or service to service tokens. The role is available in the Data Pipeline/Load reporting solution in CONNECT.
- This property is used in conjunction with the target "Custom" and the possible values are listed below.

ConfigId	Target	Description
DE	Custom	The input file is a custom pattern file for DE Gateway
MS2D	Custom	The input file is a custom pattern file for Gateway for 2D Data
AC2D	Custom	The input file is a custom pattern file for Gateway for 2D Data
AC3D	Custom	The input file is a custom AutoCAD pattern file for the Gateway for 3D Data
IFC	Custom	The input file is a custom Industry Foundation Classes pattern file for the Gateway for 3D Data
NAV	Custom	The input file is a custom Navisworks pattern file for the Gateway for 3D Data
Homepage	Custom	The input file is a new Homepage for the respective asset
Bootstrap	Custom	The input file is a bootstrap XML for the respective asset
Facets	Custom	The input file is a csv file for the

ConfigId	Target	Description
		Facet Register

**action**

- This parameter is used exclusively for deleting 3D models.
- The possible value for this parameter is:

Parameter Value	Description
delete	For deleting 3D Models only. This is the only accepted value. The value must be all lowercase.

- This parameter requires two additional parameters that **must** be specified:
  - **fileName** must be a CSV file, for example: "fileName": "DeleteModels.csv".
  - **target** must be set to "**Model**".
- For more information on deleting 3D models, see [Deleting 3D Models](#).

**Known Types**

- The orchestration has a fallback mechanism to decide the target for any input file, if it is already added into the system as a known type.
- For any file, if target is not specified by mistake, known types have been configured to default to a specific type of processing. For example, if an upload process accidentally forgets to pass Target parameter for a PDF file, the system scrapes and processes the PDF file using the DE gateway.
- For certain file types, there can be multiple valid processing units. Out of these, one is configured by default as a known type. If you want a different type of processing to be done for this file type, you need to make sure the target parameter is accordingly passed.
- For example, XLSX is a file type that may require the Registers Gateway or DE Gateway processing. It defaults to the Registers Gateway, so if you want an XLSX file to be scraped using DE, you need to specify target as DE in the API request.
- It is a recommended practice to always provide a target.

The following section provides sample sets of request parameters that must be provided for the specified file for orchestration to successfully process it.

- Class Library
- Registers
- Drawings
- MicroStation Files
- Documents
- AutoCAD Files
- Industry Foundation Classes Files

- Navisworks Files
- Models
- Delete 3D Models
- Homepage
- Custom bootstrap
- Custom Gateway Configs - AC2D
- Custom Gateway Configs - MS2D
- Custom Gateway Configs - DE
- Custom Gateway Configs - AC3D
- Custom Gateway Configs - IFC
- Custom Gateway Configs - NAV
- Facets

## Parameters for 1D Orchestration

### Class Library

```
[{  
    "target": "CL",  
    "fileName": "clib.xml"  
}]
```

### Registers

```
[{  
    "target": "Regi",  
    "context": "CTX1",  
    "fileName": "register1.csv",  
    "registerIdentifier": "System/Register1"  
}]
```

## Parameters for 2D Orchestration

### Drawings

```
[{  
    "target": "AC2D",  
    "publishOriginal": false,  
    "publishRendition": true,  
    "publishReference": true,  
    "documentIdentifier": "DWG1",  
    "context": "CTX1",  
    "fileName": "drawing1.dwg",  
    "registerIdentifier": "System/References1",  
    "fileRevisionKey": "321456"  
}]
```

### MicroStation Files

```
[{  
    "target": "MS2D",  
    "publishOriginal": false,  
    "publishRendition": true,  
}]
```

```
"publishReference": true,  
"documentIdentifier": "DGN1",  
"context": "CTX1",  
"fileName": "msd1.dgn",  
"registerIdentifier": "System/References1",  
"fileRevisionKey": "321456"  
}]
```

## Documents

```
[{  
"target": "DE",  
"publishOriginal": true,  
"publishRendition": false,  
"publishReference": true,  
"documentIdentifier": "PDF1",  
"context": "CTX1",  
"fileName": "document1.pdf",  
"registerIdentifier": "System/Documents1",  
"fileRevisionKey": "321456"  
}]
```

If you want to publish the scraped references for a file, you must pass the registerIdentifier for the respective ISM CL register.

You can provide any values for publishOriginal, publishRendition and publishReference flags. The above mentioned examples are the best suited values. For example, if you don't want to publish a DWG file but only its scraped references, you can set

- publishOriginal = false
- publishRendition = false
- publishReference = true

In case all three publish flags are set to false, orchestration does not process the file.

## Parameters for 3D Orchestration (Gateway)

### AutoCAD Files

```
[{  
"target": "AC3D",  
"publishOriginal": false,  
"publishRendition": true,  
"publishReference": true,  
"context": "CTX1",  
"fileName": "autocad1.dwg",  
"registerIdentifier": "System/References1",  
}]
```

### Industry Foundation Classes Files

```
[{  
"target": "IFC",  
"publishOriginal": false,  
"publishRendition": true,  
"publishReference": true,  
"context": "CTX1",  
"fileName": "IndustryFoundationClasses1.ifc",  
}]
```

```
"registerIdentifier": "System/References1"
}]
```

#### Navisworks Files

```
[{
  "target": "NAV",
  "publishOriginal": false,
  "publishRendition": true,
  "publishReference": true,
  "context": "CTX1",
  "fileName": "Navisworks1.nwd",
  "registerIdentifier": "System/References1"
}]
```

### Parameters for 3D Orchestration (3DVis)

#### Models

```
[{
  "target": "Model",
  "context": "CTX1",
  "fileName": "model1.rvm"
}]
```

#### Delete 3D Models

```
[{
  "target": "Model",
  "fileName": "DeleteModel.csv",
  "action": "delete"
}]
```

### Parameters for Customization

#### Homepage

```
[{
  "target": "Custom",
  "configId": "Homepage",
  "fileName": "homepage.html"
}]
```

#### Custom bootstrap

- Any custom bootstrap can be uploaded using this set of parameters.
- Roles cannot be covered as they require CONNECT Administration and cannot be automated entirely.

```
[{
  "target": "Custom",
  "configId": "Bootstrap",
  "fileName": "Profiles.xml"
}]
```

#### Custom Gateway Configs - AC2D

- Any AC2D configuration file can be uploaded using this set of parameters.

```
[{
```

```
[{  
    "target": "Custom",  
    "configId": "AC2D",  
    "fileName": "Provide the file name that you want to process. See the allowed list  
    of files below"  
}]
```

AC2D configurable files:

drawingfile-ac2d-patterns2d.xml  
drawingfile-ac2d-presentationmapping.xml  
drawingfile-ac2d-rescale2dunitsdef.xml  
drawingfile-ac2d-textmapping1.xml  
drawingfile-ac2d-textmapping2.xml

For more information, see [2D Gateway Configuration](#).

### Custom Gateway Configs - MS2D

- Any MS2D configuration file can be uploaded using this set of parameters.

```
[{  
    "target": "Custom",  
    "configId": "MS2D",  
    "fileName": "Provide the file name that you want to process. See the allowed list  
    of files below"  
}]
```

MS2D configurable files:

drawingfile-ms2d-patterns2d.xml  
drawingfile-ms2d-presentationmapping.xml  
drawingfile-ms2d-rescale2dunitsdef.xml  
drawingfile-ms2d-textmapping.xml

For more information, see [2D Gateway Configuration](#).

### Custom Gateway Configs - DE

- Any DE configuration file can be uploaded using this set of parameters.

```
[{  
    "target": "Custom",  
    "configId": "DE",  
    "fileName": "Provide the file name that you want to process. See the allowed list  
    of files below"  
}]
```

DE configurable files:

documentfile-patternmappingregex.dex.xml

### Custom Gateway Configs - AC3D

- Any AC3D configuration file can be uploaded using this set of parameters.

```
[{  
    "target": "Custom",  
    "configId": "AC3D",  
    "fileName": "Provide the file name that you want to process. See the allowed list of  
    files below"  
}]
```

```
}]
```

AC3D configurable files:

```
modelfile-ac3d-basemapping.xml  
modelfile-ac3d-extractconfiguration.xml  
modelfile-ac3d-loadconfiguration.xml  
modelfile-ac3d-loadcsvconfiguration.xml  
modelfile-ac3d-loadeiwmconfiguration.xml  
modelfile-ac3d-loadzglconfiguration.xml  
modelfile-ac3d-presentationmapping.xml  
modelfile-ac3d-transformconfiguration.xml  
modelfile-ac3d-transformgeometry.xml
```

### Custom Gateway Configs - IFC

- Any IFC configuration file can be uploaded using this set of parameters.

```
[  
  {"target": "Custom",  
   "configId": "IFC",  
   "fileName": "Provide the file name that you want to process. See the allowed list of  
   files below"  
 }]
```

IFC configurable files:

```
modelfile-ifc-basemapping.xml  
modelfile-ifc-extractconfiguration.xml  
modelfile-ifc-loadconfiguration.xml  
modelfile-ifc-loadcsvconfiguration.xml  
modelfile-ifc-loadeiwmconfiguration.xml  
modelfile-ifc-loadzglconfiguration.xml  
modelfile-ifc-presentationmapping.xml  
modelfile-ifc-propertysetmapping.xml  
modelfile-ifc-transformconfiguration.xml  
modelfile-ifc-transformgeometry.xml
```

### Custom Gateway Configs - NAV

- Any NAV configuration file can be uploaded using this set of parameters.

```
[  
  {"target": "Custom",  
   "configId": "NAV",  
   "fileName": "Provide the file name that you want to process. See the allowed list of  
   files below"  
 }]
```

NAV configurable files:

```
modelfile-nav-basemapping.xml  
modelfile-nav-extractconfiguration.xml  
modelfile-nav-loadconfiguration.xml  
modelfile-nav-loadcsvconfiguration.xml  
modelfile-nav-loadeiwmconfiguration.xml  
modelfile-nav-loadzglconfiguration.xml
```

modelfile-nav-presentationmapping.xml  
modelfile-nav-transformconfiguration.xml  
modelfile-nav-transformgeometry.xml

### Facets

```
[{  
  "target": "Custom",  
  "configId": "Facets",  
  "fileName": "FacetRegister.csv"  
}]
```

## Load Data

This section provides information relating to the following processes of loading data:

- Using the Ingestion API
- Using the GDP
- Using the Document Connector
- Data Loading Performance

### Using the Ingestion API

The API client that can be used is Postman, however, any API is fine as long as it supports basic API calls.

A sample API collection is included in the [Postman Collection for Ingestion API](#) appendix.

### Install Postman

When using the Ingestion API, install Postman on to your local machine. You can download from <https://www.postman.com/downloads/>.

If you already have Postman, you can import the attached collection and start making the API calls.

### Importing the API collection

Import the attached collection (see appendix: [Postman Collection for Ingestion API](#)) into Postman, you can use <https://learning.postman.com/docs/getting-started/importing-and-exporting-data/> as a reference documentation on how to use Postman.

### Sending data to the Data Pipeline (Ingestion API)

Execute the following API calls by providing the required parameters as described below in the order defined:

#### Init API

1. Select **Init API** call from the imported Postman collection.
2. Replace **{Ingestion-API-Base-URL}** with the Ingestion API URL you have received from AVEVA.
3. Select the **Authorization** tab.

4. From the **Type** dropdown list, select **Bearer Token**.
5. Provide the actual **CONNECT Token** instead of the {token} value.

The screenshot shows the Postman interface with the 'Authorization' tab selected for a POST request. The 'Type' dropdown is set to 'Bearer Token' and the 'Token' field contains '(token)'. A note below the field states: 'The authorization header will be automatically generated when you send the request. Learn more about authorization.'

6. Switch to the **Body** tab.
7. Provide the actual **AIM-A CONNECT Folder Name** instead of {AIM-A CONNECT Folder Name} as the assetId.

The screenshot shows the Postman interface with the 'Body' tab selected for a POST request. The 'Body' dropdown is set to 'raw' and the JSON content is: {\"assetId\": \"[AIM-A Connect Folder Name]\"}.

8. Select **Send** once all the parameters are in place.  
You receive the transactionId as a response if the call is successful.

## Upload URI API

1. Select **Upload URI API** call from the imported Postman collection.
2. Replace **{Ingestion-API-Base-URL}** with the Ingestion API URL that you have received from AVEVA. This URL should also be included in your firewall rules.
3. Select the **Authorization** tab.
4. From the **Type** dropdown list, select **Bearer Token**.
5. Provide the actual CONNECT Token instead of the {token} value.

The screenshot shows the Postman application interface. On the left, the 'Scratch Pad' sidebar lists collections, APIs, environments, and other tools. In the main workspace, a collection named 'Ingestion API Calls' is expanded, showing four API definitions: 'POST Init API', 'POST Upload API' (which is selected), 'PUT Put File', and 'POST Complete API'. The 'POST Upload API' card shows its details: method 'POST', URL 'https://[Ingestion-API-Base-URL]/api/load/uploadurl', and a 'Headers (11)' tab. The 'Authorization' section is active, showing 'Type' as 'Bearer Token' and 'Token' as '(token)'. A note below states: 'The authorization header will be automatically generated when you send the request.' A 'Send' button is at the bottom right.

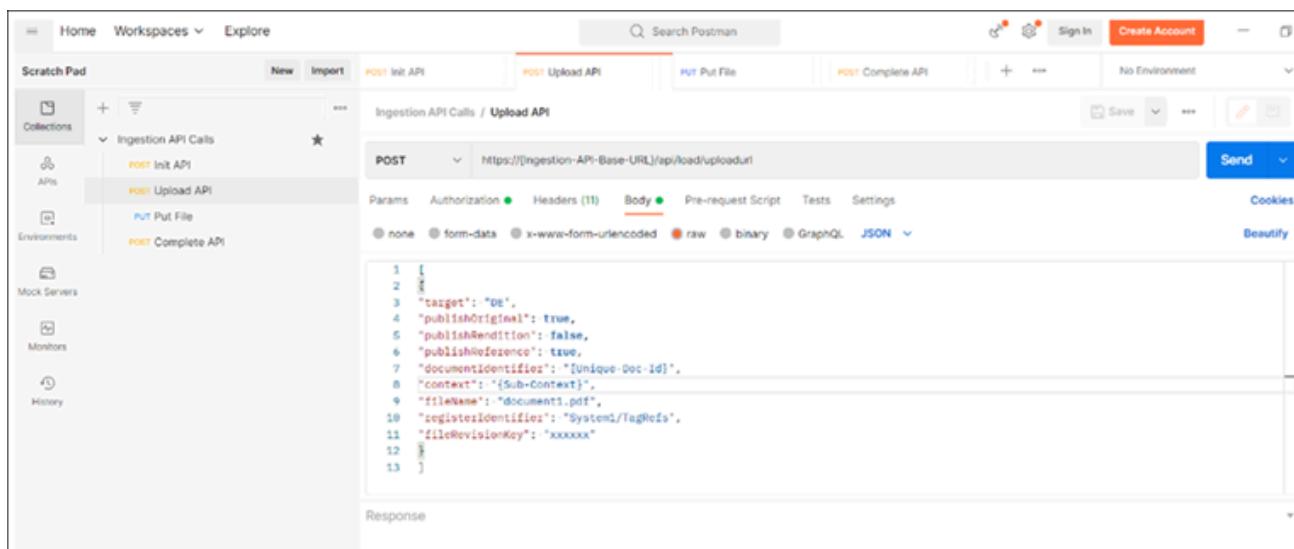
6. Select the **Headers** tab.
7. Provide the transaction ID returned by the Init call as the transactionId.

This screenshot shows the same Postman interface as above, but with specific headers added. The 'Headers (11)' tab is selected, and the following headers are listed:

- Accept**: `*`
- Accept-Encoding**: `gzip, deflate, br`
- Connection**: `keep-alive`
- transactionId**: `(Transaction-Id-From-Init-API-Call)`
- X-Account**: `(Connect Account Id if you are setting up a service to ...)`

The 'Body' tab is visible at the bottom of the interface.

8. Switch to the **Body** tab.
9. Provide the set of API parameters based on the type of data you want to load and the type of processing it requires. Refer to the [Ingestion API Request Parameters](#) appendix for more details on these parameters. These parameters are different for different types of data so read through the referenced documentation. You can provide an array of files as a part of this request.



10. Select **Send** once all the parameters are in place.
11. As a response, you get one upload URL for each file in the API request. You can put the actual file against these URLs directly.

## Uploading the Class library

To upload a class library, you need to use the following set of body parameters in the Upload URI request:

```
[{
  "target": "CL",
  "fileName": "clib.xml"
}]
```

## Uploading data

To upload data, you need to use the specific set of body parameters in the Upload URI request. These parameters are defined based on the type of files, refer to the [Ingestion API Request Parameters](#) appendix for more details on these parameters. Examples have been included for each type of file.

### Put File into Upload URL

1. Copy the upload URL for the file from the **Upload URL API** response.
2. Open the **PUT API Call** from the imported Postman collection.
3. Paste the upload URL in the address bar instead of {Url-Returned-By-Upload-Url-API-call}.
4. Switch to the **Body** tab.
5. Select binary as the request type. Select **Select File** and select the file to be uploaded.

The screenshot shows the Postman interface with the 'Ingestion API Calls / Put File' collection selected. A 'PUT' request is configured with the URL '(Url-Returned-By-Upload-Url-API-call)'. The 'Body' tab is selected, showing a file named 'document1.pdf' attached. The 'Params', 'Authorization', and 'Headers' tabs are also visible.

6. Select **Send** and wait for an OK response (**Response Code - 200**) to be displayed.
7. These steps need to be repeated for all the files that you initially requested upload URLs for.

## Complete API

1. Select the **Complete API** call from the imported Postman collection.
2. Replace **{Ingestion-API-Base-URL}** with the Ingestion API URL that has been received from AVEVA.
3. Select the **Authorization** tab. From the **Type** dropdown list, select **Bearer Token**.
4. Provide the actual **CONNECT Token** instead of the **{token}** value.

The screenshot shows the 'Ingestion API Calls / Complete API' collection. A 'POST' request is configured with the URL 'https://(Ingestion-API-Base-URL).api/load/complete'. The 'Authorization' tab is selected, showing 'Type: Bearer Token' and 'Token: (token)'. A note indicates that the authorization header will be automatically generated when the request is sent.

5. Select the **Headers** tab. Provide the transaction ID returned by the Init call as the **transactionId**.

The screenshot shows the 'Ingestion API Calls / Complete API' collection. A 'POST' request is configured with the URL 'https://(Ingestion-API-Base-URL).api/load/complete'. The 'Headers' tab is selected, showing the following key-value pairs:

Key	Value	Description
transactionId	(Transaction-Id-From-Init-API-Call)	

6. Switch to the **Body** tab.
7. Set status to **completed**.

The screenshot shows the Postman application interface. On the left, there's a sidebar with 'Scratch Pad' selected, showing various API collections like 'Ingestion API Calls' which contains 'POST Init API', 'POST Upload API', 'PUT Put File', and 'POST Complete API'. The main area shows a POST request to 'https://(Ingestion-API-Base-URL)/api/load/complete'. The 'Body' tab is selected, showing a JSON payload with a single key-value pair: 'status': 'completed'. Other tabs like 'Params', 'Authorization', 'Headers', 'Tests', and 'Settings' are also visible.

8. Select **Send** once all the parameters are in place.
9. If successful, a count of files that have been uploaded is confirmed in the response. If the number of files is greater than 100, you will receive an identifier -**ge** to denote the number of files uploaded are more than 100.

## Firewall Whitelisting

Some organizations have IT restrictions that mandate any external connection to be whitelisted in the firewall settings. In case your organization has any such whitelisting policy, you will need to whitelist the following URLs based on which region your AIM-A instance is provisioned in. The first URL is the regional Ingestion API endpoint. The second URL is the file upload URL. Both URLs must be whitelisted to successfully upload data.

Region	URLs
Ireland (IE)	<a href="https://ingestion.ie.dp.aim.connect.aveva.com">https://ingestion.ie.dp.aim.connect.aveva.com</a> <a href="https://aveva-regi-orchestration-dpieprod.s3-accelerate.amazonaws.com">https://aveva-regi-orchestration-dpieprod.s3-accelerate.amazonaws.com</a>
Singapore (SG)	<a href="https://ingestion.sg.dp.aim.connect.aveva.com">https://ingestion.sg.dp.aim.connect.aveva.com</a> <a href="https://aveva-regi-orchestration-dpsgprod.s3-accelerate.amazonaws.com">https://aveva-regi-orchestration-dpsgprod.s3-accelerate.amazonaws.com</a>
Tokyo (JP)	<a href="https://ingestion.jp.dp.aim.connect.aveva.com">https://ingestion.jp.dp.aim.connect.aveva.com</a> <a href="https://aveva-regi-orchestration-dpjpprod.s3-accelerate.amazonaws.com">https://aveva-regi-orchestration-dpjpprod.s3-accelerate.amazonaws.com</a>
North Virginia (US)	<a href="https://ingestion.us.dp.aim.connect.aveva.com">https://ingestion.us.dp.aim.connect.aveva.com</a> <a href="https://aveva-regi-orchestration-dpusprod.s3-accelerate.amazonaws.com">https://aveva-regi-orchestration-dpusprod.s3-accelerate.amazonaws.com</a>
Canada (CA)	<a href="https://ingestion.ca.dp.aim.connect.aveva.com">https://ingestion.ca.dp.aim.connect.aveva.com</a> <a href="https://aveva-regi-orchestration-dpcaprod.s3-accelerate.amazonaws.com">https://aveva-regi-orchestration-dpcaprod.s3-accelerate.amazonaws.com</a>

Region	URLs
Sydney (AU)	<a href="https://ingestion.au.dp.aim.connect.aveva.com">https://ingestion.au.dp.aim.connect.aveva.com</a> <a href="https://aveva-regi-orchestration-dpauprod.s3-accelerate.amazonaws.com">https://aveva-regi-orchestration-dpauprod.s3-accelerate.amazonaws.com</a>

**Note:** If you are still using the old Ingestion API URLs, you will still need to whitelist the respective URLs mentioned in the table above (as internally the old URL still calls these endpoints). For example:

- **Old Ingestion URL:** <https://ingestionapi.imav.connect.aveva.com>
- **Old Upload URL:** <https://aveva-regi-orchestration-aimaprod.s3-accelerate.amazonaws.com>

## Simple File Upload

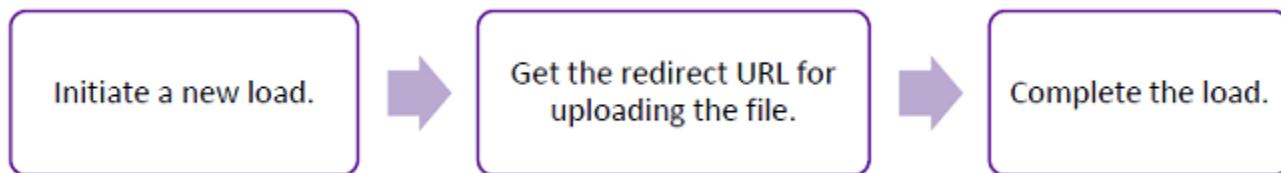
Simple Upload is meant for uploading files of size 5 GB or smaller. The Ingestion API performs a simple upload in three basic steps:

1. **Initiate a transaction:** While initiating a transaction, the user token is authenticated and authorized. When it is successfully authorized, the API returns a Transaction ID that is the unique identifier for this upload.
2. **Upload files:** After Transaction ID is received, the user can now use this Transaction ID to upload files. Multiple files can be uploaded as a part of the same transaction. Every file must have a set of API request parameters defined in the section [Ingestion API Request Parameters](#), that enable orchestration to understand the type of processing required for this file. Once it is successfully called, Ingestion API returns a pre-signed S3 URL for each file in the transaction. The actual file is then put into this pre-signed S3 URL. To upload files of size 5 GB or smaller, you can use the Simple Upload API. To upload files above the size 5 GB, you must use the Multipart Upload API.
3. **Complete the transaction:** Once all the files are successfully uploaded into their respective S3 URLs, the transaction can now be closed.

For each of these steps, an endpoint has been created in the API. To perform these steps, the Ingestion API provides respective endpoints:

- **/api/load/init** - Initiate a new transaction.
- **/api/load/uploadurl** - Get S3 presigned URLs to upload files.
- **/api/load/complete** - Complete the transaction.

This Load API internally has the following three calls in sequence:



### Initiate a New Load

**/api/load/init** – Initiate a new load.

This endpoint returns a new Transaction ID to be used for the subsequent API calls.

**HEADERS**

You must pass the following two headers as described below:

- Authorization**

You must pass a valid CONNECT Bearer JWT token.

- Transaction ID**

This is optional. You may pass the Transaction ID in the Header.

**REQUEST BODY**

*Example Value*

```
{
  "assetId": "string"
}
```

Parameter	Description	Parameter type	Required
assetId	A valid asset/folder created in CONNECT account	string	Yes

**RESPONSES**

Code	Description	Media type	Response json
200	Success	application/json	<pre>{   "transactionId": "string" }</pre>
400	Bad Request	application/json	<pre>{   "invalidParametersDetails": [     {       "parameterName": "string",       "ParameterValue": "string",       "message": "string"     }   ],   "details": "string",   "isRetryable": true }</pre>
500	Server Error	application/json	<pre>{   "details": "string",   "isRetryable": true }</pre>

## Get the Upload URL

`/api/load/uploadurl` – Get the redirect URL for uploading the file.

This endpoint returns the redirect URL for uploading the file. The number of redirect URLs varies based on the number of files required to be uploaded.

---

### Notes:

---

- The redirect URL is valid for one hour only.
- You must write your own code to upload your files depending on the redirect URL you have received.

Each load can have multiple files and you can call the API once or multiple times by providing details of one or more files in the Request Body and passing the appropriate headers.

### HEADERS

You must pass the following two headers:

- **Authorization**  
This is a valid CONNECT Bearer JWT token.
- **Transaction ID**  
This is generated as part of the init API request.

### REQUEST BODY

*Example Value*

```
[{  
  "target": "string",  
  "source": "string",  
  "publishOriginal": true,  
  "publishRendition": true,  
  "publishReference": true,  
  "documentIdentifier": "string",  
  "context": "string",  
  "additionalMetadata": {  
    "additionalProp1": "string",  
    "additionalProp2": "string",  
    "additionalProp3": "string"  
  },  
  "fileName": "string",  
  "registerIdentifier": "string"  
}]
```

Parameter Type	Description	Parameter	Required
fileName	Name of the file	string	Yes
registerIdentifier	ISM Class Library Register path to be used for data processing through the Registers Gateway.	string	Yes
context	When given, it is used as a subcontext.	string	No
target	Use any one of the following processing targets – CL, AC2D, Regi, DE, Model, MS2D.  <b>Note:</b> <ul style="list-style-type: none"><li>• CL – Class Library</li><li>• AC2D – Gateway for 2D Data</li><li>• Regi – The Registers Gateway</li><li>• DE – Data Extractor Gateway</li><li>• Model – 3D Model</li><li>• MS2D – Gateway for 2D Data</li></ul>	string	Yes
source	The actual source information of the file.	string	No
publishOriginal	Whether the file needs to be published to AIM Advanced.	Boolean	Yes for 2D No for 1D and 3D
publishRendition	Whether the rendition extracted out of a file needs to be published to AIM Advanced.	Boolean	Yes for 2D No for 1D and 3D

Parameter Type	Description	Parameter	Required
publishReference	Whether the tags scraped off a file need to be published to AIM Advanced.	Boolean	Yes for 2D No for 1D and 3D
documentIdentifier	This value is used to create the association between the current file and a document.	string	Yes for 2D No for 1D and 3D
additionalMetadata	Currently not in use. In future, it can be used to add more properties when required.	string	No

**RESPONSES**

Code	Description	Media Type	Response Json
200	Success	application/json	[ { "fileName": "string", "registerIdentifier": "string", "redirectUrl": "string", "expires": 0 } ]
400	Bad Request	application/json	{ "invalidParametersDetails": [ { "parameterName": "string", "ParameterValue": "string", "message": "string" } ], "details": "string", "isRetryable": true }
500	Server Error	application/json	{ "details": "string", "isRetryable": true }

## Complete the load

**/api/load/complete** – Complete the load.

This endpoint is used to either complete or abort the load which is started as part of the init API request.

When you choose to complete the load, the orchestration happens. When you choose to abort the load process, no orchestration happens.

### HEADERS

You must pass the following two headers:

- **Authorization**

This is a valid CONNECT Bearer JWT token.

- **Transaction ID**

This is generated as part of the init API request.

### REQUEST BODY

```
{
  "status": "completed"
}
```

Parameter	Description	Parameter Type	Required
Status	It can either be completed or aborted	string	Yes

### RESPONSES

Code	Description	Media Type	Response Json
200	Success	application/json	<pre>{   "receivedFilesCount": 0,   "receivedFilesCountIdentifier": "string" }</pre>
400	Bad Request	application/json	<pre>{   "invalidParametersDetails": [     {       "parameterName": "string",       "parameterValue": "string",       "message": "string"     }   ],   "details": "string",   "isRetryable": true }</pre>

Code	Description	Media Type	Response Json
500	Server Error	application/json	{ "details": "string", "isRetryable": true }

## MultiPartUpload API for Large Files

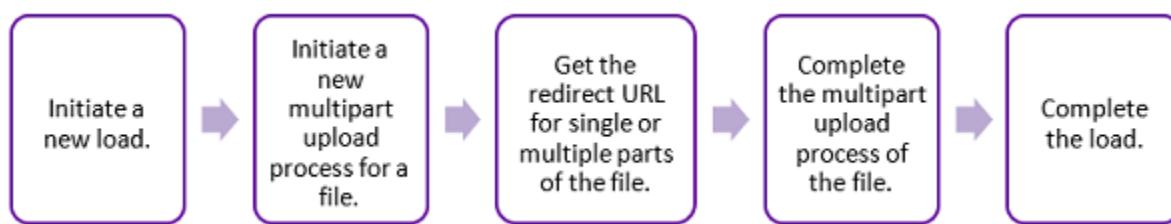
Any file larger than 5GB must be divided into parts smaller than 5MB before it can be uploaded using the ingestion API. The process and responses for the multipart API requests is quite complex, so it is recommended to use a utility.

The Ingestion API performs a multipart upload in five basic steps:

1. **Initiate a transaction:** While initiating a transaction, the user token is authenticated and authorized. After it is successfully authorized, the API returns a TransactionId that is the unique identifier for this upload.
2. **Initiate a multipart upload:** After TransactionId is received, the user can now use this TransactionId to upload large files. A multipart upload request is initiated for the large file. A multipart uploadId is returned which is used in the next steps.
3. **Upload part(s):** When the uploadId is available, a redirectURL must be requested for each part of the file. Each part is then uploaded to the respective redirectURL. When uploading a single part, in addition to the uploadId, a part number is also specified. The part number is any number between 1 and 10,000. It uniquely identifies a part and its position in the file being uploaded. When a part is successfully uploaded, the API returns an eTag header in its response.
4. **Complete multipart upload:** When all the parts of a file are successfully uploaded, the multipart upload must be completed. This requires the part number and the eTag header from the upload step and the uploadId from the initiate multipart step.
5. **Complete the transaction:** After all the files are successfully uploaded into their respective S3 URLs, the transaction can now be completed or aborted.

To upload files above the size 5 GB, you must use the Multipart Upload API.

This **MultiPartUpload** API internally has three calls in sequence in addition to the **init** and **complete** Load API request:



To perform these steps, the Ingestion API provides the following five endpoints:

- **/api/load/init** - Initiate a new transaction
- **/api/load/multipart/init** - Initiate a new multipart upload
- **/api/load/multipart/url** - Get S3 presigned URLs to upload parts

- **/api/load/multipart/complete** - Complete the multipart upload
- **/api/load/complete** - Complete the transaction

### Initiate a new multipart upload process for a file

**/api/load/multipart/init** – Initiate a new multipart upload process for a file.

This endpoint enables you to initiate a new multipart upload process for each specific part of the larger file you want to upload.

#### HEADERS

You must pass the following two headers:

- **Authorization**

This is a valid CONNECT Bearer JWT token.

- **TransactionId**

This is generated as part of the init API request.

#### REQUEST BODY

*Example Value*

```
{
  "target": "string",
  "source": "string",
  "publishOriginal": true,
  "publishRendition": true,
  "publishReference": true,
  "documentIdentifier": "string",
  "context": "string",
  "additionalMetadata": {
    "additionalProp1": "string",
    "additionalProp2": "string",
    "additionalProp3": "string"
  },
  "fileName": "string",
  "registerIdentifier": "string"
}
```

Parameter type	Description	Parameter	Required
fileName	Name of the file	string	Yes.
registerIdentifier	ISM Class Library Register path to be used for data processing through the Registers Gateway.	string	Yes.
context	When given, it is used as a subcontext.	string	No.

Parameter type	Description	Parameter	Required
target	<p>Use any one of the following processing targets – CL, AC2D, Regi, DE, Model, MS2D.</p> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• CL – Class Library</li> <li>• AC2D – Gateway for 2D Data</li> <li>• Regi – Registers Gateway</li> <li>• DE -Data Extractor Gateway</li> <li>• Model -3D Model</li> <li>• MS2D – Gateway for 2D Data</li> </ul>	string	Yes.
source	The actual source information of the file	string	No.
publishOriginal	Whether the file needs to be published to AIM Advanced.	Boolean	Yes for 2D. No for 1D and 3D.
publishRendition	Whether the rendition extracted out of a file needs to be published to AIM Advanced.	Boolean	Yes for 2D. No for 1D and 3D.
publishReference	Whether the tags scraped off a file need to be published to AIM Advanced.	Boolean	Yes for 2D. No for 1D and 3D.
documentIdentifier	This value is used to create the association between the current file and a document.	string	Yes for 2D. No for 1D and 3D.

Parameter type	Description	Parameter	Required
additionalMetadata	Currently not in use. In future, it can be used to add more properties when required.	string	No.

**RESPONSES**

Code Description		Media Type	Response Json
200	success	application/json	<pre>{   "multiPartUploadId": "string",   "fileName": "string",   "registerIdentifier": "string",   "redirectUrl": "string",   "expires": 0 }</pre>
400	Bad Request	application/json	<pre>{   "invalidParametersDetails": [     {       "parameterName": "string",       "parameterValue": "string",       "message": "string"     }   ],   "details": "string",   "isRetryable": true }</pre>
500	Server Error	application/json	<pre>{   "details": "string",   "isRetryable": true }</pre>

**Get the redirect URL for single or multiple parts of the file**

**/api/load/multipart/url** – Get the redirect URL for single or multiple parts of the file

This endpoint returns the redirect URL for each part of the larger file. A file larger than 5 GB must be broken into different smaller parts greater than 5 MB other than the last part. You need a new redirect URL for uploading each part of the file.

**HEADERS**

You must pass the following two headers:

- Authorization**

This is a valid CONNECT Bearer JWT token.

- Transaction ID**

This is generated as part of the init API request.

## REQUEST BODY

*Example Value*

```
{
  "multiPartUploadId": "string",
  "partNumber": 0,
  "fileName": "string",
  "registerIdentifier": "string"
}
```

Parameter	Description	Parameter Type	Required
multipartuploadid	This value comes from the multipart init response.	string	Yes
partNumber	The unique number assigned to each part of the file being uploaded	integer	Yes
fileName	Name of the file	string	Yes
registerIdentifier	ISM Class Library Register path to be used for data processing through the Registers Gateway.	string	Yes

## RESPONSES

Code	Description	Media Type	Response Json
200	Success	application/json	[ { "partNumber": 0, "multiPartUploadId": "string", "fileName": "string", "registerIdentifier": "string", "redirectUrl": "string", "expires": 0 }

Code	Description	Media Type	Response Json
			<pre>]</pre>
400	Bad Request	application/json	<pre>{   "invalidParametersDetails": [     {       "parameterName": "string",       "parameterValue": "string",       "message": "string"     }   ],   "details": "string",   "isRetryable": true }</pre>
500	Server Error	application/json	<pre>{   "details": "string",   "isRetryable": true }</pre>

### Complete the multipart upload process for a file

[/api/load/multipart/complete](#) – Complete the multipart upload process for a file

This endpoint returns the confirmation of completion of multipart upload for a large file.

This request needs to be recursively triggered until the requestId parameter in the response is null. As multipart takes time based on the number and size of the parts uploaded, this multipart/complete API is designed in such a way that you can make a recursive call to identify the status of multipart upload.

---

**Note:** When you have a requestId other than null, the status is InProgress. By the time you get the null value for the requestId in CompleteMultiPartResponse, the Status is either "Completed" or "Error".

---

#### HEADERS

You must pass the following two headers:

- **Authorization**

This is a valid CONNECT Bearer JWT token.

- **TransactionId**

This is generated as part of the init API request.

**REQUEST BODY***Example Value*

```
{
  "multiPartUploadId": "string",
  "multiPartUploads": [
    {
      "eTag": "string",
      "partNumber": 0
    }
  ],
  "requestId": "string",
  "fileName": "string",
  "registerIdentifier": "string"
}
```

Parameter	Description	Parameter Type	Required
multiPartUploadId	This value comes from the multipart init response.	string	Yes
requestId	The requestId received in the CompleteMultiPart Response.	string	For the first request, it is not passed. In the subsequent requests, it needs to be passed from the Response requestId.
fileName	Name of the file	string	Yes
registerIdentifier	ISM Class Library Register path to be used for data processing through the Registers Gateway.	string	Yes
multiPartUploads	It consists of the eTag and partNumber of each part.	MultiPartUploadInfo  <u>Note:</u> It is a custom type which has eTag and partNumber in it.	Yes
eTag	The HTTP response eTag header value received after uploading the respective part.	string	Yes
partNumber	Part number of the respective uploads.	integer	Yes

## RESPONSES

Code	Description	Media Type	Response JSON
200	Success	application/json	{ "MultiPartUploadid": "string", "status": "string", "requestid": "string" }
400	Bad Request	application/json	{ "invalidParameterDetails": [ { "parameterName": "string", "parameterValue": "string", "message": "string" } ] "details": "string", "isRetryable": true }
500	Server Error	application/json	{ "details": "string", "isRetryable": true }

Postman Collection for Ingestion API

```
{  
  "info": {  
    "_postman_id": "599d1357-8e31-499a-9f1d-07d025f543fb",  
    "name": "Ingestion API Calls",  
    "schema": "https://schema.getpostman.com/json/collection/v2.1.0/collection.json"  
  },  
  "item": [  
    {  
      "name": "Init API",  
      "request": {  
        "auth": {  
          "type": "bearer",  
          "bearer": [  
            {  
              "key": "token",  
              "value": "{token}",  
              "type": "string"  
            }  
          ]  
        },  
        "method": "POST",  
        "header": [],  
        "body": {  
          "mode": "urlencoded",  
          "form": [  
            {"key": "id", "value": "12345"},  
            {"key": "name", "value": "John Doe"}  
          ]  
        }  
      }  
    }  
  ]  
}
```

```
"mode": "raw",
"raw": "{\r\n \"assetId\": \"{AIM-A Connect Folder Name}\",\r\n",
"options": {
"raw": {
"language": "json"
}
}
},
"url": {
"raw": "https://{{Ingestion-API-Base-URL}}/api/load/init",
"protocol": "https",
"host": [
"{{Ingestion-API-Base-URL}}"
],
"path": [
"api",
"load",
"init"
]
}
},
"response": []
},
{
"name": "Upload API",
"protocolProfileBehavior": {
"disabledSystemHeaders": {}
},
"request": {
"auth": {
"type": "bearer",
"bearer": [
{
"key": "token",
"value": "{token}",
"type": "string"
}
]
},
"method": "POST",
"header": [
{
"key": "transactionId",
"value": "{Transaction-Id-From-Init-API-Call}",
"type": "text"
},
{
"key": "X-Account",
"value": "{Connect Account Id if you are setting up a service to service call}",
"type": "text",
"disabled": true
}
],
"body": {
"mode": "raw",
"raw": "[\r\n{\r\n\"target\": \"DE\", \r\n\"publishOriginal\": true,\r\n"
}
```

```
n\"publishRendition\": false,\r\n\"publishReference\": true,\r\n\"documentIdentifier\":\n\"{Unique-Doc-Id}\",\r\n\"context\": \"{Sub-Context}\",\r\n\"fileName\":\n\"document1.pdf\", \r\n\"registerIdentifier\": \"System1/TagRefs\", \r\n\"fileRevisionKey\": \"xxxxxx\"\r\n}]\r\n},\r\n\"options\": {\r\n\"raw\": {\r\n\"language\": \"json\"\r\n}\r\n}\r\n},\r\n\"url\": {\r\n\"raw\": \"https://{{Ingestion-API-Base-URL}}/api/load/uploadurl\", \r\n\"protocol\": \"https\", \r\n\"host\": [\r\n\"{{Ingestion-API-Base-URL}}\"\r\n], \r\n\"path\": [\r\n\"api\", \r\n\"load\", \r\n\"uploadurl\"\r\n]\r\n}\r\n},\r\n\"response\": []\r\n},\r\n{\r\n\"name\": \"Put File\", \r\n\"request\": {\r\n\"method\": \"PUT\", \r\n\"header\": [], \r\n\"body\": {\r\n\"mode\": \"file\", \r\n\"file\": {\r\n\"src\": \"/C:/Users/ritik.kumar/Desktop/Ext Pen Testing/document1.pdf\"\r\n}\r\n}, \r\n\"url\": {\r\n\"raw\": \"{Url-Returned-By-Upload-Url-API-call}\", \r\n\"host\": [\r\n\"{{Url-Returned-By-Upload-Url-API-call}}\"\r\n]\r\n}\r\n}, \r\n\"response\": []\r\n},\r\n{\r\n\"name\": \"Complete API\", \r\n\"request\": {\r\n\"auth\": {\r\n\"type\": \"bearer\", \r\n\"bearer\": [\r\n{\r\n\"key\": \"token\", \r\n\"value\": \"{token}\", \r\n\"type\": \"string\"\r\n}\r\n]\r\n}\r\n}\r\n}
```

```
],
},
"method": "POST",
"header": [
{
"key": "transactionId",
"value": "{Transaction-Id-From-Init-API-Call}",
"type": "text"
},
],
"body": {
"mode": "raw",
"raw": "{\r\n \"status\": \"completed\"\r\n}",
"options": {
"raw": {
"language": "json"
}
}
},
"url": {
"raw": "https://{{Ingestion-API-Base-URL}}/api/load/complete",
"protocol": "https",
"host": [
 "{{Ingestion-API-Base-URL}}"
],
"path": [
 "api",
 "load",
 "complete"
]
},
},
"response": []
}
]
```

## Deleting 3D Models

The process to delete 3D models involves loading files into the AVEVA Data Pipeline following the standard method, but with a key difference: instead of uploading a 3D model file, a CSV file is uploaded. This CSV file contains the file names of the 3D models to be deleted.

The other difference in this process is the use of the **"action":"delete"** parameter, which is exclusively used for deleting 3D model files. This parameter is specified in the Upload URL API call, along with the dependent parameters (**"fileName": "{filename}.csv"** and **"target": "Model"**). See [Ingestion API Request Parameters](#) for more information.

---

**Note:** Deleting 3D models is not supported using the AVEVA Document Connector. Any CSV files uploaded through the Document Connector that have Target: Model will not be processed.

---

## The CSV File for 3D Model Deletion

The CSV file used for specifying the 3D models to be deleted must adhere to the following guidelines:

- The CSV file should contain a column with the file names of the 3D models along with their extensions.
- It must include a header called **File Names**.
- The extensions of the file names in the column should correspond to valid 3D model file formats.

An example CSV file:

```
File Names
Model1.rvm
Model2.zgl
```

## Loading the CSV into the Data Pipeline

The process of loading the CSV (that describes which 3D files to delete) involves three API calls: **Init API**, **Upload URL API**, and **Complete API**. The key difference, when deleting 3D files, is in the request body for the Upload URL API, which includes the **action** parameter. See [Using the Ingestion API](#) for more information on using Postman.

### Init API

The process for this call remains unchanged from the standard process.

### Upload URL API

- This step uploads your prepared CSV file to the cloud.
- There are specific parameters that must be specified in the request body for 3D model deletion.
- The remaining process for this call remains unchanged from the standard process (to PUT the file into the upload URL).

### Request Body

When deleting a 3D model, the body of the Upload URL request must include specific parameters to ensure the process is correctly executed. These parameters are essential for the orchestration to identify and process the deletion of 3D models. See [Ingestion API Request Parameters](#) for an example request body.

### Required Parameters

- **action**: This parameter must be set to 'delete'. It indicates that the request is for deleting 3D models.
  - Example: "action": "delete"
  - The value 'delete' must be in lowercase.
- **fileName**: This parameter must be set to the name of your prepared CSV file (including the .csv extension).
  - Example: "fileName": "myfiles.csv"
- **target**: This parameter must be set to "Model". It specifies that the target of the deletion action is a 3D model.
  - Example: "target": "Model"

### Error Handling

- **Incorrect Target**
  - Error: "Delete action is currently only supported for Models."
  - Cause: action is set to **delete**, but target is not set to **Model**.
- **Incorrect File Type**

- Error: "Model delete currently only supports csv files."
- Cause: action is set to **delete**, but fileName is not a CSV file.
- Incorrect Action Value
  - Error: "Missing required parameters."
  - Cause: **action** is present but its value is not **delete**.

## Complete API

The process for this call remains unchanged from the standard process.

## Using the GDP

The AVEVA Gateway Data Publisher (GDP) is a back-end process tool that enables the users of AVEVA Gateways to publish data to the AVEVA Data Pipeline.

In order to do this, the GDP watches a pre-configured staging area to which an AVEVA Gateways user publishes the data, picks the modified contents of the folder and publishes them to AIM-A via the Data Pipeline.

By doing this, the GDP enables you to connect your on-premise AVEVA applications to cloud-based applications that are available through CONNECT. Thus, the GDP enables transfer of data across your organization.

For more information, refer to the AVEVA Gateway Data Publisher Administrator Guide in the AVEVA Knowledge and Support Center

<https://softwaresupportsp.aveva.com/#/producthub?q=%22Gateway%20Data%20Publisher%22&selectedTab=Documentation>

## Using the Document Connector

AIM-A can be loaded with documents that reside in an external **Document Management System** (DMS). The following DMS systems are currently supported:

- Aconex
- Assai
- OpenText
- SharePoint

To load documents from a DMS system, the AVEVA Document Connector is used. It requires two areas to be configured:

- Where the documents must be loaded into (for example, which **CONNECT Account ID**) and how often the connector must look for new documents to be loaded (for example, every Friday at midnight). This is referred to as **on-boarding a new tenant**.
- Where the documents must be loaded from (details of the DMS).

## Setup

The Document Connector is a **CONNECT** integrated solution. So, to run the Document Connector, integration between the Document Connector and AIM-A must be enabled in **CONNECT**.

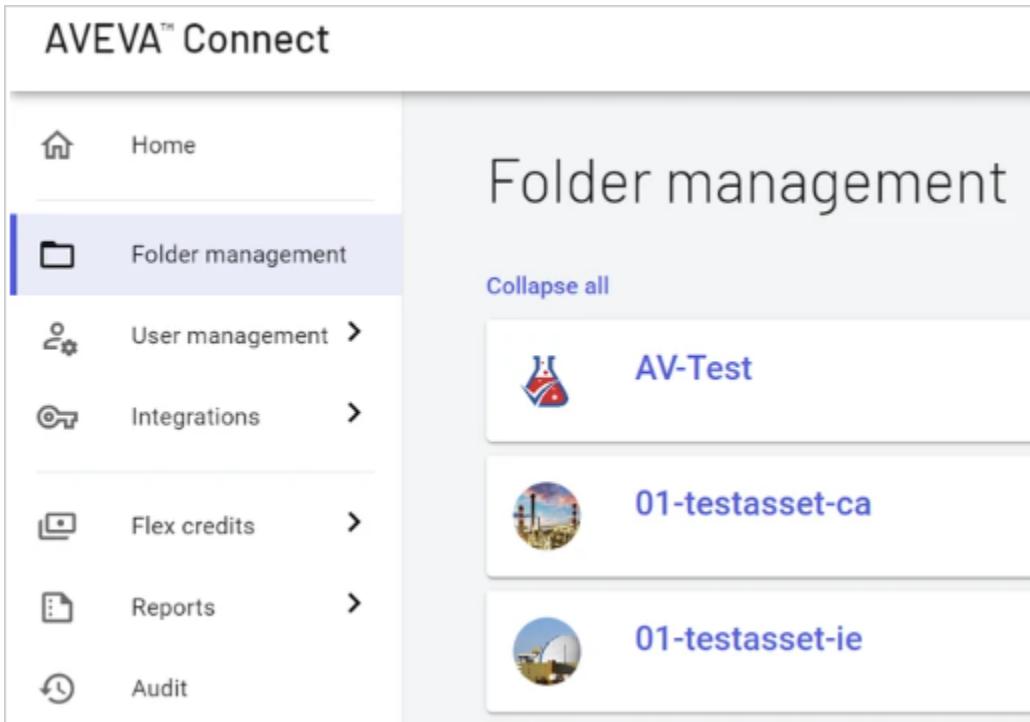
**Note:** If the solution is not visible in the CONNECT account, please contact AVEVA with the CONNECT Account

---

details and request “AVEVA Document/Data Connector” to be made available.

The integration must be performed by the CONNECT Account Administrator.

1. Log into your **CONNECT** account.
2. Go to **Folder Management**.
3. Open the folder where you want to enable the Document Connector.



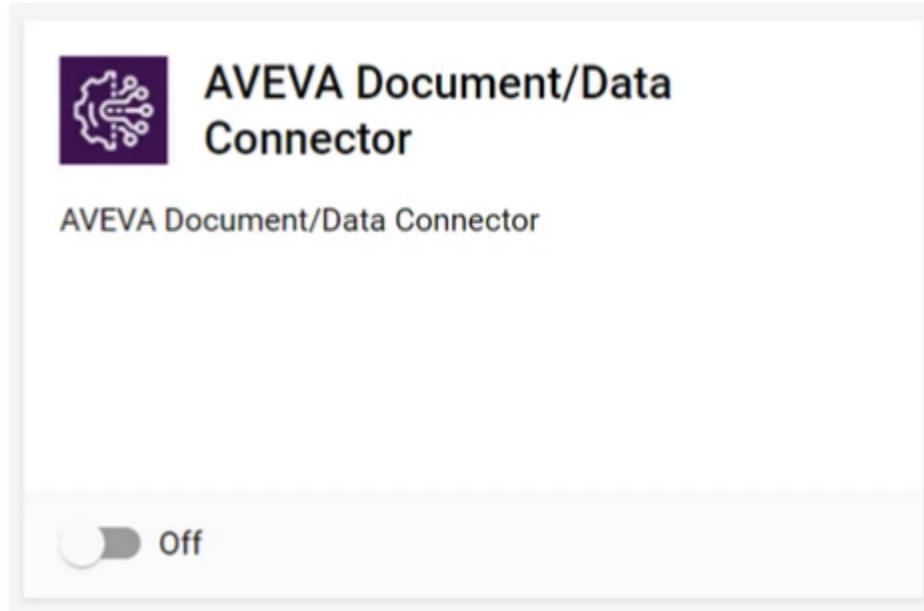
The screenshot shows the AVEVA Connect interface. On the left is a sidebar with the following menu items:

- Home
- Folder management** (selected, highlighted in blue)
- User management >
- Integrations >
- Flex credits >
- Reports >
- Audit

The main content area is titled "Folder management". It displays three folder entries:

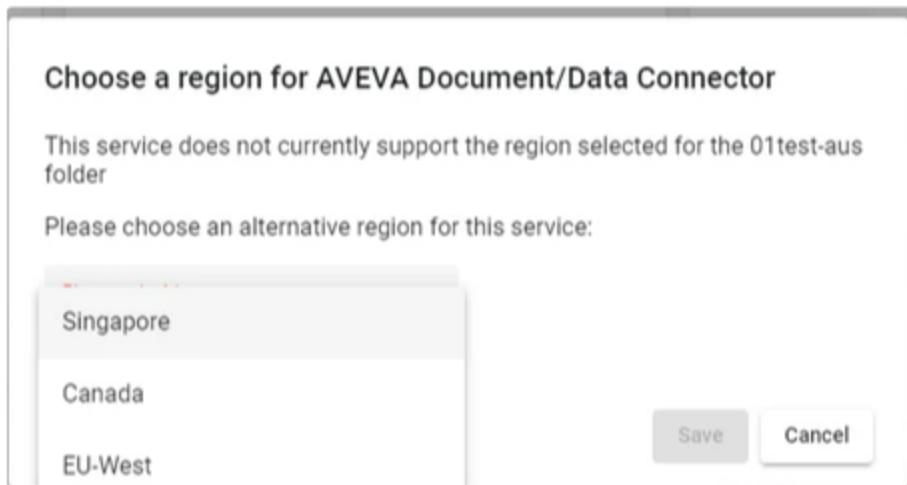
- AV-Test (with a flask icon)
- 01-testasset-ca (with a landscape icon)
- 01-testasset-ie (with a windmill icon)

4. For the **AVEVA Document/Data Connector** tile, toggle the switch from **Off** to **On**.

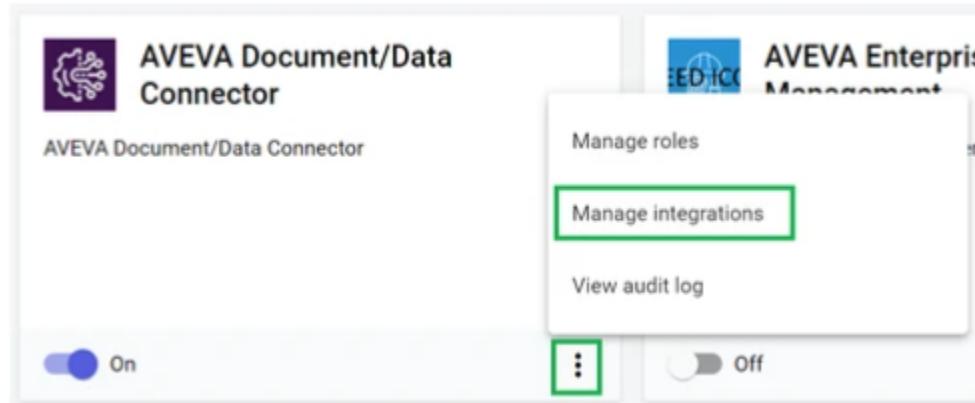


The screenshot shows the configuration for the AVEVA Document/Data Connector. At the top, there is a purple icon of a gear with circuit board elements. Next to it, the text "AVEVA Document/Data Connector" is displayed. Below this, the text "AVEVA Document/Data Connector" is repeated. At the bottom, there is a toggle switch labeled "Off".

5. If prompted, select the region where your Document Connector is deployed for this asset.



6. Once enabled, you will see an ellipsis (three dots) on the tile. Select the ellipsis, then select **Manage Integrations**.



7. Find your **Asset Information Management – Advanced** instance from the list and toggle the switch to enable the integration.
8. Select **Confirm**.

## Manage Integrations for AVEVA Document/Data Connector

Asset Information Management Advanced / dev21



Name: Document Data Connector to AIM-A

Description: Integrates Document Data Connector with Asset Information Management Advanced

Cancel

Confirm

- Verify from the list of integrations that the integration is enabled, and no errors are displayed for it.

**Note:** Once the integration is turned on, no further action is required. The Document Connector will automatically start using the integration.

### Add a DMS Tenant to the Document Connector

**Note:** The following documentation includes the information required to onboard a new DMS tenant into **AVEVA Document Connector**. This is a CDO activity, so you can raise a ticket with the CDO team through [CDO Service Desk](#). The instructions provided here enable you to create a meaningful and actionable CDO ticket.

The configuration for AVEVA Document Connector requires two set of information:

- Onboarding configuration
- DMS and Ingestion configuration

### Onboarding Configuration

This configuration is required by AVEVA Document Connector to identify the tenant, setup the schedule, the source type and the AIM-A asset, the connector to which the data must be sent.

Include the following information in the CDO ticket:

Field	Description
TenancyId	Unique identifier to manage tenancy of new source system. Use only lowercase letters, numbers and hyphen ( - ) characters. Any other character is not supported. A good tenancy ID can include information about the

Field	Description
	<p>source type and the aim instance stage while maintaining uniqueness.</p> <p>If you do not provide a value for this field, CDO team assigns a value based on the rest of the information.</p> <p>For example, <b>assai-teststage-projectcode-1</b></p>
SourceType	<p>Valid values are (only lowercase letters are allowed):</p> <ul style="list-style-type: none"> <li>• aconex</li> <li>• assai</li> <li>• opentext</li> <li>• sharepoint</li> </ul>
ConnectAccountId	<p>CONNECT Account ID of AIM-A environment. If you are not aware of the CONNECT Account ID, you can share the CONNECT Account Name.</p>
ConnectAssetId	<p>CONNECT Folder ID of AIM-A environment. If you are not aware of the CONNECT Folder ID, you can share the CONNECT Folder Name.</p> <p>If the CONNECT AIM-A environment is at an account level, you can provide the CONNECT Account Name in this field as well.</p>
CronJobSchedule	<p>Cron job schedule for AVEVA Document Connector to run. Use <a href="https://crontab.cronhub.io">https://crontab.cronhub.io</a> for help in setting up a meaningful Cron Job schedule.</p> <p><b>For example, 0 6 * * *</b></p> <p><b>Note:</b> The minimum frequency for the AVEVA Document Connector to run is 4 hours.</p>
IsEnabled	<p>Valid values are <b>true</b> or <b>false</b>.</p> <p>When true, AVEVA Document Connector pulls documents and push them to the <b>Data Pipeline</b>.</p> <p>When false, the field skips the schedules and not process file or metadata.</p>
IsFirstLoad	<p>Valid values are <b>true</b> or <b>false</b>.</p> <p>Please raise a request to change the value to true to perform a full data pull from the source system.</p> <p>This works in conjunction with the <b>StartingDate</b> field.</p> <p><b>Note:</b> Once the first load successfully completes, the system will automatically revert back to a value of</p>

Field	Description
	false (hence an extra CDO ticket is not required).
StartingDate	<p>Starting date in a fixed format from when you want the files to be pulled from the source DMS system.</p> <p>For running a pull for all the documents, set this field to an empty string ("") and set <b>IsFirstLoad</b> to <b>true</b>.</p> <p>Having <b>IsFirstLoad=false</b> and <b>StartingDate=""</b> will result in an error.</p> <p><b>Format - yyyy-mm-ddThh:mm:ssZ</b></p>

## DMS and Ingestion Configuration

This configuration provides the information that AVEVA Document Connector requires for authentication, API endpoints and class library register configuration for the DMS systems. It also covers the Ingestion API authentication, API endpoint and asset information.

This configuration must be provided in a fixed JSON formatted template and is specific to the type of DMS tenant you are trying to configure.

Use the following sections, and examples in the *Additional Information* section, to create a similar JSON configuration file for the DMS tenant you want to configure. Name this JSON file as the **TenancyId** mentioned in the onboarding configuration in the previous section and send it over as a part of the CDO ticket created.

Once both the configuration is complete and CDO onboards this tenant, AVEVA Document Connector starts pulling the files from the source DMS and send it to the **Data Pipeline** via **Ingestion API** for processing.

---

**Note:** Sharing any sensitive information such as credentials over any ticketing system is not advised as these systems may be publicly accessible. Ensure that you share the JSON file in an encrypted email with the intended CDO engineer only.

---

### Connect to an Aconex DMS

The Aconex sample is a **json** split into six main sections. Some configuration parts of the sections are already hardcoded in the template so the sample includes only some of the configurations, as follows:

- Authentication
- DmsConfiguration
- MetadataAIMContext
- AIMIngestion
- HttpSettings
- PipelineRunnerSettings

### Authentication

For Aconex, the Document Connector supports both **Refresh Token Grant Type** and **Client Credentials Grant Type** using Oracle Smart Construction Platform OAuth. **The recommendation is to use the Client Credentials**

**Grant Type for any existing or new Aconex connector configurations.** For more information on how to get client credentials from Aconex, see the section below: "**Getting Aconex Client Credentials from Oracle**".

### Refresh Token Grant Type (Legacy)

Aconex can use OAuth2 with the Authorization Code grant type, and for every code generation we will need human interaction. Once a combination of access and refresh tokens is generated, we can reuse the refresh token to generate new pairs of tokens, but only if the regeneration is done in less than two weeks. It is the responsibility of whoever is configuring the DMS to provide the Refresh Token along with the Data Pipeline parameters.

---

**Note:**

- This method is now considered legacy and will be deprecated by Oracle soon.
- It is recommended to migrate any existing Refresh Token Grant Type (legacy OAuth) integrations to Client Credential Grant type (Lobby OAuth) integrations. Support from Aconex for Refresh Token Grant Type authentication will only continue for existing implementations until 1st September 2024. For more information see <https://help.aconex.com/DisplayContent/migrate-from-legacy-oauth-to-smart-construction-platform-oauth>.
- If you are still using the Refresh Token Grant Type (Legacy) authentication, then replace the Authentication section with the following:

```
"Authentication": {  
    "AuthenticationMethod": "OAuth2Refresh",  
    "OAuth2RefreshAuthenticationDetails": {  
        "AuthorizeAPI": "https://sso-us1.aconex.com/as/token.oauth2",  
        "BasicLogin": {  
            "username": "",  
            "password": ""  
        },  
        "RefreshTokenParameter": "RefreshTokenParameter"  
    }  
}
```

This means that for Aconex we need to configure the OAuth2 Refresh grant type as follows:

- **BasicLogin**
  - **username**: the Client ID provided by Aconex
  - **password**: the Client Secret provided by Aconex
- **RefreshTokenParameter**

Only for systems that use OAuth2 with Authorization Code grant type. A combination of access and refresh token should be manually generated and the refresh token should be passed here.

On every run of the **Add Source System** pipeline, a **RefreshToken** is mandatory and should be valid.

---

**Note:** Every time the on-boarding pipeline is run the Aconex Sample file must be updated with a new Refresh token

---

### Client Credentials Grant Type (Recommended)

With the Client Credentials grant type, Aconex can support user-bound integration without requiring user interaction in order to request an access token. Each time the integration calls an Aconex API, the call will be made in the context of this user. The Aconex user account must be linked to a Lobby account. A single set of client credentials can be used for multiple Aconex connector configurations.

To configure OAuth2 with client credentials, configure the following values:

- **BasicLogin**
  - **username**: the Client ID provided by Aconex.
  - **password**: the Client Secret provided by Aconex.

The values for the other parameters are provided in the example.

If you are migrating from Refresh Token Grant Type (legacy) authentication to the recommended Client Credential Grant type (Lobby OAuth) authentication, then ensure you replace the authentication section with the following:

```
"Authentication": {  
  "AuthenticationMethod": "Oauth2",  
  "Oauth2AuthenticationDetails": {  
    "AuthorizeApi": "https://constructionandengineering.oraclecloud.com/auth/token",  
    "BasicLogin": {  
      "username": "",  
      "password": ""  
    },  
    "BodyRequestValues": {  
      "grant_type": "client_credentials"  
    }  
  }  
}
```

## DmsConfiguration

**DmsConfiguration** is a section where we configure DMS-related settings such as formats, endpoints, query parameters and so on.

- **DMSBaseUrl**: represents the base url of the endpoints that will be used. It is the common part of all the URLs that will be consumed.
- **DeltaEndpoint**: represents the endpoint that returns an expected list of documents that must be pushed to ingestion. Usually, this endpoint returns a Delta instead of all the documents. Delta represents all the documents that are new or were modified between a certain date and the actual moment. Usually that certain date is transmitted to the endpoint as a query parameter.
- **DeltaQueryParameters**
  - **search\_query**: Aconex enables us to configure detailed searches for documents. If we want to return the minimum information you require the documents IDs filtered by last modified date. Use the %DeltaDate% as a wildcard for the starting date.
  - **return\_fields**: Aconex enables you to configure what metadata we need. So you can add a list of properties you want to be returned.
  - **search\_type**: The searching services provide the ability to perform different types of searches. One can perform a paged search which allows the user to request back a specific page from a large number of results.
  - **page\_size**: This parameter is available only if search\_type is explicitly set to PAGED. If specified, the value must be a number that is divisible by 25. Without this parameter specified, this defaults to 25.

**Note:** This parameter has a maximum value of 500. If the number is not divisible by 25, it will return bad

---

request.

- **Filtering**

- **FilteringItem**

- **Identifier:** a unique identifier of the filteringItem; an identifier that will be used in the ValidationExpression.
    - **Mapping:** the actual filtering name.
    - **Value:** the actual value against which the filtering is done; it can contain a list of values separated by commas.
  - **ValidationExpression:** a filtering condition based on the identifiers already created and the logical operators in use OR and AND.

---

**Note:** Supported filters are:

RegisterDocument.Confidential | RegisterDocument.FileType | RegisterDocument.DocumentType

These are not configurable.

Filtering can be configured by adding the following section within the DmsConfiguration section. The example is shown with sample values which must be replaced with actual values before adding to your configuration.

```
"Filtering": {  
  "FilteringItems": [  
    {  
      "identifier": "sampleIdentifier",  
      "mapping": "sampleMapping",  
      "value": "sampleValue"  
    },  
    {  
      "identifier": "testIdentifier",  
      "mapping": "testMapping",  
      "value": "testValue"  
    }  
  ],  
  "ValidationExpression": "{sampleIdentifier} or {testIdentifier}"  
}
```

- **DeltaListOfResultsName:** In order to configure this you must be aware of the looping requirements. Considering the response is a xml or json tree, you need to point which level is the repetitive one (point the documents level). To that you must specify every level with dots in between (**lvl1.lvl2.lvl3**).
- **MetadataFromDelta:** boolean. Informs the program if the delta response includes the mandatory information, other than the document ID. In order to download a file you need more information about the file. You need the filename that contains the extension, and a title. Also, if possible you need the **filesize** but it is optional. If the delta response is not able to give us all the information we need to make another call in order to get document's metadata.
- **DeltaMapping**
  - **id:** Mapping for the document ID in the delta response. The mapping must be added surrounded by brackets. Mapping is similar to DeltaListOfResultsName but this time only for the document object. See the [Sample Aconex Configuration File](#) for a sample.
  - **DocumentDownloadLink:** URL used to download the document. Includes the document ID mapping as parameter added between brackets. See the [Sample Aconex Configuration File](#) for a sample.
  - **MetadataDownloadLink:** URL used to download the document metadata. It must contain the document ID mapping as parameter added between brackets. See the [Sample Aconex Configuration File](#) for a sample.

sample.

- **MetadataMapping**

- **title**: fixed string, mapping or combination. It will represent the pattern for document title. Mappings is done just as for the id and it must be surrounded by brackets. Mapping is related to delta response or to metadata response (MetadataDownloadLink) depending on MetadataFromDelta value.
- **filename**: fixed string, mapping or combination. It will represent the pattern for document title. Mappings is done just as for the id and it must be surrounded by brackets. Mapping is related to delta response or to metadata response (MetadataDownloadLink) depending on MetadataFromDelta value.endpoint that returns the packages list.
- **filesize**: optional. The mapping must be added surrounded by brackets. Mapping is similar to DeltaListOfResultsName but this time only for the document object. See the [Sample Aconex Configuration File](#) for a sample.

- **DeltaPaging**

- **TotalPagesFromResult**: The total number of pages available. Only applicable to a paged search.
- **QueryParameterPageNumber**: This parameter is available only if **search\_type** is explicitly set to **PAGED**. If specified, the value must be between **1** and the value of the **TotalPages** attribute that is in the response, otherwise an error is returned. Without this parameter specified, this defaults to **1**.
- **IsMetadataToStore**: boolean. Flag that let us save the response from MetadataDownloadLink as regi file or not.
- **DateTimeFormat**: is a string representation of the date format supported by DMS when calling the DeltaEndpoint. Different DMSs may use different formats so we need to convert our date to the DMS format before starting any request that contains a date.

**Limitation:** The DateTimeFormat for Aconex must be "yyyyMMdd". If this parameter value is not as mentioned, an empty delta will be returned, and no document will be processed.

## MetadataAIMContext

**MetadataAIMContext** is a section where we configure what we send to the Ingestion API, such as paths, groups, naming formats, extensions and so on.

- **context**: value sent to ingestion and used to group files for clients with multiple tenants
- **ClassLibraryRegisterPath**
  - **DocumentMetadataRegister**: path for the document revisions.
  - **ScrapedFileRegister**: path for scraped files.
  - **DocLinkAIMContext**: path for document links.
  - **CustomScrapedFileRegisterPatterns**: list of paths for custom name patterns. Every path consists of a rank, a pattern and a path. Check the attached file sample for examples. Use an asterisk character to match any string (for example, \*-test-\*.txt will match any file that has “- test-” keyword preceded and succeeded by any string - aconex-test-regi.txt).
- **FileTimeStampFormat**: timestamp format that will be used for delta file name.
- **FileNamePrefix**: file name prefix for regi files, used for identification.
- **FileNameSuffixForDelta**
  - **Suffix**: delta filename suffix.

- **Extension:** delta extension. Represent the DeltaEndpoint response type extension to be saved to. If endpoint response is XML, then the extension will be xml. Same for any other response type.

## AIMIngestion

**AIMIngestion** section is about ingestion configuration.

- **BaseUrl:** represents the base url for ingestion api.
- **AssetId:** represents the ID of the asset for which the upload is done.
- **ProcessingUnit:** represents the processing units with the attached allowed extension type.

## HttpSettings

**HttpSettings** section configures timeouts and retries. Most of them are hardcoded in the template, only the DMS timeout must be configured by user.

- **DmsTimeout:** timeout used for DMS http calls (in minutes - minimum 7, maximum 30).

## PipelineRunnerSettings

**PipelineRunnerSettings** is a section that configures the flow of the program. Most of the configurations are already hardcoded in the template.

- **DownloadFiles:** boolean, switch for toggling on and off the files transfer. If set to FALSE, only delta file and document links are transferred.

## Getting Aconex Client Credentials from Oracle

The Oracle Construction and Engineering Lobby (or "Lobby" for short), provides an OAuth 2.0 implementation for all Oracle Smart Construction Platform applications, including Aconex. This implementation is sometimes referred to as "Lobby OAuth".

Users authenticate with their Lobby account credentials and if they have multiple linked Aconex accounts, they will be required to select one account.

For more details on how Oracle OAuth 2.0 implementation works, see [Smart Construction Platform OAuth](#).

Oracle Construction and Engineering Lobby currently supports four types of integrations, that are documented in detail in the link mentioned above. For integration using the Document Connector, the "User-Bound Integration" is supported. This integration has no user interaction and is bound to a specified Aconex user account.

You can register your integration by following the instructions at [Register a Customer Integration](#). Registering this integration is a manual process that needs to be carried out before configuring the Document Connector. The Aconex user needs to raise a support ticket with Oracle to get the client credentials. The section below outlines the key inputs that will be required for raising this ticket and how to get these values from Aconex. The Oracle support team usually responds within 2-4 working days with the client credentials. The Aconex Sample for the Document Connector outlines the relevant configuration changes required to setup the Document Connector to use this authentication mechanism.

## Setting up your Oracle Construction and Engineering Account

The first step in configuring a User-Bound Integration is setting up your individual Oracle Construction and Engineering account. To do this, follow the steps provided below:

1. Login to your Aconex account. You will be prompted to use a new way to sign in to Aconex, select “Skip This Time”.

There's a new way to sign in to Aconex

Link your Aconex account 'a.sant' to a Lobby account.

Create the Lobby account that you will use to sign in

Email

*(i)* Your email will be your username

Your account information will be stored in the 'primaveralobbyeu' Identity Domain

I have read and agree to the [Terms of Service](#) and [Privacy Policy](#).

[Create Account](#) Skip This Time

Already have a Lobby account? [Sign In](#)

2. After you have logged in, navigate to the **Setup** menu item. Select “**Create Oracle Construction and Engineering account**”.

The screenshot shows the Oracle Aconex setup menu. The left sidebar contains links for Configuration, Preferences, User Role Assignment, User Role Configuration, User (Account Details, Create User, Create Guest), and My Organization (Organization Details, User Accounts List). The 'Create Oracle Construction and Engineering account' link is highlighted with a yellow box. The right sidebar contains links for Project (List My Projects, Create Project), About Aconex, Terms of Service, Useful 3rd Party Software, and Other Modules.

3. Follow the instructions through the setup wizard and you will be able to configure this account.
4. When you successfully setup and log back into Aconex, navigate to **Setup**. Select **Account Details**.

The screenshot shows the Oracle Aconex User Information page. It includes tabs for General and Administration, and sections for Organization, Projects, and 2-step verification enrolment. Fields for User ID and Title are visible, with the User ID field highlighted by a yellow box.

5. Copy your **User ID**. This will be used later.

## Retrieving your Organization Lobby ID

This step can only be performed by the Aconex organization administrator. The steps below are for the administrator to follow.

1. Login to your Aconex account.
2. Navigate to "<https://constructionandengineering.oraclecloud.com/web/home/projects>".
3. Click on the **Navigation** menu in the top left corner. Select **Organizations**.

The screenshot shows the Aconex web interface with the URL "constructionandengineering.oraclecloud.com/web/home/projects". At the top left, there is a navigation menu icon (three horizontal lines) which is highlighted with a yellow box. The main title "Construction and Engineering" is displayed next to it. Below the title, the word "Projects" is centered. There is a search bar with the placeholder "Ask hint" and a status filter "Status Active 2". At the bottom of the screen, there is a message "2 Results" and a button "Get Latest Data".

The screenshot shows the Aconex web interface with the URL "constructionandengineering.oraclecloud.com/web/home/directory". At the top left, there is a navigation menu icon (three horizontal lines) and a close button (an 'X') which are both highlighted with yellow boxes. The main title "Construction and Engineering" is displayed next to them. Below the title, there is a sidebar with three items: "Projects", "Applications", and "Organizations". The "Organizations" item is highlighted with a yellow box. The main content area is currently empty.

4. Copy the **Organization ID** field. This will be used in the next step.

## Information Required to Register an Aconex Customer Integration

When your Oracle Construction and Engineering account is ready and you have the Lobby Organization ID at hand, you will also need the following information to raise the Oracle support ticket as outlined in [Register a](#)

Customer Integration to get your client credentials. Follow the section that covers “User-Bound Integration”, this is the only part relevant for Document Connector integration.

- **Lobby Organization ID(s)** - Provide the “Organization ID” copied earlier.
- **Unique Name** - For example - “AVEVA Document Connector Dev Connection”. Create a unique name based on your organization.
- **Description** - For example - “Integration between AVEVA Document Connector and Aconex for Project X”.
- **Client Type** - Keep this value as “User-Bound Integration”.
- **Aconex User ID** - Provide the User ID copied above. Also provide your Aconex email ID for reference.
- **Aconex Instance** - For example - “us1.aconex.com”.

## Sample Aconex Configuration File

The following is a sample .json file targeted at configuring an Aconex DMS connection:

```
{  
  "Authentication": {  
    "AuthenticationMethod": "Oauth2",  
    "Oauth2AuthenticationDetails": {  
      "AuthorizeApi": "https://constructionandengineering.oraclecloud.com/auth/token",  
      "BasicLogin": {  
        "username": "",  
        "password": ""  
      },  
      "BodyRequestValues": {  
        "grant_type": "client_credentials"  
      }  
    }  
  },  
  "DmsConfiguration": {  
    "DMSBaseUrl": "https://us1.aconex.com",  
    "DeltaEndpoint": "api/projects/1207972507/register",  
    "DeltaQueryParameters": {  
      "search_query": "registered:[%DeltaDate% TO 20990213]",  
      "return_fields": "registered",  
      "search_type": "paged",  
      "page_size": "250"  
    },  
    "DeltaListOfResultsName": "RegisterSearch.SearchResults.Document",  
    "MetadataFromDelta": false,  
    "MetadataMapping": {  
      "title": "{RegisterDocument.Title}",  
      "filename": "{RegisterDocument.Filename}",  
      "filesize": "{RegisterDocument.Filesize}"  
    },  
    "DeltaMapping": {  
      "id": "{DocumentId}",  
      "DocumentDownloadLink": "https://us1.aconex.com/api/projects/1207972507/  
register/{DocumentId}/markedup",  
      "MetadataDownloadLink": "https://us1.aconex.com/api/projects/1207972507/  
register/{DocumentId}/metadata"  
    },  
  }  
}
```

```
"IsMetadataToStore": true,
"DateTimeFormat": "yyyyMMdd"
},
"MetadataAIMContext": {
"context": "",
"ClassLibraryRegisterPath": {
"DocumentMetadataRegister": "Aconex/Documents",
"ScrapedFileRegister": "Aconex/Discovery",
"CustomScrapedFileRegisterPatterns": [
{
"Rank": 1,
"Pattern": "*is*.txt",
"Path": "Aconex/Discovery_txt"
},
{
"Rank": 2,
"Pattern": "*as*.doc",
"Path": "Aconex/Discovery_txt"
}
]
},
"FileTimeStampFormat": "yyyyMMdd-HHmmss",
"FileNamePrefix": "aconex",
"FileNameSuffixForDelta": {
"Suffix": "docrevs",
"Extension": "xml"
},
"AIMIngestion": {
"BaseUrl": "https://ingestionapi-atest.dev-av.capdev-connect.aveva.com",
"AssetId": "windfarm Holland",
"ProcessingUnit": [
{
"ExtensionType": "DWG|DXF",
"Unit": "AC2D",
"publishOriginal": false,
"publishRendition": true,
"publishReference": true
},
{
"ExtensionType": "DGN",
"Unit": "MS2D",
"publishOriginal": false,
"publishRendition": true,
"publishReference": true
},
{
"ExtensionType": "PDF|DOC|DOCX|XLS|XLSX|JSON|HTML|XML|TXT|SVG|CSV|TSV|PPT|PPTX",
"Unit": "DE",
"publishOriginal": true,
"publishRendition": false,
"publishReference": true
},
{
"ExtensionType": "RVM|ZGL",
"Unit": "Model"
}
```

```
},
{
  "ExtensionType": "RTF|POT|PPS|POTX|PPSX|VSD|VSDX|VDX|ODT|OTT|FODT|ODS|OTS|FODS|ODP|OTP|FODP|ODF|ODG|OTG|FODG|DWF|XHTML|XHTM|MSG|EML|DCM|DICOM|DCIM|DICM|TIF|TIFF|JPG|JPEG|JP2|JPC|GIF|PNG|PSD|PSB|BMP|DIB|PCT|PIC|PICT|WMF|EMF|PCX|DCX|RAS|PCD|TGA|TPIC|CAL|CALS|ICO|CUR|NCR|XWD|SGI|WBMP|SCT|WPG|XBM|PBM|PGM|PPM|IMG|CUT|DOT|DOTX|XLT|XLTX|XLTM|HTM|XLTS",
  "Unit": "Original",
  "publishOriginal": true,
  "publishRendition": false,
  "publishReference": false
}
]
},
{
  "HttpSettings": {
    "DmsTimeout": 30
  },
  "PipelineRunnerSettings": {
    "DownloadFiles": true
  }
}
```

## Connect to an Assai DMS

The Assai sample is a json split in six main sections. Some configuration parts of the sections are already hardcoded in the template so the sample include only some of the configurations, as follows:

- Authentication
- DmsConfiguration
- MetadataAIMContext
- AIMIngestion
- HttpSettings
- PipelineRunnerSettings

## Authentication

It is adapted to use Oauth2 with Resources Owner grant type (also known as Password grant type) and Client Credentials grant type. The following values are required:

- **AuthorizeApi**: Assai URL where the access token is requested.
- **BasicLogin**
  - **username**: the Client ID provided by Assai
  - **password**: the Client Secret provided by Assai
- **BodyRequestValues**
  - **grant\_type**: the used Oauth2 grant type. (values: password or client\_credentials)
  - **username**: Assai username (only for password grant type)
  - **password**: Assai password (only for password grant type)

## DmsConfiguration

DmsConfiguration is a section where we configure DMS-related settings such as formats, endpoints, query parameters, and so on.

- **DMSBaseUrl:** represents the base url of the endpoints that are used. It is the common part of all the URLs that are consumed.
- **DeltaEndpoint:** represents the endpoint that will return an expected list of documents that must be pushed to ingestion. Usually, this endpoint returns a Delta instead of all the documents. Delta represents all the documents that are new or were modified between a certain date and the actual moment. Usually that certain date is transmitted to the endpoint as a query parameter.
- **DeltaQueryParameters**
  - **response\_type:** the format of the response. Preferred is csv.
  - **is\_latest:** boolean. If true ("Y") returns the latest versions of the documents and if false ("N") returns all version.
  - **for\_polling:** boolean. If true ("Y") activates polling on assai request and if false ("N") works in the classic way. For the first release **for\_polling** must be N.
  - **latest\_change\_date\_subq\_after:** variable date that always comes from the DB. It will always be set to "%DeltaDate%"
  - **project\_code:** Assai project code to extract the documents from.
- **EnableDeleteAudit:** Represents a boolean (values: true or false) and provides an ability to process deleted documents.
- **DeleteAuditEndpoint:** represents the endpoint that will return audit data of deleted documents that should be pushed to the Data Pipeline. The endpoint will become mandatory when "EnableDeleteAudit" is set to true.

---

### Notes:

- Before enabling this setting, ensure you have added the **DeleteWhere** attribute to the ISM class library register and this change is successfully orchestrated in AIM-A. An example register is as follows:

```
<Documents Category="Docs" RegisterType="Tracker" IDColumn="docs_seq_nr"
  Remarks="This tracks the primary key for a document in assai"
  Filepath="ASSAI/Documents" HeaderRow="1" CaptureMethod="Partial"
  DeleteWhere="{{@[Action] starts any ['Del','Rem']}}">
  <Columns>
    <document_nr>
      <capture ValueExpression="{{ coalesce(@document_nr, GUID) }}"/>
    </document_nr>
  </Columns>
</Documents>
```

- This functionality does not delete the scraped references as this action is not supported by AIM-A.
- Historical document deletion cannot be actioned.

### • Filtering

- **FilteringItem**

- **Identifier:** a unique identifier of the filteringItem; an identifier that will be used in the ValidationExpression.
- **Mapping:** the actual filtering name.

- **Value:** the actual value against which the filtering is done; it can contain a list of values separated by commas.
- **ValidationExpression:** a filtering condition based on the identifiers already created and the logical operators in use OR and AND.

**Note:** The supported filters are:

class\_code|subclass\_code|company\_code|document\_type|discipline\_code|asset\_code|status\_code|approval\_These are not configurable.

Filtering can be configured by adding the following section within the DmsConfiguration section. The example is shown with sample values which must be replaced with actual values before adding to your configuration.

```
"Filtering": {  
  "FilteringItems": [  
    {  
      "identifier": "sampleIdentifier",  
      "mapping": "sampleMapping",  
      "value": "sampleValue"  
    },  
    {  
      "identifier": "testIdentifier",  
      "mapping": "testMapping",  
      "value": "testValue"  
    }  
  ],  
  "ValidationExpression": "{sampleIdentifier} or {testIdentifier}"  
}
```

- **DateTimeFormat:** is a string representation of the date format supported by DMS. Different DMSs may use different formats so we need to convert our date to the DMS format before starting any request that contains a date. Assai currently use the following format: "yyyy-MMddTHH:mm:ssZ"

Limitation: The DateTimeFormat for Assai must be "yyyy-MM-ddTHH:mm:ssZ". If this parameter value is not as mentioned, an empty delta is returned, and no document is processed.

- **ProjectsEndpoint:** endpoint that returns the projects list.
- **PackagesEndpoint:** endpoint that returns the packages list.
- **FileTypeLookup:** For Assai, one document may have multiple files. This property defines what kind of files to look for. Each type should be separated by a vertical-bar ('|'). Supported types are:

- publish\_file
- source\_file

See the following example, which includes the required formatting:

**"FileTypeLookup": "publish\_file:pdf|source\_file:dwg,dxf"**

The FileTypeLookup value for publish\_file can optionally include file extensions, for example:

- **publish\_file** - all file extensions are considered.
- **publish\_file:fileextension1, fileextension2** - multiple file extensions can be specified, separated by comma.

The FileTypeLookup value for source\_file can optionally include file extensions, for example:

- **source\_file** - all file extensions are considered.
- **source\_file:fileextension1, fileextension2** - multiple file extensions can be specified, separated by comma.

- **DocumentAPIAddress:** the endpoint that return all the document links and if the file ID is appended as a query string, it will download the document link for that specific document.
- **LastRefreshDateTimeURL:** Is actually the same endpoint as delta but it returns just one document in json. One of the document's metadata is **last\_refresh\_date** that represent the last time Assai did a refresh of all the files. We get and store this date in a db in order to use it as a starting date on the next delta call (it will be used as %DeltaDate% parameter).
- **ProjectCode:** Assai can work with multiple projects but Document Connector can extract documents from just one project. Each tenant must have a single project associated.
- **DocumentDownloadEndpoint:** This is the endpoint that will be used to download the actual file. The file ID will be appended to the end of this endpoint in order to generate the final download link.
- **DownloadDocumentAsset:** Represents a boolean (it can have the value true or false) and marks the ability to download the document links. If the value is true, document links will be extracted and pushed to ingestion. If value is false then no document link will be extracted.
- **DownloadProjects:** Represents a boolean (it can have the value true or false) and marks the ability to download a list of projects that the user has access to. If the value is true, projects list will be extracted and pushed to ingestion. If value is false then project list will not be extracted.
- **DownloadPackages:** Represents a boolean (it can have the value true or false) and marks the ability to download a list of packages that the user has access to. If the value is true, packages list will be extracted and pushed to ingestion. If value is false then packages list will not be extracted.

## MetadataAIMContext

MetadataAIMContext is a section where we configure what we send to the Ingestion API, such as paths, groups, naming formats, extensions, and so on.

- **context:** value sent to ingestion and used to group files for clients with multiple tenants.
- **ClassLibraryRegisterPath**
  - **DocumentMetadataRegister:** path for the document revisions.
  - **ScrapedFileRegister:** path for scraped files.
  - **DocLinkAIMContext:** path for document links.
  - **ProjectAIMContext:** path for projects list.
  - **PackageAIMContext:** path for packages list.
- **SuffixFileNameStampFormat:** timestamp format that will be used for delta file name.
- **FileNamePrefix:** file name prefix for regi files, used for identification.
- **FileNameSuffixForDelta**
  - **Suffix:** delta filename suffix.
  - **Extension:** delta extension. If the response\_type from DmsConfiguration is set to csv, then the extension must be "csv". Same for any other response types.

## AIMIngestion

AIMIngestion section is about ingestion configuration.

- **BaseUrl:** represents the base url for ingestion api.

- **AssetId**: represents the ID of the asset for which the upload is done.
- **ProcessingUnit**: represents the processing units with the attached allowed extension type.

## HttpSettings

HttpSettings section configures timeouts and retries. Most of them are hardcoded in the template, only the DMS timeout must be configured by user.

- **DmsTimeout**: timeout used for DMS http calls (in minutes - minimum 7, the maximum 30).

## PipelineRunnerSettings

**PipelineRunnerSettings** is a section that will configure the flow of the program. Most of the configurations are already hardcoded in the template.

- **DownloadFiles**: boolean, switch for toggling on and off the files transfer. If set to FALSE, only delta file and document links will be transferred.

# Sample Assai Configuration File

The following is a sample .json file targeted at configuring an Assai DMS connection:

```
{  
  "Authentication": {  
    "Oauth2AuthenticationDetails": {  
      "AuthorizeApi": "",  
      "BasicLogin": {  
        "username": "",  
        "password": ""  
      },  
      "BodyRequestValues": {  
        "grant_type": "",  
        "username": "",  
        "password": ""  
      }  
    }  
  },  
  "DmsConfiguration": {  
    "DMSBaseUrl": "https://eu.assaicloud.com/AAeu901",  
    "DeltaEndpoint": "api/customservices/dbi_document_revision_digitaltwin",  
    "DeltaQueryParameters": {  
      "response_type": "csv",  
      "is_latest": "Y",  
      "for_polling": "Y",  
      "latest_change_date_subq_after": "%DeltaDate%",  
      "project_code": "XXXX"  
    },  
    "DeleteAuditEndpoint": "api/customservices/dbi_documents_delete_audit_data",  
    "EnableDeleteAudit" : "true",  
    "DateTimeFormat": "yyyy-MM-ddTHH:mm:ssZ",  
    "ProjectsEndpoint": "api/views/projects?response_type=csv",  
  }  
}
```

```
"PackagesEndpoint": "api/views/packages?response_type=csv",
"FileTypeLookup": "publish_file",
"DocumentAPIAddress": "api/customservices/
dbi_asset_item_docs_proj?response_type=csv&is_latest=Y",
"LastRefreshDateTimeURL": "api/customservices/
dbi_document_revision_digitaltwin?page=0&size=1&response_type=json",
"ProjectCode": "XXXX",
"DocumentDownloadEndpoint": "api/fils/download/",
"DownloadDocumentAsset": "True",
"DownloadProjects": "False",
"DownloadPackages": "False"
},
"MetadataAIMContext": {
"context": "testbb1",
"ClassLibraryRegisterPath": {
"DocumentMetadataRegister": "Assai/Documents",
"ScrapedFileRegister": "Assai/Discovery",
"DocLinkAIMContext": "Assai/Links",
"ProjectAIMContext": "Assai/Projects",
"PackageAIMContext": "Assai/Packages",
"CustomScrapedFileRegisterPatterns": [
{
"Rank": 1,
"Pattern": "*is*.txt",
"Path": "Assai/Discovery_txt"
},
{
"Rank": 2,
"Pattern": "*as*.doc",
"Path": "Assai/Discovery_txt"
}
]
},
"TimeStampFormat": "yyyyMMdd-HHmmss",
"FileNamePrefix": "assai",
"FileNameSuffixForDelta": {
"Suffix": "dcrevs",
"Extension": "csv"
},
"AIMIngestion": {
"BaseUrl": "https://ingestionapi-atest.dev-av.capdev-connect.aveva.com",
"AssetId": "windfarm Holland",
"ProcessingUnit": [
{
"ExtensionType": "DWG|DXF",
"Unit": "AC2D",
"publishOriginal": false,
"publishRendition": true,
"publishReference": true
},
{
"ExtensionType": "DGN",
"Unit": "MS2D",
"publishOriginal": false,
"publishRendition": true,
```

```
"publishReference": true
},
{
"ExtensionType": "PDF|DOC|DOCX|XLS|XLSX|JSON|HTML|XML|TXT|SVG|CSV|TSV|PPT|PPTX",
"Unit": "DE",
"publishOriginal": true,
"publishRendition": false,
"publishReference": true
},
{
"ExtensionType": "RVM|ZGL",
"Unit": "Model"
},
{
"ExtensionType":
"RTF|POT|PPS|POTX|PPSX|VSD|VSDX|VDX|ODT|OTT|FODT|ODS|OTS|FODS|ODP|OTP|FODP|ODF|ODG|OTG|FODG
|DWF|XHTML|XHTM|MSG|EML|DCM|DICOM|DCIM|DICM|TIF|TIFF|JPG|JPEG|JP2|JPC|GIF|PNG|PSD|PSB|BMP|D
IB|PCT|PIC|PICT|WMF|EMF|PCX|DCX|RAS|PCD|TGA|TPIC|CAL|CALS|ICO|CUR|NCR|XWD|SGI|WBMP|SCT|WPG|
XBM|PBM|PGM|PPM|IMG|CUT|DOT|DOTX|XLT|XLTX|XLTM|HTM|XLTS",
"Unit": "Original",
"publishOriginal": true,
"publishRendition": false,
"publishReference": false
}
]
},
{
"HttpSettings": {
"DmsTimeout": 30
},
"PiplineRunnerSettings": {
"DownloadFiles": true
}
}
```

## Connect to an OpenText DMS

The OpenText sample is a json file split in six main sections. Some configuration parts of the sections are already hardcoded in the template so the sample will contain only some of the configurations, as follows:

- Authentication
- DmsConfiguration
- MetadataAIMContext
- AIMIngestion
- HttpSettings
- PipelineRunnerSettings

## Authentication

In order to be able to authenticate using Oauth2 we must identify the:

- Tenant ID - this value can be found on the OpenText platform.

**AuthorizeApi:** URL for requesting the access token. <https://<REGION>.api.opentext.com/tenants/<TENANT ID>/oauth2/token>

- **BasicLogin**
  - **username:** Client ID
  - **password:** Client Secret

## DmsConfiguration

DmsConfiguration is a section where we configure DMS-related settings such as formats, endpoints, query parameters, and so on.

- **DMSBaseUrl:** represents the base URL of the endpoints that will be used. It is the common part of all the URLs that will be consumed. For example <https://<REGION>.api.opentext.com>
- **DeltaEndpoint:** represents the endpoint that will return an expected list of documents that should be pushed to the ingestion. Usually, this endpoint returns a delta instead of all of the documents. A delta represents all of the documents that are new or were modified since a certain date. Usually that certain date will be transmitted to the endpoint as a query parameter. For OpenText, this value is: **cms/instances/folder/cms\_folder/{FolderId}/items**
- **BlobIdEndpoint:** it is used to get the blob ID for every file. This ID is needed to fetch the metadata and the actual content of files. for example **/cms/instances/file/cms\_file/{Id}/contents**
- **RootFolder:** represents the root folder in the OpenText folder structure. Based on the configuration, if pagination and recursive pull are wanted, the application will get all the files in the folder's hierarchy, or all the documents in the first level of the given folder. It is represented by the folder ID, for example **057a1d3a-2876-11e8-b467-0ed5f89f718b**
- **DeltaQueryParameters:** represents the parameters given to the document revision endpoint called. OpenText is using "filter": "update\_time gt '%DeltaDate%' and type eq 'cms\_file'" - to fetch only the files created or updated after the given date, and "include-total": true, "items-per-page": 250 to specify that the recursive pull with pagination is wanted.
- **FolderQueryParameters:** represents the parameters given to the folder query endpoint called. OpenText is using "filter": "type eq 'cms\_folder'" - to fetch only the folder ID "include-total": true, "items-per-page": 250 to specify that the recursive pull with pagination is wanted.
- **DeltaPaging:** represents the parameters needed for pagination and recursivity. The only flag that is configurable within this subsection is: **IsWithRecursivity** used in order to enable or disable the recursive retrieval of data within subfolders of the given RootFolder.
- **MetadataFromDelta:** boolean. Informs the system if the delta response will contain mandatory information other than the document ID. In order to download a file we need the filename that contains the extension and a title. Also, if possible, we need the file size but it's not mandatory. If the delta response is not able to give us all this information, then we need to make another call in order to get the document's metadata. Should be **false** for OpenText.
- **DeltaMapping**
  - **id:** Mapping for the document ID in the delta response. The mapping should be added surrounded by brackets. Check the sample file for an example.
  - **DocumentDownloadLink:** URL used to download the document. It should contain the document blob ID between brackets. Check the sample file for an example. For example:

[https://css.na-1-dev.api.opentext.com/v2/content/{blob\\_id}/download](https://css.na-1-dev.api.opentext.com/v2/content/{blob_id}/download)

- **MetadataDownloadLink:** URL used to download the metadata of the file. It should contain the document blob ID between brackets. Check the sample file for an example. For example:  
[https://css.na-1-dev.api.opentext.com/v2/content/{blob\\_id}](https://css.na-1-dev.api.opentext.com/v2/content/{blob_id})
- **MetadataMapping**
  - **title:** fixed string, mapping or combination. It will represent the pattern for the document title. Mappings are done just as for the ID and it should be surrounded by brackets. Because of the OpenText response format, these mappings have to be in the following format: {entries[0].fileName} - or size, the values for both title and filename should be the same.
  - **filename:** fixed string, mapping or combination. This represents the pattern for a document title. Mappings are done just for the ID and it should be surrounded by brackets.
  - **filesize:** The mapping should be added surrounded by brackets. For OpenText the value is **size**.
- **Filtering** - optional - subsection will contain a list of **FilteringItems** and **ValidationExpression**.

The **FilteringItem** - mandatory if Filtering is present - will contain:

- *Identifier*: a unique identifier of the filteringItem, identifier that will be used in the ValidationExpression - mandatory if Filtering is present
- *Mapping*: the actual property present in the incoming metadata for all DMSs - mandatory if Filtering is present
- *Value*: the actual value against which the filtering is done, can contain a list of values separated by comma - mandatory if Filtering is present

The **ValidationExpression** - mandatory if Filtering is present - will contain:

- filtering condition based on the identifiers already created and the logical operators in use **OR** and **AND**.

---

**NOTE:** Supported filters is entries0.mimeType. These are not configurable.

Filtering can be configured by adding the following section within the DmsConfiguration section. The example is shown with sample values which must be replaced with actual values before adding to your configuration.

```
"Filtering": {
  "FilteringItems": [
    {
      "Identifier": "identifier",
      "Mapping": "entries[0].mimeType",
      "Value": "text/plain"
    }
  ],
  "ValidationExpression": "{identifier}"
}
```

- **IsMetadataToStore**: boolean. A flag that allows us to save the response from the MetadataDownloadLink as a regi file or not.
- **DateTimeFormat**: is a string representation of the date format supported by the DMS when calling the DeltaEndpoint. Different DMSs may use different formats so we need to convert our date to the DMS format before starting any request that contains a date, for example **yyyy-MM-ddTHH:mm:ssZ**

---

**NOTE:** To get the files recursively with pagination, the following configurations must be present. These are partly configurable and partly predefined:

```
"DeltaQueryParameters": {
  "filter": "update_time gt '%DeltaDate%' and type eq 'cms_file'",
```

```
"include-total": true,  
  "items-per-page": 250  
,  
  "FolderQueryParameters": {  
    "filter": "type eq 'cms_folder'",  
    "include-total": true,  
    "items-per-page": 250  
,  
    ""DeltaPaging": {  
      "TotalPagesFromResult": "total",  
      "QueryParameterPageNumber": "page",  
      "IsWithRecursivity": true  
    },
```

## MetadataAIMContext

MetadataAIMContext is a section where we configure what we send to the ingestion, such as paths, groups, naming formats, extensions, and so on.

- **context**: a value sent to the ingestion and used to group files for clients with multiple tenants.
- **ClassLibraryRegisterPath**
  - **DocumentMetadataRegister**: a path for the document revisions.
  - **ScrapedFileRegister**: a path for scraped files.
- **FileTimeStampFormat**: a timestamp format that will be used for delta file names.
- **FileNamePrefix**: a file name prefix for regi files, used for identification.
- **FileNameSuffixForDelta**
  - **Suffix**: a delta filename suffix.
  - **Extension**: a delta extension. Represents the DeltaEndpoint response type extension to be saved to. For OpenText, the delta response extension is **json**.

## AIMIngestion

AIMIngestion section is about ingestion configuration.

- **BaseUrl**: represents the base URL for the Ingestion API.
- **AssetId**: represents the ID of the asset for which the upload is done.
- **ProcessingUnit**: represents the processing units with the attached allowed extension type.

---

**Note:** Document Connector now supports service to service integration with the Data Pipeline. If your configuration already has an Ingestion Token, it will be ignored with no impact to the processing. There is no need to remove the key from the configuration.

---

## HttpSettings

HttpSettings section configures timeouts and retries. Most of them are hardcoded in the template, only the DMS timeout can be configured.

- **DmsTimeout**: a timeout used for DMS HTTP calls

## PipelineRunnerSettings

PipelineRunnerSettings is a section that will configure the flow of the program. Most of the configurations are already hardcoded in the template.

- **DownloadFiles**: boolean, a switch for toggling on and off the files transfer. Has to be **TRUE** for OpenText.

# Sample OpenText Configuration File

The following is a sample .json file targeted at configuring an OpenText DMS connection:

```
{
  "Authentication": {
    "Oauth2AuthenticationDetails": {
      "AuthorizeApi": "",
      "BasicLogin": {
        "username": "",
        "password": ""
      }
    }
  },
  "DmsConfiguration": {
    "DMSBaseUrl": "https://na-1-dev.api.opentext.com",
    "RootFolder": "db0720c6-5cea-4b63-be2b-6c0d0803dc76",
    "DeltaEndpoint": "cms/instances/folder/cms_folder/{FolderId}/items",
    "BlobIdEndpoint": "/cms/instances/file/cms_file/{Id}/contents",
    "DeltaQueryParameters": {
      "filter": "update_time gt '%DeltaDate%' and type eq 'cms_file'",
      "include-total": true,
      "items-per-page": 250
    },
    "FolderQueryParameters": {
      "filter": "type eq 'cms_folder'",
      "include-total": true,
      "items-per-page": 250
    },
    "DeltaPaging": {
      "IsWithRecursivity": true
    },
    "MetadataMapping": {
      "title": "{entries[0].fileName}",
      "filename": "{entries[0].fileName}",
      "filesize": "{entries[0].size}"
    },
    "MetadataFromDelta": "false",
    "DeltaMapping": {
      "id": "{Id}",
      "DocumentDownloadLink": "https://css.na-1-dev.api.opentext.com/v2/content/{blob_id}/download",
      "MetadataDownloadLink": "https://css.na-1-dev.api.opentext.com/v2/content/{blob_id}"
    },
    "IsMetadataToStore": "true",
    "DateTimeFormat": "yyyy-MM-ddTHH:mm:ssZ"
  }
}
```

```
"MetadataAIMContext": {  
    "context": "",  
    "ClassLibraryRegisterPath": {  
        "DocumentMetadataRegister": "Opentext/Documents",  
        "ScrapedFileRegister": "Opentext/Discovery"  
    },  
    "FileTimeStampFormat": "yyyyMMdd-HHmmss",  
    "FileNamePrefix": "opentext",  
    "FileNameSuffixForDelta": {  
        "Suffix": "dcrevs",  
        "Extension": "json"  
    }  
},  
"AIMIngestion": {  
    "BaseUrl": "https://ingestionapi-atest.dev-av.capdev-connect.aveva.com",  
    "AssetId": "windfarm Holland",  
    "ProcessingUnit": [  
        {  
            "ExtensionType": "DWG|DXF",  
            "Unit": "AC2D",  
            "publishOriginal": true,  
            "publishRendition": true,  
            "publishReference": false  
        },  
        {  
            "ExtensionType": "DGN",  
            "Unit": "MS2D",  
            "publishOriginal": true,  
            "publishRendition": true,  
            "publishReference": false  
        },  
        {  
            "ExtensionType": "PDF|DOC|DOCX|XLS|XLSX|JSON|HTML|XML|TXT|SVG|CSV",  
            "Unit": "DE",  
            "publishOriginal": true,  
            "publishRendition": true,  
            "publishReference": false  
        },  
        {  
            "ExtensionType": "RVM|ZGL",  
            "Unit": "Model"  
        },  
        {  
            "ExtensionType":  
                "DOT|RTF|PPT|POT|PPS|PPTX|POTX|PPSX|VSD|VSDX|VDX|ODT|OTT|FODT|ODS|OTS|FODS|ODP|OTP|FODP|ODF  
                |ODG|OTG|FODG|DWF| XHTML|XHTM|MSG|EML|DCM|DICOM|DCIM|DICM|TIF|TIFF|JPG|JPEG|JP2|JPC|GIF|PNG|  
                PSD|PSB|BMP|DIB|PCT|PIC|PICT|WMF|EMF|PCX|DCX|RAS|PCD|TGA|TPIC|CAL|CALS|ICO|CUR|NCR|XWD|SGI|  
                WBMP|SCT|WPG|XBM|PBM|PGM|PPM|IMG|CUT",  
            "Unit": "Original",  
            "publishOriginal": true,  
            "publishRendition": true,  
            "publishReference": false  
        }  
    ]  
},  
"HttpSettings": {
```

```
"DmsTimeout": 2
},
"PipelineRunnerSettings": {
"DownloadFiles": true
}
}
```

## Connect to a SharePoint DMS

The SharePoint sample is a json split into six sections. Some configuration parts of the sections are already hardcoded in the template so the sample will contain only some of the configurations, as follows:

- Authentication
- DmsConfiguration
- MetadataAIMContext
- AIMIngestion
- HttpSettings
- PipelineRunnerSettings

---

**Note:** Every time the on-boarding pipeline is run the SharePoint sample file must be updated with a new Refresh token.

---

## Authentication

In order to be able to authenticate using Oauth2 we must identify the:

- Client ID
- Client secret
- Tenant ID - this value is received from generating the credentials

The SharePoint API uses the **grant\_type** that is, **client\_credentials**. The OAuth 2.0 client credentials grant flow permits a web service (confidential client) to use its own credentials, instead of impersonating a user, to authenticate when calling another web service.

Refer to the How to Integrate SharePoint in GenericDocumentConnector topic to obtain the **clientId** and **clientSecret** for SharePoint.

This means that for SharePoint we need to configure the Oauth2 grant type as follows:

- **AuthorizeApi**: URL that where will request the access token.  
<https://accounts.accesscontrol.windows.net/<tenantId>/tokens/OAuth/2>
- **BasicLogin**
  - **username**: the Client ID@tenant ID provided by SharePoint
  - **password**: the Client Secret provided by SharePoint
- **BodyRequestValues**
  - **grant\_type**: the used Oauth2 grant type. "client\_credentials"
  - **client\_id**: the Client ID@tenant ID provided by SharePoint
  - **client\_secret**: the Client Secret provided by SharePoint

- **resource:** 00000003-0000-0ff1-ce00-000000000000/aveva-my.sharepoint.com@<tenantId>

## DmsConfiguration

- **DmsConfiguration** is a section where we configure DMS-related settings such as formats, endpoints, query parameters, etc.
- **DMSBaseUrl:** represents the base URL of the endpoints that will be used. It is the common part of all the URLs that will be consumed. For example, for SharePoint [https://aveva-my.sharepoint.com/personal/firstname\\_lastname\\_aveva\\_com](https://aveva-my.sharepoint.com/personal/firstname_lastname_aveva_com)
- **DeltaEndpoint:** represents the endpoint that will return an expected list of documents that must be pushed to the ingestion. Usually, this endpoint returns a delta instead of all of the documents. A delta represents all of the documents that are new or were modified between a certain date and the actual moment. Usually that certain date will be transmitted to the endpoint as a query parameter. For SharePoint this must be left empty.
- **RootFolder:** represents the root folder in the SharePoint folder structure. A delta can get documents from this folder and folders below in the folder tree. For example, for SharePoint [/personal/firstname\\_lastname\\_aveva\\_com/Documents/SharePointTest](/personal/firstname_lastname_aveva_com/Documents/SharePointTest)
- **DeltaListOfResultsName:** In order to configure this we need to know what we are looping. Considering the response is an XML or JSON tree, we need to point to which level is the repetitive one (point to the documents level). For that we must specify every level with dots in between (lvl1.lvl2.lvl3)
- **MetadataFromDelta:** boolean. Informs the system if the delta response will contain mandatory information other than the document ID. In order to download a file we need more information about the file. We need the filename that contains the extension and a title. Also, if possible, we need the file size but it is not mandatory. If the delta response is not able to give us all this information, then we need to make another call in order to get the document's metadata.
  - **DeltaMapping**
    - **id:** Mapping for the document ID in the delta response. The mapping must be added surrounded by brackets. The mapping is similar to **DeltaListOfResultsName** but this time only for the document object. See the [Sample SharePoint Configuration File](#) for an example.
    - **DocumentDownloadLink:** URL used to download the document. It must contain the document ID mapping as a parameter added between brackets. See the [Sample SharePoint Configuration File](#) for an example.
  - **MetadataMapping**
    - **title:** fixed string, mapping or combination. It will represent the pattern for the document title. Mappings are done just as for the id and it must be surrounded by brackets. The mapping is related to a delta response or to a metadata response (MetadataDownloadLink) depending on the MetadataFromDelta value.
    - **filename:** fixed string, mapping or combination. This represents the pattern for a document title. Mappings are done just for the id and it must be surrounded by brackets. The mapping is related to a delta response or to a metadata response (MetadataDownloadLink) depending on the MetadataFromDelta value.
    - **filesize:** optional. The mapping must be added surrounded by brackets. The mapping is similar to DeltaListOfResultsName but this time only for the document object. See the [Sample SharePoint Configuration File](#) for an example.
  - **Filtering**

- **FilteringItem**
  - **Identifier:** a unique identifier of the filteringItem; an identifier that will be used in the ValidationExpression.
  - **Mapping:** the actual property present in the incoming metadata for all DMSs.
  - **Value:** the actual value against which the filtering is done; it can contain a list of values separated by commas.
- **ValidationExpression:** a filtering condition based on the identifiers already created and the logical operators in use **OR** and **AND**.

---

**Note:** The supported filters are:

Name|ServerRelativeUrl

These are not configurable.

---

Filtering can be configured by adding the following section within the **DmsConfiguration** section. The example is shown with sample values which must be replaced with actual values before adding to your configuration.

```
"Filtering": {  
  "Filteringitems": [  
    {  
      "identifier": "sampleIdentifier",  
      "mapping": "sampleMapping",  
      "value": "sampleValue"  
    },  
    {  
      "identifier": "testIdentifier",  
      "mapping": "testMapping",  
      "value": "testValue"  
    }  
  ],  
  "ValidationExpression": "{sampleIdentifier} or {testIdentifier}"  
}
```

- **IsMetadataToStore:** boolean. A flag that allows us to save the response from MetadataDownloadLink as regi file or not.
- **ConvertMetadataToJson:** fixed boolean value, set to true. A flag where true ensures that the metadata will be subject to conversion to json. This is needed so that the metadata is able to be parsed in the Register Gateway.
- **DateTimeFormat:** is a string representation of the date format supported by the DMS when calling the DeltaEndpoint. Different DMSs may use different formats so we need to convert our date to the DMS format before starting any request that contains a date.

## MetadataAIMContext

**MetadataAIMContext** is a section where we configure what we send to the ingestion, such as paths, groups, naming formats, extensions, etc.

- **context:** a value sent to the ingestion and used to group files for clients with multiple tenants.
- **ClassLibraryRegisterPath**
  - **DocumentMetadataRegister:** a path for the document revisions.
  - **ScrapedFileRegister:** a path for scraped files.

- **DocLinkAIMContext:** a path for document links.
- **CustomScrapedFileRegisterPatterns:** a list of paths for custom name patterns. Every path consists of a rank, a pattern and a path. See the [Sample SharePoint Configuration File](#) for an example. Use an asterisk character to match any string (e.g. \*-test-.txt will match any file that has the “-test-” string preceded and succeeded by any string - sharepoint-test-regi.txt)
- **FileTimeStampFormat:** a timestamp format that will be used for delta file names.
- **FileNamePrefix:** a file name prefix for regi files, used for identification.
- **FileNameSuffixForDelta**
  - **Suffix:** a delta filename suffix.
  - **Extension:** a delta extension. Represents the DeltaEndpoint response type extension to be saved to. If the endpoint response is XML, then the extension is XML. Same for any other response type.

## AIMIngestion

**AIMIngestion** section is about ingestion configuration.

- **BaseUrl:** represents the base URL for the Ingestion API.
- **AssetId:** represents the ID of the asset for which the upload is done.
- **ProcessingUnit:** represents the processing units with the attached allowed extension type.

## HttpSettings

**HttpSettings** section configures timeouts and retries. Most of them are hardcoded in the template, only the DMS timeout must be configured by the user.

- **DmsTimeout:** a timeout used for DMS HTTP calls (in minutes - minimum 7, maximum 30).

## PipelineRunnerSettings

**PipelineRunnerSettings** is a section that will configure the flow of the program. Most of the configurations are already hardcoded in the template.

- **DownloadFiles:** boolean, a switch for toggling on and off the files transfer. If set to FALSE, only delta files and document links are transferred.

## How to Integrate SharePoint in GenericDocumentConnector

The scope of this topic is to provide the necessary steps for configuring the Generic Document Connector with SharePoint integration.

### Introduction

SharePoint is a browser-based collaboration and document management platform from Microsoft. SharePoint is structured into a collection of websites – site collections. Every site collection contains sites, and, in turn, each site can contain multiple subsites.

Out of the box, documents have a limited set of properties (metadata) such as: name, file type, path, modified date, modified by, etc. This set of properties can be further enhanced by customization, either manually (by creating new columns and content types) or by enabling some features within SharePoint.

## Authentication

Authentication represents the process of obtaining access within the system using either a username and a password (this is called basic authentication) or using more complex steps like OAuth2 which is more suitable in a production environment.

In order to be able to authenticate using OAuth2 we must identify the:

- Client ID
- Client secret
- Tenant ID - this value is received from generating the credentials

The SharePoint API uses the **grant\_type client\_credentials**. The OAuth 2.0 client credentials permit a web service (confidential client) to use its own credentials, instead of impersonating a user, to authenticate when calling another web service.

## Obtaining client credentials

1. Register Add-In in SharePoint (URL: [https://<sitename>.SharePoint.com/\\_layouts/15/appregnew.aspx](https://<sitename>.SharePoint.com/_layouts/15/appregnew.aspx))

The screenshot shows the 'App Information' registration form. It includes fields for Client Id (4b4276d0-74cd-4476-b66f-e7e326e2), Client Secret (nuC+ygmhpadiH93TqJdte++C375Ud), Title (PostAddIn), App Domain (localhost), and Redirect URI (https://localhost). There are 'Generate' buttons next to the Client Id and Client Secret fields. At the top right are 'Create' and 'Cancel' buttons.

App Information  
The app's information, including app id, secret, title, hosting url and redirect url.

Client Id: 4b4276d0-74cd-4476-b66f-e7e326e2

Client Secret: nuC+ygmhpadiH93TqJdte++C375Ud

Title: PostAddIn

App Domain: localhost  
Example: "www.contoso.com"

Redirect URI: https://localhost  
Example: "https://www.contoso.com/default.aspx"

2. Click **Create**. Now we have the **Client ID** and **Client Secret**.
3. Grant permissions to register add-in:

In the **AppId** insert the **ClientId** value and select **Lookup**.

---

**Important:** `DisableCustomAppAuthentication` must be set to false (it's true by default) before assigning permissions to the add-in.

---

URL: [https://<sitename>.Sharepoint.com/\\_layouts/15/appinv.aspx](https://<sitename>.Sharepoint.com/_layouts/15/appinv.aspx)

Create      Cancel

<b>App Id and Title</b>	App Id: <input type="text" value="4b4276d0-74cd-4476-"/> <input type="button" value="Lookup"/>
The app's identity and its title.	Title: <input type="text" value="PostAddIn"/>
App Domain:	localhost Example: "www.contoso.com"
Redirect URL:	<input type="text" value="https://localhost/"/> Example: "https://www.contoso.com/default.aspx"
<b>App's Permission Request XML</b>	Permission Request XML: <pre>&lt;AppPermissionRequests AllowAppOnlyPolicy="true"&gt; &lt;AppPermissionRequest Scope="http://sharepoint/content/sitecollection/web" Right="Read" /&gt; &lt;/AppPermissionRequests&gt;</pre>
The permission required by the app.	

```
<AppPermissionRequests AllowAppOnlyPolicy="true">
<AppPermissionRequest Scope="http://sharepoint/content/sitecollection/web"
Right="Read" />
</AppPermissionRequests>
```

4. Select **Create** and **Trust It**.

## Do you trust Postmant\_APITest?

Let it read items in this site.

Let it share its permissions with other users.

Let it access basic information about the users of this site.



Postmant\_APITest

Trust It      Cancel

5. Obtain the **Tenant ID**.

When you subscribe to Office 365, you'll be assigned a unique identifier as your **Tenant ID**. This **Tenant ID** is a GUID that links all services in your Office 365 environment. To get the **Tenant ID** go to [https://<sitename>.Sharepoint.com/\\_layouts/15/appprincipals.aspx](https://<sitename>.Sharepoint.com/_layouts/15/appprincipals.aspx).

The **Tenant ID** is the part after the @.

Site Settings › Site Collection App Permissions ◉

X App Display Name

App Identifier

6. Get the access token.

We now have all the information necessary to obtain the access token, we can do this by calling <https://accounts.accesscontrol.windows.net/<TenantID>/tokens/OAuth/2>.

**Headers**

Key	Syntax	Value
Content-Type	application/x-www-form-urlencoded	application/x-www-form-urlencoded

**Body**

Key	Syntax	Value
grant_type	client_credentials	client_credentials
client_id	ClientID@TenantID	4b4276d0-74cd-4476-b66f-e7e326e2cb93@10267809-adcb-42b6-b103-c7c8190b3fed
client_secret	ClientSecret	nuC+ygmhpadH93TqJdte+C37SUchZVK4a5xT9XtVBU=00000003-0000-0ff1-ce00-
Resource	resource/SiteDomain@TenantID	00000000000000000000000000000000/spsnips.sharepoint.com@10267809-adcb-42b6-b103-c7c8190b3fed

(Dummy credentials from a tutorial)

7. Use the token retrieved to call the SharePoint REST API.  
8. For the AuthenticationSection we should now use the following:

```
"AuthenticationMethod": "Oauth2",
  "Oauth2AuthenticationDetails": {
    "AuthorizeApi": "https://accounts.accesscontrol.windows.net/<tenantId>/tokens/OAuth/2",
    "BasicLogin": {
      "username": "clientId@tenantId",
      "password": "clientSecret"
    },
    "BodyRequestValues": {
      "grant_type": "client_credentials",
      "client_id": "clientId@teamantId",
      "client_secret": "clientSecret",
      "resource": "00000003-0000-0ff1-ce00-000000000000/aveva-my.sharepoint.com@<tenantId>"
    }
  }
```

For the “resource”, the value is always the constant 00000003-0000-0ff1-ce00-000000000000 in an add-in that is accessing SharePoint, this is the principal ID for accessing SharePoint.

## Getting a Delta from SharePoint

The application has the possibility of downloading the requested metadata in one single call when retrieving the delta. The delta represents any information changes made to the data between two points in time.

To get the delta, we will need the DMSBaseUrl and the RootFolder as follows:

Key in SharePoint_dms_smable.json	Value
DMSBaseUrl	<a href="https://sitename.sharepoint.com/pathToDeltaPage">https://sitename.sharepoint.com/pathToDeltaPage</a>
DeltaEndpoint	
RootFolder	/pathToDeltaPage/Folder

DMSBaseUrl can be something like **https://aveva-my.sharepoint.com/personal/firstname\_lastname\_aveva\_com**

RootFolder can be something like **/personal/firstname\_lastname\_aveva\_com/Documents/SharePointTest**

RootFolder represents the folder from where we will get the delta. The delta will contain every file from the RootFolder and below.

By default, the delta response will be in the format atom-xml. Currently we only accept the media type:

- text/csv
- application/csv
- application/xml
- application/json

We will need to change the delta response from SharePoint to be a json, for this the OptionalHeaderRequestValues value from DmsConfiguration will need to be changed to accept json.

The implementation can be changed in the application to also accept atom-xml media type.

```
"OptionalHeaderRequestValues": {  
  "Accept": "application/json"  
}
```

### Delta and Metadata mapping

In the DmsConfiguration section make the following changes:

```
"DeltaListOfResultsName": "value",  
"MetadataFromDelta": true,  
"MetadataMapping": {  
  "title": "{Name}",  
  "filename": "{Name}",  
  "filesize": "{Length}"  
},  
"DeltaMapping": {  
  "id": "{UniqueId}",  
  "DocumentDownloadLink": "https://sitename.sharepoint.com/pathToDeltaPage/_api/web/  
GetFileByServerRelativeUrl('ServerRelativeUrl')/$value  
"},
```

**DeltaListOfResultsName** will be set to “value” for the application to know what are we looping.

**MetadataFromDelta** will be set to “true”. This informs the program if the delta response will contain the mandatory info, other than the document ID. In order to download a file we need more info about the file. We need the filename that contains the extension, title, and the file size. All of this is received with the delta call.

**MetadataMapping** will extract the filename and the filesize from the delta response.

**DeltaMapping** will extract the document ID and DocumentDownloadLink. From the delta response we will receive the ‘ServerRelativeUrl’ value and this is automatically added to the DocumentDownloadLink.

## Sample SharePoint Configuration File

The following is a sample .json file targeted at configuring an SharePoint DMS connection:

```
{  
  "Authentication": {
```

```
Oauth2AuthenticationDetails": {
"AuthorizeApi": "",
"BasicLogin": {
"username": "",
"password": ""
},
"BodyRequestValues": {
"grant_type": "",
"client_id": "",
"client_secret": "",
"resource": ""
}
}
},
"DmsConfiguration": {
"DMSBaseUrl": "https://aveva-my.sharepoint.com/personal/xxxx",
"DeltaEndpoint": "",
"RootFolder": "/personal/xxxx/Documents/SharePointTest",
"DeltaQueryParameters": {},
"DeltaListOfResultsName": "value",
"MetadataFromDelta": true,
"MetadataMapping": {
"title": "{Name}",
"filename": "{Name}",
"filesize": "{Length}"
},
"DeltaMapping": {
"id": "{UniqueId}",
"DocumentDownloadLink": "https://aveva-my.sharepoint.com/personal/xxxx/_api/web/GetFileByServerRelativeUrl('{ServerRelativeUrl}')/$value"
},
"IsMetadataToStore": true,
"DateTimeFormat": "yyyy-MM-ddTHH:mm:ssZ"
},
"MetadataAIMContext": {
"context": "",
"ClassLibraryRegisterPath": {
"DocumentMetadataRegister": "SharePoint/Documents",
"ScrapedFileRegister": "SharePoint/Discovery",
"CustomScrapedFileRegisterPatterns": [
{
"Rank": 1,
"Pattern": "*is*.txt",
"Path": "SharePoint/Discovery_txt"
},
{
"Rank": 2,
"Pattern": "*as*.doc",
"Path": "SharePoint/Discovery_txt"
}
]
},
"FileNameStampFormat": "yyyyMMdd-HHmmss",
"FileNamePrefix": "SharePoint",
"FileNameSuffixForDelta": {
"Suffix": "docrevs",
"DeltaListName": "value"
}
}
```

```
"Extension": "xml"
}
},
{
"AIMIngestion": {
"BaseUrl": "https://ingestionapi-atest.dev-av.capdev-connect.aveva.com",
"AssetId": "windfarm Holland",
"ProcessingUnit": [
{
"ExtensionType": "DWG|DXF",
"Unit": "AC2D",
"publishOriginal": false,
"publishRendition": true,
"publishReference": true
},
{
"ExtensionType": "DGN",
"Unit": "MS2D",
"publishOriginal": false,
"publishRendition": true,
"publishReference": true
},
{
"ExtensionType": "PDF|DOC|DOCX|XLS|XLSX|JSON|HTML|XML|TXT|SVG|CSV|TSV|PPT|PPTX",
"Unit": "DE",
"publishOriginal": true,
"publishRendition": false,
"publishReference": true
},
{
"ExtensionType": "RVM|ZGL",
"Unit": "Model"
},
{
"ExtensionType":
"RTF|POT|PPS|POTX|PPSX|VSD|VSDX|VDX|ODT|OTT|FODT|ODS|OTS|FODS|ODP|OTP|FODP|ODF|ODG|OTG|FODG
|DWF|XHTML|XHTM|MSG|EML|DCM|DICOM|DCIM|DICM|TIF|TIFF|JPG|JPEG|JP2|JPC|GIF|PNG|PSD|PSB|BMP|D
IB|PCT|PIC|PICT|WMF|EMF|PCX|DCX|RAS|PCD|TGA|TPIC|CAL|CALS|ICO|CUR|NCR|XWD|SGI|WBMP|SCT|WPG|
XBM|PBM|PGM|PPM|IMG|CUT|DOT|DOTX|XLT|XLTX|XLTM|HTM|XLTS",
"Unit": "Original",
"publishOriginal": true,
"publishRendition": false,
"publishReference": false
}
]
},
{
"HttpSettings": {
"DmsTimeout": 30
},
"PipelineRunnerSettings": {
"DownloadFiles": true
}
}
```

## Data Loading Performance

There are many aspects that can influence the performance of the overall import process, from sending data to the cloud, through to data availability in the Dashboard. Each of these steps could take more or less time depending on different criteria. The following is a list of the main processes and what can affect their performance.

- Upload of the data to the cloud (via GDP, Work Tasks or other mechanisms):
  - End user internet connection speed.
  - Amount of data to be uploaded.
- Gateway processing:
  - Amount of data.
  - Complexity of the files.
  - Size of the files.
  - Data sent via previous transactions that are still not completed. In this case, transactions will be placed in a queue and will have to wait for the previous transactions to be completed.
- Data Import:
  - Amount of data.
  - Size of the files.
  - Files from other transactions still being processed. Although the loading process can import documents in parallel, this is not the case, for example, with 1D data (XML files).

For more details about specific parameters that could influence performance, depending on the type of data being processed, please see below.

## 3D Processing

Here we are looking at the expected average performance while loading 3D models, using ZGL or RVM files, of different sizes. The times provided are for the end-to-end process, including all the steps mentioned in the previous section.

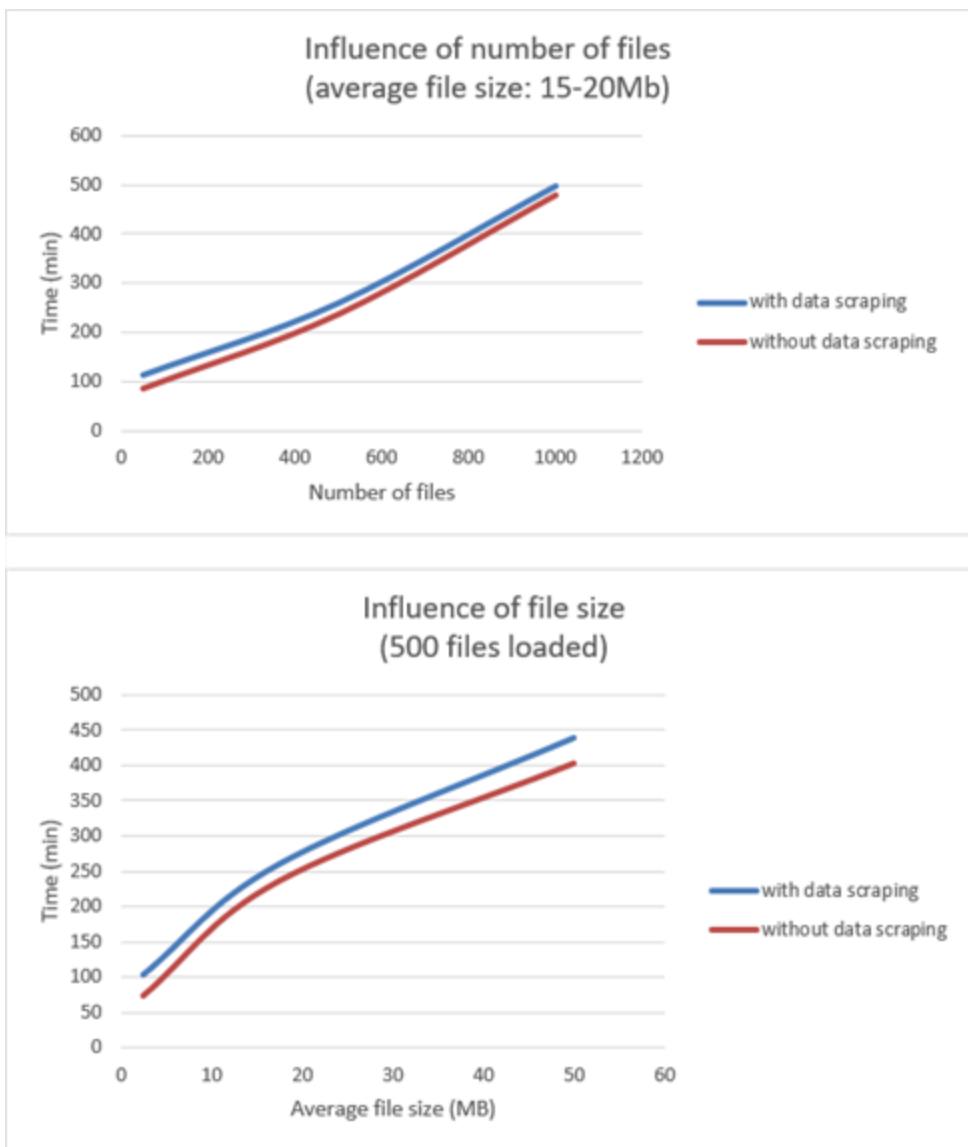


For 3D files, the main factors that can influence performance are:

- Size of the file as illustrated above.
- Complexity of the model: the more geometries you have, the longer the conversion will take. For example, due to the internal complexities of the models, a 9 GB RVM file could take 17 hours to process, whereas a 14 GB RVM file could be quicker and take 13 hours to process. The reason could be that the 9 GB RVM file also contains mechanical 3D data that was imported into the main model. To improve performance, it is recommended to look at simplifying the 3D model (for example, removing detailed mechanical data or using model simplification from AVEVA E3D).

## 2D Processing

Here we are looking at the expected average performance while loading 2D documents using a DWG file. The times provided are for the end-to-end process.

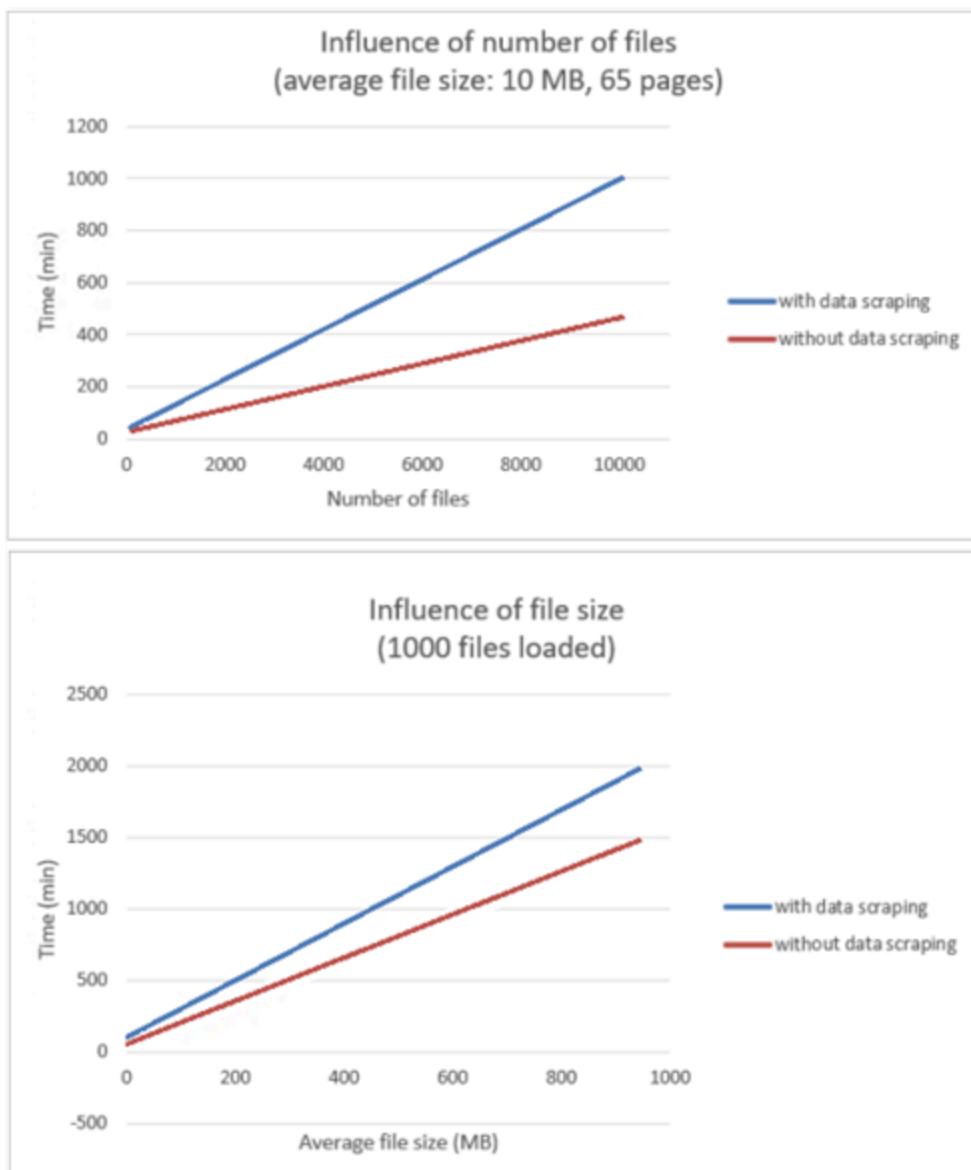


For 2D files, the main factors that can influence performance are:

- Size and number of files as illustrated above.
- Complexity of files.
- Number of patterns defined in the files.
- Number of tags to extract when scraping data (above results performed using the default set of patterns provided by the gateway).

## Document Processing (using GDP)

Here we are looking at the expected average performance while loading documents using PDF/DOC files. The times provided are for the end-to-end process.



These results are a guideline only. The processing times for documents will vary depending on:

- Size and number of files to process as illustrated above.
- Number of patterns defined in the files.
- Number of tags to extract, in case of data scraping (Tests have been performed using the default set of patterns provided by the gateway)

## 1D Processing

### Class Library (clib) File

Loading this file should be considered with care and ideally tested before uploading to a production environment. Any change could have a big impact on the system.

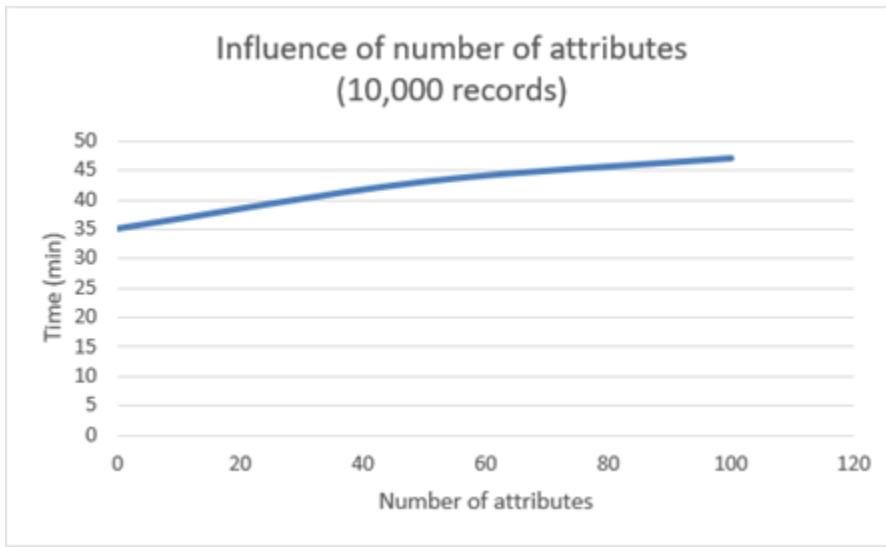
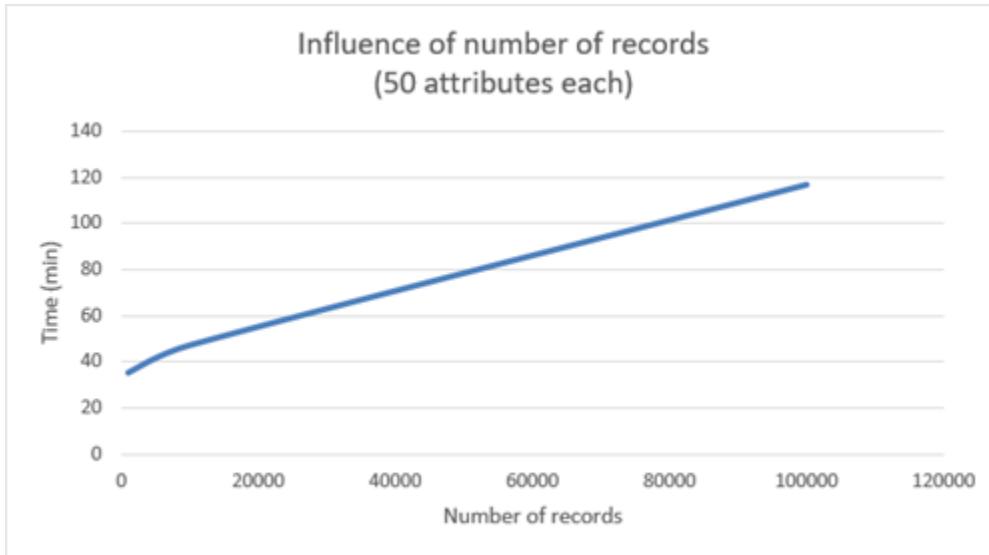
Indeed, even a very small change in the class library file means that all 1D objects, and related information, need to be reprocessed and reloaded. So, the more data you have in the system the more impact changes may have.

Processing a **clib** file on a new environment with no data, may not take a lot of time, but making a change on a **clib** file where data already exists may take much longer. Aspects that need to be considered when loading a **clib** are:

- How many objects/attributes/associations exist in the system.
- How complex the class library file is.

### Register File

Here we are looking at the expected performance while loading a register file. The times provided are the end-to-end process.



The main factors that can influence performance are:

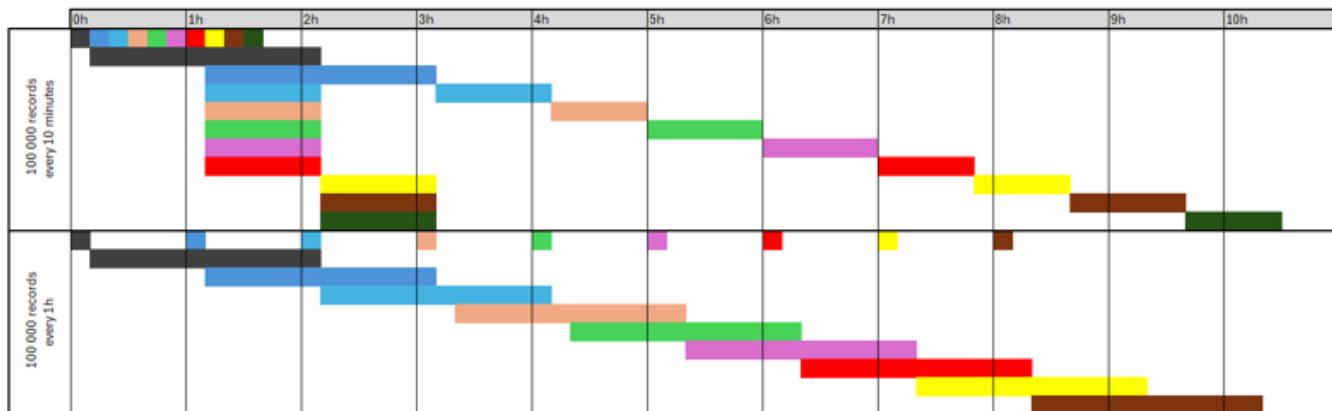
- Number of records
- Number of attributes

To reduce the time taken to process a register also consider the following:

- Optimize your register files by avoiding duplicated records.
- Empty data is still processed by our gateways. To avoid this you can incorporate a filter that rejects empty data. This will significantly speed up the process.
- Publishing data to the reporting database for reporting purposes takes extra time. So you may not want to publish the data into the database every time you upload a new register, but instead to do so on a less frequent basis depending on your usage of the reports. This can be configured via the **clib** file.

### Parallel Loading

To optimize performance you may also want to consider the frequency of uploads. The following graphic illustrates the impact of the frequency of uploads for an identical register containing 100,000 records.



In the first example, we upload the same register every 10 minutes. For the simplicity of the exercise, we are considering 1 hour for register gateway processing and 1 hour for data import. (The upload time is not considered, as this is very small compared to the other 2 steps.)

If the register gateway is already processing previously received data, then no new register files can be processed.

So in the first example, files are being queued until the gateway finishes its current process. So once the first register gets processed, all the registers accumulated during the hour can be sent for processing together.

For the import, the output file generated by the register gateway can only be processed in sequence by the import tool, hence files are also being queued. With the first example we can see that it is taking longer for the system to digest all the data if the frequency of update is too short.

Finally, if you are processing a **clib** file in the middle of this process, there may be a delay to get your data visible in the system, especially if the **clib** has a big impact on the data (see above), as more files will need to get processed in sequence by the loading tool.

## Monitor Data Loads

The **Load Reporting Portal** enables users to view progress of data through the Data Pipeline. The status of each file uploaded can be monitored. It shows the status of active, cancelled and archived loads created by any user.

The report is accessible via a webpage which provides all files in the document register along with the load status as defined in the status definition.

This report enables the customer to easily identify files that have been loaded or need to be loaded.

The **Load Reporting Portal** can perform the following operations:

- Track progress of data through the Data Pipeline.
- Enable users to view the status of each file progressing through the Data Pipeline.
- Enable users to access the Load Report via a webpage.
- Navigate by asset, files or transactions.
- Filter reports by filename, time-frame, state and source.
- Manage email notifications that are sent based on rules that query the state of data loads.

## Accessing Load Reporting

The Load Reporting capability is an addition to the Data Pipeline solution, so the same **CONNECT Account** provides access to the Load Reporting feature.

To use the **Load Reporting Portal** the capability must be enabled, integrated and the appropriate role assigned to those accessing the **Load Reporting Portal**.

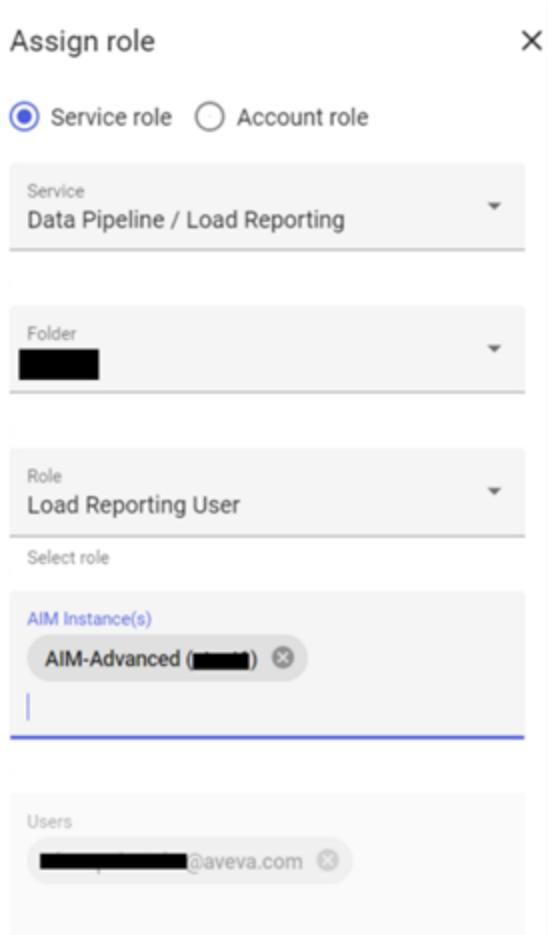
Load Reporting is enabled by default when the Data Pipeline solution is available.

To ensure that each asset is integrated, perform the following steps:

1. Navigate to **CONNECT > Folder Management**.
2. Select the respective folder.
3. **Data Pipeline/Load Reporting** service should be enabled.
4. Open **Manage Integrations**.
5. Integration for the respective asset should be enabled.

To access the Load Reporting Portal, assign the **Load Reporting User** role using the following steps:

1. Log in to **CONNECT**.
2. Navigate to **User Management > Filter the user > Select Assign role**.
3. Assign the **Load Reporting User** role for the respective folder, as shown below.



Load Reporting is a multi-asset capability. Each operation enables access to multiple assets. In CONNECT, the assets are maintained at Connect-Account-Name/Connect-Folder-Name level.

### **View Reports by Asset**

The initial view of the Load Reporting Portal lists all assets in the account that the user has access to. For each asset, the number of files that are in each state of the Data Pipeline are shown:

The screenshot shows the AVEVA Load Reporting Portal for Data Pipeline interface. On the left, there's a sidebar with a folder icon and the word 'Assets'. Below it, there's a 'COLLAPSE' button and a chevron icon (<). The main area is titled 'Assets' and contains a table with the following data:

Asset	Initiated	Uploaded	Processing	Failed	Completed	Last updated
preasset	2	1	4	52	54	06/23/2023, 02:51 PM
Asset 2	6	2	1	11	14	06/23/2023, 03:12 PM
Asset 3	12	8	2	6	19	06/23/2023, 03:29 PM

At the top right of the main area, there are three icons: a circular arrow (refresh), a magnifying glass (filter), and a downward arrow (sort).

To list the files for an asset that are in a particular state, select the appropriate number. The column for **Completed** also includes files in the **Completed With Warnings** state.

To refresh the view, select the icon.

To filter on asset name, select the icon.

To sort by a column, select the header for the column.

To collapse the panel on the left, select the chevron (<).

## View Reports by Files

When an asset has been selected, then the files for the asset are listed.

## AV-Test/mahtest

[Notification Configuration](#)[Back to assets](#)[Files](#)   [Transactions](#)   [Import Progress](#)

File Name	State	Source	Document ID	Last updated	Error ID	Import
Equipment-1.xlsx	<span style="background-color: yellow; border-radius: 50%; padding: 2px 5px;">⚠ Completed With Warnings</span>			02/02/2024, 11:53 AM		<a href="#">View</a> <span style="font-size: small;">⋮</span>
Document-2.xlsx	<span style="background-color: green; border-radius: 50%; padding: 2px 5px;">✓ Completed</span>			02/02/2024, 11:53 AM		<a href="#">View</a>
997187_AfterFix.pdf	<span style="background-color: green; border-radius: 50%; padding: 2px 5px;">✓ Completed</span>		997187_AfterFix.pdf	02/02/2024, 11:53 AM		<a href="#">View</a>
999250_AfterFix.dwg	<span style="background-color: green; border-radius: 50%; padding: 2px 5px;">✓ Completed</span>		999250_AfterFix.dwg	02/02/2024, 11:53 AM		<a href="#">View</a>
DocTagAssociation-1.xlsx	<span style="background-color: red; border-radius: 50%; padding: 2px 5px;">❗ Failed</span>			02/02/2024, 09:42 AM	DataImportError	<a href="#">View</a> <span style="font-size: small;">⋮</span>
Equipment_small.xlsx	<span style="background-color: yellow; border-radius: 50%; padding: 2px 5px;">⚠ Completed With Warnings</span>			02/02/2024, 07:52 AM		<a href="#">View</a> <span style="font-size: small;">⋮</span>
999250_134500.csv	<span style="background-color: green; border-radius: 50%; padding: 2px 5px;">✓ Completed</span>	aim-a orchestration	999250_134500	02/01/2024, 09:41 PM		<a href="#">View</a>
PDFFile-1.csv	<span style="background-color: green; border-radius: 50%; padding: 2px 5px;">✓ Completed</span>	aim-a orchestration	PDFFile-1	02/01/2024, 08:18 PM		<a href="#">View</a>
999250_134500.dwg	<span style="background-color: red; border-radius: 50%; padding: 2px 5px;">❗ Failed</span>		999250_134500	02/01/2024, 12:59 PM	DataImportError	<a href="#">View</a> <span style="font-size: small;">⋮</span>
997187_134444.pdf	<span style="background-color: green; border-radius: 50%; padding: 2px 5px;">✓ Completed</span>		997187_134444.pdf	02/01/2024, 12:59 PM		<a href="#">View</a>

Rows per page

10

1 – 10 of 186621



To return to the list of assets, select the **Back to assets** button.

To refresh the view, select the icon.

To filter the files, select the icon. The following set of filters will appear:

Filter Files by File Name or Document ID	Date	State	Source	<a href="#">Clear all</a>
---	------	-------	--------	---------------------------

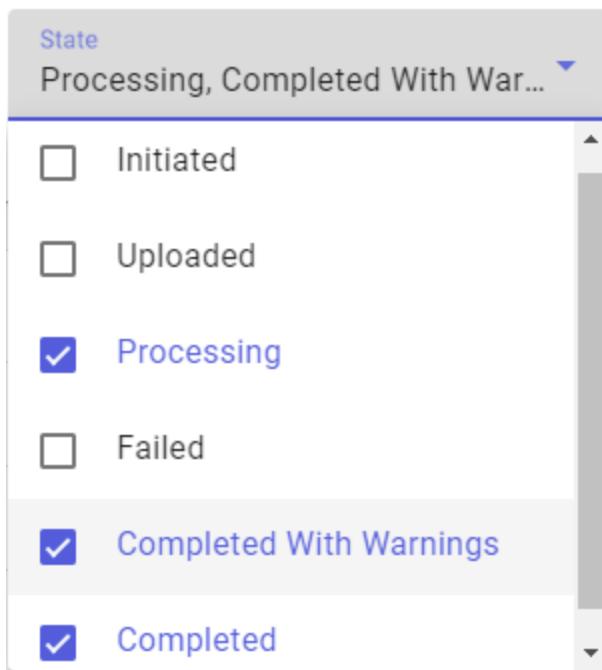
To filter files by filename or document ID, enter part of a filename or part of a document ID – no wildcards are necessary – and select the **Return** key. For example, entering **.csv** returns all files of type **.csv**.

To filter by date, select from one of the following options:

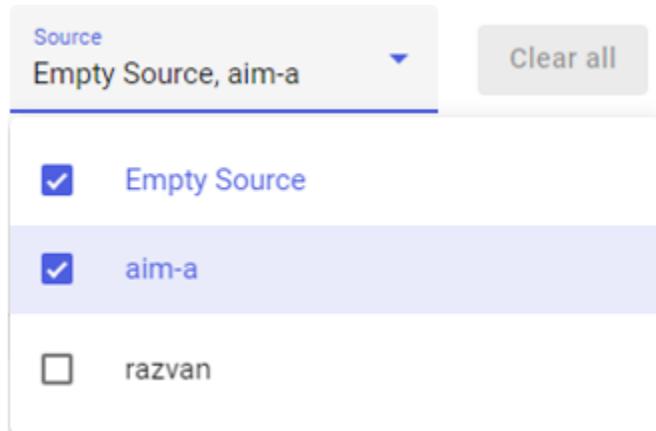
Date

- 2 hours
- 6 hours
- 24 hours
- 2 days
- 1 week
- 1 month
- Custom

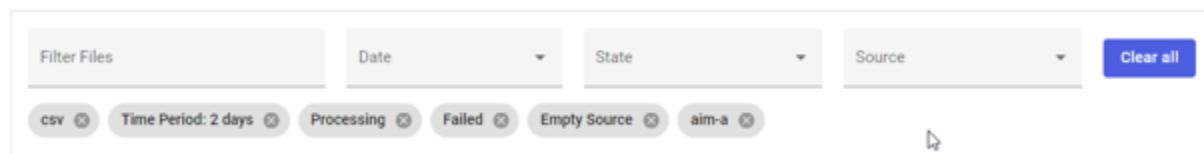
To filter by state, multiple states may be selected from the list. To apply the selection click outside of the list.



To filter by source, select the **Source** field. First, you can filter the list of sources by entering at least **three** characters into the source field. The entry for **Empty Source** will remain in the checkbox list. Then multiple sources may be selected from the list. To apply the selection click outside of the list.



To remove filters, select the for the filter, or select **Clear all**.



Some columns allow the view to be sorted by data in that column. To sort by a column, select the header of the column.

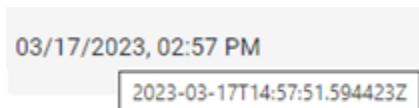
The full path of a file can be checked by hovering over the filename. For example:



More information on the state can be viewed by hovering over the state. For example:

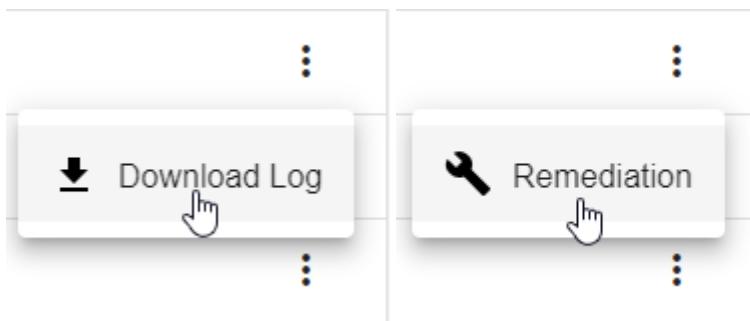


The timestamps are in the UTC time zone. So the same value is seen in all local time zones. The full UTC time can be seen by hovering the mouse over the timestamp, for example:



To view the import files for a file entry, select the  [View](#) icon. For more information, see [View Import Progress](#).

Some states will have a 3 vertical dots icon. For states such as, **Completed With Warnings**, this will provide Log information that can be downloaded. For states such as, **Failed**, this will provide Remediation information. For more information, see [File Progress](#).



## File Progress

Selecting a file from the list of files will provide more details on the file, for example:

## AV-Test/mahtest

[Back to files](#)

File path: loadtemplate/equipment/Equipment-1.xlsx

## File Processing History

Transaction ID	State	Timestamp	Error ID
17679b2b-a00d-4916-876a-81db637dc8eb	<span>Latest</span> <span>⚠ Completed With Warnings</span>	02/02/2024 11:49 AM	
ed163eae-243c-4fe4-9c5d-760a73642650	<span>⚠ Completed With Warnings</span>	02/01/2024 08:12 PM	
d5e87e78-438f-4bca-bf2e-310be5bd6d22	<span>Scheduled</span>	02/01/2024 05:43 AM	
fd0697d1-7472-4cb8-a99c-d124f2f23110	<span>⚠ Completed With Warnings</span>	01/31/2024 11:43 PM	
3ed692e4-e17f-492a-9ab8-5f12c79188af	<span>⚠ Completed With Warnings</span>	01/22/2024 12:56 PM	
b4a78313-3c10-4c98-b86f-6814738e1af7	<span>Completed</span>	01/18/2024 11:36 AM	
f8891123-e5cb-4c8b-a7de-fcb030d08393	<span>Failed</span>	01/17/2024 01:26 PM	DataImportError
4198eedf-8b58-4326-a47d-2e14d3a87438	<span>Uploaded</span>	01/17/2024 12:46 PM	
34a22bdd-681b-4e79-800c-0cff2269bf2	<span>Failed</span>	01/12/2024 09:14 AM	DataImportError
be0e717f-1f9a-4b32-b132-e6ef5b38e602	<span>Uploaded</span>	01/05/2024 11:18 AM	

Rows per page

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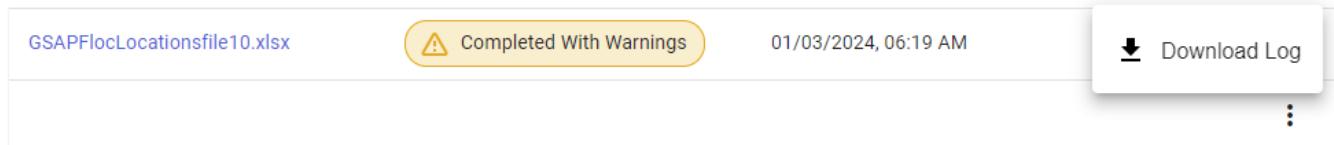
Files may go through the following steps and each step may have the following states (depending on the outcome):

Step	States				
Ingestion	Initiated	Uploaded			
Input Validation	Scheduled				
Register Data Processing	Scheduled	Processing	Completed/ Completed with Warnings	Failed	
File Processing	Scheduled	Processing	Completed/ Completed with Warnings	Failed	
Publish to Import	Completed/ Completed with Warnings				

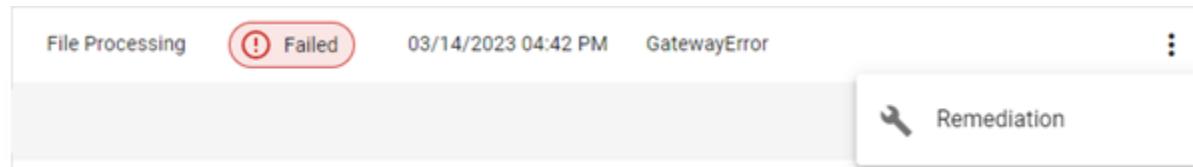
The definition of each state is:

State	Details
Initiated	The file upload process has been initiated.
Uploaded	The file has been uploaded to the S3 bucket.
Scheduled	The type of the file has been identified and the respective orchestrator has been scheduled to process the file.
Processing	The file has been picked up by the orchestrator from the S3 bucket and processing of the file has started.
Completed	The orchestration process has completed and is scheduled for import into the AIM-A environment.
Completed with Warnings	The orchestration process has completed and is scheduled for import into the AIM-A environment. However, there were warnings generated.
Failed	The file has failed to pass through one of the stages in the orchestration process.

For files which are in a **Completed With Warnings** state, the user can download the log file by selecting the three dots menu on the end of the row, then select **Download Log**. This will give more information for each of the separate reasons that have generated warnings.



For files which are in a **Failed** state, the user can view the remediation by selecting the three dots menu on the end of the row, then select **Remediation**.



Then, on the **Error Details** page, select the 3 dots on the end of the **Recommended Validations** line and select **View details** to give the details of the error for the file loaded. For example:

0-Sample2DModelX6

Back to files

Error Details

Error ID: GatewayError

Error message: ("Message": "Gateway processing failed. Exitcode = 17", "InternalReferenceId": "06e18f69c52446f0828b3c09fdc11d1c", "AdditionalInfo": "Target=AC2D, Logs=Logs are not generated for this execution")

Remediation	Date updated ↑
GatewayError-1	12/28/2022 01:03 PM
Recommended Validations	06/26/2023 07:35 PM

For the following Error IDs please check validation steps

- InvalidInput – Check Class Library, input file and the ingestion API inputs.
- GatewayError – File was accepted but failed to complete processing.
- RegdGatewayError – File data is captured but failed to publish.
- Unknown – File contained no identifiable tag information, but processed correctly. If this is thought to be incorrect check the files against known patterns. No data is captured from the given register or any other error occurred.

For additional assistance please create a support request providing the following details

1. Error ID
2. Error Message
3. Transaction ID
4. File Name

Close

This shows recommended validation for the issue and also an **Error Message** value that can be passed to AVEVA if further support is needed.

To view the **Gateway Log** for the failed file, select the **Download Log** link in the top-right of the page.

If the log is not present (or the file failed to load prior to the **Download Log** functionality becoming available), then the **Download Log** link will be disabled.

For any errors with an Error ID of **UnsupportedFileType**, see [Limitations](#) for the lists of supported file types.

You may select the **Transaction ID** to see details of the transaction.

## View Import Progress

When files have been processed by the Gateways they are then imported into the AIM-A database. The progress of importing these files may be viewed for one specific file or for all files in an Import ID. To view for a specific file go to the Files tab of an asset.

## AV-Test/mahtest

[Notification Configuration](#)[Back to assets](#)[Files](#)   [Transactions](#)   [Import Progress](#)

File Name	State	Source	Document ID	Last updated	Error ID	Import
Equipment-1.xlsx	<span>⚠ Completed With Warnings</span>			02/02/2024, 11:53 AM		<span>View</span> <span>⋮</span>
Document-2.xlsx	<span>✓ Completed</span>			02/02/2024, 11:53 AM		<span>View</span> <span>⋮</span>
997187_AfterFix.pdf	<span>✓ Completed</span>		997187_AfterFix.pdf	02/02/2024, 11:53 AM		<span>View</span> <span>⋮</span>
999250_AfterFix.dwg	<span>✓ Completed</span>		999250_AfterFix.dwg	02/02/2024, 11:53 AM		<span>View</span> <span>⋮</span>
DocTagAssociation-1.xlsx	<span>❗ Failed</span>			02/02/2024, 09:42 AM	DataImportError	<span>View</span> <span>⋮</span>
Equipment_small.xlsx	<span>⚠ Completed With Warnings</span>			02/02/2024, 07:52 AM		<span>View</span> <span>⋮</span>
999250_134500.csv	<span>✓ Completed</span>	aim-a orchestration	999250_134500	02/01/2024, 09:41 PM		<span>View</span> <span>⋮</span>
PDFFile-1.csv	<span>✓ Completed</span>	aim-a orchestration	PDFFile-1	02/01/2024, 08:18 PM		<span>View</span> <span>⋮</span>
999250_134500.dwg	<span>❗ Failed</span>		999250_134500	02/01/2024, 12:59 PM	DataImportError	<span>View</span> <span>⋮</span>
997187_134444.pdf	<span>✓ Completed</span>		997187_134444.pdf	02/01/2024, 12:59 PM		<span>View</span> <span>⋮</span>

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Selecting the View icon in the **Import** column will display the **Import Files** view for the file. For example:

## Import Files

[Back to Import Progress](#)

Import ID: 01-02-2024\_11-33-30\_071\_c632f662-e0ec-473d-8c2e-5d50563b0ad1

[Source Files](#)   [Imported Files](#)

File Name	State	Source	Document ID	Last updated ↑	Error ID
PDFFile-1.csv	<span>✓ Completed</span>	aim-a orchestration	PDFFile-1	02/01/2024, 11:15 AM	
Equipment-1.xlsx	<span>⚠ Completed With Warnings</span>			02/01/2024, 11:08 AM	

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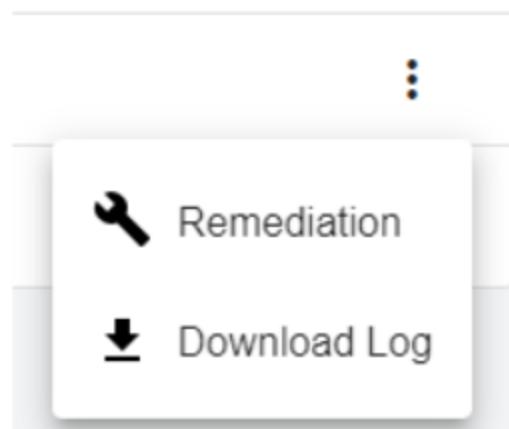


To refresh the view, select the refresh icon.

To filter the files, select the filter icon. For more details on using filters see [View Reports by Files](#).

Select the file name to see its File Processing History, for more information, see [File Progress](#).

Some states will have a 3 vertical dots icon. Selecting the icon will show links for Remediation information and/or will provide log information that can be downloaded. For more information, see [File Progress](#).



The **Source Files** tab shows the original files that were passed to the Gateways for processing. The **Imported Files** tab shows the files after Gateway processing that were passed to the Import process. For example:

## Import Files

Import ID: 01-02-2024\_11-33-30\_071\_c632f662-e0ec-473d-8c2e-5d50563b0ad1

File Name	File Path	State	Last updated ↑	Error ID
000000023_null.xml	003 - Docs/000000023_null.xml	Completed	02/01/2024, 08:18 PM	
000000022_null.xml	003 - Docs/000000022_null.xml	Completed	02/01/2024, 07:58 PM	
000000021_null.xml	003 - Docs/000000021_null.xml	Completed	02/01/2024, 07:39 PM	
000000020_null.xml	003 - Docs/000000020_null.xml	Completed	02/01/2024, 07:20 PM	
000000000_null.xml	002 - Tags/Operational/000000000_null.xml	Completed	02/01/2024, 07:00 PM	

Back to Import Progress

For an asset, selecting the Import Progress tab lists all of the available **Import IDs** for that asset.

## AV-Test/mahtest

[Notification Configuration](#)[Back to assets](#)[Files](#)[Transactions](#)[Import Progress](#)

Import ID	State	Last updated ↑
02-02-2024_09-47-30_245_81e7c10f-37f9-4381-8606-a21b183ef625	Completed	02/02/2024, 11:53 AM
02-02-2024_09-39-57_758_5b32f145-3dfa-4d1e-ab9b-cc18c6ca779c	Completed	02/02/2024, 11:53 AM
02-02-2024_09-39-59_029_96b344e0-6ad7-44cf-b4b8-54faa81ec035	Completed	02/02/2024, 11:53 AM
02-02-2024_09-33-20_494_bf4b3bf6-4f4a-44f3-b8bc-45fa683fe72c	Failed	02/02/2024, 09:42 AM
02-02-2024_07-43-22_086_062c126d-84ca-4508-99b1-d68fb46e7116	Completed	02/02/2024, 07:52 AM
02-02-2024_07-42-49_123_0d3042dd-9033-441f-ba44-eb9c1d3632f7	Completed	02/02/2024, 07:46 AM
02-02-2024_07-42-06_735_08e12006-120a-4d08-ad87-6521400f32d7	Completed	02/02/2024, 07:46 AM
02-02-2024_06-30-07_160_c75a49f7-aaf7-478d-a476-23d279f5781e	Completed	02/02/2024, 06:35 AM
02-02-2024_06-30-24_378_0521a360-4415-490a-bb83-97fcde567982	Completed	02/02/2024, 06:35 AM
01-02-2024_12-13-32_037_cad9e1b7-199f-41db-afdf-41074cebf0f6	Completed	02/01/2024, 09:41 PM

Rows per page

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To return to the list of assets, select the **Back to assets** button.

To refresh the view, select the icon.

To filter the files, select the icon.

To go to the **Import Files** page for an **Import ID**, select the appropriate entry in the **Import ID** column.

## View Reports by Transactions

To view the transactions for an asset, select the **Transactions** tab.

## AV-Test/preasset

[Notification Configuration](#)[Back to assets](#)

Files	Transactions	Import Progress							
Transaction ID ↑	State	Source	Initiated	Uploaded	Processing	Failed	Completed	Last updated	
fd3b9a8f-362e-4875-a6de-d7f5a3a2ae34	Completed		0	0	0	0	1	11/02/2023, 03:34 PM	
fb93ba50-7e90-4432-87b9-32d74b6ed90d	In Progress		0	1	0	0	0	11/24/2023, 07:13 AM	
f8c99448-7b3a-4aa8-8b73-c1ef967717fd	Completed		0	0	0	0	1	11/17/2023, 04:51 PM	
f82a5c84-e775-4520-add2-be1c56347f5a	Completed		0	0	0	0	1	11/14/2023, 06:08 AM	
f724f50a-36d8-4702-9bb8-0a7661117f0f	In Progress		1	0	0	0	0	11/06/2023, 09:43 AM	
f6480064-dde4-4a41-af93-55c12f068b44	Completed		0	0	0	0	1	11/07/2023, 04:29 AM	
ed84387b-9aff-4ad2-947d-cb9146926593	Failed		0	0	0	1	0	11/21/2023, 06:32 AM	
ec58de2b-ee95-4092-95b7-00dd85d10660	Completed		0	0	1	0	0	11/17/2023, 03:28 PM	
eb7b56a8-ad4d-4a01-9eaf-3e06d19ddfd3	Completed		0	0	0	0	1	11/17/2023, 12:09 PM	
dc59ece8-b8a8-42ea-8ef0-e09994ca43c6	Completed		0	0	0	0	1	11/03/2023, 06:49 AM	

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To return to the list of assets, select the **Back to assets** button.

To refresh the view, select the  icon.

To filter the files, select the  icon. For more details on using filters see [View Reports by Files](#).

The column for **Completed** also includes files in the **Completed With Warnings** state.

The definition of each transaction state is:

Transaction State	Details
In Progress	Some files are still processing.
Partially Completed	All files have finished processing and there were some failures.
Completed	All files have finished processing and there were no failures.
Failed	All files have failed to process.

Each file uploaded is tagged with a transaction. To view the files for a transaction, select the **Transaction ID**. For example:

## AV-Test/mahtest

[Back to transactions](#)

Transaction ID: fd0697d1-7472-4cb8-a99c-d124f2f23110



File Name	State	Source	Document ID	Last updated	Error ID	Import
PDFFile-1.csv	<span>Completed</span>	aim-a orchestration	PDFFile-1	02/01/2024, 06:54 PM		<a href="#">View</a>
Equipment-1.xlsx	<span>Completed With Warnings</span>			01/31/2024, 11:48 PM		<a href="#">View</a> <span>⋮</span>
DWGFile-1.dwg	<span>Failed</span>		DWGFile-1	01/31/2024, 08:36 AM	DataImportError	<a href="#">View</a> <span>⋮</span>
DGNFile-1.dgn	<span>Failed</span>		DGNFile-1	01/31/2024, 08:36 AM	DataImportError	<a href="#">View</a> <span>⋮</span>
PDFFile-1.pdf	<span>Failed</span>		PDFFile-1	01/31/2024, 08:36 AM	DataImportError	<a href="#">View</a> <span>⋮</span>
DWGFile-1.csv	<span>Completed</span>	aim-a orchestration	DWGFile-1	01/31/2024, 08:30 AM		

Rows per page  1 – 6 of 6 < >

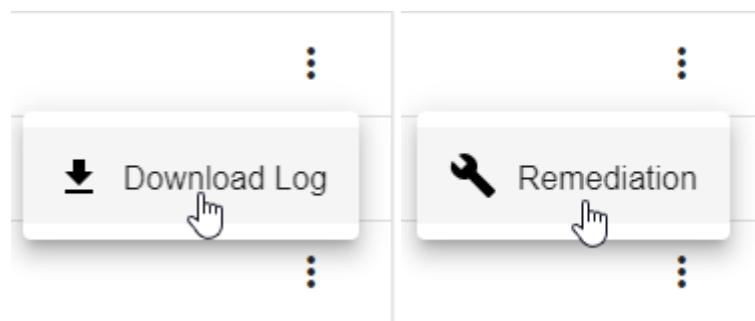
To return to the list of transactions, select the **Back to transactions** button.

To refresh the view, select the

To filter the files, select the

To view the import files for a file entry, select the [View](#) icon. For more information, see [View Import Progress](#).

Some states will have a 3 vertical dots icon. For states such as, **Completed With Warnings**, this will provide log information that can be downloaded. For states such as, **Failed**, this will provide remediation information. For more information, see [File Progress](#).



## Notifications

When monitoring large data loads or several different data loads, rather than frequent reviews of the Load Reporting Portal to understand the progress of the loads, email notifications can be created based on rules that query the state of data loads. Inside the email is a CSV report on files that match the criteria of the notification, this allows for easy review of recent Load Reporting activity. To configure, after selecting an asset, select **Notification Configuration**.

## AV-Test/preasset

[Notification Configuration](#)[Back to assets](#)[Files](#)[Transactions](#)[Import Progress](#)

The **Notifications** page displays a paged summary of the current notifications for the asset.

Name	Status	Frequency	Enabled	Last 5 runs	Updated by	Last Update	Actions
Sample-Daily	<span>Scheduled</span>	<span>Daily</span>	<span>✓</span>	✓ - ✘ - ✘ - ✘ - ✘		06/03/2024 10:16 AM	<span>edit</span> <span>trash</span>
Sample-Weekly	<span>Scheduled</span>	<span>Weekly</span>	<span>✓</span>	✓ - ✓ - ✘ - ✓ - ✘		06/03/2024 10:18 AM	<span>edit</span> <span>trash</span>
Sample-Hourly-8	<span>Scheduled</span>	<span>8 Hours</span>	<span>✓</span>	✓ - ✓ - ✓ - ✓ - ✓ - ✘		06/03/2024 10:19 AM	<span>edit</span> <span>trash</span>
Tony-Mock	<span>Scheduled</span>	<span>6 Hours</span>	<span>-</span>			06/12/2024 12:09 PM	<span>edit</span> <span>trash</span>

Rows per page: 10 | 1 ~ 4 of 4 | < >

For each notification, the key details are shown. Hover the mouse over one of the runs to see the date and time of the run. To edit a notification, select edit. To delete a notification, select trash (it will show as Pending Delete for around 15 minutes before being removed). To create a new notification, select **New Notification**. To return to the main page for the asset, select the **Back to asset** button.

### Create a New Notification

- After selecting **New Notification** the **Notification** page is displayed:

Notification

Name\* Processed-PDF-Files

Frequency\* Daily

Email list\* .com  type email address to select from list

Enabled

Send notification when no data

**Create rule** \* at least one rule is required

- Enter a **Name** to describe the notification. It should be unique, contain 3 to 35 characters and only contain letters, numbers, hyphens and underscores.
- Select a **Frequency** based on:
  - Monthly - the process is triggered on the first day of the month at 12AM UTC.
  - Weekly - the process is triggered on the first day of the week (Monday) at 12AM UTC.

- Daily - the process is triggered everyday at 12AM UTC.
  - Hourly - the process is triggered every 4, 6, 8 or 12 hours starting at 12AM UTC.
4. Enter an **Email List** detailing those that will receive the email notifications. Only emails of users with access to the current asset are allowed. A scrolled list of all possible emails is provided. Multiple emails may be selected.
  5. The **Enabled** toggle allows for the notification to be enabled or disabled.
  6. The **Send notification when no data toggle**, when selected, means that if no data is generated for the processed notification then an email with no attachment will still be sent to the email list. For example, for a weekly notification, if no files were uploaded in the past week, then the email list will receive an email informing them of that. If this toggle is not selected, then no email will be sent if no data is generated.
  7. Select **Create rule** to start creating rules. At least one rule must be created to save the notification.
  8. When the notification fields have been filled out correctly, select **Save** to save the notification. **Cancel** will discard the changes.

## Create Notification Rules

1. After selecting **Create rule** the **Configure Rule** page is displayed.

The screenshot shows the 'Configure Rule' dialog box. At the top, it says 'Configure Rule'. Below that is a 'Rule name\*' input field. Underneath are three dropdown menus: 'Criteria\*', 'Operator\*', and 'Value'. To the right of the 'Value' dropdown is an 'Add' button with a plus sign icon. Below these fields is a note: '\* at least one filter is required'. At the bottom right are two buttons: 'Cancel' and 'Set rule'.

2. Enter a **Rule name** to describe the rule. It should be unique, contain 3 to 35 characters and only contain letters, numbers, hyphens and underscores.
3. Select a **Criteria** for the filter. Criteria values are:
  - File State - multiple file states may be provided, these can be selected from a list in the value field, for example, Failed, Completed.
  - File Source - text value.
  - File Name - text value.
  - Document ID - plain text value.
4. Select an **Operator** for the filter. Depending on the criteria selected, some of the following Operator values will be available:
  - =
  - <>
  - Contains
  - Starts With

- Ends With
5. Provide a **Value** for the filter.
  6. Select **Add** to add the filter to the rule definition. For each rule, at least one filter must be added.

When the notification is processed, filters are combined using an **AND** operator and rules are combined using an **OR** operator. For example, if a notification has rule1 with filter1 and filter2 and has rule2 with filter3 and filter4, then the logical operation will be: (filter1 AND filter2) OR (filter3 AND filter4).

Configure Rule		
Rule name*	ProcessedDOCXFiles	
Criteria*	Operator*	Value
File Name	Ends With	docx
File State	=	Failed, Completed With Warnin...
		<input type="button" value="Add"/>
		<input type="button" value="Remove"/>
		<input type="button" value="Remove"/>
		<input type="button" value="Set rule"/>

7. To remove a filter, select . When the filter(s) have been added, select **Set rule** to save the rule. **Cancel** will discard the changes.

After saving a rule, the **Notification** page is displayed. The rules are displayed at the bottom of the page, for example:

Create rule				
Notification rules				
ProcessedPDFFiles	File Name Ends With "pdf"	File State = "Failed, Completed With Warnings, Completed"		
ProcessedDOCXFiles	File Name Ends With "docx"	File State = "Failed, Completed With Warnings, Completed"		

To edit a rule, select . To delete a rule, select .

After saving a notification, the **Notifications** page is displayed.

Any new notification will have a status of **Pending Creation** for a few minutes, and then it will change to **Scheduled**.

Any edited notification will have a status of **Pending Update** for a few minutes and then it will change to **Scheduled**.

Any deleted notification will have a status of **Pending Delete** for a few minutes and then it will be removed from the list.

---

**Note:** if statuses are not updated automatically, then refresh the browser by selecting F5.

---

## Integrate CONNECT Services with AIM-A

CONNECT allows account administrators to create and manage service applications. For each service application created, a relevant Auth0, non-interactive application must be created. Administrators must be able to copy the client credentials for this application from the Connect portal.

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**Important:** Service application integration in CONNECT is restricted functionality. Please contact your AVEVA representative for more information.

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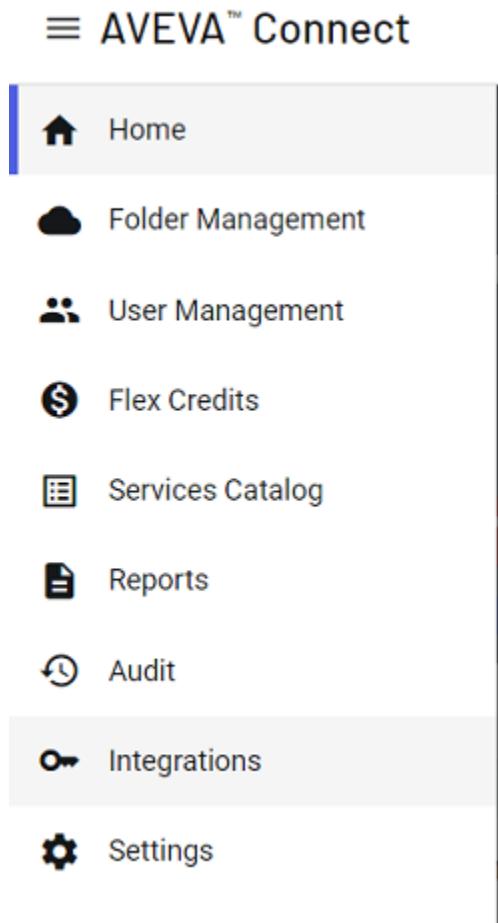
For more information, refer to the *CONNECT Help Service Applications* document that is available upon request through AVEVA representatives.

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### Service application creation and role assignments

Following these steps below, CONNECT account administrators can create a service application:

1. Login to **CONNECT** at <https://connect.aveva.com/>.
2. Select **Integrations**.



3. Selecting Create service application displays a list of service applications.

The screenshot shows the 'Integrations' section of the AVEVA Connect interface. It features three main cards:

- Access tokens**: Create and manage access tokens.
- Applications**: Create and manage applications for authenticating with AVEVA Connect.
- Service Applications**: Create and manage service to service applications for AVEVA Connect services integration.

The screenshot shows the 'Service Applications' page under the 'Integrations' section. It displays a table of existing service applications with columns for Name, Date created, Client ID, Client secret, and Status. A blue button at the top right says '+ Create service application'.

4. Create a new service application by providing the name and description and select **Service Role**. CONNECT will prompt to select Service, Folder and Role. Select **Data Pipeline/Load Reporting** or **Asset Information Management - Advanced** based on which API you want to use this token for. Also select the respective service role.

## ≡ AVEVA™ Connect

The screenshot shows the configuration of a new service application. The fields filled in are:

- Name: ServiceApplication-Demo-AIM-A
- Description: Demo
- Character limit: 4/500 Characters
- Role selection: Service role (selected)
- Service dropdown: Data Pipeline / Load Reporting
- Folder dropdown: AIMA
- Roles section:
  - Assigned Role: Data Pipeline User
  - Available Role: AIM Instance(s)
    - AIM-Advanced (testonprem)

At the bottom right are the **Cancel** and **Create** buttons.

5. Select **Create**. The list of service applications page is displayed.
6. The status of the new service application is **Creating**. The status will be updated to **Active** on successful application creation.

## Service Applications

[Back to Integrations](#)

Name	Date created	Client ID	Client secret	Status	⋮
DataPipelineServiceApplication	5/4/2023	[REDACTED]	*****	Active	⋮
AIMConfiguration	6/1/2023	[REDACTED]	*****	Active	⋮
DataPipelineUserRole	6/1/2023	[REDACTED]	*****	Active	⋮
test1	6/13/2023	[REDACTED]	*****	Active	⋮
test1admin	6/13/2023	[REDACTED]	*****	Active	⋮
DataPipeLineUserRole1	6/14/2023	[REDACTED]	*****	Active	⋮
DataPipeAIMConfig	6/14/2023	[REDACTED]	*****	Active	⋮
pvalto_testdefault	6/19/2023	[REDACTED]	*****	Active	⋮
AIM_MauricioTest	7/5/2023	[REDACTED]	*****	Active	⋮
ServiceApplication-Demo-AIM-A	7/7/2023	[REDACTED]	Getting Client secret ready.	Creating	⋮

7. Copy the client credentials for the service application from the menu as shown below.

Name	Date created	Client ID	Client secret	Status	⋮
DataPipelineServiceApplication	5/4/2023	[REDACTED]	*****	Active	⋮
AIMConfiguration	6/1/2023	[REDACTED]	*****	Active	⋮
DataPipelineUserRole	6/1/2023	[REDACTED]	*****	Active	⋮
test1	6/13/2023	[REDACTED]	*****	Active	⋮
test1admin	6/13/2023	[REDACTED]	*****	Active	⋮
DataPipeLineUserRole1	6/14/2023	[REDACTED]	*****	Active	⋮
DataPipeAIMConfig	6/14/2023	[REDACTED]	*****	Active	⋮
pvalto_testdefault	6/19/2023	[REDACTED]	*****	Active	⋮
AIM_MauricioTest	7/5/2023	[REDACTED]	*****	Active	⋮
ServiceApplication-Demo-AIM-A	7/7/2023	[REDACTED]	*****	Active	⋮

**Service application token generation**

Using the service application client credentials and the Client Credentials Flow mechanism, an access token can be generated. Follow the guidelines available in the Auth0 portal at <https://auth0.com/docs/get-started/authentication-and-authorization-flow/client-credentials-flow> to generate an access token.

**C# Sample Application**

```
var client = new HttpClient(new HttpClientHandler() { UseDefaultCredentials = false });
client.DefaultRequestHeaders.Accept.Clear();
client.DefaultRequestHeaders.Accept.Add(new MediaTypeWithQualityHeaderValue("application/x-www-form-urlencoded"));
var postData = new List<KeyValuePair<string, string>>()
{
    new KeyValuePair<string, string>("grant_type", "client_credentials"),
    new KeyValuePair<string, string>("scope", "connect"),
```

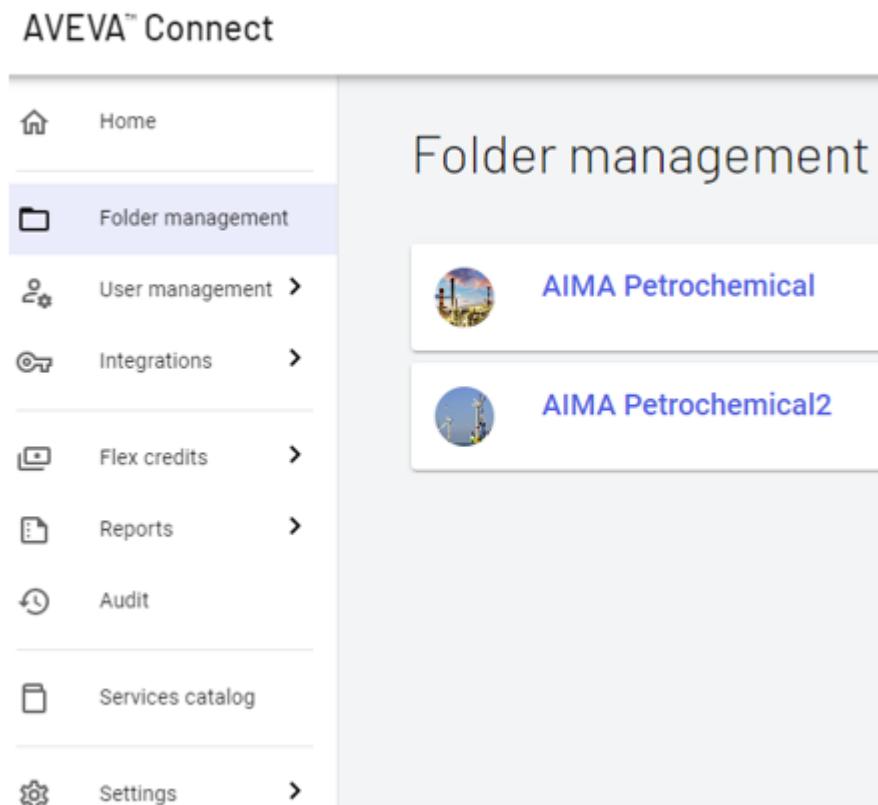
```
new KeyValuePair<string, string>("client_id", clientId),
new KeyValuePair<string, string>("client_secret", clientSecret)
};
var tokenResponse = client.PostAsync("https://signin.connect.aveva.com/oauth/token", new
FormUrlEncodedContent(postData)).Result;
var token = await tokenResponse.Content.ReadAsAsync<AccessTokenModel>();
```

## Notes

- Always cache the token that is generated. The token is valid for 30 minutes.
- The token generation is rate limited, that is, a maximum of 5 tokens can be generated per service application within a 5 minutes window.

## 3DVis Integration

1. Log into your AVEVA CONNECT account.
2. Go to **Folder Management**.
3. Open the folder where your AIM-h service is enabled, to further enable the 3DVis Cloud Streaming Service in the same folder.



4. After selecting the Folder, identify the **3DVis Cloud Streaming Service** and open the sub-menu using the vertical 3 dots.



## 3DVis Cloud Streaming Service

Adds the capability to convert and render 3D models.

**Region:**

EU-West



On



5. Select Manage integrations.

All the 3DVis integration points for the CONNECT account will be listed.

6. Enable the correct integration for the Folder/environment.

### Manage Integrations for 3DVis Cloud Streaming Service



Current folder: AIMATest

1 Select integration ————— 2 Select context ————— 3 Configuration ————— 4 Summary

Integration name:	AIM-A to 3DVis Cloud
Description:	Integrates 3DVis Cloud with Asset Information Management Advanced
Service:	Asset Information Management Advanced
Folder:	APCMIIntegration

Integration name:	AIM-A to 3DVis Cloud
Description:	Integrates 3DVis Cloud with Asset Information Management Advanced
Service:	Asset Information Management Advanced
Folder:	DRScen

Cancel

Next

7. After selecting the Folder, identify the **3DVis Cloud Streaming Service** and open the sub-menu using the vertical 3 dots.
8. To apply roles, open the sub-menu using the vertical 3 dots on **3DVis Cloud Streaming Service** and select **Manage roles**.

3DVis Cloud Streaming Service

Adds the capability to convert and render 3D models.

Region: EU-West

On

⋮

Manage roles

Manage integrations

View audit log

9. After selecting **Manage roles**, the **Roles** screen will open. Use **Assign role** to create any new role assignments as follows:

Type = **Service role**

Service = **3DVis Cloud Streaming Service**

Folder = <The folder associated to the AIM instance>

Role = **Render User**

Models The access tags = **Any**

Groups = <Your CONNECT group you may wish to apply, for example, Power User>

Users = <specific usernames outside of groups>

10. Select **Save**.

## Integrate APCM with AIM-A

This section describes the changes required for enabling AVEVA Point Cloud Manager integration with AIM using the AVEVA Data Pipeline.

### Setup

#### Prerequisites

For this integration to work successfully, the following minimal prerequisites need to be met:

- The AVEVA Data Pipeline is required to process the incoming APCM data.
- The Data Pipeline must be deployed in the same AWS account as the target AIM environment.

---

#### Notes:

---

- The Data Pipeline is multi-tenant, so a single deployment of the Data Pipeline can manage all of the AIM environments in the account.
- For any AWS environment, a new deployment of the Data Pipeline can be requested by raising a CDO ticket.
- Every AIM environment must be added as an asset to the respective Data Pipeline before it can process APCM data.

## CONNECT requirements

- To make sure AIM is listed as an available integration for APCM in the CONNECT user interface, please make sure both of the solutions are available and enabled. They can be at a different folder level in CONNECT.
- When you turn the integration on, you are asked for a Context value. If the project has a **sub-context** in AIM, please specify the same value. If the data is at the **root context level**, then this field can be left blank.

## Integration with the Data Pipeline

Please contact AVEVA for enabling APCM integration with the Data Pipeline.

## Whitelist APCM URL in AIM

To make sure the AIM import enables **InfoLocator** values with the APCM URLs to be processed, we need to whitelist the referenced APCM URLs in the environment file of any **AIM-A** environment.

## Ingestion API Input

APCM integration with the Data Pipeline and the Ingestion API must be enabled by AVEVA. If the integration is not enabled, then any APCM registers will be rejected by the Ingestion API. If the integration is enabled, then the following data can be passed for processing.

### Important

- Any csv file sent to the Ingestion API for APCM integration must be a **UTF-8** encoded file with **CRLF** line endings. For samples of each of the three APCM registers, see the [Sample APCM Registers](#) section. Please ensure conformance to enable smooth processing.
- The ISM Class Library must be loaded into the AIM system before any register can be sent for processing to make sure any required classes and associations are available in the system.

## APCM/Projects

This register is responsible for creating an object for an APCM project in AIM. This creates a document object of type APCM Viewer Project for the project (an alternative class name can be used), creates a FILE object that points to the target APCM project to be opened in AIM and associates the two using an "**is fulfilled by**" association for viewing. The InfoLocator attribute is set to the APCM Sharelink of the project and InfoType is set to "application/x-lfm", which invokes the APCM Viewer embedded in the AIM Dashboard.

The input register csv contains the following columns:

Column Name	Is Identifier?	Brief Description
ProjectId	Yes	The identifier for the document object for the APCM project. This is the ID that is searchable and viewable in AIM. This must be unique for any project in the register.
Sharelink		The URL to the project root in APCM

Register Identifier to send to the Ingestion API: **APCM/Projects**

The register definition for the same in an ISM Class Library is as follows:

```
<APCM geicl:id="APCM" nomenclature="APCM">
<Projects geicl:id="Projects" Category="General" IDColumn="ProjectId"
RegisterType="Primary" MaxRequiredFieldErrors="0" DeleteWhere="{{ @Action starts 'd' }}"
CaptureMethod="partial" ClassDefault="APCM Viewer Project">
<Columns geicl:id="Columns">
<ProjectId geicl:id="ProjectId" Description="{geicl:null}" required="true" />
<Sharelink geicl:id="Sharelink" Description="{geicl:null}" required="true" />
<Ref_Visual ValueExpression="{{ concat('.'.join('File', @ProjectId)) }}"
AssociationType="is fulfilled by" AssociationClass="{geicl:null}" />
</Columns>
</Projects>
<Projects.Files geicl:id="Projects.Files" Category="General"
IDExpression="FILE.{{@ProjectId}}" ClassDefault="FILE" FromRegister="APCM/Projects"
RegisterType="Primary">
<Columns geicl:id="Columns">
<Sharelink geicl:id="Sharelink" Description="{geicl:null}" />
<Calc_InfoType ValueExpression="application/x-lfm" />
<Calc_InfoLocator From="Sharelink" ValueExpression="{{ $[attr.value] }}" />
</Columns>
</Projects.Files>
</APCM>
```

## APCM/Visuals

This register is responsible for creating an object for an APCM Scan in AIM. This creates a document object of type LASER VISUAL for the scan and associates it with the respective Project using an **"is referenced in"** association for viewing. The input register csv contains the following columns:

Column Name	Is Identifier?	Brief Description
VisualId	Yes	The identifier for the APCM scan object in AIM. This must be unique.
ProjectId		The identifier for the document object for the APCM project.

Column Name	Is Identifier?	Brief Description
EntityType		The Entity Type for the visual in APCM database. Required for performance improvement. [Optional]
ViewId		The identifier of the visual in APCM database.
Sharelink		The URL to the APCM scan in APCM.

Register Identifier to send to the Ingestion API: **APCM/Visuals**

The register definition for the same in an ISM Class Library is as follows:

```
<APCM geicl:id="APCM" nomenclature="APCM">
<Visuals geicl:id="Visuals" Category="General" IDCOLUMN="VisualId" RegisterType="Primary"
MaxRequiredFieldErrors="0" DeleteWhere="{{ @Action starts 'd'}}" CaptureMethod="partial"
ClassDefault="LASER VISUAL">
<Columns geicl:id="Columns">
<VisualId geicl:id="VisualId" Description="{geicl:null}" required="true" />
<ProjectId geicl:id="ProjectId" Description="{geicl:null}" required="true" />
<ViewId geicl:id="ViewId" Description="{geicl:null}" required="true" />
<Sharelink geicl:id="Sharelink" Description="{geicl:null}" required="true" />
<Ref_Project ValueExpression="{{ @ProjectId }}" AssociationType="is referenced in"
AssociationClass="{geicl:null}" />
</Columns>
</Visuals>
</APCM>
```

## APCM/TagAssociations

This register is responsible for creating associations between an APCM Scan or Project with any existing AIM tag object. This creates an association of type "**is located in**" between a LASER VISUAL and the existing tag. It also creates the association "**is referenced in**" between the APCM project and the existing tag.

---

**Note:** If the tag is not already available in AIM, the object is classified as UNKNOWN and it is not directly searchable from AIM.

The input register csv contains the following columns:

Column Name	Is Identifier?	Brief Description
Id	Yes	The identifier of the tag in AIM. This must be unique.
VisualId		The identifier for the APCM scan object in AIM. This is used to create the "is located in" association between the tag and the APCM

Column Name	Is Identifier?	Brief Description
		scan
ProjectId		The identifier for the document object for the APCM project. This is used to create the "is referenced in" association between the tag and the APCM project
EntityType		The Entity Type for the visual in APCM database. Required for performance improvement. [Optional]
ViewId		The identifier of the visual in APCM database.
Sharelink		The URL to the tag in APCM.

Register Identifier to send to the Ingestion API: **APCM/TagAssociations**

The register definition for the same in an ISM Class Library is as follows:

```
<APCM geicl:id="APCM" nomenclature="APCM">
<TagAssociations geicl:id="TagAssociations" Category="Tags" IDColumn="Id"
RegisterType="Secondary" MaxRequiredFieldErrors="0" DeleteWhere="{{ @Action starts 'd' }}"
CaptureMethod="Partial">
<Columns geicl:id="Columns">
<Id geicl:id="Id" Description="{geicl:null}" required="true"/>
<VisualId geicl:id="VisualId" Description="{geicl:null}" required="true"/>
<ProjectId geicl:id="ProjectId" Description="{geicl:null}" required="true"/>
<ViewId geicl:id="ViewId" Description="{geicl:null}" required="true"/>
<Sharelink geicl:id="Sharelink" Description="{geicl:null}" required="true"/>
<Ref_Project ValueExpression="{{ @ProjectId }}" AssociationType="is referenced in"
AssociationClass="APCM Viewer Project"/>
<Ref_Visual ValueExpression="{{ @VisualId }}" AssociationType="is located in
AssociationClass="LASER VISUAL"/>
</Columns>
</TagAssociations>
</APCM>
```

## Classification of APCM Data

The data from APCM is classified into two classes:

- **APCM Viewer Project:** This is the class for any APCM project in AIM (an alternative class name can be used).
- **Laser Visual:** This is the class for any APCM scan in AIM.

---

**Note:** You must ensure that the classes are defined as shown in this section. These are also linked to a DataGroup defined in the AIM-A bootstrap which drives the APCM viewer in the UI. Any alteration results in

---

UI errors.

---

For AIM-A, they need to be defined in the ISM Class Library as below. APCM Viewer Project and Laser Visual are defined in Documents.

## APCM Classes

```
<Class id="DC-500001" name="laser visual">
<Extension nmcltr:APCM="{geicl:notderivable}Laser Visual" />
<Attributes>
<Attribute id="APCMProjectId" validationType="Association" validationRule="is referenced in::Document::APCM Viewer Project" />
</Attributes>
</Class>
<Class id="APCM Viewer Project" name="APCM Viewer Project">
<Extension nmcltr:APCM="{geicl:notderivable}APCM Viewer Project" />
<Attributes>
<Attribute id="APCMEntityType" validationType="Association" validationRule="is fulfilled by::General::FILE" />
</Attributes>
</Class>
```

This block also creates permissible associations between:

- Laser Visual and APCM Viewer Project - **is referenced in**
- APCM Viewer Project and FILE - **is fulfilled by**

If any additional permissible association is required for any specific tag class, it must also be added to the ISM Class Library.

Apart from these classes, the following characteristic classes are also required. The visibility of these classes in the AIM-A UI can be decided by the designer of the ISM Class Library by selecting which ones to include in the APCM registers. The name attribute must be provided for each characteristic, as it is required by the Registers Gateway for processing data.

## APCM Characteristic Classes (Attributes)

A sample fragment of APCM sections from ISM Class Library is as follows:

```
<Attribute id="InfoLocator" name="InfoLocator">
<Extension nmcltr:APCM="Calc_InfoLocator" />
</Attribute>
<Attribute id="InfoType" name="InfoType">
<Extension nmcltr:APCM="Calc_InfoType" />
</Attribute>
<Attribute id="APCMProjectId" name="APCMProjectId">
<Extension nmcltr:APCM="ProjectId" />
</Attribute>
<Attribute id="APCMViewId" name="APCMViewId">
<Extension nmcltr:APCM="ViewId" />
</Attribute>
<Attribute id="APCMEntityType" name="APCMEntityType">
<Extension nmcltr:APCM="EntityType" />
</Attribute>
```

```
<Attribute id="Sharelink" name="Sharelink">
<Extension nmcltr:APCM="Sharelink" />
</Attribute>
```

## Sample APCM Registers

The following are samples of the three registers required to support integration with APCM:

### Projects Register

Projects.csv

A	B
1 ProjectId	Sharelink
2 ABC	<a href="https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-aaaaaaaaaaaa">https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-aaaaaaaaaaaa</a>

### Visual Register

Visuals.csv

A	B	C	D	E
1 VisualId	ProjectId	EntityType	ViewId	Sharelink
2 ZF_POSITION_02	ABC	IMAGE_NODE	c64a0eb6-d035-4da4-8b49-aaaaaaaaaaaa	<a href="https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=c64a0eb6-d035-4da4-8b49-aaaaaaaaaaaa&amp;entityType=IMAGE_NODE">https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=c64a0eb6-d035-4da4-8b49-aaaaaaaaaaaa&amp;entityType=IMAGE_NODE</a>
3 ZF_POSITION_01	ABC	IMAGE_NODE	cde2a159-f01d-4326-b2c8-aaaaaaaaaaaa	<a href="https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=cde2a159-f01d-4326-b2c8-aaaaaaaaaaaa&amp;entityType=IMAGE_NODE">https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=cde2a159-f01d-4326-b2c8-aaaaaaaaaaaa&amp;entityType=IMAGE_NODE</a>
4 ZF_POSITION_03	ABC	IMAGE_NODE	7689a9d4-7227-47cc-92f8-aaaaaaaaaaaa	<a href="https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=7689a9d4-7227-47cc-92f8-aaaaaaaaaaaa&amp;entityType=IMAGE_NODE">https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=7689a9d4-7227-47cc-92f8-aaaaaaaaaaaa&amp;entityType=IMAGE_NODE</a>
5 ZF_POSITION_04	ABC	IMAGE_NODE	79663250-ed7d-42a5-b2f8-aaaaaaaaaaaa	<a href="https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=79663250-ed7d-42a5-b2f8-aaaaaaaaaaaa&amp;entityType=IMAGE_NODE">https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=79663250-ed7d-42a5-b2f8-aaaaaaaaaaaa&amp;entityType=IMAGE_NODE</a>

### Tag Associations Register

TagAssociations.csv

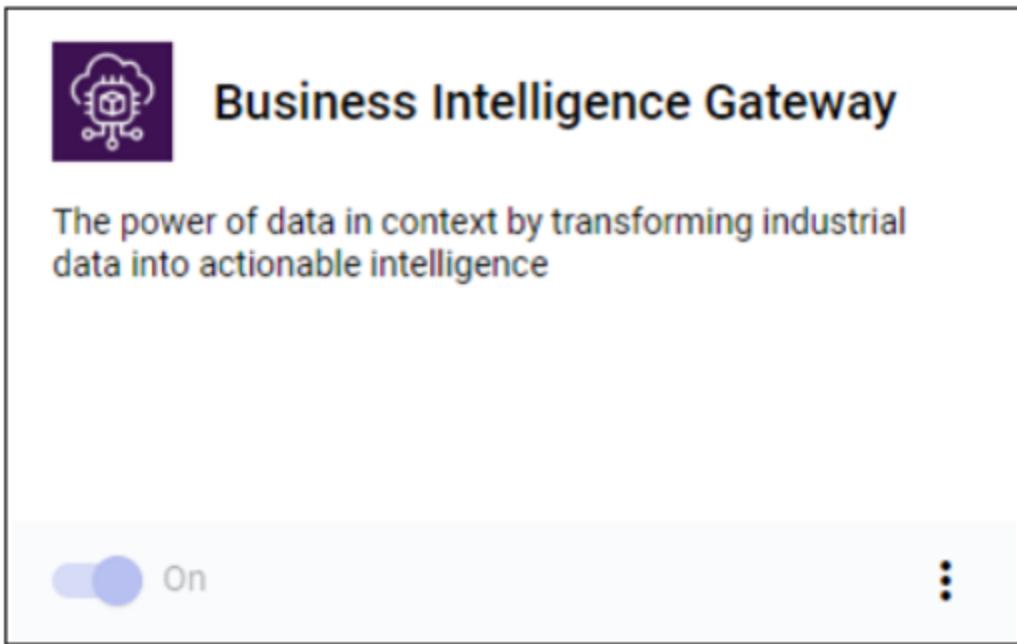
A	B	C	D	E	F
1 Id	ProjectId	VisualId	EntityType	ViewId	Sharelink
2 Testing reparenting	ABC	POINT_ANNOTATION	4521c755-a9ba-425e-b410-aaaaaaaaaaaa	<a href="https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=4521c755-a9ba-425e-b410-aaaaaaaaaaaa&amp;entityType=POINT_ANNOTATION">https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=4521c755-a9ba-425e-b410-aaaaaaaaaaaa&amp;entityType=POINT_ANNOTATION</a>	
3 Point Markup	ABC	POINT_ANNOTATION	1b34c2ad-30e2-4e55-9fc1-aaaaaaaaaaaa	<a href="https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=1b34c2ad-30e2-4e55-9fc1-aaaaaaaaaaaa&amp;entityType=POINT_ANNOTATION">https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=1b34c2ad-30e2-4e55-9fc1-aaaaaaaaaaaa&amp;entityType=POINT_ANNOTATION</a>	
4 undefined	ABC	CUBOID_ANNOTATION	e282f228-1a40-4d07-9fca-aaaaaaaaaaaa	<a href="https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=e282f228-1a40-4d07-9fca-aaaaaaaaaaaa&amp;entityType=CUBOID_ANNOTATION">https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=e282f228-1a40-4d07-9fca-aaaaaaaaaaaa&amp;entityType=CUBOID_ANNOTATION</a>	
5 Point Markup	ABC	POINT_ANNOTATION	e9d06eea-491f-47b1-8cea-aaaaaaaaaaaa	<a href="https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=e9d06eea-491f-47b1-8cea-aaaaaaaaaaaa&amp;entityType=POINT_ANNOTATION">https://viewer.dev-pointcloudmanager.capdev-connect.aveva.com/?project=dbeaf4f0-dc61-4f28-bcc7-ffa3b38c41b&amp;id=e9d06eea-491f-47b1-8cea-aaaaaaaaaaaa&amp;entityType=POINT_ANNOTATION</a>	

## Integrate BI Gateway with AIM-A for Reporting

This section describes the configuration needed to run Power BI reports on the data loaded into AIM Advanced. Data loaded through the AVEVA Data Pipeline is loaded into an AIM database and a Reporting database. The Business Intelligence Gateway cloud service uses the Reporting database to generate Microsoft Power BI reports.

### Creating a Tenant

1. Sign into CONNECT and choose an account.
2. Select the hamburger icon (≡), then select **Folder Management**.
3. Select **Add Folder**, then fill in the required details. A new tenant is created.
4. To enable the tenant service, select the toggle button to switch it **On**.  
Wait for about 10 minutes as the database gets created.



The screenshot shows the AVEVA Business Intelligence Gateway landing page. It features a purple header bar with the AVEVA logo and a search bar. Below the header is a large purple banner with the text "Business Intelligence Gateway". Underneath the banner, there is a sub-headline: "The power of data in context by transforming industrial data into actionable intelligence". At the bottom of the banner is a toggle switch labeled "On" and a vertical ellipsis icon.

## Assigning Groups and roles

1. Once the database is created, select the vertical ellipsis icon (⋮), and select **Manage roles**.
  2. Under the **Groups** tab, select **Assign group**.
  3. Create the required groups. You require at least an Admin group and a Reporting Database group.
  4. For each group, add the following:
    - a. Group name
    - b. Group description
    - c. Users
- 
- Note:** The only special character allowed is an underscore '\_.'
- If you are being added to the Active Directory for AVEVA Intelligence in the cloud, for the first time, accept the invite you receive via email. However, if you are already registered in the Active Directory, you may not receive an email. Follow the instructions:
- a. Visit <https://portal.azure.com/d9bde4ea-8859-4e11-9efa-491b97c4db44> in an incognito mode tab.
  - b. Log in with your credentials.
  - c. Accept the invite.
5. Under the **Roles** tab, select **Assign role**. It is compulsory to add the following roles:
    - a. **Administrator** role – Only users/groups with the Administrator role can view the tenant model builder.
    - b. **Reporting - Analytics User** role – Only users/groups with the Reporting - Analytics User role can view the reporting database information and later configure a database.

---

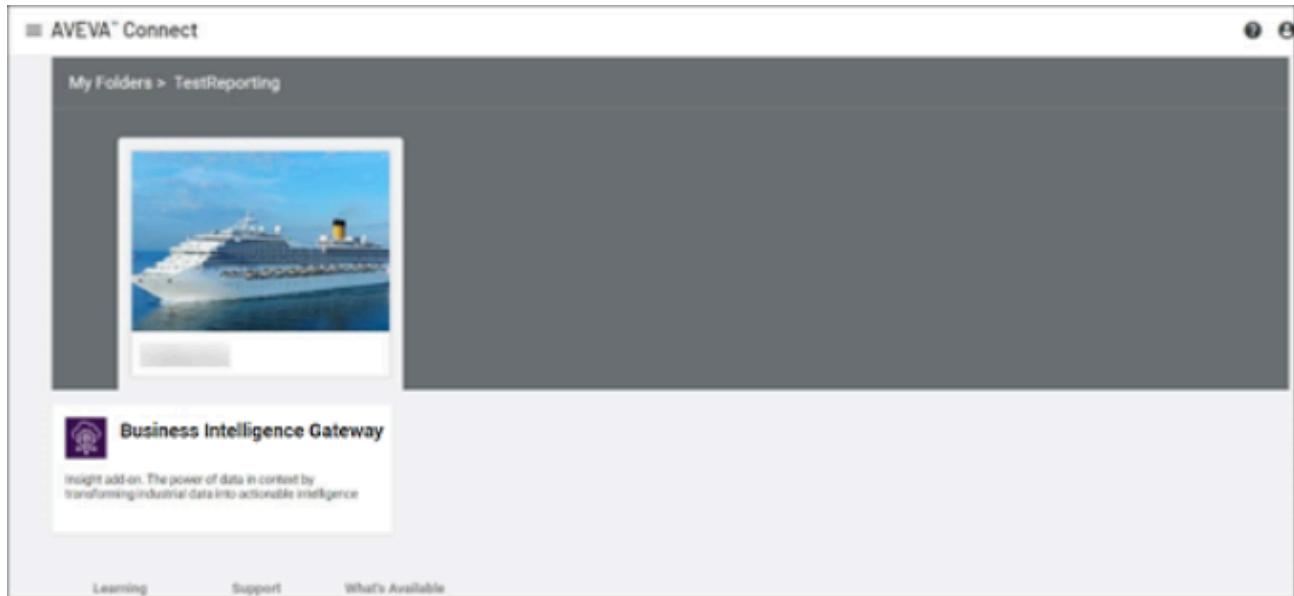
**Important:** 1:1 mapping is only allowed within the same account. A BI Gateway role can be assigned to only one group and one tenant. The tables below demonstrate the 1:1 mapping within two accounts:

Account	Tenant	Role	Group	
Account1	Tenant1	Administrator	Grp1	Allowed
Account1	Tenant1	Administrator	Grp2	Not allowed
Account1	Tenant1	Reporting - Analytics User	Grp1	Not allowed
Account1	Tenant1	Reporting - Analytics User	Grp2	Allowed
Account1	Tenant2	Reporting - Analytics User	Grp2	Not allowed
Account1	Tenant2	Administrator	Grp1	Not allowed
Account1	Tenant2	Administrator	Grp3	Allowed
Account1	Tenant2	Reporting - Analytics User	Grp4	Allowed

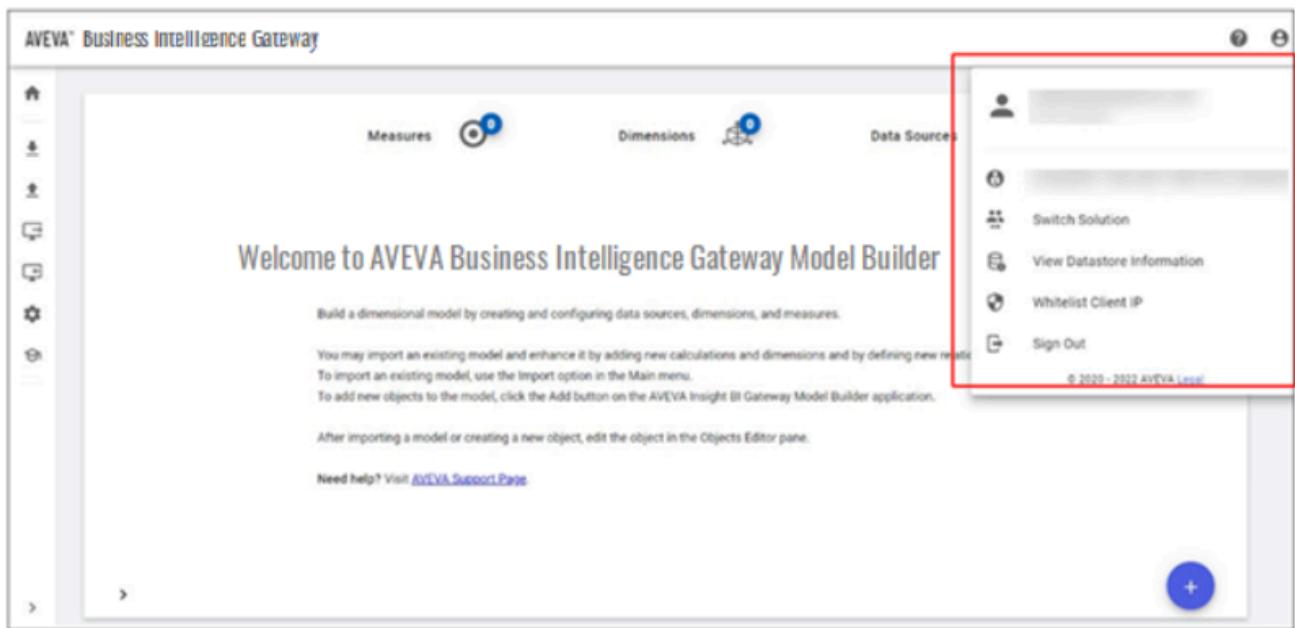
## Configuring the Database

1. Return to the **Home** page (≡) from the task list and go to the tenant.

**Note:** Only the user(s) with the Admin role can access the tenant model builder.



2. For Power BI users to access the reporting database, under the profile icon, select **Whitelist Client IP**.



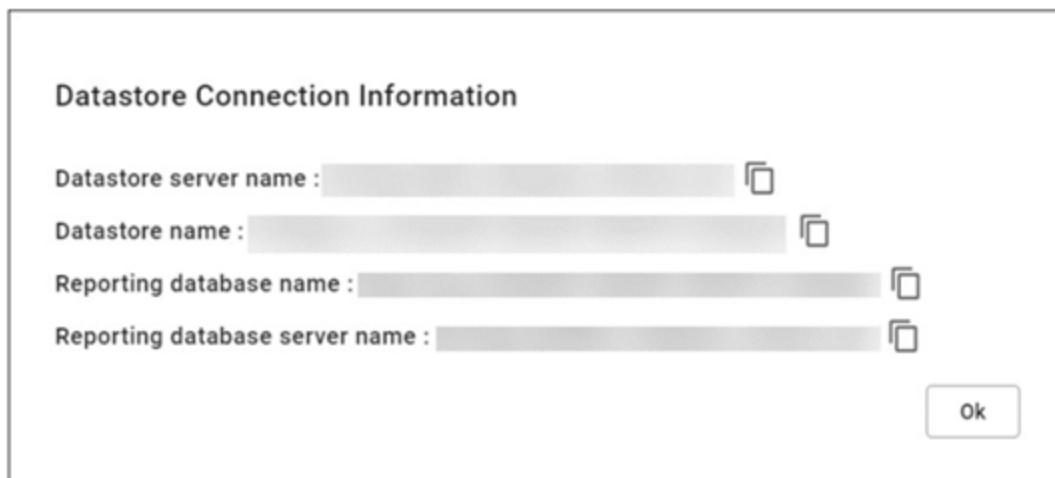
3. Add a new Firewall rule by pressing the + icon.

You can add your own IP address for **Start IP** and **End IP**.

The screenshot shows a "Firewall Rules" dialog box. At the top, it says "Firewall Rules" and has a "+" icon to add new rules. Below is a table with three columns: "Firewall Rule Name", "Start IP", and "End IP". There is one row in the table with the value "IP" in the "Firewall Rule Name" column. At the bottom of the dialog are three buttons: "Cancel", "Save", and a blue "Save & Close" button.

Firewall Rule Name	Start IP	End IP
IP		

4. Under the profile icon, select **View Datastore Information**. You can copy the reporting database name and the reporting database service name from here.



5. Go to the program you use to configure databases. For example: Power BI, SQL Server Management Studio, etc.
6. Fill in the required information to connect to the server.

### Further Reading

For general information on the BI Gateway, refer to the [AVEVA BI Gateway Documentation](#).

For information on how to configure a private endpoint for your data and integrate it with the AVEVA BI Gateway, refer to [Private Endpoint Configuration](#).

## Manage User Access and Permissions

### Roles

The following are the AIM-A roles that are provided by default and managed by CONNECT:

#### CONNECT Roles

Role Name	Description and Use	Permissions
<b>Administrator</b>	<p>AIM-A site Administrator with full access to the AIM-A user interface. You can access the Settings area in the user interface and change the AIM-A UI for all site users.</p> <p><b>Note:</b> This role must be restricted to administrative users only.</p>	<ul style="list-style-type: none"><li>• QueryFormCreation</li><li>• SetCreation</li><li>• Print</li><li>• CreateExport</li><li>• CreateAdvancedFind</li><li>• ManageSettings</li><li>• CreateMarkup</li><li>• EditMarkup</li><li>• Download</li><li>• RunExport</li></ul>

Role Name	Description and Use	Permissions
		<ul style="list-style-type: none"> <li>• ExportMarkup</li> <li>• ManageFacetedSearch</li> </ul>
<b>Default User</b>	<p>A Default User gains a read-only access to the AIM-A user interface.</p> <p>This user can print documents from within AIM-A.</p>	<ul style="list-style-type: none"> <li>• Print</li> </ul>
<b>Power User</b>	<p>A Power User can perform some administrative tasks listed in the permissions column.</p>	<ul style="list-style-type: none"> <li>• QueryFormCreation</li> <li>• SetCreation</li> <li>• Print</li> <li>• CreateAdvancedFind</li> <li>• CreateMarkup</li> <li>• EditMarkup</li> <li>• Download</li> <li>• RunExport</li> <li>• ExportMarkup</li> </ul>
<b>Core Team Admin</b>	<p>A Core Team Admin has limited access to the settings panel, though can perform all other administrative tasks.</p>	<ul style="list-style-type: none"> <li>• QueryFormCreation</li> <li>• VisualReportCreation</li> <li>• SetCreation</li> <li>• Print</li> <li>• CreateExport</li> <li>• CreateAdvancedFind</li> <li>• CreateMarkup</li> <li>• EditMarkup</li> <li>• Download</li> <li>• RunExport</li> <li>• ExportMarkup</li> <li>• ManageFacetedSearch</li> <li>• ManageSiteSettings</li> </ul>
<b>ImportProgress</b>	<p><b>Service role</b> that enables you to view the import progress of any AIM-A load.</p>	Not Applicable
<b>ImportReport</b>	<p><b>Service role</b> that enables you to</p>	Not Applicable

Role Name	Description and Use	Permissions
	view the progress of any AIM-A orchestration in the Import Report site.	
<b>Data Pipeline</b>	<b>Service role</b> that enables you to invoke the Ingestion API in the AVEVA Data Pipeline using an user access token.	Not Applicable
<b>Load Reporting User</b>	To access the Data Pipeline Load Reporting web portal.	Not Applicable
<b>AIM Configuration</b>	Allows users to create tokens for uploading AIM-A configuration changes.	Not Applicable

**Permissions**

Permission	Description
QueryFormCreation	Create and delete Query Forms
SetCreation	Create and save new Sets
Print	Print documents from within AIM-A
CreateExport	Save export definitions
CreateAdvancedFind	Create advanced searches, save searches and manage saved searches
ManageSettings	Access the Settings area of the user interface
CreateMarkup	Create new markup
EditMarkup	Edit all markup
Download	Download files
RunExport	Run exports
ExportMarkup	Export markup for documents
ManageFacetedSearch	Allows configuration of viewable facets for searching
ManageSiteSettings	Allows updating of print settings (Banners and Watermarks)

## Manage Roles

**Note:** To add new users in CONNECT see <https://docs.aveva.com/bundle/aveva-connect/page/885607.html>

To manage (create/update/delete) roles, navigate to the **Settings** dialog and select the **Manage** tab. This feature requires the **Administrator** role.

Only custom roles can be managed. The built-in roles, such as **Administrator** cannot be managed.

Select **Create** to create a new role.

**Note:** A maximum of 100 custom roles can be created (this excludes the built-in bootstrapped roles). When the limit is reached, selecting the **Create** button will show an error message.

The screenshot shows the 'Manage - Roles' section of the AVEVA Settings dialog. On the left, there's a sidebar with 'General' and 'Roles' tabs, where 'Roles' is currently selected. The main panel lists existing roles: 'Query Form Manager' and 'Security Group 1'. Each listed role has a small checkbox and an 'X' icon to its right. At the bottom right of the main panel are 'Save' and 'Cancel' buttons.

### Create a New Role

1. Provide a name for the new role. It must follow these criteria:
  - Minimum of 1 character and maximum of 30 characters.
  - Only alphanumeric characters and spaces are allowed.
  - New role names must not be the same as those used for built-in roles. See [Roles](#) for a list of built-in role names.
2. Select a role from the **Based On** dropdown.

All roles are available except for **Administrator**. So no new role can be created based on Administrator.

The **Rights** will default to be the same as those for the **Based On** role. **Rights** can then be selected and unselected as desired according to how the new role will be used. At least one right must be selected.

Role Configuration

Details	
Name	<input type="text"/>
Based On	Default User
Rights	
<input type="checkbox"/> Create - Delete Markup	i
<input type="checkbox"/> Download	i
<input type="checkbox"/> Edit - Delete Markup	i
<input type="checkbox"/> Export	i
<input type="checkbox"/> Export Markup	i
<input type="checkbox"/> Manage Advance Search	i
<input type="checkbox"/> Manage Export and Export Definition	i
<input type="checkbox"/> Manage Query Form	i
<input type="checkbox"/> Manage Set	i
<input type="checkbox"/> Manage Visual report	i
<input checked="" type="checkbox"/> Print	i

Save Cancel

Only rights that relate to using the Dashboard will be shown. They are:

Right Name	Description
Create – Delete Markup	To create/delete markups
Download	To download files
Edit – Delete Markup	To edit/delete markups

Right Name	Description
Export	To run exports for files and data
Export Markup	To export markup on documents
Manage Advance Search	To create/update/delete advance searches
Manage Export and Export Definition	To create/update/delete exports and export definitions
Manage Query Form	To create/update/delete query form definitions
Manage Set	To create/update/delete sets
Manage Visual report	To create/update/delete visual reports
Print	To print files

After selecting **Save**, the new role will be shown in the list of roles.

## Edit a Role

1. To edit a role select the  icon next to the role.

The details for the role will be shown and the **Name** will be disabled. The **Based On** dropdown will not be shown. **Rights** can be selected or unselected.

2. Ensure at least one right is selected. For example:

Role Configuration

Details	
Name	Security Group 1
Rights	
<input type="checkbox"/> Create - Delete Markup	<a href="#">i</a>
<input type="checkbox"/> Download	<a href="#">i</a>
<input checked="" type="checkbox"/> Edit - Delete Markup	<a href="#">i</a>
<input checked="" type="checkbox"/> Export	<a href="#">i</a>
<input type="checkbox"/> Export Markup	<a href="#">i</a>
<input type="checkbox"/> Manage Advance Search	<a href="#">i</a>
<input type="checkbox"/> Manage Export and Export Definition	<a href="#">i</a>
<input type="checkbox"/> Manage Query Form	<a href="#">i</a>
<input type="checkbox"/> Manage Set	<a href="#">i</a>
<input type="checkbox"/> Manage Visual report	<a href="#">i</a>
<input checked="" type="checkbox"/> Print	<a href="#">i</a>

[Save](#) [Cancel](#)

3. Click **Save**.

## Delete a Role

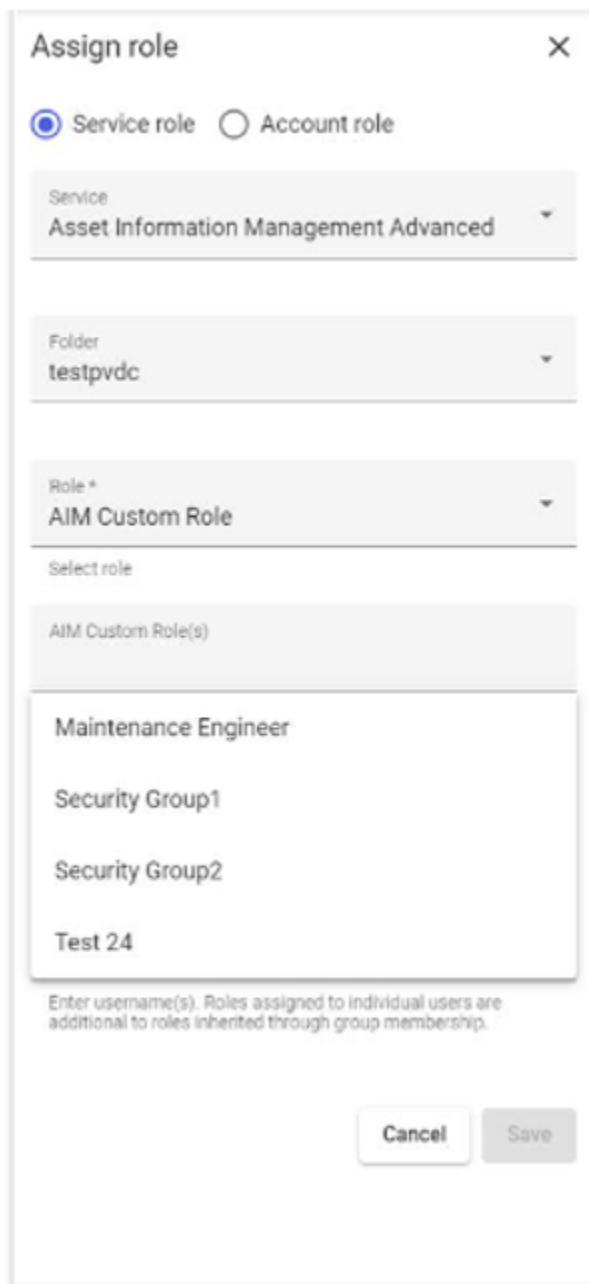
1. To delete a role select the  icon next to the role.
2. Select **Yes** on the **Confirmation Dialog** box to confirm the deletion.

**Note:** A role can only be deleted when it has been unassigned in **CONNECT** and all users who had that role have logged in.

## Assign Role in CONNECT

After creating a custom role, it is now available to be assigned in Connect.

1. In the **Assign role** dialog, select the custom role in the **AIM Custom Role(s)** section.
2. Enter the other information as needed.



3. Click **Save**.

## Context Access Control

**Context Access Control** allows the Dashboard to be configured so that only items with certain contexts can be viewed by a user. The access seen by a user is dependent on the role the user is in.

**Context Access Control** allows an administrator to manage and restrict the contextual data a user has access to while using the AIM Dashboard. This is achieved by configuring the list of contexts a user can see (allowed contexts) and cannot see (denied contexts) for a given AIM Dashboard role.

The **Administrator** role is required to manage **Context Access Control**.

Navigate to the following page in the **Settings** dialog and select the role to be configured.

**NOTE:** Only custom roles will appear here, so only custom roles can be configured in this way.

The screenshot shows the 'Settings' dialog with the 'Role' tab selected. The 'Role' dropdown is set to 'Security User1'. The left sidebar lists various settings categories: Browse, General, Data Visibility (which is selected), Default Views, Export, Global Navigation, Messages, Query Forms, Search, Tooltips, and Labels. The main panel contains sections for 'Data Visibility' and 'Context Access Control'. Under 'Data Visibility', there are four checkboxes: 'Make all types visible in Browse', 'Show Hidden types', 'Show Hidden attributes', and 'Show items of Unknown type'. Under 'Context Access Control', there are three sections: 'Allow', 'Deny', and 'Allowed root items in Browse', each with a text input field and an information icon (i).

If no settings are specified everyone has access to all data (as far as **Context Access Control** settings are concerned).

To configure the Context Access Control, define the following three fields:

- **Allow**

The list of contexts that are allowed to be accessed by a given role.

You can provide multiple values by separating them with a comma.

For example: Site1, Site2|Project1

- **Deny**

The list of contexts that are not allowed to be accessed by a given role.

You can provide multiple values by separating them with a comma.

For example: Site1, Site2|Project1

- **Allowed root items in Browse**

This should be the list of items (full IDs) which are allowed to be shown as root nodes in the Browse panel.

This is independent of the allow and deny Context Access Control configurations.

You can provide multiple values by separating them with a comma and percent can be used to match multiple characters.

For example: Item1, Item2%

This is required if a Browse root node is not accessible according to the user's Context Access Control configuration, but the node is still required to start the breakdown.

This configuration ensures that the root node is visible to the user, so that a user can then expand the root node. Though they will still only see items below the root node that they have access to according to the allow and deny settings of the Context Access Control configuration.

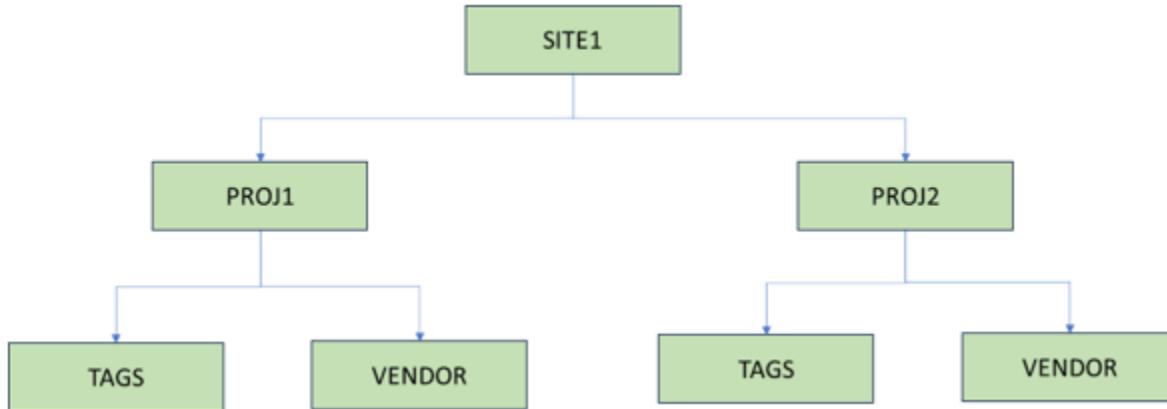
---

**Notes:**

- It is recommended to not add more than 10 assets in total to the **Allow** and **Deny** lists.
- The **Deny** setting takes precedence over the **Allow** setting.
- Independent of the **Allow/Deny** configuration, all users will have access to VNET System data. For example sets, query forms, export definitions and so on.
- If there is any custom home page defined which is classified under the CL\_HomePage class, then it will be visible to all users irrespective of the Context Access Control configuration.

### Example Configurations

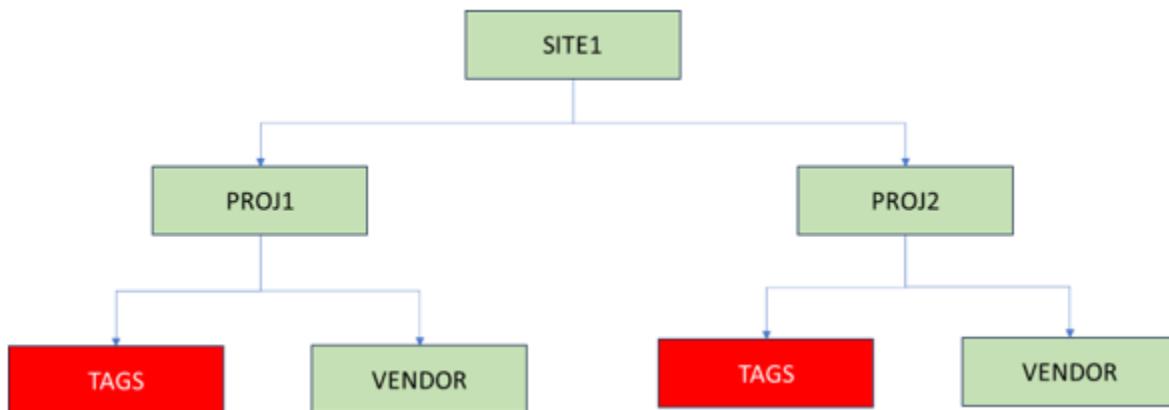
With a hierarchy of contexts, if the **Allow** and **Deny** values are left unset, then all users will have access to all data.



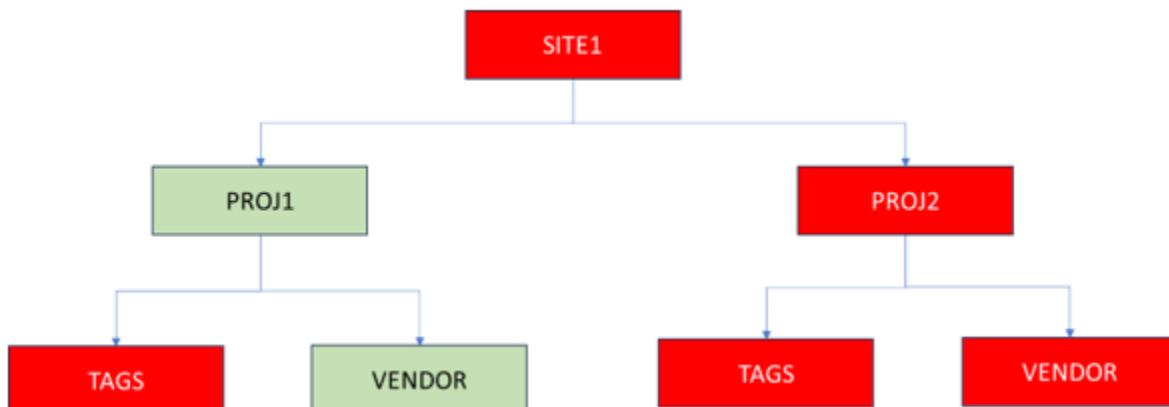
To give a specific role access to only **PROJ1** data, then configure Context Access Control as **Allow = SITE1|PROJ1**. The diagram below represents the data access a user will have in this case. In this case, if the breakdown node in Browse starts from **SITE1**, then configure the **Allowed root items in Browse = SITE1**, so that users can see the root node. However, when expanded, only **SITE1|PROJ1** data will be visible.



To deny access to only TAGS data, then configure Context Access Control as **Deny = SITE1|PROJ1|TAGS,SITE2|PROJ2|TAGS**. The diagram below represents the data access a user will have in this case.



To provide access to only SITE1|PROJ1 data, but not SITE1|PROJ1|TAGS, then configure Context Access Control as **Allow = SITE1|PROJ1** and **Deny = SITE1|PROJ1|TAGS**. The diagram below represents the data access a user will have in this case.



## Additional Dashboard Configuration

This section describes about how to configure the Dashboard with respect to the following:

- [Dashboard Settings](#)
- [Configure the External View Tab](#)
- [Configure Faceted Search](#)

## Dashboard Settings

Using the **Settings** panel you can change some of the ways *the AIM Dashboard* looks and behaves. You must be logged on with the *Manage Settings Right* to see the **Settings** menu.

To manage roles via the Setting panel, see [Manage Roles](#).

**Note:** Changes to **Site** settings are seen by all users; but changes to **Role** settings are seen only by users who are assigned to a specific role. For more information, see [Roles](#).

To change settings for a *Role*:

1. Open *the AIM Dashboard*, select **Settings** (  ), **Settings**.
2. On the **Roles** tab, select the *Role* that you want to change the settings for.
3. Change the settings (see the following table).
4. Select **Save**.

The screen refreshes, and the new settings take affect.

Following are the fields and the corresponding descriptions for a *Role*:

### Role Settings - Browse

Parameter	Description
<b>Breakdown Nodes</b>	
Delete	Manage the top-level categories in the Browse panel.
Apply	
Edit	
Create	
<b>Breakdown Node Configuration</b>	
Node ID	The ID of the Breakdown Node.
Label	The label displayed in the Browse panel.
Tooltip	The tooltip displayed in the Browse panel.
Expansion Type	The type of expansion used for child nodes.
Show Items of Type	The Class of object to show in the breakdown node.
Associations from Root	How the child classes must be associated to the root

Parameter	Description
	object.
<b>Item Node Expansion</b>	
Default	Used to over-ride the default expansion defined in Settings, Browse, Default Breakdown, for this breakdown node.
Type Based	Used to over-ride the default expansion defined above, for this breakdown node, for a specific type of association.
<b>Default Breakdown</b>	
Default Associations	The default expansion defined for all breakdown nodes.
<b>General</b>	
Show expansion by type hierarchy if the list length is greater than	Select to display browse results in groups if the total number of items is more than the number entered in the box.  Note: This settings will take effect, only when an item (not a type) is being expanded. If the number of 'children' to be displayed is greater than the number specified, then the 'children' are organized by their type hierarchy and this is displayed.
Max list items per page	The size of the group for browse results.
<b>Node Label</b>	
Type node label	Supported tokens: @ID and @NAME. For example: @ID-@NAME
<b>Root Items</b>	
Root item type	The type of object to show at the root of the Browse panel.
Show all the items of this type	Show the type selected above.
Show item ... as the root	Limit the root nodes to those matching the string entered in this box. % can be used to match multiple characters.
<b>Type-Based Associations</b>	
Items of Type	Select the type of object.

Parameter	Description
Association Types	Select the Association type.

**Role Settings - General**

Parameter	Description
<b>Data Visibility</b>	
Show only the latest revision of documents	Select to show the relevant types of data, in the Search and Browse panels, for example.
Make all types visible in Browse	
Show Hidden types	
Show Hidden attributes	
Show items of Unknown type	
Context Access Control	Defines which items can be seen based on its contexts and the user's role.
<b>Default Views</b>	
Type	The type of an item that is selected.
View	The style of view that should be shown for selected items of the type.
<b>Export</b>	
Warning export size	The threshold for the number of objects in an export that triggers a warning message.
Maximum export size	The maximum number of objects that can be exported.  If this value is changed be careful to not exceed the combined performance of the system, the hardware and the network latency.
<b>Global Navigation</b>	
Show the Browse link	Select to show the relevant buttons on the Global Navigation Bar.
Show the Search link	
Show the Sets link	
Show the Query Forms link	
Show the Export link	

Parameter	Description
Show the Reports link	
Start-up	Select the Global Navigation Panel to be opened and docked on the application start-up
<b>Messages</b>	
Output licence expiry messages to the default event log	Whether licence expiry messages should be written to the default event log.
<b>Query Forms</b>	
Form View	Select the default results view for Query Forms.
Table View	
<b>Search</b>	
Max list items per page	The maximum number of search results that will be displayed per page.
<b>Tooltips</b>	
ISO15926	Select to use ISO15926 compliant tooltips.

**Role Settings - Labels**

Parameter	Description
<b>Attributes</b>	
Attribute Label	Supported tokens: @ID, @NAME. For example: @ID-@NAME
<b>Items</b>	
Item Label	Supported tokens: @ID, @NAME, @DESCRIPTION, @TYPEID, @TYPENAME, @SCHEME and @REVISION. To add characters that are only shown if the token is not blank, precede the token and the characters with a caret (^) character. For example: @ID^ - @NAME^{@REVISION}
Sets Panel Label	Supported tokens: @ID, @NAME, @DESCRIPTION, @TYPEID, @TYPENAME, @SCHEME and @REVISION. To add characters that are only shown if the token is not blank, precede the token and the characters with a caret (^) character. For example: @ID^ - @NAME^{@REVISION}

Parameter	Description
	This setting is only used for Sets. If the value is blank, then the value for Item Label will be used.
Type Scheme	Select the labelling scheme.
<b>Types</b>	
Type Label	Supported tokens: @ID and @NAME. For example: @ID-@NAME

**Note:** The value for the @NAME token is taken from the Descriptive Name of the object. The value for the @DESCRIPTION token is taken from the **Desc** attribute present in the object's attribute.

To change **Site** settings:

1. Open the AIM Dashboard, select **Settings** (  ), **Settings**.
2. Select the **Site** tab.
3. Change the settings (see the following table).
4. Select **Save**.
5. The screen refreshes, and the new settings take affect.

Following are the fields and the corresponding descriptions for a Site:

#### Site Settings - General

Parameter	Description
<b>Home Page</b>	
Home Page Tab Header	The label for the tab in the browser.
Home Page	The path and filename of an HTML page to use on the Dashboard tab.

#### Site Settings - Print

Parameter	Description
<b>Banner Text</b>	
Top - Left	Location of banner text when printing
Top - Centre	<b>Note:</b> Banner Text and Watermark will NOT be applied to documents under the following print operations:
Top - Right	1. Printing from the Accusoft PrizmDoc Viewer
Bottom - Left	2. Printing a 3D model
Bottom - Center	3. Printing from the Report Viewer
	4. A query form printer-friendly view

Parameter	Description
Bottom - Right	
<b>Watermark</b>	
Default Watermark	<p>Text for the watermark when printing. This value is overridden by the attribute-base watermark where applicable.</p> <p><b>Note:</b></p> <p>Due to limitations in Accusoft's PrizmDoc Viewer: Any watermarks that are set will appear not only on the output of the print but also in the Document Viewer when viewing documents in PrizmDoc. Watermarks do not appear on <a href="#">DGN</a> or <a href="#">DWG</a> files.</p>
Attribute-based Watermark	When an attribute is selected, the value of this attribute on the Document to be printed will be used instead of the Default Watermark.

## Configure Faceted Search

### Faceted Search

**Faceted Search** may be configured by adding or removing custom facets. You can configure this by uploading the **Facets Register** via the Ingestion API in the Data Pipeline. This process updates the Dashboard accordingly. The processing of the register can be monitored in the [Data Pipeline Load Reporting](#) website.

**Note:** **Faceted Search** must be enabled for the respective AIM-A environment before the facets can be customized. This service is already enabled for all AIM-A environments.

#### The Facets Register

The Data Pipeline accepts the facets register in the following csv format:

	A	B	C
1	Name	Type	Action
2	testTagAttr1	tags	add
3	testTagAttr2	tags	delete
4	testDocAttr1	documents	add
5	testDocAttr2	documents	delete

The column definitions are:

- **Name:** The class name of the attributes that need to be added or deleted from the available custom facets.
- **Type:** Allowed values are “tags”, “documents”.
- **Action:** Allowed values are “add”, “delete” . To update an existing facet, first delete and then create a new facet.

## Ingestion API Request Parameters

Here is the required Ingestion API request body for uploading the facets register:

```
1 [{  
2     "target": "Custom",  
3     "configId": "Facets",  
4     "fileName": "FacetRegister.csv"  
5 }]
```

## Semantic Search

The enabling and disabling of **Semantic Search** for the content of specific documents is performed by uploading a CSV file to the **Custom** endpoint of the Ingestion API, as follows:

### Input File

The Data Pipeline accepts the input file as a csv in the following format (the headers in row 1 are mandatory):

	A	B
1	DocumentId	Action
2	C400 CTX DOC Document1-1	add
3	C400 CTX DOC Document1-4	add
4	C400 CTX DOC DocPDF-1	add
5	C400 CTX DOC Document2	remove
6	C400 CTX DOC Document3	remove
7	C400 CTX DOC Document4	add

The required columns are:

- **DocumentId:** This is the full document ID (<ROOTCONTEXT>|DOC|<FileName>) of the document that needs to be added or removed from the list of documents with Semantic Search enabled. For example, C400|CTX|DOC|Document1.
- **Action:** Allowed values are:
  - add - add the specified document to the list of documents with semantic search enabled
  - remove - removes the specified document from the list of documents with semantic search enabled

### Ingestion API Request parameters

The following is an example Ingestion API upload request body for uploading the input csv file:

```
[{  
  "target": "Custom",  
  "configId": "semanticsearch",  
  "fileName": "Input1.csv"  
}]
```

## Additional Information

This section provides information relating to the following:

- Limitations
- Associative Object Model and XML
- AIM API

## Limitations

The following table outlines limitations of the AIM Advanced solution:

Description	Value
Characters disallowed in IDs uploaded to AIM-A.	{,}  Curly brackets, { and }, are replaced with round brackets, ( and ) respectively, when uploading IDs via the AVEVA Data Pipeline.
Characters disallowed in contexts uploaded through the AVEVA Data Pipeline.	", <, >, :, *, ?, \, /, ASCII characters 0-31, Windows reserved keywords. Must conform to Windows file and folder name standards.
Characters disallowed in file and folder names uploaded through the AVEVA Data Pipeline.	", <, >,  , :, *, ?, \, /, ASCII characters 0-31, Windows reserved keywords. Must conform to Windows file and folder name standards.
Load Reporting Retention Policy	<ul style="list-style-type: none"> <li>• Load Reports are available from the last 60 days.</li> <li>• Load Reports older than 60 days but not older than 90 days are available on request.</li> <li>• Load Reports older than 90 days are no longer available.</li> </ul>
Maximum file name length	120 characters
Maximum file path length (including file name)	420 characters
Maximum file size for 1D Registers	5 GB
Maximum length of Root Context in the Data Pipeline	15 characters
Maximum number of pages when viewing files in the Dashboard using the PrizmDoc Viewer	10,000
Maximum PDF file size that can be viewed in the Dashboard using the PrizmDoc Viewer	900 MB
Maximum size of 3D model files (with average complexity) for importing (tag scraping supported).	1 GB

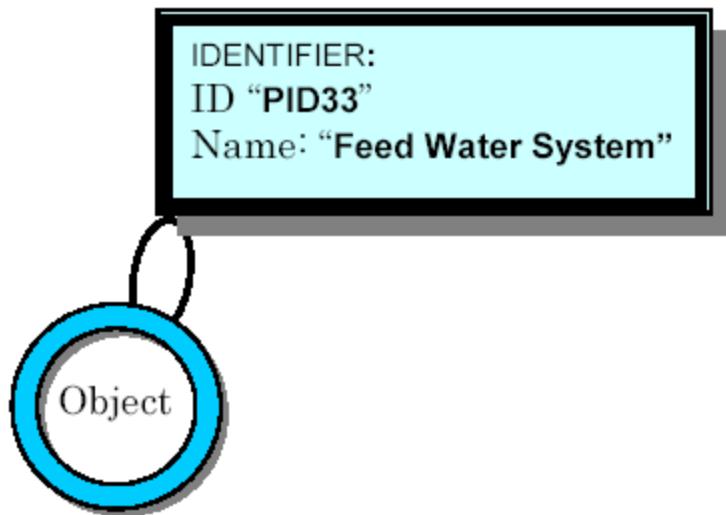
Description	Value
Maximum size for RVM model file	20 GB
Maximum size for ZGL model file	9 GB
Supported 1D file types (tag scraping not supported)	csv, json, txt, xml, xls, xlsx, tsv
Supported 2D file types (tag scraping supported)	dwg, dxf, dgn, docx, doc, pdf, ppt, pptx, svg, xls, xlsx
Supported 2D file types (tag scraping not supported)	jpg, png, dot, dotx, rtf, xlt, xlts, xltm, pot, pps, potx, ppsx, vsd, vsdx, vdx, odt, ott, fodt, ods, ots, fods, odp, otp, fodp, odf, odg, otg, fodg, dwf, html, htm, xhtml, xhtm, msg, eml, dcm, dicom, dcim, dicm, tif, tiff, jpeg, jp2, jpc, gif, psd, psb, bmp, dib, pct, pict, wmf, emf, pcx, dcx, ras, pcd, tga, tpic, cal, cals, ico, cur, ncr, xwd, sgi, wbmp, sct, wpg, xbm, pbm, pgm, ppm, img, cut, etf, xlsm
Supported 3D file types (tag scraping supported)	dwg, dxf, nwd, ifc
Supported 3D file types (tag scraping not supported)	rvm, zgl
Timeout for reloading 3D models when focus to the Dashboard is lost	30 seconds
Timeout for importing 3D files	20 hours (this allows for ZGL files of up to around 9 GB to be processed)
Timeout in the Dashboard for long running operations (for example, opening large files, expanding complex tree views, exporting large amounts of data, performing complex searches)	60 seconds

## Associative Object Model and XML

The AIM Workhub Object itself contains no information (other than an internal system handle) and is often visualized as a ‘keyring’ with Identifiers and other information attached to it. For an Object to exist in the AIM Workhub Database, it must have at least one Identifier, which consists of:

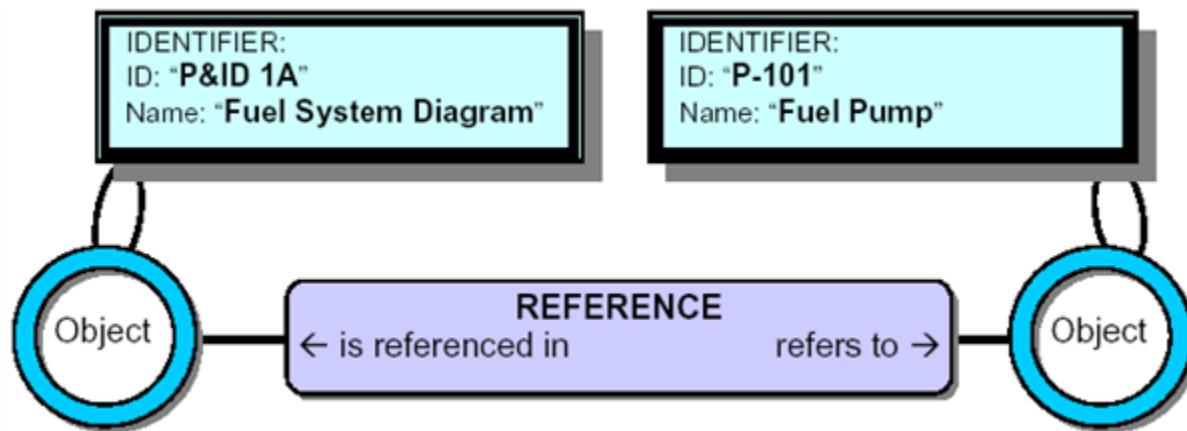
- An ID which must be present and must be unique.
- An optional longer descriptive Name.
- An optional Context or namespace for the ID – refer to Context.
- An optional Revision name or number.

A fully registered Object should also have a Class as discussed below.



## Associations

An Association is a link between two Objects and there is no limit to the number of Associations an Object can have. Here is an example of an Association:



All Associations are bi-directional, so they can be followed in either direction from one Object to another. Most Associations read differently depending on the direction in which they are followed and this is shown in the diagrams by an arrow.

**Note:** For ease of understanding, the text is shown only in one direction, in later diagrams.

An Association can exist only for as long as the two linked Objects exist. If either of them are deleted, AIM Workhub automatically deletes the Association.

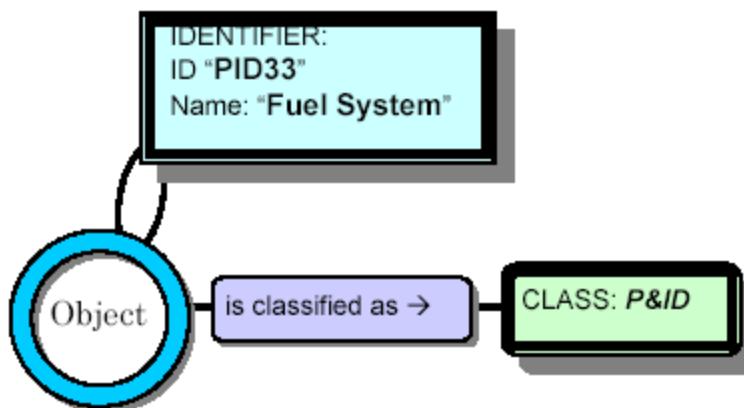
## Association Types

About twenty built-in Association Types have so far been defined. The following diagram lists the most frequently encountered Associations and how they are typically used:

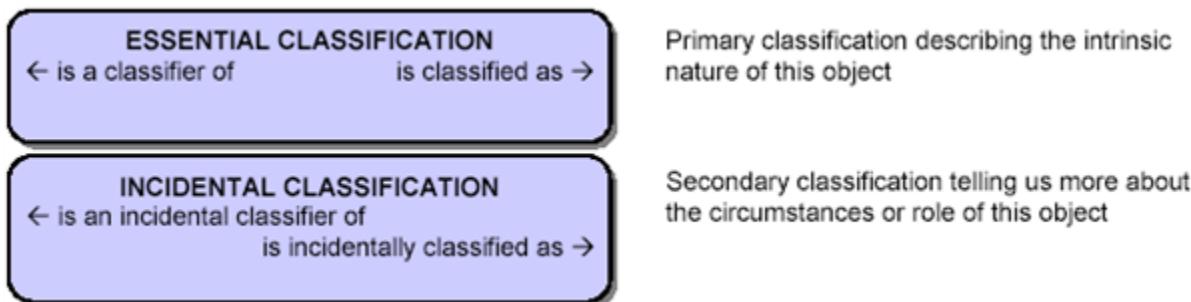
<b>REFERENCE</b>	← is referenced in	refers to	DOCUMENT refers to → EQUIPMENT
<b>ESSENTIAL CLASSIFICATION</b>	← is a classifier of	is classified as	OBJECT is classified as → CLASS
<b>INCIDENTAL CLASSIFICATION</b>	← is an incidental classifier of	is incidentally classified as	OBJECT is incidentally classified as → CLASS
<b>ASSEMBLY</b>	← is an assembly including	is a part of	EQUIPMENT is a part of → UNIT
<b>COLLECTION</b>	← is a collection including	is an element of	OBJECT is an element of → FOLDER
<b>NOTE REFERENCE</b>	← is referenced in note	is a note referring to	A310204 is a note referring to → VALVE
<b>FULFILLMENT</b>	← fulfils	is fulfilled by	DOCUMENT is fulfilled by → FILE
<b>DIRECT CONNECTION</b>	← is connected to	is connected to	PUMP is connected to → VALVE
<b>SUCCESSION</b>	← is a successor to	is succeeded by	DOCUMENT is succeeded by → DOCUMENT
<b>GENERIC ASSOCIATION</b>	← is associated with	is associated with	OBJECT ← is associated with → OBJECT

## Classes

Ideally, every Object is classified and its Class tells us what kind of object it is. Here is an object classified as a P&ID document:



Two kinds of Associations are used for classification:



## Class Library or Reference Data Library (RDL)

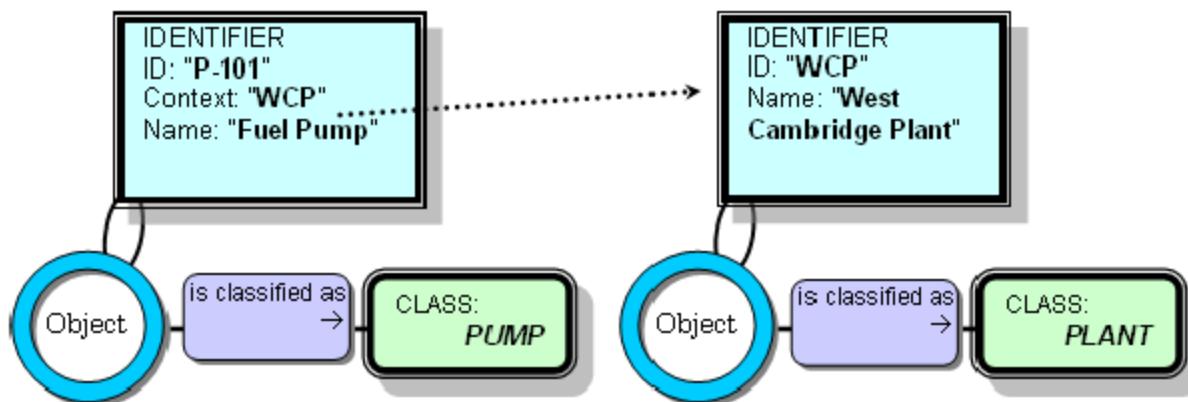
An Object can only be classified using a pre-defined Class from the Class Library, also known as the Reference Data Library (RDL). The AIM Workhub comes supplied with a Class Library of classes that have been found useful in practice. However, it is not necessary to use the Standard Class Library as supplied and the user can add classes or create a whole custom Class Library to suit the job in hand.

When customizing a Class Library, you must be aware of the following restrictions:

- A number of system classes are defined as subclasses of the AIM Workhub SYSTEM class and they cannot be deleted.
- The upper levels of the class hierarchy are system-defined and the functionality of the AIM Workhub depends on this basic framework known as the Upper Ontology.
- Any new Class must directly or indirectly be a subclass of one of these built-in classes.
- You cannot delete a Class that is currently in use as an Essential or Incidental classification of any Object. All such Objects must be deleted before the Class can be deleted.

## Context

An Object Identifier must be globally unique across an entire database. By default, objects have identifiers in the Global or null Context. For an object in this default Context, the object ID must be globally unique. When a Context is specified, an ID only needs to be unique within the namespace represented by that Context. Any ID can serve as the Context for any other Identifier. In the following example, a PUMP is given an ID in the context of the ID of a PLANT:



If the ID of an object is unique within the database, it can be referred to by its short ID, for example "P-101". To make sure that an ID refers to a single object the Context must be supplied as well: "WCP|P-101". Context is not limited to just one level but can be chained without limit.

**Note:** The use of the convention used in the AIM Workhub of a vertical bar (|) to separate the Context from the ID (however, this is not valid in the AIM Workhub XML Schema) and the use of Context should be regarded as mandatory. It is in any case unavoidable when one database contains information from two or more PLANTS or PROJECTS to prevent clashes of identifier between the two sets of data. In an AIM Workhub Import Package, it is necessary to declare a Root Object and the ID of this object is normally used as the Context for all the objects in that Import Package.

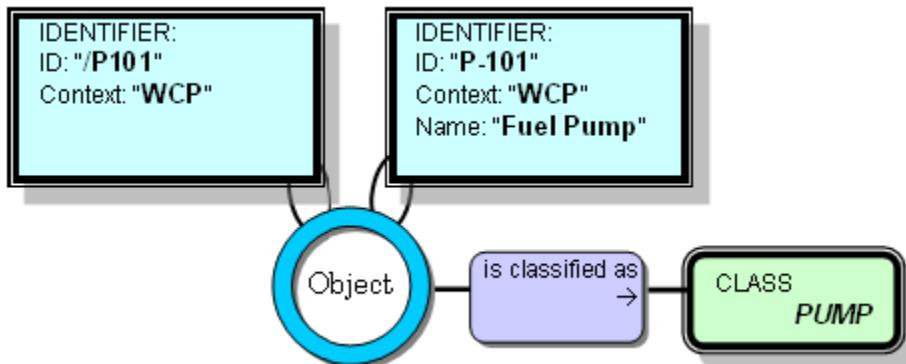
## Unclassified Objects

A fully registered AIM Workhub Object has at least one Identifier and at least one Class. Objects may exist without a Class but this usually only occurs as a transitional state during data import. For example, to store an Association between two objects it may be necessary for the AIM Workhub System to create an object on-the-fly before the full details about that Object have been imported. In a fully populated database unclassified objects would normally be regarded as an error and evidence of some problem with data import.

Unclassified objects are reported as if they are classified as UNKNOWN. The UNKNOWN class may also be used to search for unclassified objects.

## Alias Identifiers

An AIM Workhub Object may have more than one Identifier:



A common example, as shown here, is when PDMS has been used on a project and it is desirable to identify an

object with the PDMS form of the name as it appears on PDMS ISOs as well as the name appearing elsewhere in the project.

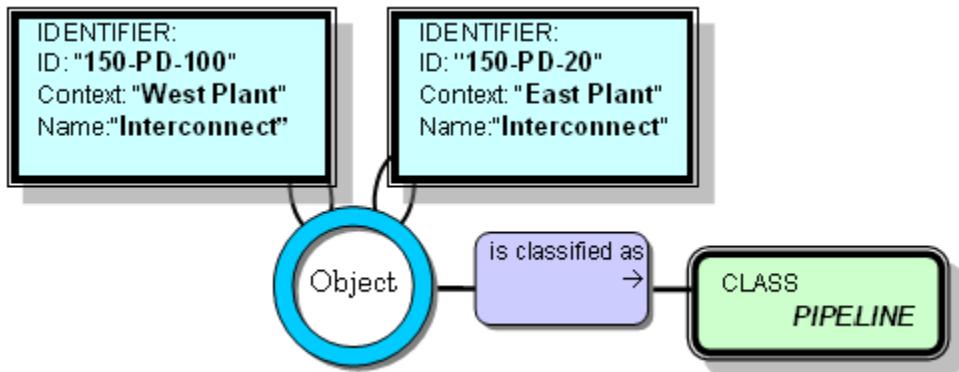
Identifiers can be added and deleted at any time but an Object must always have at least one. The last remaining Identifier cannot be deleted without deleting the Object itself.

When an object has more than one Identifier, one of them is designated as the ‘Preferred Identifier’ and is the first Identifier given to the object. This is the identifier normally displayed in the AIM Dashboard. However, the object may still be referred to and search for using any of its Identifiers.

The AIM Workhub Admin Tool can be used to select a different Identifier as the Preferred Identifier.

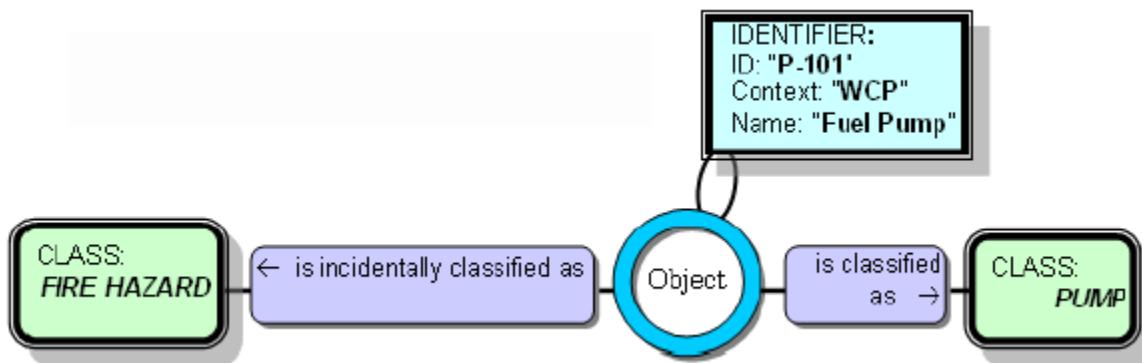
## Objects Common to Two or More Projects

An object that is common to two separate plants should be given two identifiers, each with the Context of the respective Plant. It does not matter whether the ID is the same or different in each context provided the combined identifiers consisting of Context + ID are unique within the AIM Workhub Database.



## Multiple Classification

An AIM Workhub Object may have more than one Class:



In this example, the object has an Incidental Classification of FIRE HAZARD as well as an ‘Essential Classification’ of PUMP. When objects are shown in classified lists in the AIM Dashboard such objects will be listed twice – once under each class (whether the classification was Essential or Incidental).

An object may have any number of classes and classifications may be added at any time.

However, when an object has more than one class, these classes ought to be compatible. For example, an object might be classified as both a ROTARY PUMP and as the PRIMARY FEED PUMP. It would not make sense for an object to be classified as both a ROTARY PUMP and a P&ID DIAGRAM. Only objects that are classified at or below

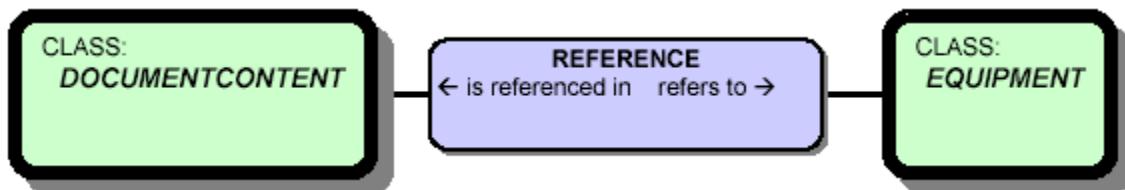
FUNCTIONAL ARTIFACT or DOCUMENT CONTENT can have further essential classifications. Furthermore, if an object is already classified at or below FUNCTIONAL ARTIFACT in the class hierarchy, then further classifications must also be at or below FUNCTIONAL ARTIFACT. The same applies to DOCUMENT CONTENT.

## Permissible Associations

The AIM Workhub System permits Associations to be created only where that Association has been pre-defined as a Permissible Association between objects of such classes. Any of the classes, both Essential and Incidental classifications, contribute to the set of Permissible Associations between two objects.

A Permissible Association is defined in the Class Library as an Association between two classes:

In this example, any object of type DOCUMENT CONTENT may have a 'refers to' Association to any Object of type EQUIPMENT. However, this does not automatically permit the Association in the reverse direction. If this is required (unlikely in this case), a second Permissible Association must be created.

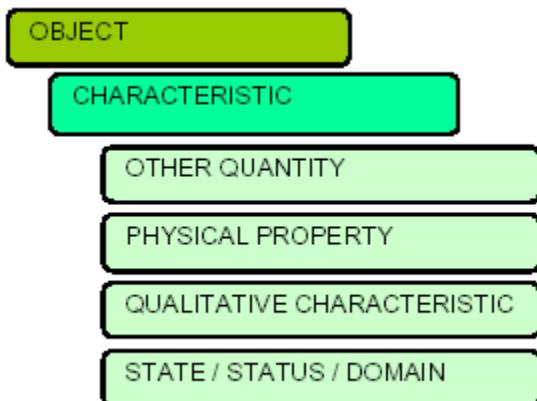


Permissible Associations between Classes are inherited by their subclasses.

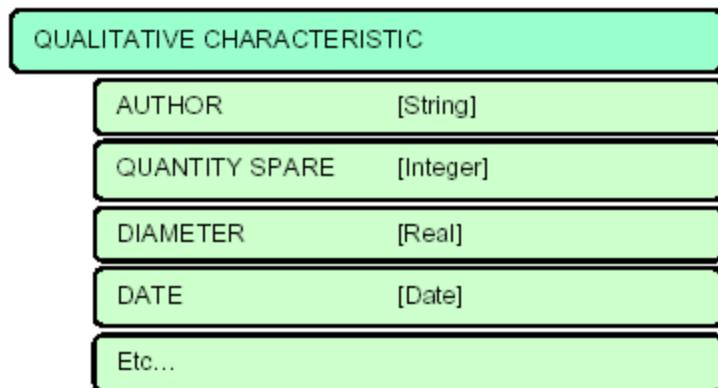
**Note:** For the AIM Dashboard to function properly, all documents should be subclassed directly or indirectly from DOCUMENT CONTENT even in a customized Class Library. Thus, the references to Association above would be permitted for all document types.

## Attributes

The AIM Workhub Objects may have Attributes. An Attribute is defined as a class in the Class Library, which determines both the name and the data type of the Attribute wherever it is used – the same Attribute definition can be used for many classes. Every Attribute is directly or indirectly a subclass of the CHARACTERISTIC class:

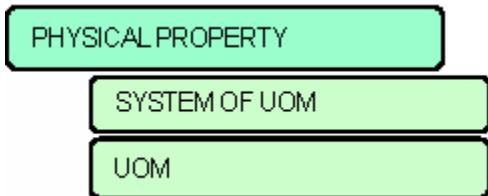


The QUALITATIVE CHARACTERISTIC class allows the user to create attributes classes with a string, real, integer or date data type:



These data types control the AIM Workhub Attribute searching when doing an advanced find.

Specifying the data type for a characteristic gives the possibility to do query like searching for notes created before a specific date (in this case the data type needs to be Date) or searching for documents, where the revision is higher than three (in this case the data type needs to be Integer or Real). Attributes can be applied directly to an object or to its corresponding datasets. In AIM Workhub, attributes created using the QUALITATIVE CHARACTERISTIC class are also known as "Characteristic attributes". Also, simple typed attributes, that is, Characteristics, Attributes, may have Units. Attributes with Units are known as Properties and are based on the PHYSICAL PROPERTY class. A property has a Name/Value pair but also a Unit Of Measure (UOM).



An example of a Characteristic might be:

- Attribute Name = Flow Type
- Attribute Value = Liquid

A Property might be:

- Attribute Name = Design Press. Max
- Attribute Value = 40
- UOM = barg

There are no Units Of Measure defined by default and so they must be defined before any PropertyClasses are defined. The user must define a System of UOM and then define a UOM class. A definition of a PropertyClass can then be created that makes use of a UOM (refer to AVEVA Asset Information Management Workhub XML Schema Reference). A Measure may have many units. A Measure of Length may have units of m, cm, mm, km, mile, furlong, chain, ft, and so on. A Measure will have a base Unit and all other units will supply a scale factor to convert that unit into the base unit. Note that this is only used internally for comparisons during searches. A UOM will only be returned as it was entered into the system. A UOM will never be converted into another UOM for any other purpose.

Some Units require a Constant as well as a scale for converting to the base unit; an example is Degrees Centigrade to Fahrenheit. For this purpose, a Constant may also be defined for a UOM. In this case the constant will be added after the scaling has been applied.

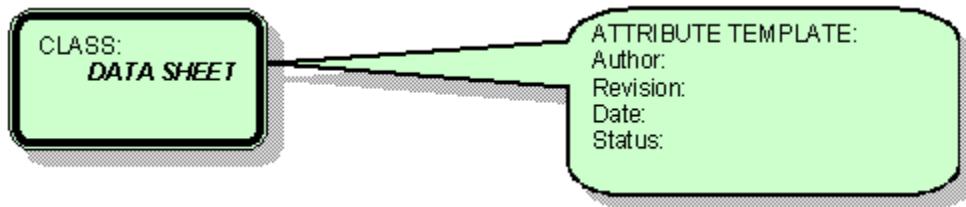
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**Note:** The Base Unit for a Measure is the UOM that has no Scale and no Constant definition.

#### Attributes Applied to an Object

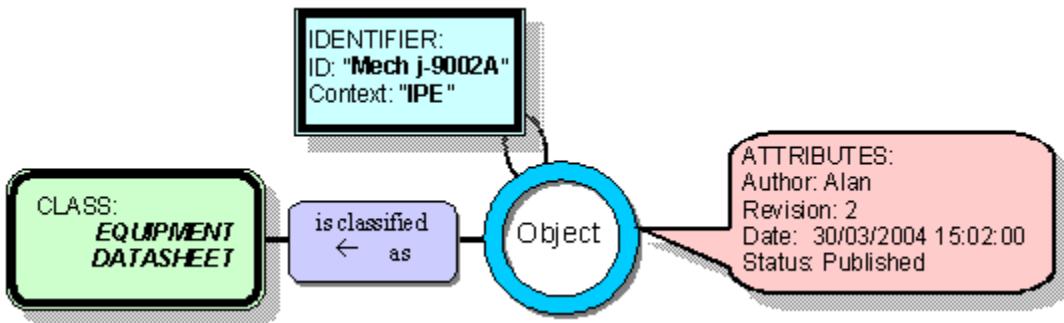
This is the case for all objects, which are classified as a class or a subclass of INFORMATION.

Attributes are added to a class by an Attribute Template. An example of a built-in AIM Workhub class with an Attribute Template is the DATASHEET class:



This is the case for all objects which are classified as a class or a subclass of INFORMATION.

Attributes are added to a class by an Attribute Template. An example of a built-in AIM Workhub class with an Attribute Template is the DATASHEET class:



#### Attributes Stored in Datasets

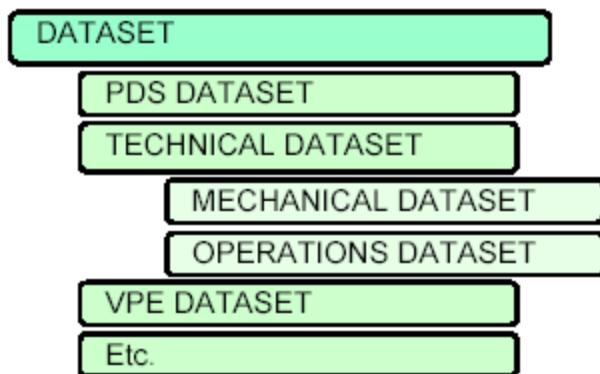
This is the case for all objects, which are NOT classified as a class or a subclass of INFORMATION, for example "PUMP".

An object can have multiple datasets. They can be created in multiple ways:

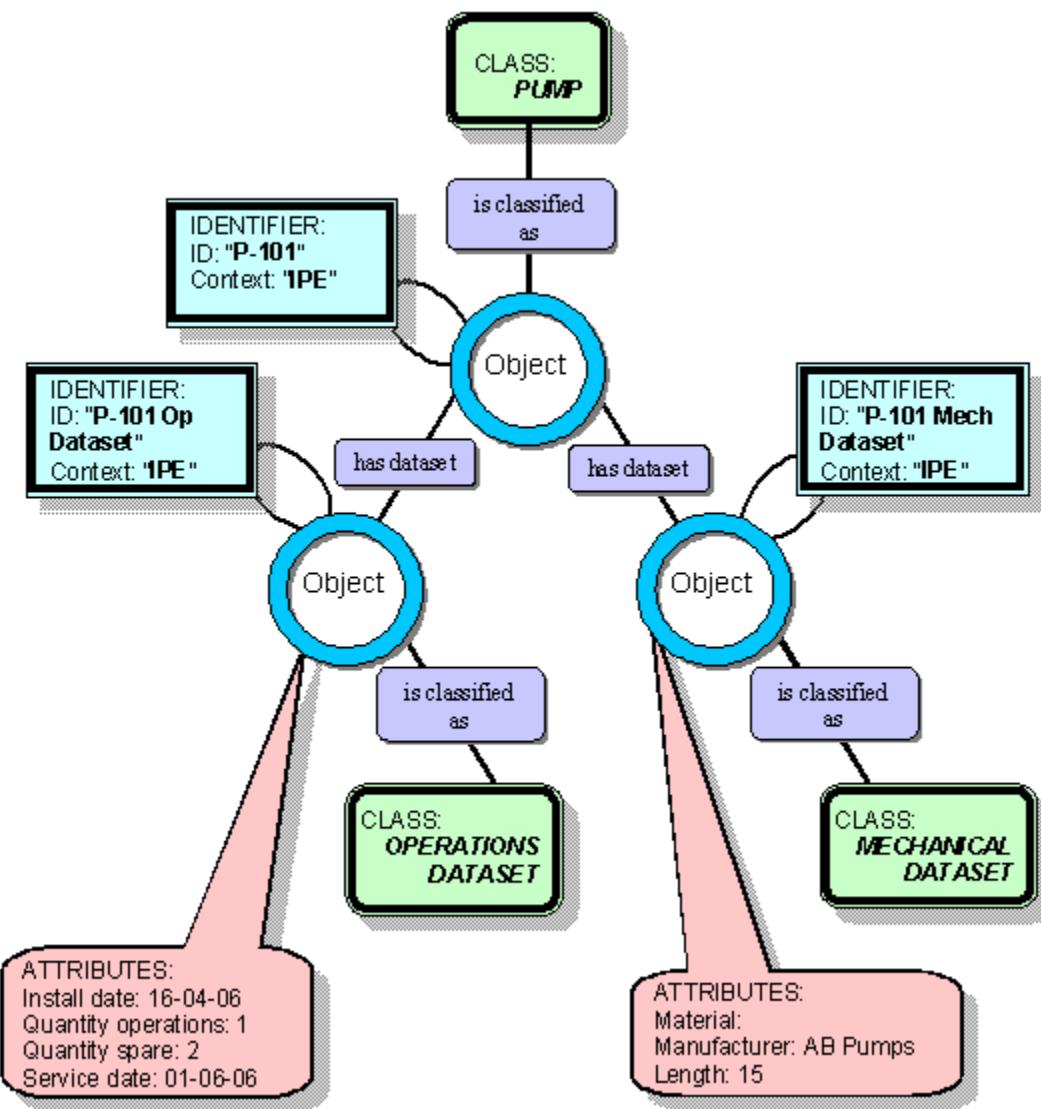
- by type: MECHANICAL DATASET, OPERATIONS DATASET, PIPING DATASET
- by source: PDMS DATASET, VPE DATASET
- by class: PUMP DATASET, VESSEL DATASET
- by type and source

To store attributes in datasets:

1. Create datasets class as a subclass of DATASET:



2. Create Attribute Template for each Dataset created: So all objects which have this type of dataset, can automatically have these attributes created and assigned to this specific object dataset.
3. Populate attributes with values; here is an example of an object of class PUMP with 2 datasets:



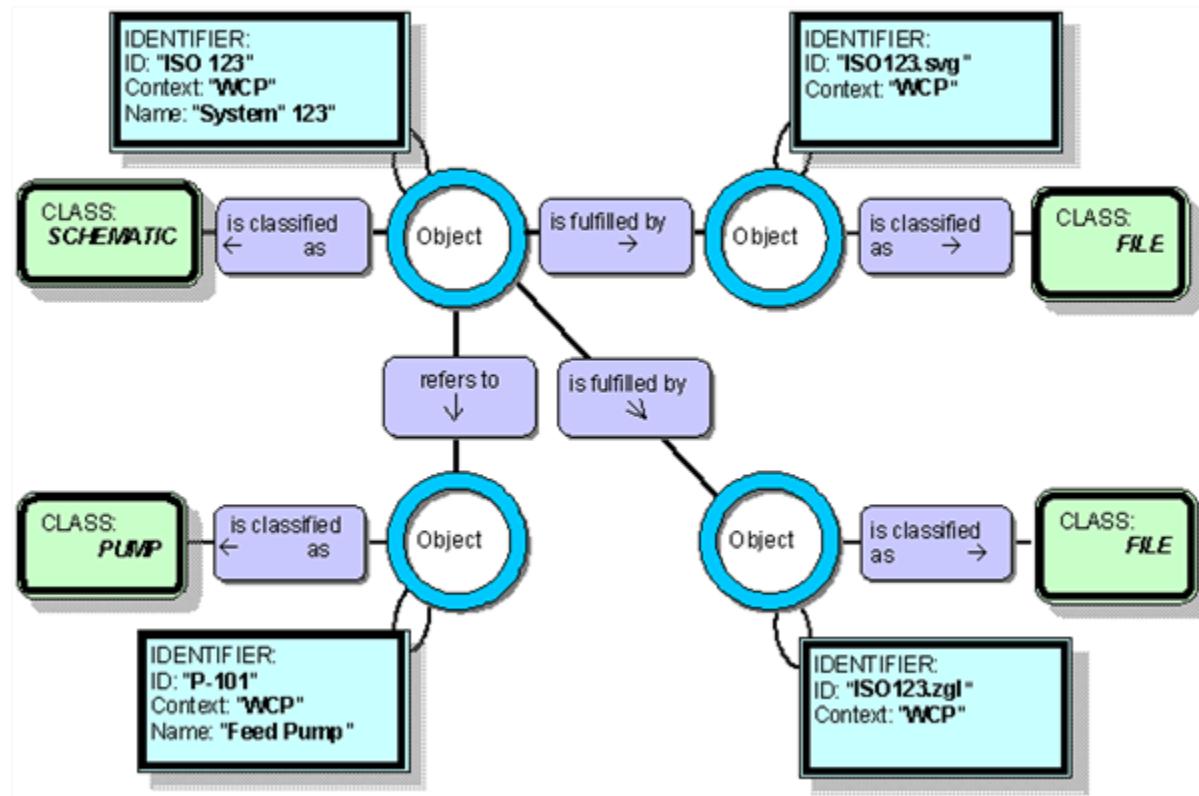
## Documents and Files

This information model distinguishes the logical Document Content from the physical representation of that Content – usually a FILE object. As an example, an Isometric might be available in two formats: as an SVG file and as a **VizStream zgl** file. The AIM Dashboard displays an SVG file in preference to the **VizStream zgl** file format but the latter must be used for mark-up.

The Document Content and the physical File are represented in the database by separate Objects linked by an ‘is fulfilled by’ Association.

In this example, SCHEMATIC would be a subclass of DOCUMENT CONTENT.

It is important to notice that Associations such as refers to are between the DOCUMENT CONTENT object and the PUMP – not between the FILE object and the PUMP.

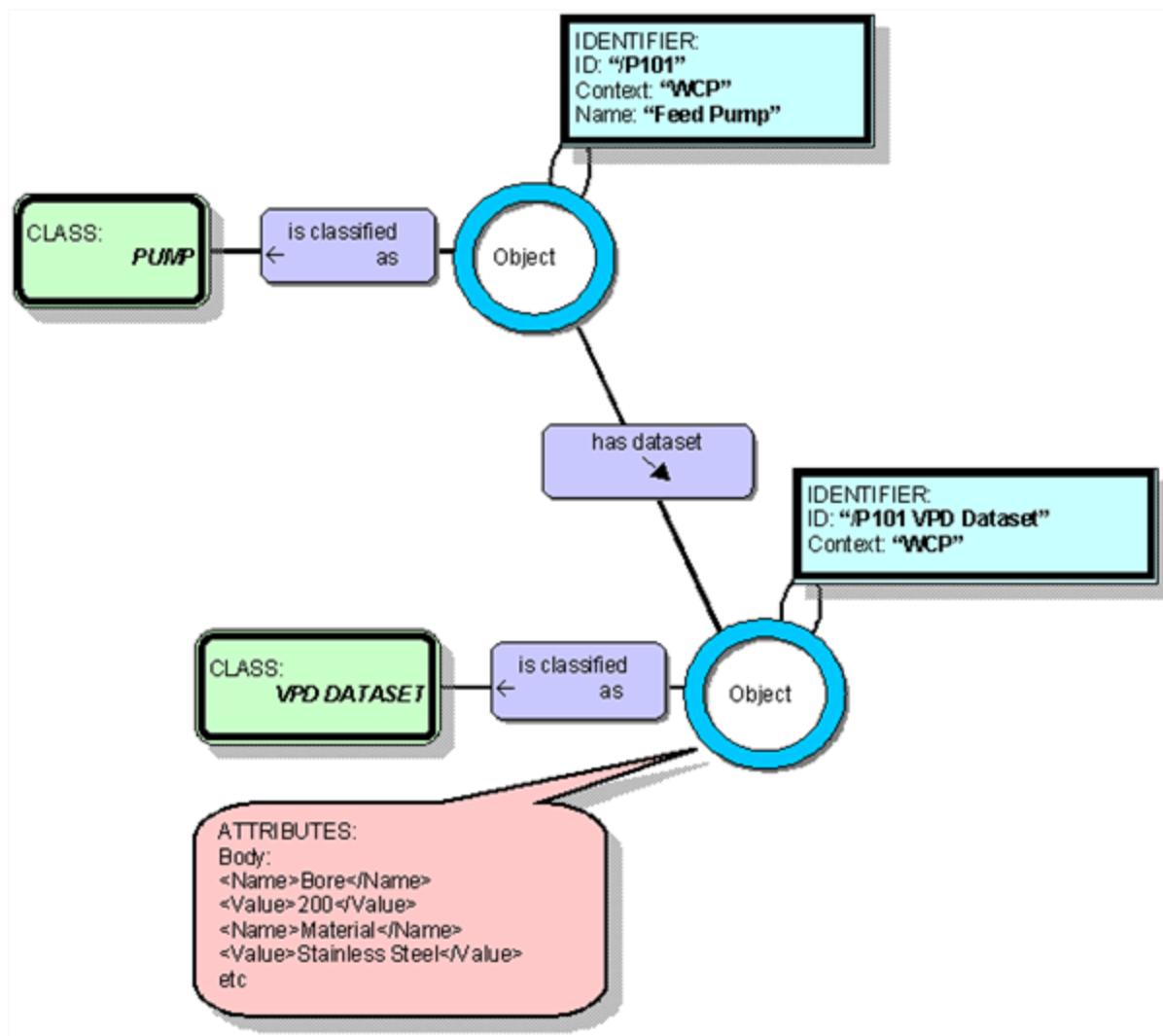


## Datasets

A Dataset is an object containing attributes as a set of name-value pairs stored as a single XML string within the AIM Workhub Database.

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**Note:** The attributes of a Dataset object do not have to be pre-defined in the Class Library and they have no data type.

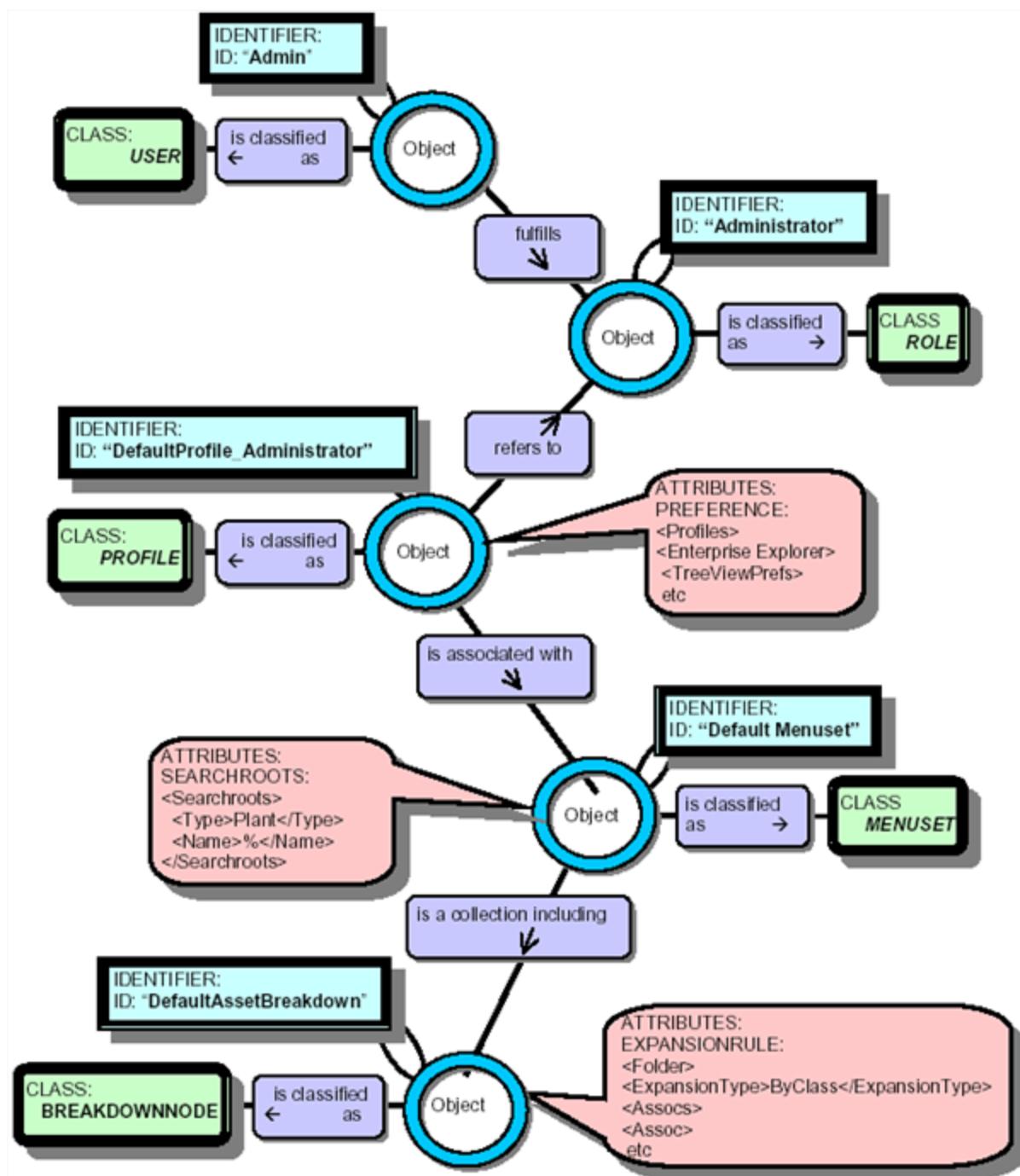


A Dataset is usually given an Identifier based on the ID of the object for which it is a dataset. You can use a non-unique name such as 'Plant Dataset' in the Context of the owning object. However, in practice, this has been found undesirable for performance reasons as it leads to a very large number of objects with the same ID in the AIM Workhub Database.

**Note:** Dataset classes should always be sub-classed from the Class DATASET even in a customized Class Library.

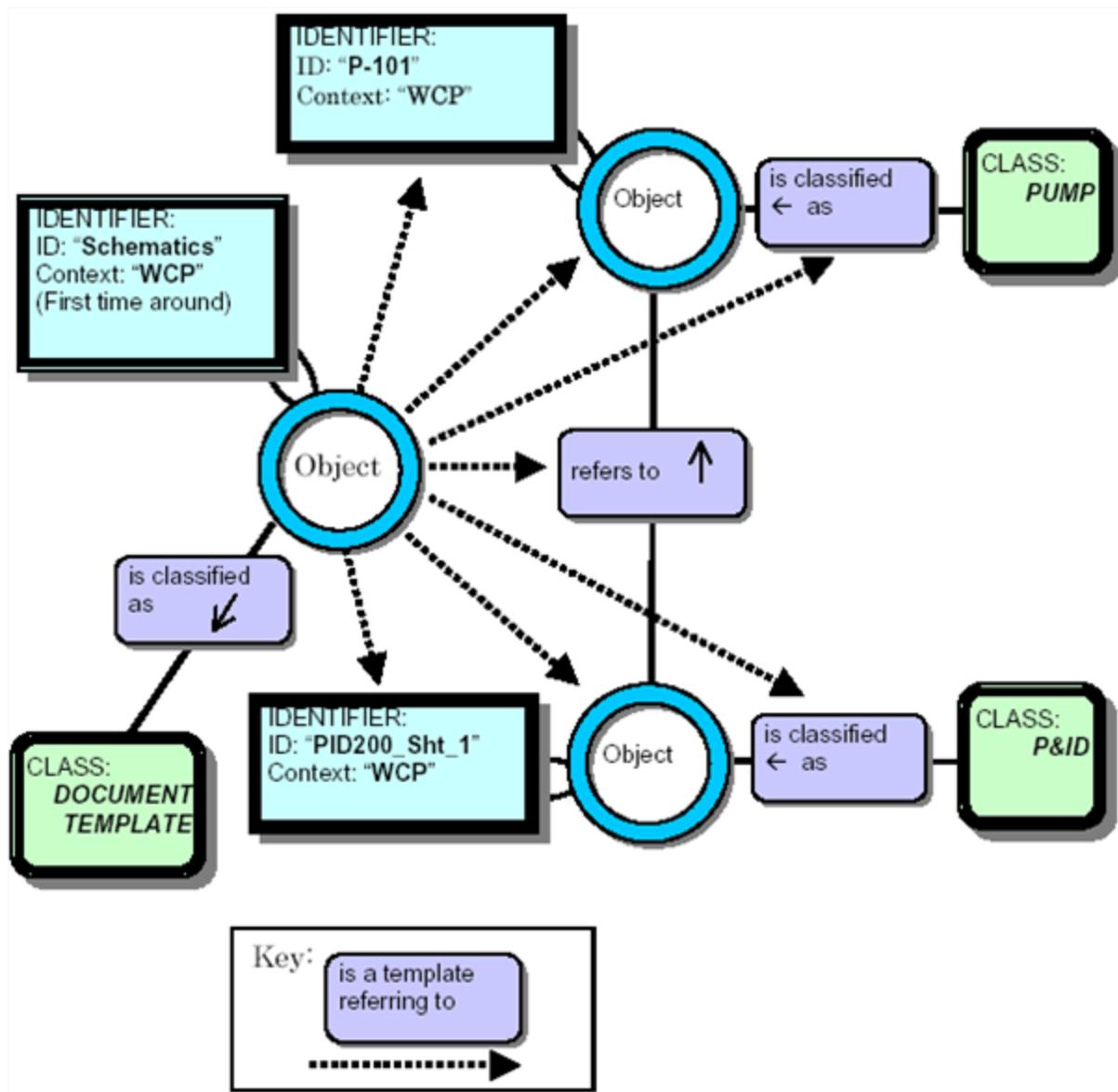
## Menusets and Breakdown Nodes

Configuration of the AIM Dashboard tree-view is based on these Associations between a MENUSET, its BREAKDOWNNODES and a user ID, user ROLE and PROFILE.



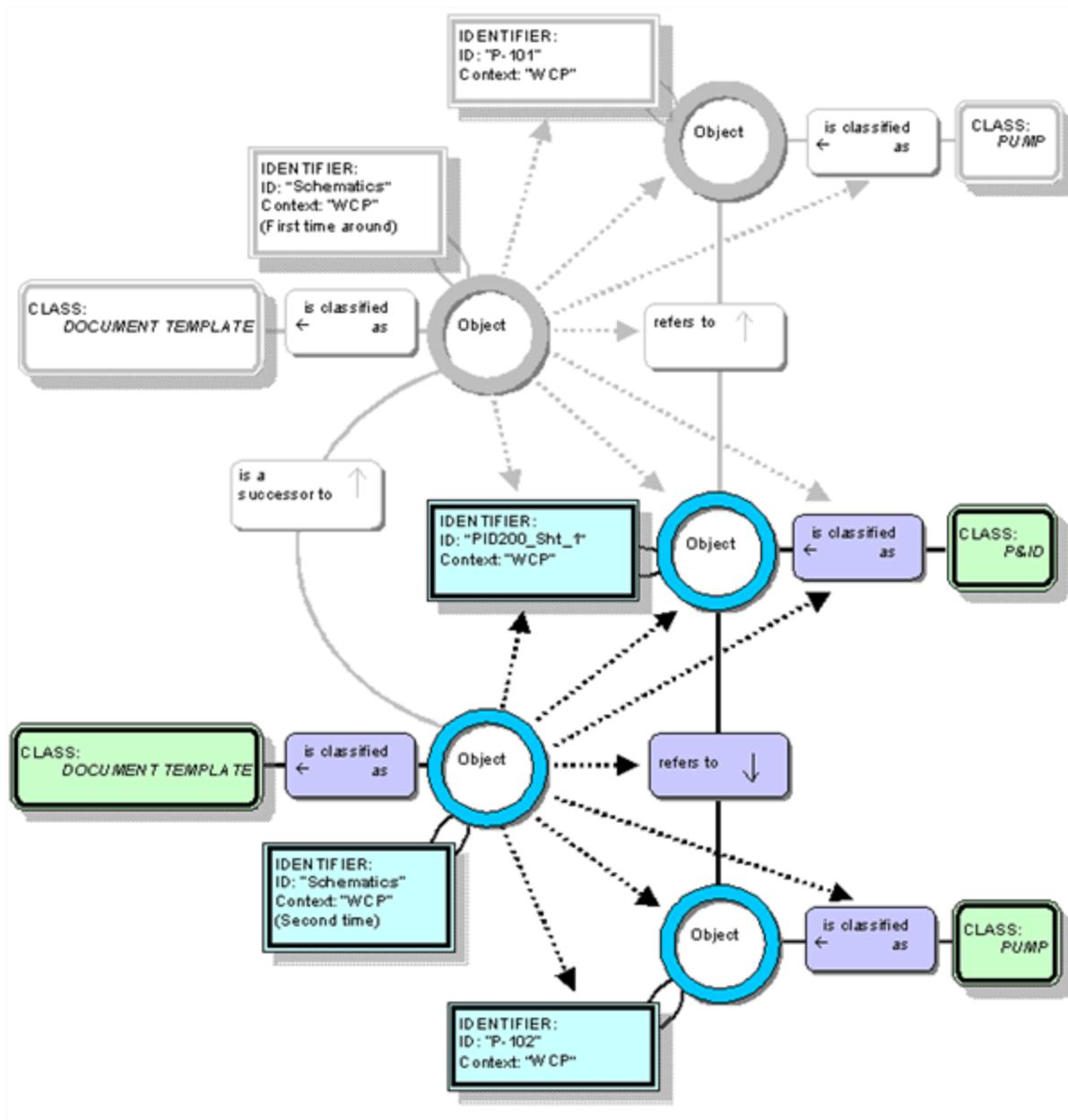
## Import Templates and Incremental Update

In the following example, the import of the template initially creates **PUMP P-101** and **P&ID PID200\_Sht\_1**. A template with the same ID is imported at the next update run and exists briefly as a successor to the original. This creates **PUMP-102** and an extra reference to the P&ID. The Import Server then removes the earlier instance of the template.



The following diagram refers to the situation after the update with the deleted objects greyed out. The P&ID and **PUMP P-102** are still referenced and so they exist, whereas **PUMP P-101** is no longer referenced and hence it has been deleted.

The presence of is a template referring to associations has maintained the existence of the P&ID object, its identifier and classification throughout the update.



## Associations and Templates

The models illustrate how objects and associations are organized and instanced for specific purposes or functions. This is not the limit of associations that can be created or used. The whole notion of [ISO 15926](#) is to create a fully flexible model that can be used to represent any data object or association. In most data warehouse implementations, this is typically at a very granular level. To improve the 'human readability' and the system's 'repeatability/reuse' of these objects, the idea of templating these objects and associations together is finding acceptance as a preferred modelling method.

Templates in the AIM Workhub are in two categories:

- **Atomic Templates (AT):** is indivisible semantically and normally forms the smallest usable building block of objects

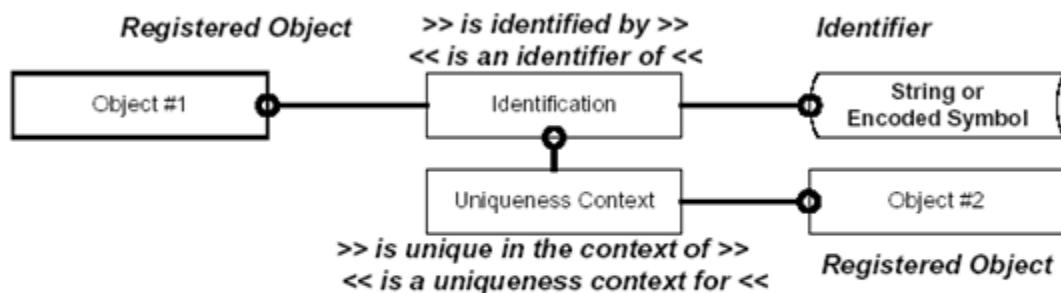
- **Molecular Templates (MT)**: is indivisible by business implementation, and represents logical groups of objects that are typically familiar to an end user

The following sections describe typical ATs and the context in which they are used.

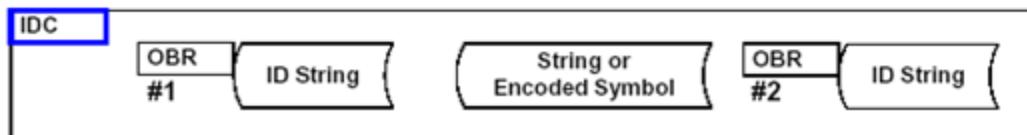
## Identification with Uniqueness Context

### IDC Identification with Uniqueness Context

Logical Reference Model (*Gellish* - Fully mappable to ISO-15926)



Compact Implementation Model (Object with attributes) **Tertiary**



## Business Usage Semantics (incl Cardinality)

Identification involves assigning a string or other encoded symbol to an object in order for it to be used subsequently to make unambiguous reference to that object.

Each object registered with EIF is to be captured at first installation using the OBR Template, which implicitly includes one embedded instance of the IDC Template. This separate IDC Template is therefore primarily intended for assigning additional identifiers (or aliases) to an object already registered. These additional (unique) identifiers (with their own contexts) are intended to enable sets of users in these particular contexts/phases of the business to navigate and access information via their preferred identification schemes, without losing management of underlying unique identity, and associated consolidation.

For objects which are versionable (essentially all associations and information objects) "version" is an essential part of identification. However physically implemented/constructed, identification therefore consists of <Context Symbol><Unique Symbol><Version Symbol>

## Implementation Notes/Issues/Suggestions

An important aspect of EIF implementation is that not only will interfaces exist to external systems which create, manipulate and persist identifiers, but middle-ware components may themselves be distributed and integrated with other middle-ware systems. Whilst internal to EIF, controlled system numbering (for example, uid's) is expected, it is essential that uniqueness of identification is managed and validated according to the agreed

standard template at all interfaces.

Often business context produces standard formatted forms for the unique symbolic string – typically referred to as "tags". Often such tags contain embedded encoded information about the context, the type, and other attributes of the identified object. It is essential that the "unique identification" aspect and the implicit or explicit "encoded information" are handled distinctly. (See separate notes on identification, tags and aliases.)

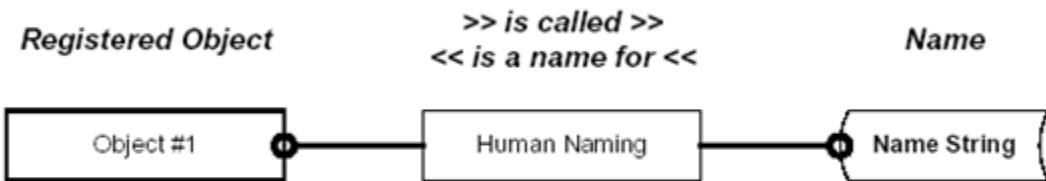
Implicit in this template is that the "context" part of the identification is handled distinct from the unique symbolic string, whereas the "version" component is embedded in the unique symbolic string. This is an acceptable implementation at the interface, since the same template can capture identification, whether the object is versionable or not. It is anticipated that versioning/time-stamping/suppression-tree aspects will be handled through meta-data in implementation, however additional formal templates may be generated for this purpose as necessary.

Inherent in the EIWM template model is the nested assembly of information sets – which itself provides useful context hierarchies, very similar to the construction of XML Namespaces/URL's/URI's. it is recommended that this fact is exploited in efficient handling of identifiers and contexts.

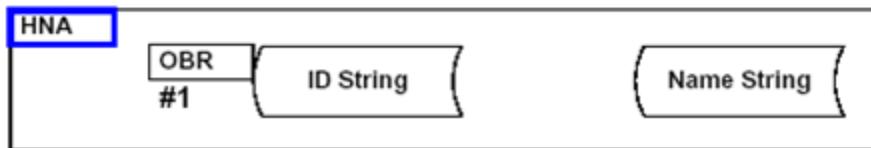
## Human Naming

### **HNA Human Naming**

#### Logical Reference Model (*Gellish* - Fully mappable to ISO-15926)



#### Compact Implementation Model (Object with attributes) **Binary**



## Business Usage Semantics (incl Cardinality)

An object may be given any number of names as useful human "handles."

The naming template does not require or exploit uniqueness of the name, and EIF therefore provides no management of any such uniqueness. Where uniqueness is intended by the business, the IDC template shall be used.

The Name string is generally descriptive for human interpretation. Naming assumes that the context (compound template) in which the name is created makes the name sufficiently intelligible and recognizable self-evidently to human users.

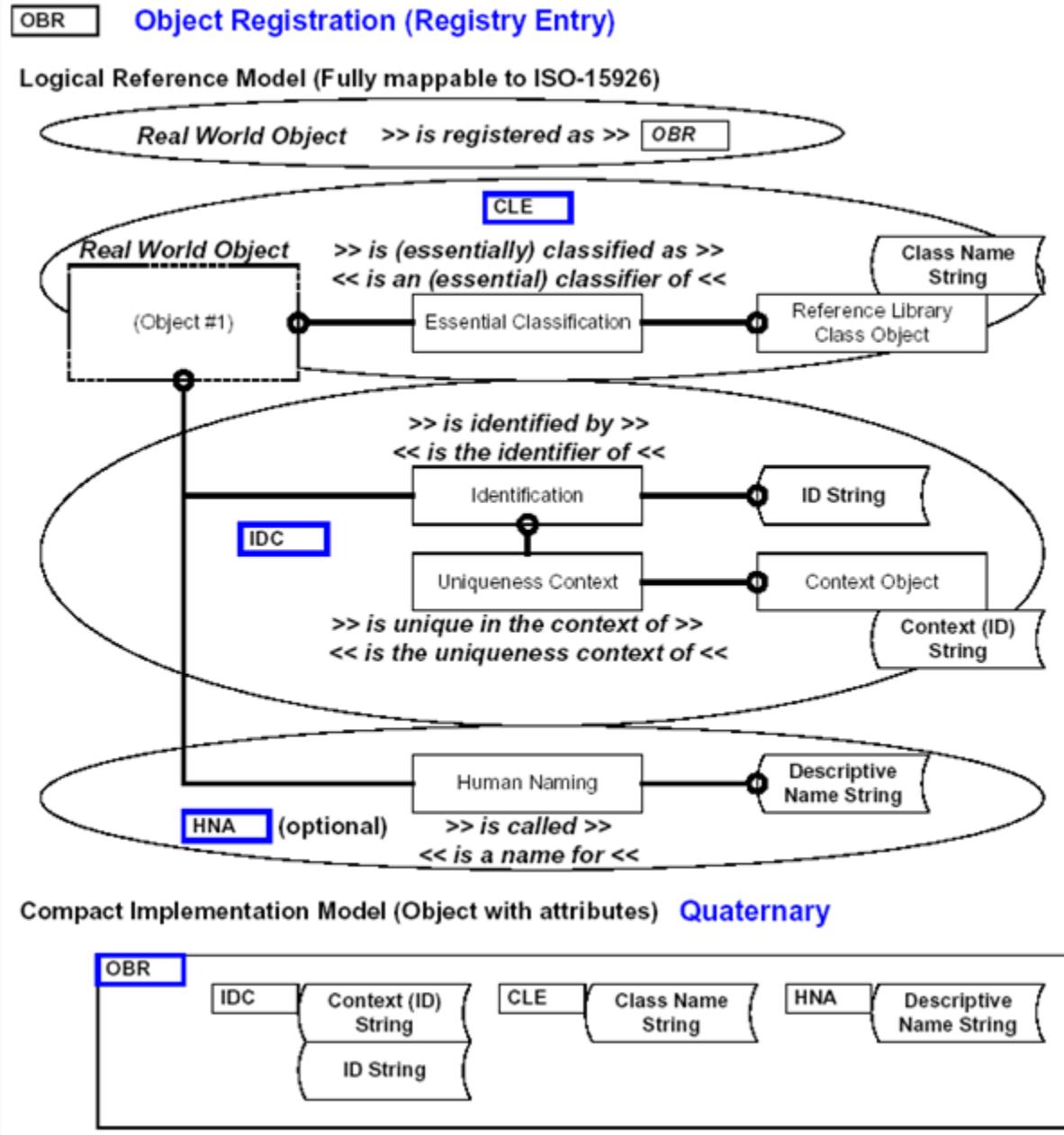
An optional HNA atomic template is part of the OBR registration template on first instantiation of any object.

Implementation Notes / Issues / Suggestions

Generally the "Name" is presented for human recognition, often for corroboration or confirmation together with

other formal IDC identifiers where there is selection ambiguity or in contexts where uncertainty of human recognition is possible.

## Object Registration (Registry Entry)



## Business Usage Semantics (incl Cardinality)

Every object of interest, of which the EIF is expected to take some part in its future management, or of information about it, must be "Registered" at least once with unique identification and essential classification. The "human name" is an optional component for cross checking purposes, particularly but not exclusively where the identification string or symbol, whilst strictly unique, is not in a form for useful human interpretation.

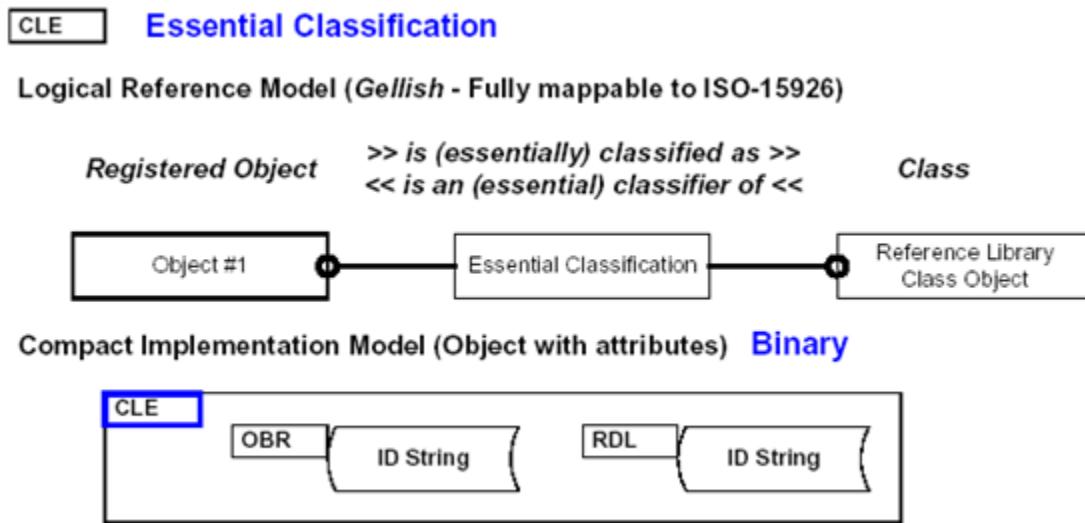
See IDC, CLE and NAM template definitions for individual semantics.

## Implementation Notes / Issues / Suggestions

See IDC, CLE and NAM template definitions for individual implementation notes.

Templates and Registered Objects in general are distinct objects each with identity in EIF. For instances of the OBR Atomic Template, ID string for the real world object is intended to be used as a surrogate for the ID of the template instance itself, in order to avoid circular references / enable bootstrapping.

## Essential Classification



## Business Usage Semantics (incl Cardinality)

Every object handled within EIF shall be essentially classified at least once. (Generally, for objects captured in the Registry, this will be achieved once on instantiation via the Object Registration Template)

Essential classification concerns the nature of (some aspect of) the object being classified (registered / instantiated). It is a specialization of the object base entity type (As per the "upper ontology"), independent of the business use of information about the entity, and independent of any additional classification for business management and access reasons for chunking and navigation. (See also Incidental Classification).

Example usages: (Hold)

Mapping guidelines / rules: (Hold)

## Implementation Notes / Issues / Suggestions

RDL class objects should be referred to by unique ID (just like any other registered object). Typically implementations use the non-unique class "name", however whilst a human interpretable name will always be captured at time of first registration (of the class), classes will have alternative names (synonyms) and multilingual translations / representations.

Essential classification(s) should be assumed fixed for the life of an object, however objects may receive additional essential (and incidental) classifications during their life as a result of increasing knowledge of more

aspects of the object. Examples of the occurrence of multiple essential classifications include:

- Discovering additional specialization (common event)
- Discovering additional specialization of multiple orthogonal aspects (common event)
- Discovering erroneous earlier classification (hopefully infrequent event)

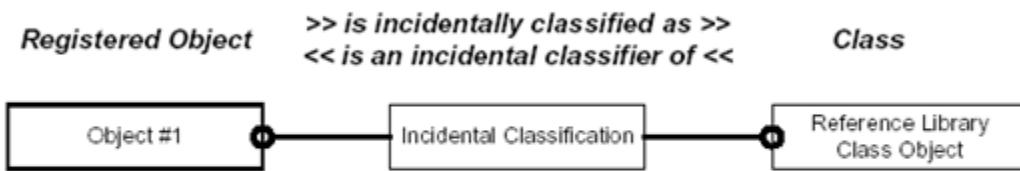
At any one time, one of the essential classifications shall be considered the "default essential classification" of the object, for display, navigation, search purposes etc. This default may be re-assigned to any one of its multiple essential classifications by an "Information Manager" level user with appropriate access rights. (This may be achieved by incidental classification of the essential classification template instance, or by creation of a separate atomic template for this purpose, or by association meta-data for the relevant essential classification association, since it is an implementation artifact to assign this default).

Recognition needs to be given to the inheritance aspects of classification – wherever calls make reference to (say) "pumps", the normal semantic will include "and all subtypes", unless the query is constructed explicitly otherwise to exclude sub-types. One corollary of these last two issues is that as well as "base entity type" and "lowest level specialization class", each object will probably need to have recognized a default organizational node in that hierarchy. Since this is an implementation artifact, a meta-data implementation is acceptable.

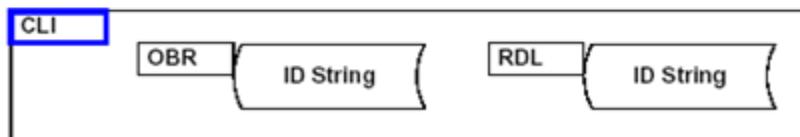
## Incidental Classification

### **CLI      Incidental Classification**

Logical Reference Model (Gellish - Fully mappable to ISO-15926)



Compact Implementation Model (Object with attributes) **Binary**



## Business Usage Semantics (incl Cardinality)

Any object may be incidentally classified (and subsequently de-classified) any number of times.

Incidental classification is used to create manageable groupings of objects according to any circumstantial (i.e., non-intrinsic) aspects of those objects – aspects which are concerned with their (temporary) involvement or usage in any aspect of the business. (See Essential Classification for classification according to lifelong intrinsic aspects).

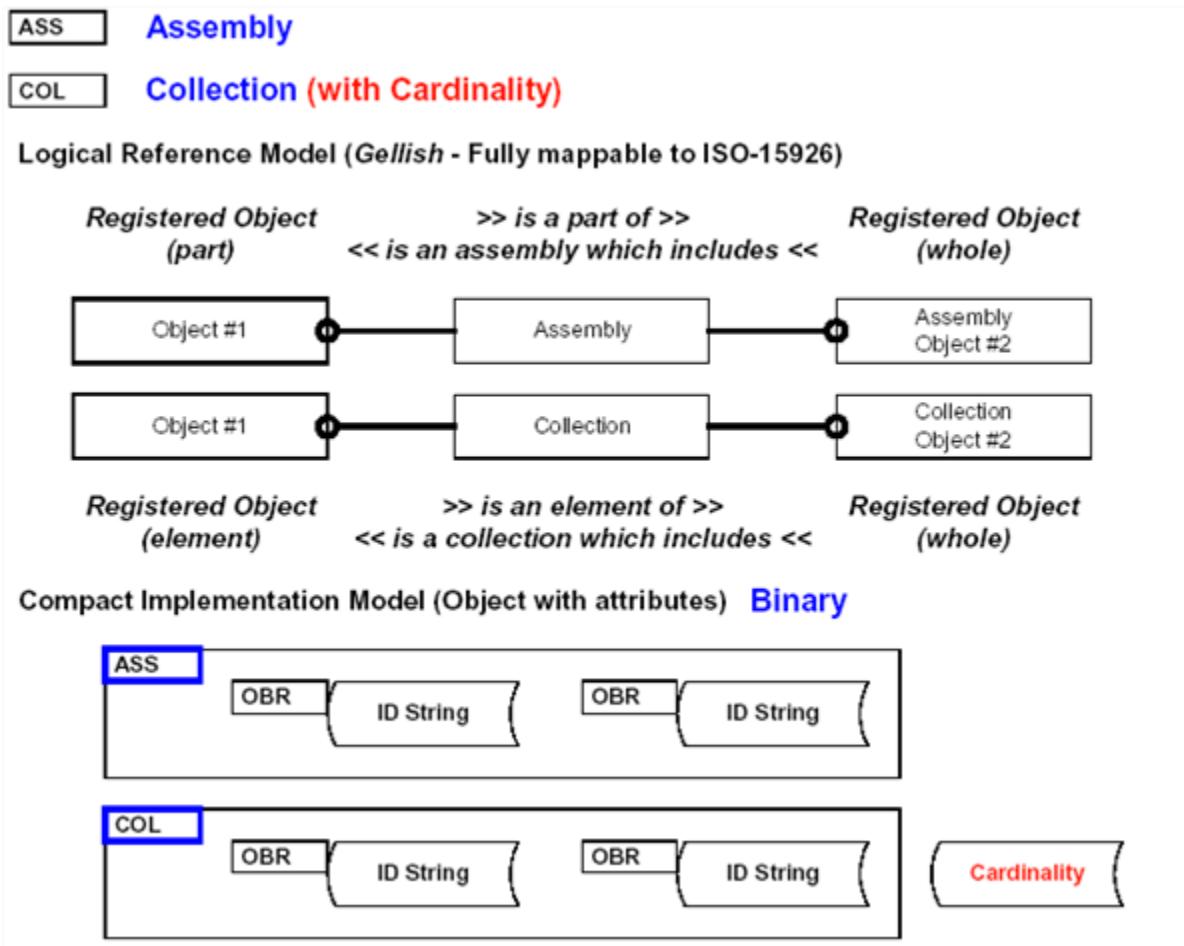
Example usages: (Hold)

Mapping guidelines / rules: (Hold)

## Implementation Notes / Issues / Suggestions

None currently recognized.

### Assembly/Collection



### Business Usage Semantics (incl Cardinality)

The assembly relationship applies between two (whole and part) objects, where the individual part plays a distinct or systematic role in the whole (It says nothing about physical assembly or joining).

The collection relationship applies between two (whole and element) objects, where the individual element plays no distinct role in the whole. (It says nothing about physical proximity or gathering together).

Example usages:

- Pump P102 is a part of System S100.
- Filter F103 is part of System S100.

These are assembly relationships, because although both P102 and F103 are "parts" of the system, they are not wholly interchangeable in their relationship to the system.

Pump MfrZ2002/02/317/M is an element of Shipment PO192/7

Filter MfrX2001/04FQP4/23 is (also) an element of Shipment PO192/7

This instance of Model no BD/PG4010scx is an element of "The set of available 10 bar pressure gauges."

That instance of Model no BD/PG4010scx is (also) an element of "The set of available 10 bar pressure gauges."

These are collection relationships, because there is no different significance in the way the distinct elements relate to the whole.

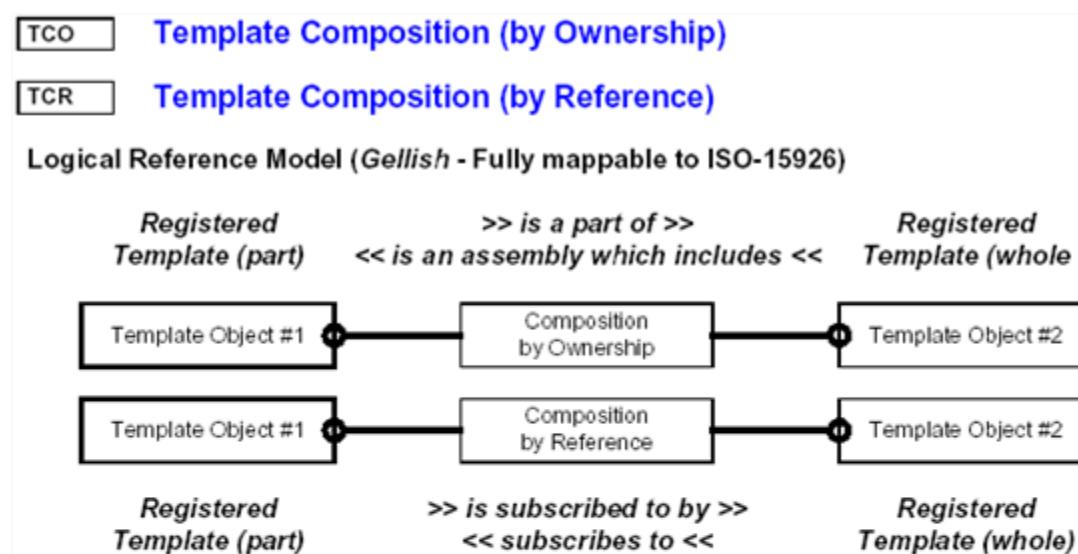
Mapping guidelines / rules:

If in doubt map whole-part relationships to Assembly. In general Collection tends to be about "discovering" useful sets of things post-hoc, and set membership is ultimately indistinguishable from incidental classification.

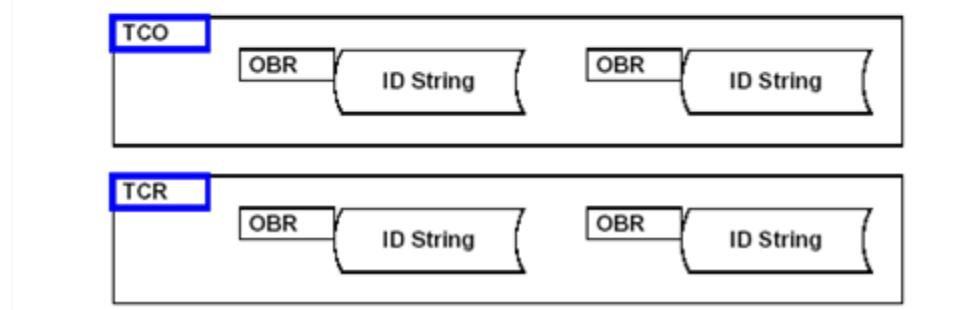
## Implementation Notes / Issues / Suggestions

None.

## Template Composition by Ownership and Reference



## Compact Implementation Model (Object with attributes) Binary



## Business Usage Semantics (incl Cardinality)

A "Template" is an information object whose (relevant) schema is defined according to this EIWM Template

model. They exist as both the Template Schema and Template Instances according to those schema. See the EIWM Overview graphic for the relationship between Templates of various kinds (AT's, MT's and DT's). These TCO and TCR AT's define assembly relationships between other AT's, MT's and DT's.

These template composition AT's are simply specializations of the 'Assembly' AT, applicable when the objects in question are Templates. The semantic differences are:

TCO applies when it is intended that instances share "ownership", that is the part inherits "publish" (create, update and delete) rights from the whole instance. A whole can have many owned parts, but a part can have ONLY ONE OWNING PARENT / whole at any one time.

TCR applies when the part is included (by reference) in the whole, but the instances retain independent ownership and publish rights, and is effectively a "subscribe" relationship. (Parts can be referred to any number of times by any number of parent wholes).

Examples and Mapping Guidelines: To follow on request.

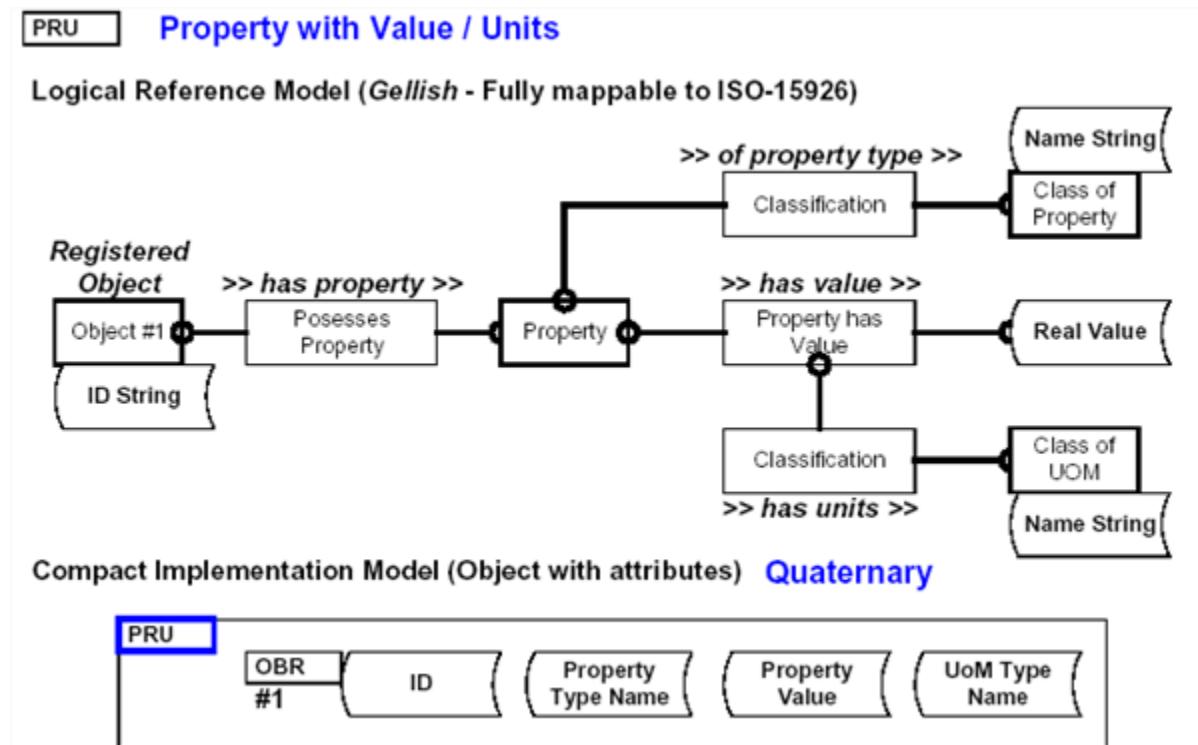
## Implementation Notes / Issues / Suggestions

Need to address Template Schema which confer the above semantics on their instances.

Need to establish minimum essential meta-data content associated with template instances.

Need to consider whether owned parts should also inherit versioning and lifestyle related meta-data, in which case the parts effectively merge into the whole (the whole-part relationships become redundant) for all practical purposes for the instances, except for configuration management of changing schema. (Alternative specializations of Template Composition relationships are conceivable depending on implementation preferences).

## Property with Value/Units



## Business Usage Semantics (incl Cardinality)

This AT is used to assign a real value quantified property to an object (with units unless the property is dimensionless ratio).

Any registered object may possess any number of properties. (The same property may in principle be possessed by any number of registered objects, though this would involve registering and uniquely identifying the property itself).

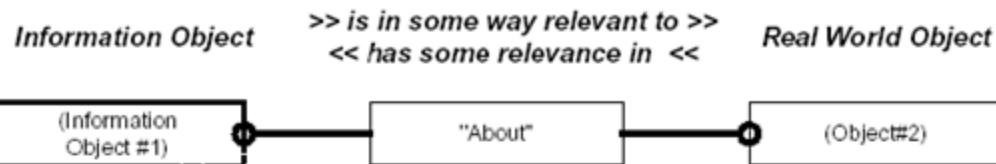
## Implementation Notes / Issues / Suggestions

It is permitted to use specializations of this AT for specific property types (and / or units) if this provides any implementation benefits. (Ex: Possession of Design Temperature in Degrees Centigrade say).

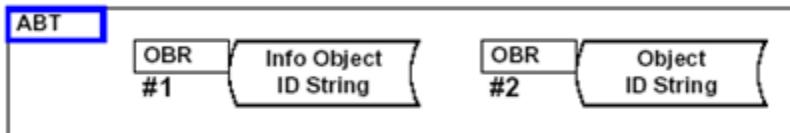
## About Information Linking Groups of ATs

### **ABT      About - (ie The "Information Linking" Group of AT's)**

Logical Reference Model (Gellish - Fully mappable to ISO-15926)



Compact Implementation Model (Object with attributes)



#### Specialisations of this AT

The ABT AT is used to indicate that an information object / document is "about" or otherwise relevant to an object, directly or indirectly, only where there is no further specific knowledge available to characterise the relationship.

To indicate that an information object / document explicitly includes a reference to an object identifier.

**IRE      Includes Reference**      **>> refers to >>**  
**<< is referred to in <<**

To indicate that an information object is a direct explicit definition of (some intrinsic aspect of) an object.

**DEF      Directly Defines**      **>> (directly) defines >>**  
**<< is (explicitly) defined in <<**

To indicate that an information object is a definition of (some intrinsic aspect of) an object indirectly or by inheritance from a parent class, set or whole object.

**IDF      Indirectly Defines**      **>> indirectly defines >>**  
**<< is indirectly defined in <<**

To indicate that an information object is a description or is otherwise about (any aspect of) an object explicitly.

**DES      Directly Describes**      **>> (directly) describes >>**  
**<< is (explicitly) described in <<**

To indicate that an information object is a description or is otherwise about (any aspect of) an object indirectly or by inheritance from a parent class, set or whole, or by association with another object.

**IDS      Indirectly Describes**      **>> indirectly describes >>**  
**<< is indirectly described in <<**

## Business Usage Semantics (incl Cardinality)

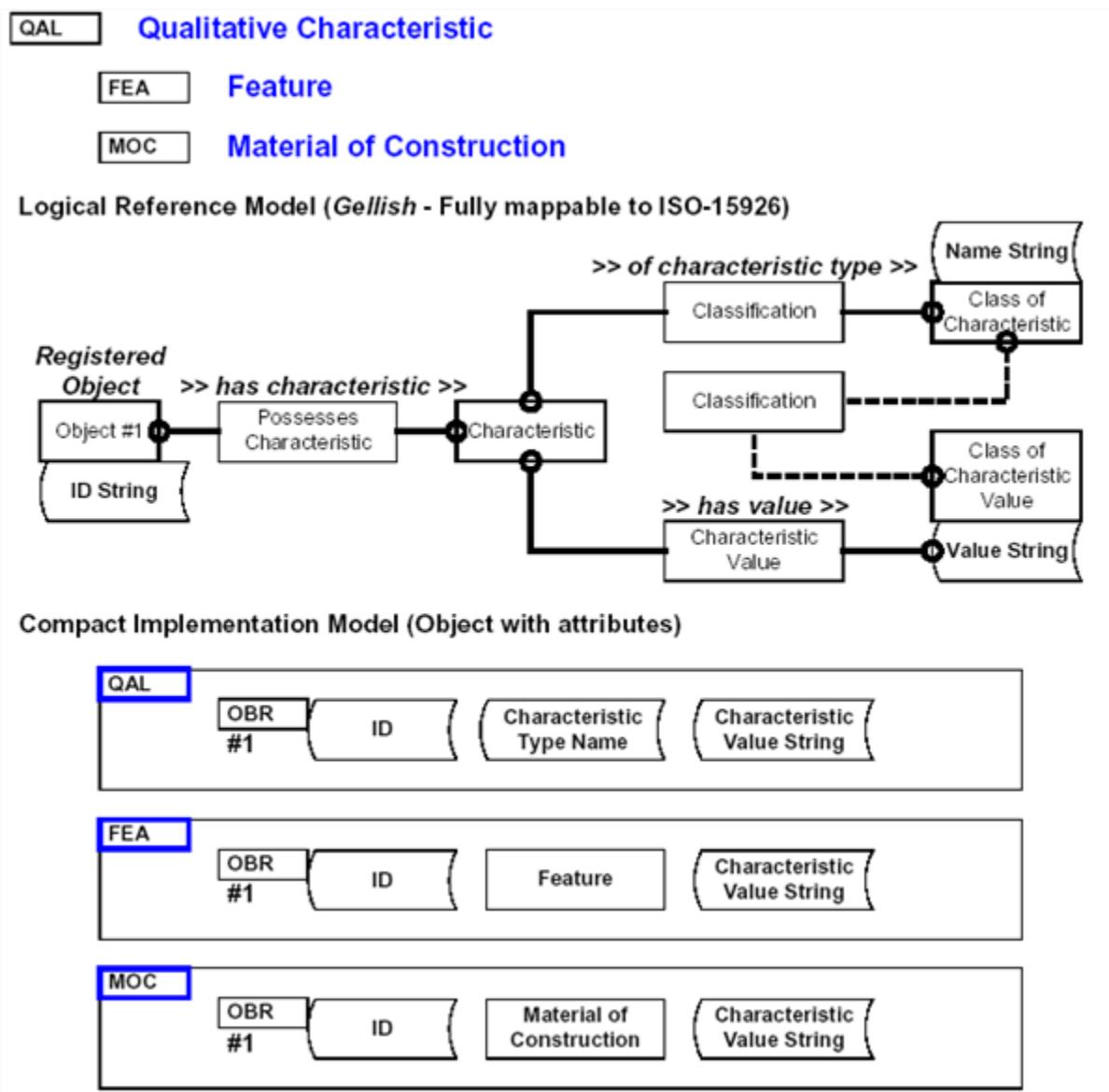
This AT provides the basic "Asset Linking" mechanism to documents or other information objects from any objects (including other information objects). Any number of information objects can be "about" any number of objects.

## Implementation Notes / Issues / Suggestions

The main issue with this (set) of AT's is the mapping choice, not just in which specialization to select, but in being clear as the most appropriate asset to which to link. Example is a "test procedure" about a specific tagged or numbered pump or about a whole class or set of pumps or is a commissioning instruction about a specific item or about all components of a system.

The mapping guidelines will suggest including the "reference" AT for all explicit objects, and a definition or description AT for the true subject. Need to beware for example, where a specification "for" an individual pump (say) includes a reference to a (say) system or process unit, etc.

## Qualitative Characteristic



## Business Usage Semantics (incl Cardinality)

This AT is used to assign qualitative information which characterizes (some aspect of) an object. This is distinguished from PRU by the fact that the characteristic is not a physically dimensioned property (though it may infer one), and its values must be selected from a domain of valid values, rather than any real number value.

Any registered object may possess any number of characteristics.

The specialization FEA is used to characterize a shape or form feature such as having "a bevelled end" or having "a bolted bonnet." The feature is a design form, not merely a distinct component.

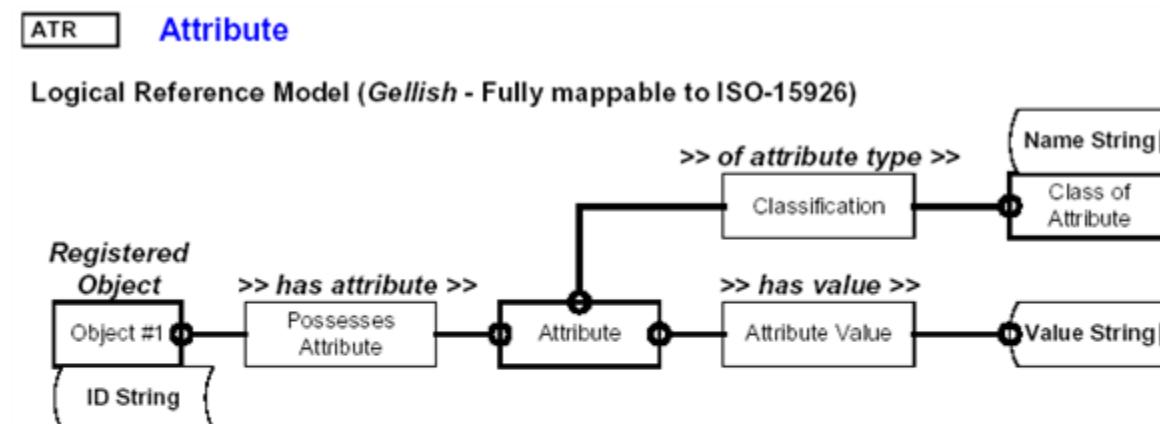
The specialization MOC is used to characterize the material of construction of an object such as "being made of Stainless Steel," or "being made of ASTM A234 WPB".

## Implementation Notes / Issues / Suggestions

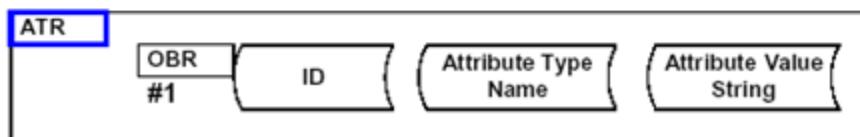
It is permitted to use specializations of this AT for specific characteristic types (and / or units) if this provides any implementation benefits. (Ex: Possession of Size according to ANSI mm Nominal Size, say)

Two particular specializations FEA and MOC are specified.

## Attribute



Compact Implementation Model (Object with attributes)



## Business Usage Semantics (incl Cardinality)

This AT is used to assign an arbitrary information attribute which characterizes (some aspect of) an object. This is distinguished from QAL by the fact that the attribute value is not limited to any domain by the class of attribute.

This is a fallback AT to be used only where other AT's are inapplicable or insufficient knowledge exists to select a more specific AT.

Any registered object may possess any number of attributes.

## Implementation Notes / Issues / Suggestions

None.

### Direct/Indirect Connection

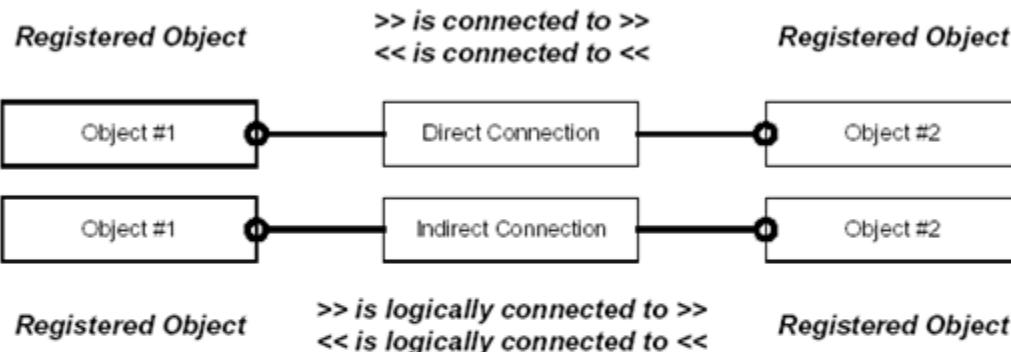
**DCO**

**Direct Connection (Contiguous)**

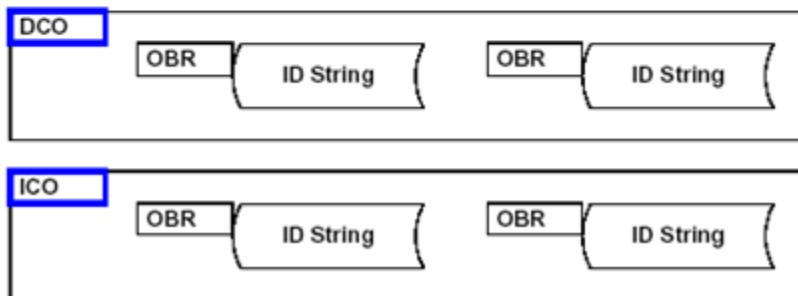
**ICO**

**Indirect Connection (Logical)**

Logical Reference Model (*Gellish* - Fully mappable to ISO-15926)



Compact Implementation Model (Object with attributes) **Binary**



### Business Usage Semantics (incl Cardinality)

These AT's are used to indicate that objects are connected to each other.

DCO is used when the two objects are contiguous, physically touching (barring any materials actually used to make the connection into a joint).

ICO is used to indicate that two objects are connected indirectly in some systematic or logical way only.

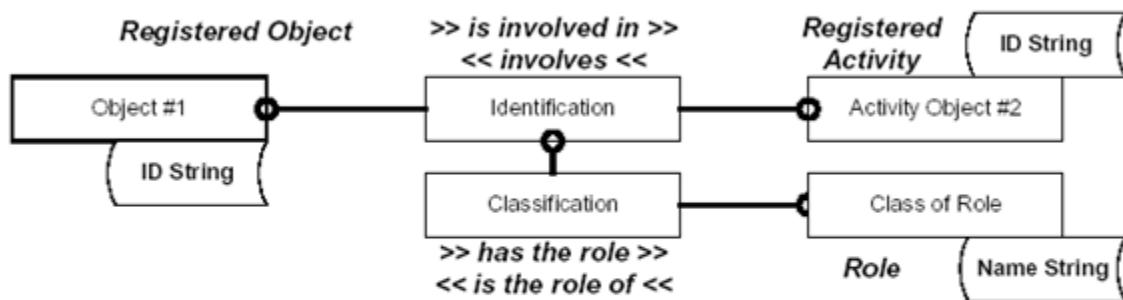
## Implementation Notes / Issues / Suggestions

None.

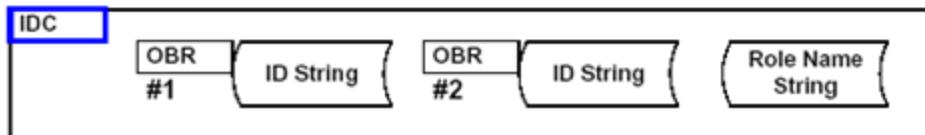
## Involvement in Activity

### **INV** Involvement in Activity

Logical Reference Model (Gellish - Fully mappable to ISO-15926)



Compact Implementation Model (Object with attributes) **Tertiary**



## Business Usage Semantics (incl Cardinality)

This AT is used to indicate that an object is involved in an activity (and its role in that activity).

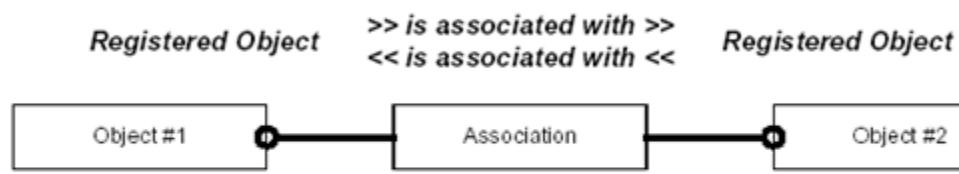
## Implementation Notes / Issues / Suggestions

None.

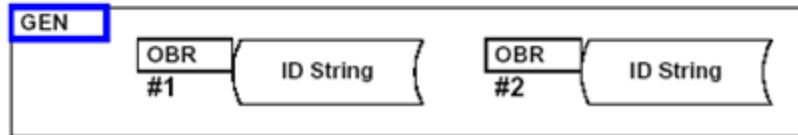
## Generic Association/Relationship

### **GEN** Generic Association / Relationship

Logical Reference Model (Gellish - Fully mappable to ISO-15926)



Compact Implementation Model (Object with attributes) **Binary**



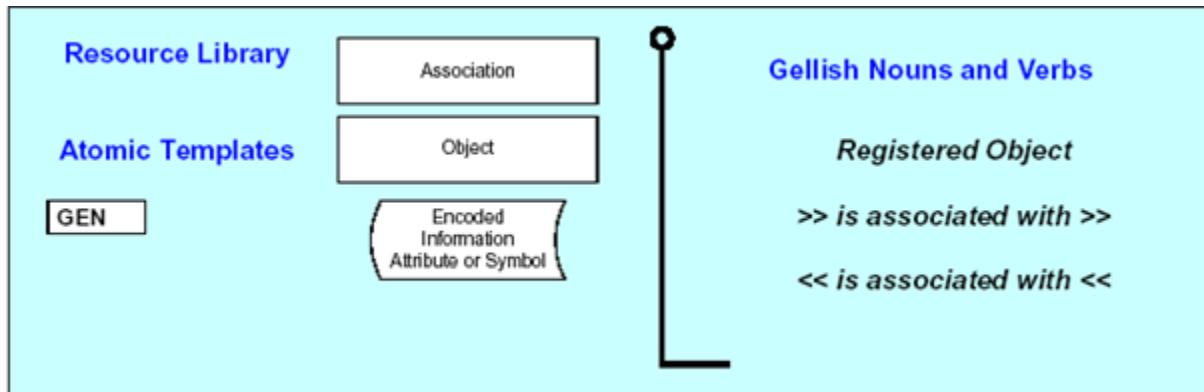
## Business Usage Semantics (incl Cardinality)

Used to capture the existence of a non-specific relationship between two objects, only where no applicable more specific atomic (binary) template exists in the template library at the time of instantiation, or knowledge about the association is insufficiently complete at that point in time.

As such, this Template offers no other semantic constraints on object types, string contents or cardinalities.

## Implementation Notes / Issues / Suggestions

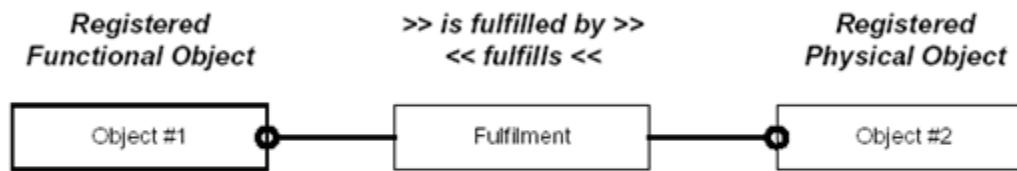
It is conceivable that the business may wish to add knowledge to a generic association, by further classification of the association instance, until such time as more explicit alternative AT is implemented.



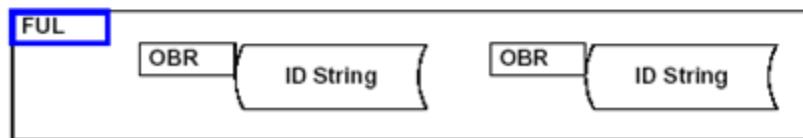
Fulfillment



Logical Reference Model (Gellish - Fully mappable to ISO-15926)



Compact Implementation Model (Object with attributes) **Binary**



## Business Usage Semantics (incl Cardinality)

This AT is used to indicate that a materialized physical object fulfills the "role" of a logical or functional physical object.

Main examples are:

The relationship between a "tagged" process item location (ex as defined on a P+ID) and an individual physical plant item of a specific serial number and model number installed at that location.

The relationship between a numbered and versioned document or other logical information content object, and a rendition of that document in some physical format or representation.

## Implementation Notes / Issues / Suggestions

None.

### AVEVA AIM Workhub XML Schema Reference

**Note:** IDs must not contain any of the following characters: left brace ({), right brace (}), vertical bar (|).

XML Schema	Reference
Object ID (Unclassified)	<pre>&lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;/Object&gt;</pre>
Object with Essential Classification	<pre>&lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;ClassID&gt;P&amp;ID&lt;/ClassID&gt; &lt;/Object&gt;</pre>
Object ID with Access Control	<pre>&lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;ACE&gt;Finance Group&lt;/ACE&gt; &lt;/Object&gt;</pre>
Descriptive Name	<pre>&lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;Name&gt;Fuel System Diagram&lt;/Name&gt; &lt;ClassID&gt;P&amp;ID&lt;/ClassID&gt; &lt;/Object&gt;</pre>
Context	<pre>&lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;Context&gt; &lt;ID&gt;IPE&lt;/ID&gt; &lt;/Context&gt; &lt;ClassID&gt;P&amp;ID&lt;/ClassID&gt; &lt;/Object&gt;</pre>
Nested Context	<pre>&lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;Context&gt; &lt;ID&gt;Design Documents&lt;/ID&gt; &lt;Context&gt; &lt;ID&gt;IPE&lt;/ID&gt; &lt;/Context&gt; &lt;/Context&gt; &lt;ClassID&gt;P&amp;ID&lt;/ClassID&gt; &lt;/Object&gt;</pre>
Association	<pre>&lt;Object&gt; &lt;ID&gt;PID 410&lt;/ID&gt; &lt;ClassID&gt;P&amp;ID&lt;/ClassID&gt; &lt;Association type="refers to"&gt; &lt;Object&gt; &lt;ID&gt;150-PD-125&lt;/ID&gt;</pre>

XML Schema	Reference
	</Object> </Association> </Object>
Alias Identifier	<Object> <ID>PID 410</ID> <ClassID>P&ID</ClassID> <Association type="is identified by"> <Object> <ID>P&ID 410 Sheet 3</ID> <Context> <ID>IPE</ID> </Context> <Revision>B</Revision> <Name>Fuel System Sheet 3</Name> </Object> </Association> </Object>
Document File	<Object> <ID>PID 113</ID> <Context> <ID>IPE</ID> </Context> <ClassID>P&ID</ClassID> <Association type="is fulfilled by"> <Object> <ID> PID_410_SVG </ID> <Context> <ID>IPE</ID> </Context> </Object> </Association> </Object>
Attributes	<Object> <ID> PID_410_SVG</ID> <ClassID>FILE</ClassID> <Context> <ID>IPE</ID> </Context> <Characteristic> <Name>InfoLocator</Name> <Value>/vs/IPE/P&IDs/P410_Sht_3.svg</Value> </Characteristic> <Characteristic> <Name>InfoType</Name> <Value>application/zgl</Value> </Characteristic> </Object>
Inline Dataset	<Object> <ID>P100</ID> <ClassID>PUMP</ClassID> <Context> <ID>IPE</ID>

XML Schema	Reference
	<pre> &lt;/Context&gt; &lt;Association type="has dataset"&gt; &lt;Object&gt; &lt;ID&gt;P100 Data Set&lt;/ID&gt; &lt;ClassID&gt;VPD DATASET&lt;/ClassID&gt; &lt;Context&gt; &lt;ID&gt;IPE&lt;/ID&gt; &lt;/Context&gt; &lt;Characteristic&gt; &lt;Name&gt;Bore&lt;/Name&gt; &lt;Value&gt;200&lt;/Value&gt; &lt;/Characteristic&gt; &lt;Characteristic&gt; &lt;Name&gt;Material&lt;/Name&gt; &lt;Value&gt;Stainless Steel&lt;/Value&gt; &lt;/Characteristic&gt; &lt;/Object&gt; &lt;/Association&gt; &lt;/Object&gt; </pre>
Import Template	<pre> &lt;?xml version="1.0" encoding="UTF-8" ?&gt; &lt;vl:VNETList xmlns:vl="http://www.aveva.com/VNET&gt;List" xmlns="http://www.aveva.com/VNET/eiwm"&gt; &lt;Template&gt;&lt;ID&gt;VPE P&amp;ID&lt;/ID&gt; : &lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;/Object&gt; : &lt;/Template&gt; &lt;/vl:VNETList&gt; </pre>
Define Units of Measure	<pre> &lt;SystemOfUOMClass&gt; &lt;ClassID&gt;SI&lt;/ClassID&gt; &lt;ClassName&gt;SI&lt;/ClassName&gt; &lt;Definition&gt;SI&lt;/Definition&gt; &lt;UOMClass&gt; &lt;ClassID&gt;Metre&lt;/ClassID&gt; &lt;ClassName&gt;Metre&lt;/ClassName&gt; &lt;Definition&gt;Metre&lt;/Definition&gt; &lt;Abbrev&gt;m&lt;/Abbrev&gt; &lt;/UOMClass&gt; &lt;UOMClass&gt; &lt;ClassID&gt;Centimetre&lt;/ClassID&gt; &lt;ClassName&gt;Centimetre&lt;/ClassName&gt; &lt;Definition&gt;Centimetre&lt;/Definition&gt; &lt;Abbrev&gt;cm&lt;/Abbrev&gt; &lt;/UOMClass&gt; &lt;/SystemOfUOMClass&gt; </pre>

This example defines the SI system of units of measure (UOM), and also defines the two UOM classes – one for Metre (m) and another for Centimetre (cm).

Measure classes are defined as given in this snippet:

```
<MeasureClass>
<ClassID>Length Measure</ClassID>
<ClassName>Length Measure</ClassName>
<Definition>Length Measure</Definition>
<UnitOfMeasure>
<UOMClassID>Metre</UOMClassID>
</UnitOfMeasure>
<UnitOfMeasure>
<UOMClassID>Centimetre</UOMClassID>
<Scale>0.01</Scale>
</UnitOfMeasure>
</MeasureClass>
```

Here, a Length Measure is defined with its base UOM as Metre and another UOM of Centimetre.

**Note:** The Scale factor converts Centimetre to the base unit Metre.

Following is the definition of a PropertyClass that makes use of a UOM:

```
<PropertyClass>
<ClassID>LENGTH</ClassID>
<ParentClassID>PHYSICAL PROPERTY</ParentClassID>
<ClassName>Length</ClassName>
<Definition>Length</Definition>
<MeasureClassID>Length Measure</MeasureClassID>
</PropertyClass>
To import an Object that uses this Property
<Object>
<ID>TestObject02</ID>
<Context>
<ID>IPE</ID>
</Context>
<Property>
<Name>LENGTH</Name>
<Value>10</Value>
<Units>cm</Units>
</Property>
</Object>
```

A Property can be provided with an empty `<Units/>` element (or `<Units></Units>`). If Units are not provided, then the Property will not gain the Base Unit, but will be set to Null. If a Characteristic is supplied for an attribute that is actually a Property, then it will gain the Base Unit for the Property. EIA SearchResults will return an empty `<Units/>` element for Properties that have null Units to match the EIWM schema.

The EIWM allows for the creation of Rights and the assignment of those Rights to appropriate Roles and Persons.

The following is an EIWM example of creating a Right:

```
<?xml version="1.0" encoding="UTF-8" ?>
<?vnet xslt="NULL" ?>
<vl:VNETList xmlns:vl="http://www.aveva.com/VNET>List" xmlns="http://www.aveva.com/VNET/
eiwm">
<Right>
<Name>NewRight</Name>
</Right>
</vl:VNETList>
```

The following is an EIWM example of assigning a Right to a Person and a Role:

```
<?xml version="1.0" encoding="UTF-8" ?>
<?vnet xslt="NULL" ?>
<vl:VNETList xmlns:vl="http://www.aveva.com/VNET>List" xmlns="http://www.aveva.com/VNET/
```

```
eiwm">
<Template>
<ID>BootBootstrapUsers.xml::template</ID>
<Object>
<ID>AVEVA\Person1</ID>
<ClassID>PERSON</ClassID>
<Association type="has right">
<Right>
<Name>NewRight</Name>
</Right>
</Association>
</Object>
<Object>
<ID>Default User</ID>
<ClassID>ROLE</ClassID>
<Association type="has right">
<Right>
<Name>NewRight</Name>
</Right>
</Association>
</Object>
</Template>
</vl:VNETList>
```

Rights can be assigned to either Roles or Persons with the following conditions:

- Right should be existing before assigning it to a Role or a Person. If it is not existing, then Import Controller displays the message: **Right not assigned - no such Right '<name of the right>'**
- Associating any object other than Role or Person to the Right is not permissible. If the Administrator tries to assign any other object apart from Role or Person to a new or existing Right, the following message is shown to the user while importing the XML: **Cannot assign '<name of the right>' right to '<name of the object>' object. Rights can be assigned only to persons and roles.**
- Rights cannot be deleted if there are some references still existing. Only the unreferenced rights are deleted and then the Import Controller displays messages like this for each existing referenced rights: **Right '<name of the right>' not deleted as it is still referenced.**

## AIM API

This section describes some typical examples of using the AIM API to access data stored in AIM.

Data in AIM, which 3rd party systems might need to access, can be classified into the following categories:

- Facility Objects (Tags)
  - Attributes
  - Relationships including Document Links
- Documents
  - Attributes
- Equipment Objects
  - Attributes
  - Relationships

The key calls that can be made are:

AIM API	Usage
GET {dashboardUrl}/api/domain/authorization/ isSessionValid	To check if a session is still valid and retrieve the XSRF cookie.
POST {dashboardUrl}/api/v1/domain/searches/run	To fetch data from AIM. The request body contains information on the search parameters and data to be retrieved for the objects fulfilling the criteria.
<b>For Tags:</b>  GET {dashboardUrl}/api/v1/domain/ dataGroup/{objectHandle}  ?dataGroupNames=Main Attributes &dataGroupNames=Related Items 1 &dataGroupNames=Related Items 2 &dataGroupNames=Related Items 3 &dataGroupNames=Related Items 4 &dataGroupNames=Related Items 5	Different DataGroup names can be passed to this API.  Different Related Items data group names fetch the following values (for <b>Tag Summary</b> views):  Related Items 1: Equipment Related Items 2: Parts/Components Related Items 3: Documents and 3D Models Related Items 4: Events Related Items 5: Activities/Tasks  Fetch attributes and related items for each object by passing in the object handle.  This API will only return 3000 related items - for performance reasons.
<b>For Documents:</b>  GET {dashboardUrl}/api/v1/domain/ dataGroup/{objectHandle}  ?dataGroupNames=Main Attributes &dataGroupNames=Related Items 1 &dataGroupNames=Related Items 2 &dataGroupNames=Related Items 3 &dataGroupNames=Related Items 4 &dataGroupNames=Related Items 5	Different Related Items data group names fetch the following values (for <b>Document Summary</b> views):  Related Items 1: Tags Related Items 2: Equipment Related Items 3: Documents and 3D Models Related Items 4: Events Related Items 5: Activities/Tasks
<b>For Equipment Objects:</b>  GET {dashboardUrl}/api/v1/domain/ dataGroup/{objectHandle}  ?dataGroupNames=Main Attributes &dataGroupNames=Related Items 1 &dataGroupNames=Related Items 2 &dataGroupNames=Related Items 3 &dataGroupNames=Related Items 4	Different Related Items data group names fetch the following values (for <b>Equipment Summary</b> views):  Related Items 1: Tags Related Items 2: Documents and 3D Models Related Items 3: Events Related Items 4: Activities/Tasks

**Notes:**

---

- Where {dashboardUrl} is, for example, <https://xyz.dashboard.imav.connect.aveva.com>
- You must have an authentication bearer token from CONNECT for the asset whose data is to be accessed.
- The API calls documented here are the only AIM API calls recommended for use with AIM-A.

## Steps

1. Call GET API and pass a bearer token for authorization to get a XSRF cookie.

GET {dashboardUrl}/api/domain/authorization/issessionvalid

Example: {dashboardUrl}/api/domain/authorization/issessionvalid

2. Retrieve the cookie from the above request and add it into the header of the POST API call (see Figures 1 and 2)

POST {dashboardUrl}/api/v1/domain/searches/run

Example: {dashboardUrl}/api/v1/domain/searches/run

- a. For full loads, pass in a request body based on the example in section Search API Request Inputs - Initial Load below.
- b. For delta loads, pass in a request body based on the example in section Search API Request Inputs - Delta Loads below.
- c. Always call issessionvalid API before getting subsequent pages.
- d. The field 'totalNumberOfResults' in the response gives the total number of records and is to be used to calculate the page count.

3. Call the GET API to retrieve object attributes and relationships by passing an object handle, for each object in the response from the previous POST API.

GET {dashboardUrl}/api/v1/domain/dataGroup/{objectHandle}?dataGroupNames=Main  
Attributes&dataGroupNames=Related Items 1&dataGroupNames=Related Items 2

Example: {dashboardUrl}/api/v1/domain/dataGroup/975441?dataGroupNames=Main  
Attributes&dataGroupNames=Related Items 1&dataGroupNames=Related Items 2

---

**Note:** It is recommended to continue calling the above API for fetching the tag-document relationships even though the results are capped at 3000. When the tag-document relationships returned reaches 3000, then additionally call the below API to fetch all tag-document relations.

---

4. Call the POST API to retrieve the tag-document relationships by using a request based on the example in section Search API Request Inputs – Tag-Document relationships, and passing in the fullId as highlighted for each object in response from the POST API from point 2.

POST {dashboardUrl}/api/v1/domain/searches/run

Example: {dashboardUrl}/api/v1/domain/searches/run

Figure 1: Retrieving the x-xsrf cookie from the issessionvalid GET API

The screenshot shows a Postman interface with a GET request to `https://[REDACTED].connect.aveva.com/api/domain/authorization/isSessionValid`. The 'Headers' tab is active, showing a single header 'Key' with the value 'Value'. Below it, the 'Cookies' tab is active, displaying a table with columns 'Name', 'Value', 'Domain', and 'Path'. A single cookie row is shown, with the 'Value' column highlighted by a red box. The cookie name is 'x-xsrf-tokendefault' and its value is a long string of characters.

Name	Value	Domain	Path
x-xsrf-tokendefault	9F15AB9B358B3E7F9AD395D1EA099234DB82E9C253A329C46892A8BD864944A2	[REDACTED].connect.aveva.com	/

Figure 2: Using the retrieved cookie in the Search API

The screenshot shows a Postman interface with a POST request to `https://[REDACTED].connect.aveva.com/api/v1/domain/searches/run`. The 'Headers' tab is active, showing a table with columns 'KEY', 'VALUE', and 'DESCRIPTION'. A checkbox next to 'x-xsrf-tokendefault' is checked, and its value is the same as the one in Figure 2.

KEY	VALUE	DESCRIPTION
x-xsrf-tokendefault	9F15AB9B358B3E7F9AD395D1EA099234DB82E9C253A329C46892A8BD864944A2	

## Search API Request Inputs - Initial Load

The following table shows an example request body to be used for retrieving the full set of data (not a delta) from AIM. This could be used after an initial load:

Data Category	Request body for Search API
Tags	<pre>{   "criteria": [     {       "itemIdentifierType": "Id",       "value": "%",       "valueOperator": "Like",       "booleanOperator": "AND",       "bracket": "Open",       "includeInCriteria": true     },     {       "itemIdentifierType": "ClassId",       "value": "FACILITY",       "valueOperator": "Equals",       "booleanOperator": "AND",       "bracket": "Close"     }   ] }</pre>

	<pre>         "includeInCriteria": true     }, {     "associationTypeName": "has project",     "associationClassId": "??????",     "value": "",     "booleanOperator": "AND",     "bracket": "None",     "item": {     "properties": [     {"itemIdentifierType": "Id",     "value": "%",     "valueOperator": "Like",     "booleanOperator": "AND"     }, {     "itemIdentifierType": "ClassId",     "value": "??????",     "valueOperator": "Equals",     "booleanOperator": "AND"     }     ]     },     "valueOperator": "NotEquals" }],     "paging": {         "pageSize": "100",         "currentPage": 1     },     "sorting": {         "sortAscending": true,         "sortBy": "Id"     },     "projection": [ { "associationTypeName": "has dataset", "AssociationClassId": "OPERATIONAL DATASET", "item": { "properties": [ {"attributeId": "@??????_parent_tag_name", "Label": "Parent Tag Name"}, {"attributeId": "@aim_ATT_LastModified", "Label": "AIM Last Modified"} ] } }, { "associationTypeName": "is implemented by", "AssociationClassId": "ASSET", "item": { "properties": [ {"itemIdentifierType": "Id", "Label": "Related Equipment"} ] } } ] } } </pre>
Documents	<pre> {     "criteria": [         {"itemIdentifierType": "Id", </pre>

	<pre>         "value": "%",         "valueOperator": "Like",         "booleanOperator": "AND",         "bracket": "Open",         "includeInCriteria": true     }, {         "itemIdentifierType": "ClassId",         "value": "DOCUMENT CONTENT",         "valueOperator": "Equals",         "booleanOperator": "AND",         "includeInCriteria": true     }],     "paging": {         "pageSize": "100",         "currentPage": 1     },     "sorting": {         "sortAscending": true,         "sortBy": "Id"     },     "projection": [{"attributeId": "@aim_ATT_LastModified", "Label": "AIM Last Modified"}] } </pre>
Equipments	<pre> {     "criteria": [         {             "itemIdentifierType": "Id",             "value": "%",             "valueOperator": "Like",             "booleanOperator": "AND",             "bracket": "Open",             "includeInCriteria": true         }, {             "itemIdentifierType": "ClassId",             "value": "ASSET",             "valueOperator": "Equals",             "booleanOperator": "AND",             "includeInCriteria": true         }],     "paging": {         "pageSize": "100",         "currentPage": 1     },     "sorting": {         "sortAscending": true,         "sortBy": "Id"     },     "projection": [         {             "associationTypeName": "has data set",             "AssociationClassId": "OPERATIONAL DATASET",             "item": {                 "properties": [                     {"attributeId": "@aim_ATT_La </pre>

	<pre>         "stModified", "Label":"AIM Last Modified"       ]     }   } } </pre>
--	--

**Notes:**

- It is sufficient to include in the "Tags" a projection criteria of "is implemented by" to retrieve the tag-equipment relationships.
- DOCUMENT CONTENT is the parent of **Document** and **Document Package** classes. Therefore, the above call fetches both documents and document packages. However, if the call needs to be more specific, then modify the DOCUMENT CONTENT class accordingly. This change can be applied to section **Search API Request Inputs - Delta Loads** and section **Search API Request Inputs – Tag-Document** relationships.

## Search API Request Inputs - Delta Loads

The following table shows an example request body to be used for retrieving a delta set of data. Update the highlighted date to retrieve the delta from a specific date:

Data Category	Request body for Search API
Tags	<pre> {   "criteria": [     {       "itemIdentifierType": "Id",       "value": "%",       "valueOperator": "Like",       "booleanOperator": "AND",       "bracket": "None",       "includeInCriteria": true     },     {       "itemIdentifierType": "ClassId",       "value": "FACILITY",       "valueOperator": "Equals",       "booleanOperator": "AND",       "includeInCriteria": true     },     {       "attributeId": "@aim_ATT_LastModified",       "dataType": "Date",       "value": "2022-07-22T00:00:00Z",       "valueOperator": "GreaterThanOrEqualTo"     },     {       "booleanOperator": "AND",       "bracket": "None",       "allValues": "true"     }   ],   "paging": {     "pageSize": "100",     "currentPage": 1   },   "sorting": {     "sortAscending": true,     "sortDescending": false   } } </pre>

	<pre>         "sortBy": "Id"     },     "projection": [         "associationTypeName": "has dataset",         "AssociationClassId": "OPERATIONAL DATASET",         "item": {             "properties": [                 {"attributeId": "@??????_parent_tag_name",                  "Label": "Parent Tag Name"},                 {"attributeId": "@??????_tag_status",                  "Label": "Tag Status"},                 {"attributeId": "@aim_ATT_LastModified",                  "Label": "AIM Last Modified"}             ]         }     ],     "associationTypeName": "is implemented by",     "AssociationClassId": "ASSET",     "item": {         "properties": [             {"itemIdentifierType": "Id",              "Label": "Related Equipment"}         ]     } ] } </pre>
Documents	<pre> {     "criteria": [         {             "itemIdentifierType": "Id",             "value": "%",             "valueOperator": "Like",             "booleanOperator": "AND",             "bracket": "Open",             "includeInCriteria": true         },         {             "itemIdentifierType": "ClassId",             "value": "DOCUMENT CONTENT",             "valueOperator": "Equals",             "booleanOperator": "AND",             "includeInCriteria": true         },         {             "attributeId": "@aim_ATT_LastModified",             "dataType": "Date",             "value": "2022-11-04T00:00:00Z",             "valueOperator": "GreaterThanOrEqualTo",             "booleanOperator": "AND",             "bracket": "None",             "allValues": "true"         }     ],     "paging": {         "pageSize": "100",         "currentPage": 1     } }, </pre>

	<pre>         "sorting": {             "sortAscending": true,             "sortBy": "Id"         },         "projection": [             {"attributeId": "@aim_ATT_LastModified",             "Label": "AIM Last Modified"}         ]     } } </pre>
Equipments	<pre> {     "criteria": [         {             "itemIdentifierType": "Id",             "value": "%",             "valueOperator": "Like",             "booleanOperator": "AND",             "bracket": "Open",             "includeInCriteria": true         },         {             "itemIdentifierType": "ClassId",             "value": "ASSET",             "valueOperator": "Equals",             "booleanOperator": "AND",             "includeInCriteria": true         },         {             "attributeId": "@aim_ATT_LastModified",             "dataType": "Date",             "value": "2022-07-22T00:00:00Z",             "valueOperator": "GreaterThanOrEqualTo",             "booleanOperator": "AND",             "bracket": "None",             "allValues": "true"         }     ],     "paging": {         "pageSize": "100",         "currentPage": 1     },     "sorting": {         "sortAscending": true,         "sortBy": "Id"     },     "projection": [         {             "associationTypeName": "has data set",             "AssociationClassId": "OPERATIONAL DATASET",             "item": {                 "properties": [                     {"attributeId": "@aim_ATT_LastModified",                     "Label": "AIM Last Modified"}                 ]             }         }     ] } </pre>

}

## Search API Request Inputs – Tag-Document relationships

Data Category	Request body for Search API
Documents linked to a Tag	<pre>{   "criteria": [     {       "itemIdentifierType": "Id",       "value": "%",       "valueOperator": "Like",       "booleanOperator": "AND",       "bracket": "Open",       "includeInCriteria": true     },     {       "itemIdentifierType": "ClassId",       "value": "DOCUMENT CONTENT",       "valueOperator": "Equals",       "booleanOperator": "AND",       "includeInCriteria": true     },     {       "associationTypeName": "refers to",       "associationClassId": "FACILITY",       "value": "",       "booleanOperator": "AND",       "bracket": "None",       "item": {         "properties": [           {             "itemIdentifierType": "Id",             "value": "{TAG_FULL_ID}",             "valueOperator": "Equals",             "booleanOperator": "AND"           }         ]       }     },     {       "valueOperator": "Equals"     }   ],   "paging": {     "pageSize": "1000",     "currentPage": 1   },   "sorting": {     "sortAscending": true,     "sortBy": "Id"   },   "projection": [] }</pre>
Tags linked to a Document	<pre>{   "criteria": [     {       "itemIdentifierType": "Id",       "value": "%",       "valueOperator": "Like",       "booleanOperator": "AND",       "bracket": "Open"     }   ],   "projection": [     "Name"   ] }</pre>

```
"bracket": "Open",
"includeInCriteria": true
}, {
"itemIdentifierType": "ClassId",
"value": "FACILITY",
"valueOperator": "Equals",
"booleanOperator": "AND",
"includeInCriteria": true
}, {
"associationTypeName": "is referenced in",
"associationClassId": "DOCUMENT CONTENT",
"value": "",
"booleanOperator": "AND",
"bracket": "None",
"item": {
"properties": [
"itemIdentifierType": "Id",
"value": "{DOCUMENT_FULL_ID}",
"valueOperator": "Equals",
"booleanOperator": "AND"
]
]
},
"valueOperator": "Equals"
},
],
"paging": {
"pageSize": "1000",
"currentPage": 1
},
"sorting": {
"sortAscending": true,
"sortBy": "Id"
},
"projection": []
}
```

**Notes:**

- It is sufficient to use **Tags linked to a Document** to retrieve the tag-document relationships as whenever a new link is added the "AIM Last Modified" attribute is updated for a document.
- Replace "FACILITY" with "ASSET" in the request to retrieve the document to equipment relationships.
- Replace "DOCUMENT CONTENT" with an appropriate class to retrieve the document to tag/equipment relationships.
- Replace "DOCUMENT CONTENT" with an appropriate class to retrieve the document package to tag/equipment relationships.

**Example**

This example shows how to retrieve Tags and their attributes and relationships from AIM.

1. Call the GET API and pass a bearer token for authorization to get the XSRF cookie.

{dashboardUrl}/api/domain/authorization/isSessionValid

The screenshot shows two panels from the Postman application. The top panel displays a GET request to `https://connect.aveva.com/api/domain/authorization/issessionvalid`. The 'Cookies' tab is selected, showing three cookies: `AWSALB`, `AWSALBCORS`, and `x-xsrftokendefault`. The bottom panel shows the detailed view of the `x-xsrftokendefault` cookie, which has a value of `7D73FB02B7F2195E30324EDF06B3ED16522C60BE356D02702E17EC5F...`.

Name	Value	Domain	Path	Expires	HttpOnly	Secure
AWSALB	7buR69nPML...	[REDACTED].dashbo...	/	Wed, 30 Nov ...	false	false
AWSALBCORS	7buR69nPML...	[REDACTED].dashbo...	/	Wed, 30 Nov ...	false	true
x-xsrftokendefault	7D73FB02B7F2195E30324EDF06B3ED16522C60BE356D02702E17EC5F...	[REDACTED].dashbo...	/	Session	false	true

2. Retrieve cookie from the above request and add into the header of the POST API call. Fetching data for FACILITY objects i.e., Tags

`{dashboardUrl}/api/v1/domain/searches/run`

The screenshot shows a POST request to `https://connect.aveva.com/api/v1/domain/searches/run`. The 'Headers' tab is selected, showing two checked items: `x-xsrftokendefault` with the value `7D73FB02B7F2195E30324EDF06B3ED16522C60BE356D02702E17EC5F...` and `Accept` with the value `application/json`.

KEY	VALUE	DESCRIPTION	... Bulk Edit	Presets
<input checked="" type="checkbox"/> x-xsrftokendefault	7D73FB02B7F2195E30324EDF06B3ED16522C60BE356D02702E17EC5F...			
<input checked="" type="checkbox"/> Accept	application/json			

The screenshot shows a Postman API request for the URL `https://[REDACTED]connect.aveva.com/api/v1/domain/searches/run`. The request method is POST. The Body tab displays a JSON search criteria object:

```
1 {
2     "criteria": [
3         {
4             "itemIdentifierType": "Id",
5             "value": "N",
6             "valueOperator": "Like",
7             "booleanOperator": "AND",
8             "bracket": "Open",
9             "includeInCriteria": true
10        },
11        {
12            "itemIdentifierType": "ClassId",
13            "value": "FACILITY",
14        }
15    ]
16}
```

The response status is 200 OK, with a time of 3.22 s and a size of 118.22 KB. The response body is a JSON object containing the search results:

```
1 {
2     "result": [
3         {
4             "items": [
5                 {
6                     "data": [
7                         {
8                             ...
9                         },
10                        {
11                            ...
12                        }
13                    ],
14                    "classId": "[REDACTED]",
15                    "className": "0 Uninterruptible Power Supply",
16                    "classLabel": "[REDACTED] - 0 Uninterruptible Power Supply",
17                    "classSchema": null,
18                    "classPath": "OBJECT|LOGICAL (& OTHER PHYSICAL) OBJECT|FUNCTIONAL ARTEFACT|TAGGED ITEM|[REDACTED]|[REDACTED]|[REDACTED]",
19                    "icon": "equi.gif",
20                    "label": "0000C1",
21                    "setLabel": null,
22                    "rootClassId": "",
23                    "incidentalClassIds": null,
24                    "classSchemes": [],
25                    "fullId": "[REDACTED]0000C1",
26                    "revision": "",
27                    "context": "[REDACTED]",
28                    "handle": 129865,
29                    "id": null,
30                    "name": "BATTERY AND CHARGER IN S5000"
31                ],
32            }
33        ]
34    }
35}
```

```

POST https://connect.aveva.com/api/v1/domain/searches/run
{
  "query": [
    {
      "field": "Name",
      "operator": "NotEquals",
      "value": "Test"
    }
  ],
  "paging": {
    "pageSize": 100,
    "currentPage": 1
  },
  "sorting": [
    {
      "sortAscending": true,
      "sortBy": "Id"
    }
  ]
}
  
```

Body Cookies (3) Headers (18) Test Results

Pretty Raw Preview Visualize JSON

```

1 >   "result": {
2     "items": [...]
3   >     "totalNumberOfResults": 95636
4   >   },
5   >   "status": {
6     "connectionStatus": "Ok",
7     "numberOfReconnectsLeft": 0,
8     "licenceDaysLeftDashboard": 0,
9     "licenceDaysLeftWorkhub": 0,
10    "logLicenceWarning": true
11  }
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
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```

Use the totalNumberOfResults field to determine the number of pages. In the example above, the pageSize is 100 and the total results in AIM are 95636, so the number of pages is 957. Increment the currentPage value to retrieve subsequent pages.

```

POST https://connect.aveva.com/api/v1/domain/searches/run
{
  "query": [
    {
      "field": "Name",
      "operator": "NotEquals",
      "value": "Test"
    }
  ],
  "paging": {
    "pageSize": 100,
    "currentPage": 2
  },
  "sorting": [
    {
      "sortAscending": true,
      "sortBy": "Id"
    }
  ]
}
  
```

- Call the GET API to retrieve the object attributes and relationships by passing object handles for each object in the response from the above POST API call.

{dashboardUrl}/api/v1/domain/dataGroup/125055?dataGroupNames=Main  
Attributes&dataGroupNames=Related Items 1&dataGroupNames=Related Items 2

The screenshot shows a Postman API client interface. The URL in the header is `https://connect.aveva.com/api/v1/domain/datagroup/125055?dataGroupNames=Key Attributes&dataGroupNames>Main Attributes&dataGroupNames=Related Items 1&dataGroupNames=Related Items 2`. The 'Params' tab is selected, showing four checked items under 'Query Params': 'dataGroupNames' (Value: Key Attributes), 'dataGroupNames' (Value: Main Attributes), 'dataGroupNames' (Value: Related Items 1), and 'dataGroupNames' (Value: Related Items 2). The 'Body' tab is selected, displaying the JSON response. The response is a JSON object with the following structure:

```
1  "result": [
2    {
3      "id": "Key Attributes",
4      "data": [...]
5    },
6    {
7      "id": "Main Attributes",
8      "data": [...]
9    },
10   {
11     "id": "Related Items 1",
12     "data": [...]
13   },
14   {
15     "id": "Related Items 2",
16     "data": [...]
17   }
18 ],
19 "status": {
20   "connectionStatus": "Ok",
21   "numberOfReconnectsLeft": 0,
22   "licenceDaysLeftDashboard": 0,
23   "licenceDaysLeftWorkhub": 0,
24   "logLicenceWarning": true
25 }
```

4. Call the POST API to retrieve the tag-document relationships by passing in the fullId.

{dashboardUrl}/api/v1/domain/searches/run

POST https://[REDACTED].connect.aveva.com/api/v1/domain/searches/run

Params Authorization Headers (12) Body \* Pre-request Script Tests Settings

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
21     "item": {
22         "properties": [
23             {
24                 "itemIdentifierType": "Id",
25                 "value": "[REDACTED]A831",
26                 "valueOperator": "Equals",
27                 "booleanOperator": "AND"
28             }
29         ],
30         "valueOperator": "Equals"
31     },
32     "paging": {
33         "pageSize": "1000",
34         "currentPage": 1
35     }
36 }
```

Body Cookies (3) Headers (18) Test Results

Status: 200 OK Time: 5.59 s Size: 539.08 KB Save Response

Pretty Row Preview Visualize JSON

```
1 [REDACTED]
2 "result": [
3     "items": [
4         {
5             "data": [],
6             "classId": "[REDACTED]",
7             "className": "Other Manual",
8             "classLabel": "[REDACTED]",
9             "classScheme": null,
10            "classPath": "OBJECT|LOGICAL (& OTHER PHYSICAL) OBJECT|INFORMATION|DOCUMENT CONTENT|[REDACTED]|[REDACTED]|[REDACTED]",
11            "icon": "Document.gif",
12            "label": "[REDACTED]",
13            "setsLabel": null,
14            "rootClassId": "",
15            "incidentalClassIds": null,
16            "classSchemes": [],
17            "fullId": "[REDACTED]|[REDACTED]",
18            "revision": "",
19            "context": "[REDACTED]|[REDACTED]|[REDACTED]",
20            "handle": 2045162,
21            "id": null,
22            "name": "[REDACTED]"
23        },
24        [
25             {
26                 "data": [],
27                 "classId": "[REDACTED]"
28             }
29         ]
30     ]
31 ]
```

5. Retrieve the subsequent tag-document relationships by determining the number by pages using the totalNumberOfResults and incrementing the currentPage.

**Key Points:**

- The maximum number of calls for the API is 60 API calls per minute per asset.
- The request body for Tags will also give DISCIPLINES, SITES, PROCESS UNITS, AREAS etc that are in AIM.
- Refer to the class library (data model) of an asset for a list of permissible attributes.

# AIM Discovery

AVEVA Asset Information Management Discovery (AIM-D) provides a fully scalable, predictable, and repeatable SaaS infrastructure for Asset Information Management. With standardized deployment, implementation timescales are greatly reduced from many months to just two weeks, making it easy to roll out the solution across a region, country, or business unit.

## Key Benefits

- Helps users to save time in searching for information.
- Fetches documents and critical data easily and helps users to respond quickly to incidents, ensuring safety at all times.
- Improves the decision-making based on trusted data and enables businesses to improve operational performance and safety while reducing risk.
- Eliminates the overhead of installation, deployment, version control, and hardware maintenance as the solution is delivered through CONNECT.
- Reduces the training costs with easy-to-use software that can be accessed online.

## Key Features

- Provides universal access to the Digital Twin, allowing access to all informational content at any time.
- Enables 2D and 3D visualization, which facilitates intelligent, hot spotting of P&IDs and 3D models that link back to the content referenced in the database.
- Provides powerful search capabilities.
- Organizes and collaborates on asset data and documents irrespective of source or location.
- Enables improved security; data is secure and only accessible to approved parties.
- Continuous improvement with regular updates and feature enhancements being pushed to the Cloud, without having to install any software updates or disrupt productivity.
- Reduced risk through native Cloud support for backup and disaster recovery.
- Richer information about the operating plant and equipment to support document authoring, reviewing, and distribution process.

## Product Overview

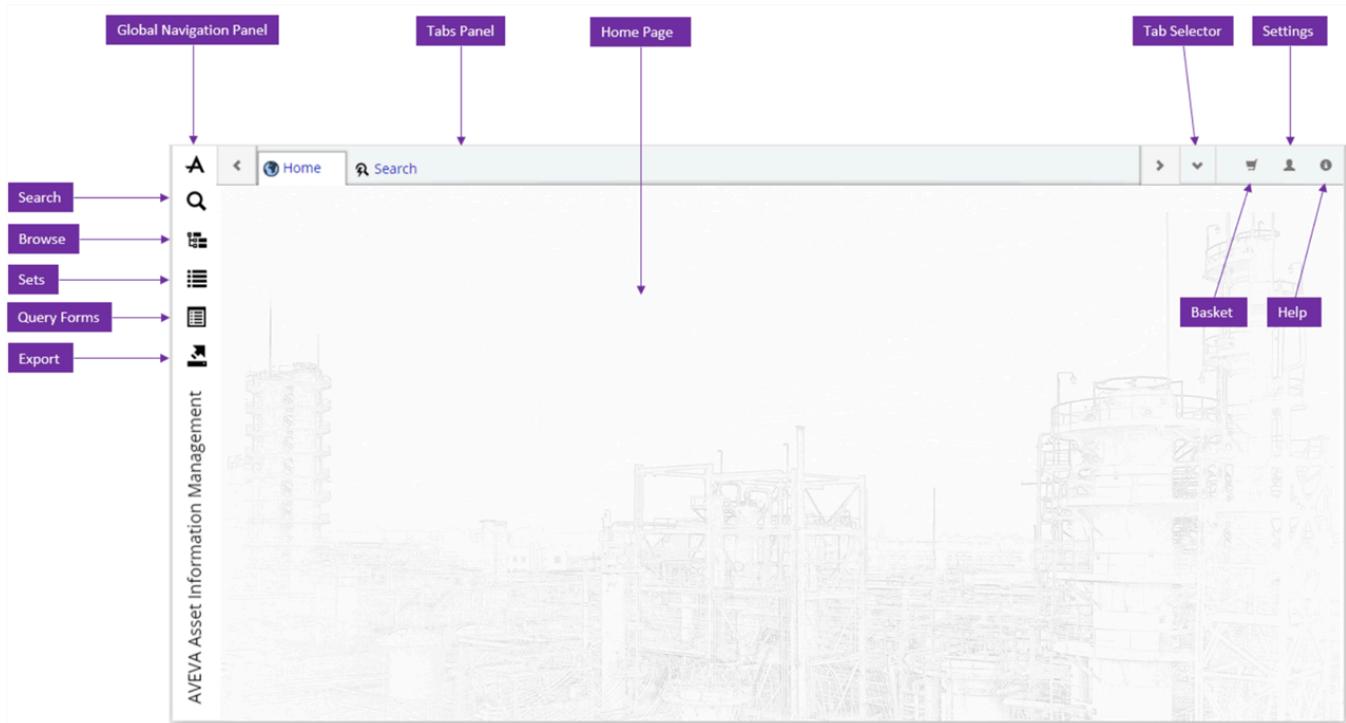
This section gives an overview of AVEVA Asset Information Management – Discovery (AIM-D).

AIM-D is a powerful web-based solution that supports users in organizing, validating and collaborating on asset data and documents irrespective of source and location, providing the ability to link project teams situated in various locations via one unique application.

AIM-D allows information of any type and from any source to be stored and viewed in a secure environment. Related information is automatically linked together to add context, can be compared, navigated, visualized and

reported upon to provide a single environment to view and understand information from multiple systems. AIM-D is a necessity for any organization involved in designing, building or operating complex engineering assets. It enables organizations to maintain a digital replica of their asset throughout its lifecycle, and enables the information therein to be accessible to support the many business processes, which make up the life cycle of such an asset.

The following illustration shows an example configuration of AIM-D.



The following table describes the panels and primary features in *AVEVA Asset Information Management – Discovery*:

Panel and Feature	Description
Global Navigation Panel	<p>A global side bar in the left margin that displays the following features:</p> <ul style="list-style-type: none"> <li>• Search</li> <li>• Browse</li> <li>• Sets</li> <li>• Query Forms</li> <li>• Exports</li> </ul> <p><b>Note:</b> Based on the configuration settings, any of these features can be hidden or disabled.</p>
Tabs Panel	<p>Displays tabs for the items, tags or documents you open in the Dashboard.</p> <p>All the tabs in the Tabs Panel can be closed after use,</p>

Panel and Feature	Description
	except the Dashboard tab.
Tab Selector	<p>A drop-down arrow, if selected displays all the open tabs.</p> <p>Enables navigating to a tab, or closing any or all of the tabs.</p>
Custom Home Page	<p>The main area of the Dashboard that is customizable, based on your organizational requirements.</p> <p><b>Note:</b> Any modifications to AVEVA Asset Information Management – Discovery must continue to display the original copyright statement, as initially displayed in the 'out of the box' home page. It must appear in the same place and in the original HTML style on any new home pages hosted in AVEVA Asset Information Management – Discovery.</p>
 Search	<p>Enables finding information using Search keywords (attributes, class, items and so on), wildcard characters, or pre-configured filters (defined in the class library). See <a href="#">Using Search</a>.</p>
 Browse	<p>Enables finding information, just by expanding the nodes, and then selecting the documents, items, or tags from the folders under it. See <a href="#">Using Browse</a>.</p>
 Sets	<p>Enables a grouped-storage of a list of items, for further use of all users. See <a href="#">Using Sets..</a></p>
 Query Forms	<p>Enables an alternate form-based advanced search method using search keywords, wildcard characters, or pre-configured filters (defined in the class library). See <a href="#">Using Query Forms..</a></p>
 Exports	<p>Enables creating Export Definition.</p> <p>Run or save exports using a specific Export Definition, for each saved search.</p> <p>See <a href="#">Exporting Data</a> and <a href="#">Managing Exports</a>.</p>
 Basket	<p>Enables personalized storing of a selection of frequently used items. See <a href="#">Using Basket</a>.</p>
 Settings	<p>Allows managing the configuration settings, if you have the ManifeStoing rights.</p>

Panel and Feature	Description
 Information & Help	Provides the information about the Dashboard, and a link to the Help documentation.

## Use AIM-D

AVEVA Asset *Information Management – Discovery* enables you to:

- Browse, search, retrieve and view the data stored in multiple formats.
- Categorize and group the data for easy access later.
- Export the data and work on it from your local machine.
- Print the documents.

## Log In/Out

By default, you can log in to AVEVA Asset *Information Management* without any prompt to enter credentials, if:

- Your organizational domain network credentials are configured by your System Administrator.
- You are accessing Dashboard from your organization's network domain computer.

However, if you are accessing Dashboard from outside the domain network of your organization, you must enter your domain credentials to log in.

### Sign in to CONNECT

You can sign in to *CONNECT* using your email address and password, using your organization's single sign on, using a sign-in link, or through a connection code.

---

**Note:** Signing in through a connection code is applicable to users who are authenticated using a federated connection. If you are a first-time user of *CONNECT*, you must first register yourself with *CONNECT* before you can sign in. For information on how to register with *CONNECT*, see [Register with CONNECT](#).

---

If you attempt a sign-in ten times consecutively with a wrong password from the same location (IP address), then your login will be blocked. If this happens, contact AVEVA Global Customer Support to unlock your account.

You can sign in to only one account at a time. You must sign out from one account before signing in to another account.

To sign in to *CONNECT*:

1. Access the *CONNECT* sign in page.

If you are accessing the *CONNECT* sign-in page directly by following the <https://connect.aveva.com/>, select the **Sign in** option on the Home page.

2. On the **SIGN IN** tab, enter your registered email address.

---

**Note:** If your organization has opted for single sign on, then you can sign in to your *CONNECT* account without entering a password.

---

After a successful sign in, the list of accounts that you are a member of is displayed.

3. Select the account you want to sign in to. You are signed in to that account.

**Note:** If you are a member of only one account, you are signed into that account automatically. For more information, see <https://help.connect.aveva.com>.

AVEVA Asset Information Management – Discovery is compatible with the following web browsers:

Browser	Supported Version
Microsoft® Edge™	Latest (Windows)
Google Chrome™	Latest (Windows, iPadOS)
Safari	Latest (iPadOS)

Your System Administrator configures the user roles and assigns access rights. You must have appropriate access rights granted by your System Administrator to access the Dashboard features.

The minimum screen resolution for viewing AVEVA Asset Information Management – Discovery is 1024 x 768. If your system screen resolution is set to a value that is less than the minimum, contact your System Administrator to set it to 1024 x 768 or greater for optimal viewing.

## Log out of AIM-D

If the **Log Out** command is enabled during configuration, it appears under the   icon at the top-right corner of the Dashboard. Selecting the **Log Out** command allows you to exit from your current session in Dashboard.

**Note:** Logging out of AVEVA Asset Information Management does not log you out of your chosen Identity Provider or release network credentials for a domain. This means, when you log out of AVEVA Asset Information Management and try logging in again, you are not prompted for credentials. To release credentials, you must close your browser session.

## Navigate

After logging on to AVEVA Asset Information Management – Discovery, you can navigate through its features in any sequence of your choice, starting from the *Global Navigation Panel*. The following sections explain the procedure for working with the features common to the panels that open in Dashboard:

- [Resize the Panels](#)
- [Dock/Undock Panels](#)
- [Change the View Modes](#)
- [Maximize and Minimize Viewing Area](#)
- [Open Items from Tab Panel](#)
- [Use Actions Menu in Panels](#)

**Note:** In the Dashboard, web links to objects, such as documents and tags, can be opened in a new browser tab by selecting the link and holding down the CTRL key.

## Resize the Panels

If you select any of the features from the *Global Navigation Panel*, the associated panel opens in the Dashboard:

- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- *Query Form Panel*
- *Export Panel*

---

**Note:** The height of the panels conform to the height of the window displaying Dashboard. However, you can resize the panel width.

---

To resize the panels:

1. Rest the mouse pointer on the panel border.
2. When the pointer becomes a double-headed arrow, drag the pointer left or right to move the split line.

The panel width is resized, providing you larger area for the *Summary View* or *Document View*.

---

**Note:** The resized panel width remains the same through a session in Dashboard, including when it is reopened. The panels have a default minimum width that cannot be reduced further.

---

## Dock/Undock Panels

By default, the following panels open in a docked ( unpinned) state. Undocking the panels by selecting  enables a wider viewing area for an opened document. This action auto-hides the original panel through which you navigate to open a document. Docking ( pinning) enables you to keep the original navigation panel open, and view the opened document side-by-side:

- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- *Query Form Panel*
- *Export Panel*

To undock panels:

1. Select .
- The panel is expanded.

To dock panels:

1. Select .
- The panel is collapsed.



By docking a navigation panel, the tabs for opened documents shift to the right in the *Tab Panel*.

---

**Note:** You can resize the docked ( pinned) navigation panel by resting the mouse pointer on the panel border. When the pointer becomes a double-headed arrow, drag the pointer left or right to move the split line. See [Resize the Panels](#).

---

## Change the View Modes

The **View** menu enables you to view the documents in any of the following modes:

- *Summary View*
- *Document View*

---

**Note:** The documents can be SVG files [Scalable Vector Graphics/two-dimensional (2D) models] or non-SVG files (for example, MS Office documents, DWGs, PDFs).

---

Any item representing a tag, when selected from Browse, Search, Query Forms, Sets or Basket Panel automatically opens in the *Summary View* mode. The *Summary View* can be configured to display information in the zones representing relationships, metadata or characteristics. For example, it can be configured with the following zones:

- Location
- Details

- Connections
- Class
- Attributes
- Grouped Attributes
- 2D Diagrams and Documents View
- Related Documents
- Event Status
- Category
- Child Items
- Related Sets

## View Documents in Summary View

Any item representing a document selected from a **Documents** folder initially opens in the *Document View*. You can change the view mode from *Document View* to *Summary View* using the  **View** option. The *Summary View* mode enables you to get an overview of a document in zones that are configurable. For example, the zones can be:

- Key Attributes
- Class Attributes
- File Viewer
- Related Tags
- Related Sets

To view documents in the *Summary View*:

1. In the top-right of the *Document View*, select  **View**.
2. From the **View** options, select **Summary View**.

The view mode changes to *Summary View*.

## View Documents in Document View

To view documents in *Document View*:

1. In the top-right of the *Summary View*, select  **View**.
2. From the **View** options, select **Document View**.

The view mode changes to *Document View*.

## Maximize and Minimize Viewing Area

By selecting  at the top-right of the viewing areas in the *Summary View*, you can maximize or minimize the viewing area.

The screenshot shows the AVEVA Asset Information Management (AIM) Discovery interface. At the top, there's a navigation bar with Home, Search, and a tab for 'J-9002A'. Below the navigation bar, the search results for 'J-9002A (Pump)' are displayed. On the left, a sidebar labeled 'AVEVA Asset Information Management' contains a tree view of categories like Active, Home, Search, and a list of items. The main content area has two main sections: 'Attributes' and 'Parts / Components'. The 'Attributes' section shows details for a pump, including Name / Title (LP Flare KO Drum Pump), Type (Pump), Parent (43), Location (C31), and Aliases (J-9002A). It also lists Ignition details like Ex Certificate Number (LCIE 01 ATEX 6015) and Ex Gas Group (II). The 'Parts / Components' section lists associated parts like Motor, Non-Electrical (1) and Piping Item, Miscellaneous (3). The right side also shows a list of Documents and 3D Models.

## Open Items from Tab Panel

When a searched document is opened, it opens in a new tab in the *Tabs Panel*. Each tab is represented with the ID of the opened item and its associated icon. You can open multiple documents from your search results, and retain them for further viewing until you close their tabs in the *Tabs Panel*. By selecting each document's tab from the *Tabs Panel*, you can:

- View one selected document at a time.
- Return to the previously viewed documents, and work on it again.

You can close a tab and its opened document by selecting on a tab.

If you open a large number of items, navigation arrows appear at the left and right of the *Tab Panel*. Selecting the drop-down arrow at the right end of the *Tab Panel* enables you to select a document to view, from a list of all the open tabs. You can close a document from the list by selecting or you can close all open documents by selecting *Close all tabs*.

The screenshot shows the AVEVA Asset Information Management (AIM) Discovery interface. At the top, there's a navigation bar with Home, Search, and tabs for 'J-9002A' and 'M-9002A'. Below the navigation bar, the search results for 'M-9002A (Motor, Non-Electrical)' are displayed. The left sidebar is similar to the previous screenshot. The main content area shows attributes for a motor, including Name / Title (Motor), Type (Motor, Non-Electrical), Parent (J-9002A), Location, and Aliases. The right side shows a tabs panel with multiple tabs open: Home, Search, J-9002A, and M-9002A. A dropdown menu in the tabs panel includes an option to 'Close all tabs'.

## Use Actions Menu in Panels

After you select an item (by selecting its corresponding check box), the  **Actions...** menu appears at the top-right of the respective panels:

When you	From	Displaying a list of
Select the <i>Documents, Items or Tags</i>	<i>Search Panel</i>	Search result documents, items or tags.
	<i>Browse Panel</i>	Documents, Items or tags under the break-down nodes.
	<i>Sets Panel</i>	Documents, items or tags under the <i>Content</i> tab of a set.
	<i>Related Items</i> area in <i>Summary View</i>	Related items of a Browse, Search, Query Form search result.
	<i>Related Documents</i> area in <i>Summary View</i>	Documents associated with Browse, Search, Query Form search result.
	<i>Related Query Form</i> area in <i>Summary View</i>	Related Query Form of a Browse, Search, Query Form search result.
	<i>Related Items</i> area in a <i>Document Content Card</i>	Items related to a 2D Diagrams and Documents View document.
	<i>Contents</i> tab in a <i>2D Diagrams and Documents View Document Content Card</i>	Elements contained in a 2D Diagrams and Documents View.
	<i>Related Items</i> tab in a <i>2D Diagrams and Documents View Tag Content Card</i>	Related Items of a 2D Diagrams and Documents View Tag.
	<i>Related Documents</i> tab in a <i>2D Diagrams and Documents View Tag Content Card</i>	Related Documents of a 2D Diagrams and Documents View Tag.
	<i>Basket Panel</i>	Documents, Items or tags in the Basket.

Selecting the **Actions** menu enables you to execute the following tasks with the selected items:

- Open
- Highlight
- Select in View
- Export

- Print
- Add to Basket
- Add to Set
- Clear Selections (*2D Diagrams and Documents View area does not have this option.*)

ID	Name	Type
<input checked="" type="checkbox"/>	J-9002A Life Cycle Costing	Cost And Pla Cost Report
<input type="checkbox"/>	J-9002A RCA Report	Root Cause Analysis Report

## Open Items

To open an item:

1. Select the item(s), and then select the **Actions...** menu at the top-right of the panel.
2. Select **Open**.

The *Summary View* opens with a tab in the *Tab Panel* for the selected item, displaying its details.

## Export Data

The **Export Items** option allows you to export the data of items (Documents and associated files with metadata, Tags) from Dashboard to your local machine in a **.csv** or **.xlsx** file format. If the number of items for which data is to be exported is more than 1000, a warning message appears.

By selecting the Export Items option from the **Actions...** menu, you can export data of the items selected from the following panels:

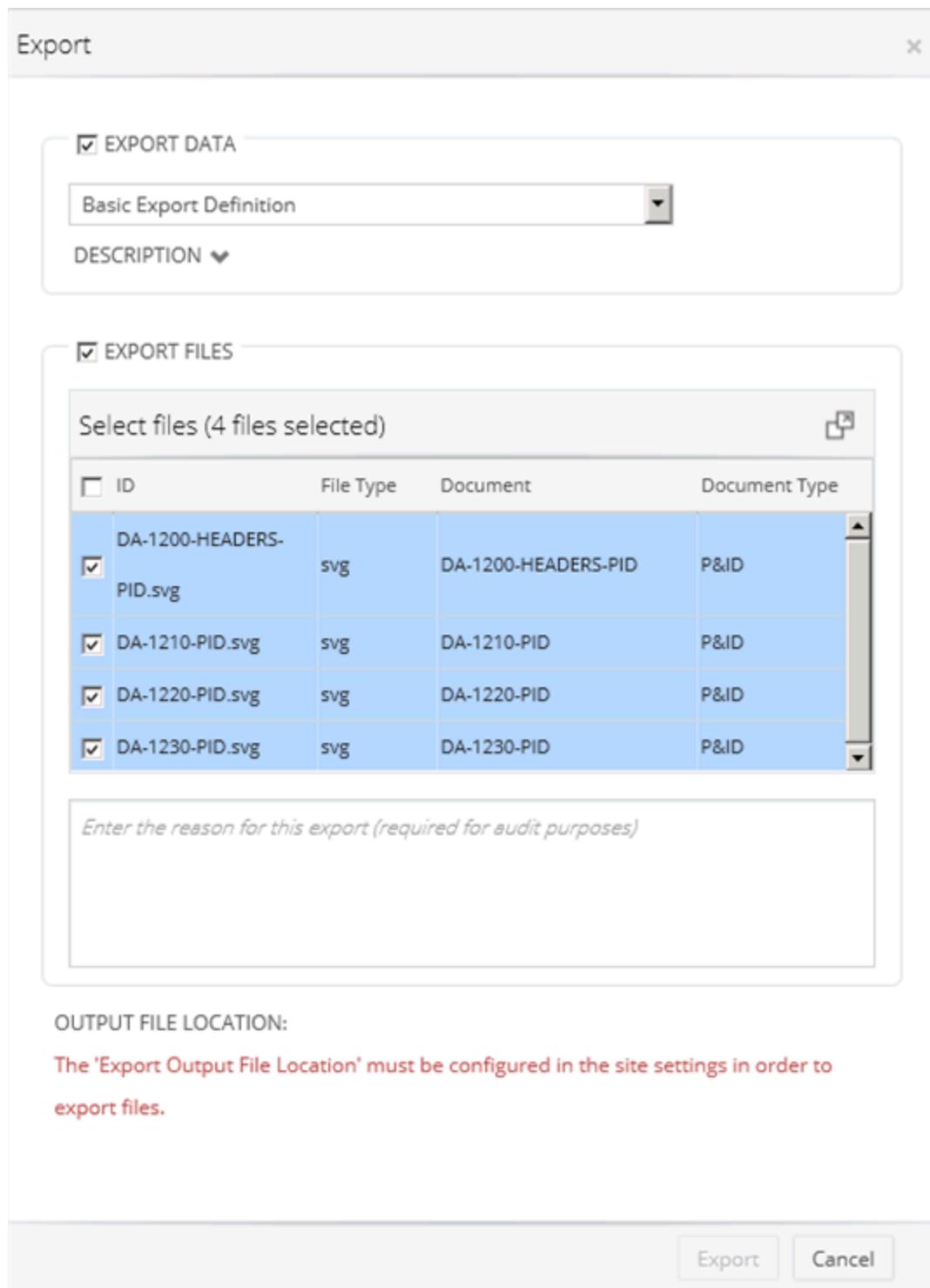
- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- **Related Items** area in the *Summary View*
- **Related Documents** area in the *Summary View*
- **Related Query Form** area in the *Summary View*
- *Query Form search results*
- **Related Items** area in a *Document Content Card*
- Items displayed under the **Contents** tab in a *2D Diagrams and Documents View Document Content Card*
- Items displayed under the **Related Items** tab in a *2D Diagrams and Documents View Tag Content Card*

- Documents displayed under the **Related Documents** tab in a *2D Diagrams and Documents View Tag Content Card*
- *Basket Panel*

To export the data of the items:

1. In the panel from which you are exporting, select the item(s).
2. Select the  **Actions...** menu, and then select **Export Items**.

The *Export* window opens.



3. In the **Export Data** box, select the drop-down arrow, and then select an Export Definition.

**Note:** If you are exporting a mixture of objects, such as Drawing metadata, Tags, Work Orders, you may want to use the **Default Definition**.

4. To expand the Select files section, select at the top-right of the **Select files** section.

To filter the files shown in the Select files section, use the following filters:

- File ID

- File Type
- Document ID
- Document Type

---

**Note:** The **Select files** section displays files associated with the first 100 documents, by default. A document can have more than one associated files. Hence, a message appears at the top of the **Select files** section, displaying the number limit for documents shown.

5. Select the check boxes for the files you want to export (if you want to amend the list of pre-selected files).

6. If you have expanded the **Select files** section by selecting , select **OK** to return to the **Export** window.

7. In the **Enter the reason for this export** box, type the details.

The pre-configured export package output path appears at the bottom of the **Export** window.

8. Choose your Export file type – [.csv](#) or [.xlsx](#).

9. Select **Export**.

A message displaying "The Export process has been started" appears.

- To view the export, select **Open**.
- To save your export in your local machine, select **Save/Save as**.
- If you do NOT want to save your export, select **Cancel**.

---

**Note:** When running a Query Form and exporting to a CSV file, then any cells in columns that appertain to Related Items may have multiple values. However, some values for the Related Items may be blank. So, in order to correspond a value to the ID or Name of the Related Item, then delimiters are used to preserve the order. For example, if there are 4 Related Items and only the 3rd item has an attribute value of "xyz" (the others having a blank values), then the cell would contain & & xyz &. The 3 ampersands correspond to 4 values, where all are blank except for the 3rd value. This will correspond to the IDs of the Related Items for example, P101 & P102 & P103 & P104. So P103 has a value of xyz for the attribute in question.

## Get Set to Print

The Print functionality relies on the *Accusoft PrizmDoc* viewer to render printable version of different document types stored in *AVEVA Asset Information Management – Discovery*.

The print option is not available in *AVEVA Asset Information Management – Discovery* when:

- A document is open in its native viewer, for example, Microsoft Office.
- Accusoft PrizmDoc client is not deployed.

Selecting the **Print** option from the  menu enables you to print one or more items selected from the following panels:

- Browse Panel
- Search Panel
- Sets Panel
- **Related Items** area in the *Summary View*
- **Related Documents** area in the *Summary View*
- **Related Query Form** area in the *Summary View*

- **Related Items** area in a *Document Content Card*
- Items displayed under the **Contents** tab in a *2D Diagrams and Documents View Document Content Card*
- Items displayed under the **Related Items** tab in a *2D Diagrams and Documents View Tag Content Card*
- Documents displayed under the **Related Documents** tab in a *2D Diagrams and Documents View Tag Content Card*
- *Basket Panel*

---

**Important:** You must configure the browser pop-up blockers, to allow pop-ups from the Dashboard Website before printing.

---

#### Configuring Pop-up Blocker Exceptions in Chrome

To configure pop-up blocker exceptions in Chrome:

1. Open the Chrome browser.
2. In the top-right corner, select , and then select **Settings**.
3. Go to the bottom, and then select **Show advanced settings**.
4. Under Privacy, select the **Content settings** button.
5. Scroll down and under Pop-ups, select **Manage Exceptions**.  
The Pop-up exceptions window opens.
6. In the Hostname pattern box, enter the domain name for which you want to create an exception.
7. In the Behavior drop-down box, select the arrow and select **Allow**.
8. Select **Done**.

For more information, see <https://support.google.com/chrome/answer/95472?hl=en-GB>

## Print Items

To print items:

1. In the panel from which you want to execute print, select the item(s).
2. Select the  **Actions...** menu, and then select **Print**.

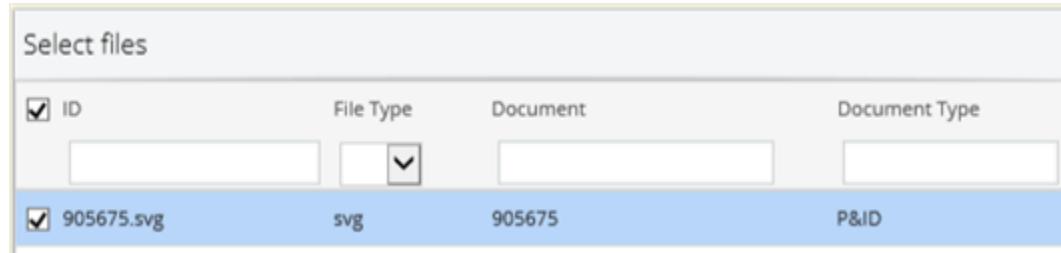
The **Select Files** window opens, listing the printable documents.

---

**Note:** The tags and datasets are NOT printable. The **Select Files** window will be empty, if the selected documents are not printable.

---

3. Select the **ID** check box for items to print, and then select **OK**.



A confirmation message displaying "**Preparing item for printing**" appears at the bottom of the screen. After the processing of items is complete and they are ready for printing, the **Print** window opens.

4. Select the printer, select the **Print Settings**, and then select **Print**.

The documents are sent to the printer for printing.

---

**Notes:**

- Your System Administrator can configure a maximum limit for the number of pages that can be printed. If the limit exceeds, a warning message appears, and the print process is cancelled. Also, if your banner text is enabled during configuration, the page setup (header and footer) must be configured accordingly.
- Your System Administrator can configure background and foreground colours when printing SVG documents.

## Clear Selection

To clear the selection:

1. Select the  **Actions...** menu at the top-right of the panel.
2. Select the **Clear Selection** option.

Your item selections are cancelled, clearing the item check boxes.

## Add Items to Sets/Basket

The **Add to Basket/Sets** menu under the  **Actions...** menu, at the top-right of the following panels, enables you to add the documents, items or tags selected from the respective panels to Basket/Sets.

When you	From	Displaying a list of
Select <i>Documents, Items or Tags</i>	<i>Browse Panel</i>	Documents, items or tags under Class break-down nodes.
	<i>Search Panel</i>	Search result documents, items or tags.
	<i>Sets Panel</i>	Documents, Items, or tags under the <i>Content</i> tab of a set.
	<i>Related Items</i> area in <i>Summary View</i>	Related items of a Browse, Search, Query Form search result.
	<i>Related Documents</i> area in <i>Summary View</i>	Documents associated with Browse, Search, Query Form search result.
	<i>Related Query Form</i> area in <i>Summary View</i>	Related Query Form of a Browse, Search, Query Form search result.
	<i>Related Items</i> area in an <i>Document Content Card</i>	Items related to a 2D Diagrams and Documents View document.

When you	From	Displaying a list of
	Contents tab in a 2D Diagrams and Documents View Document Content Card	Elements contained in a 2D Diagrams and Documents View.
	Related Items tab in a 2D Diagrams and Documents View Tag Content Card	Related Items of a 2D Diagrams and Documents View Tag.
	Related Documents tab in a 2D Diagrams and Documents View Tag Content Card	Related Documents of a 2D Diagrams and Documents View Tag.
	Basket Panel	Documents, Items or tags in the Basket.

You can also access the  menu from the top-right corner of the following areas in Dashboard:

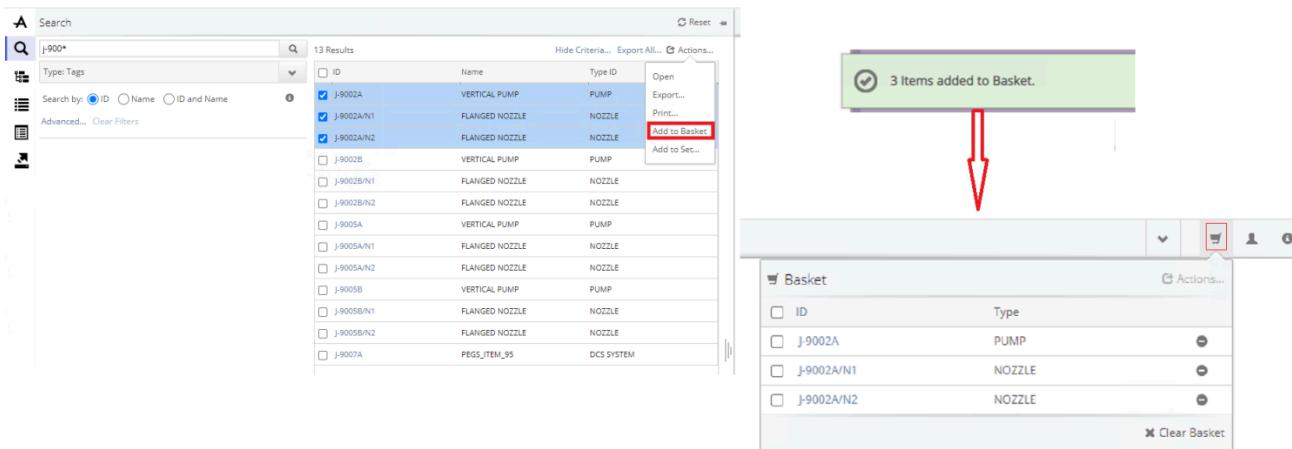
- *Summary View* of documents and tags
- *Document View* of documents and tags
- *Query Form* in *Form View* and *Table View*

## Adding to Basket

To add to basket:

1. Select the item(s), and then select the  menu at the top-right of the panel.
2. Select the **Add to Basket** option.

The selected items are added to the Basket and a confirmation message appears.



ID	Name	Type ID
J-9002A	VERTICAL PUMP	PUMP
J-9002A/N1	FLANGED NOZZLE	NOZZLE
J-9002A/N2	FLANGED NOZZLE	NOZZLE
J-9002B	VERTICAL PUMP	PUMP
J-9002B/N1	FLANGED NOZZLE	NOZZLE
J-9002B/N2	FLANGED NOZZLE	NOZZLE
J-9005A	VERTICAL PUMP	PUMP
J-9005A/N1	FLANGED NOZZLE	NOZZLE
J-9005A/N2	FLANGED NOZZLE	NOZZLE
J-9005B	VERTICAL PUMP	PUMP
J-9005B/N1	FLANGED NOZZLE	NOZZLE
J-9005B/N2	FLANGED NOZZLE	NOZZLE
J-9007A	PEGS ITEM_95	DCS SYSTEM

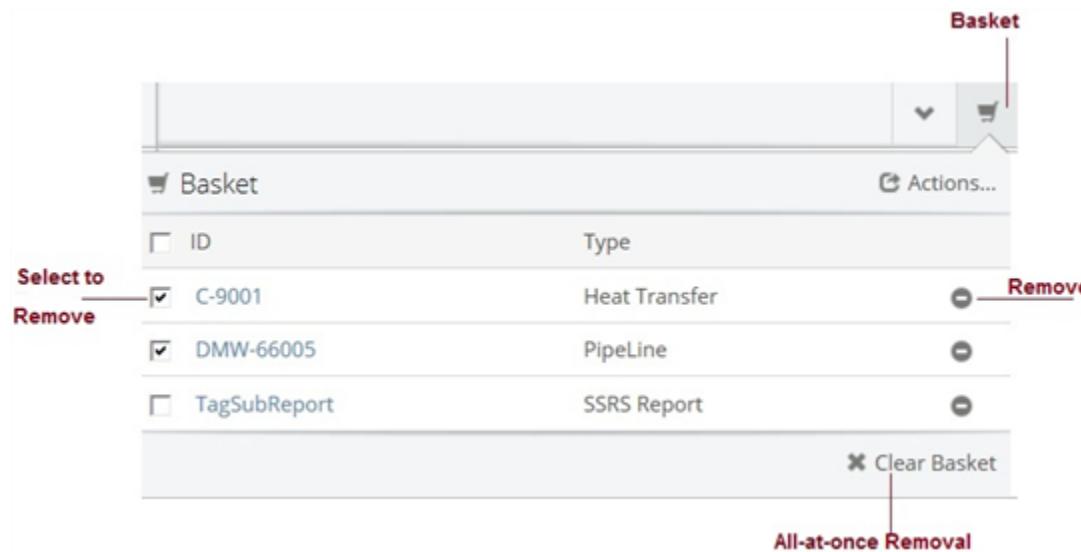
ID	Type
J-9002A	PUMP
J-9002A/N1	NOZZLE
J-9002A/N2	NOZZLE

## Removing Items/Clearing Basket

Using these features at the bottom-right corner of the *Basket Panel*, you can remove any or all items of your Basket.

Select this	To
<input checked="" type="radio"/> Remove	Remove the Basket content one by one.
<input checked="" type="checkbox"/> Clear Basket	Execute an all-at-once removal of your Basket content.

The following image depicts the procedure for removing items/clearing Basket:



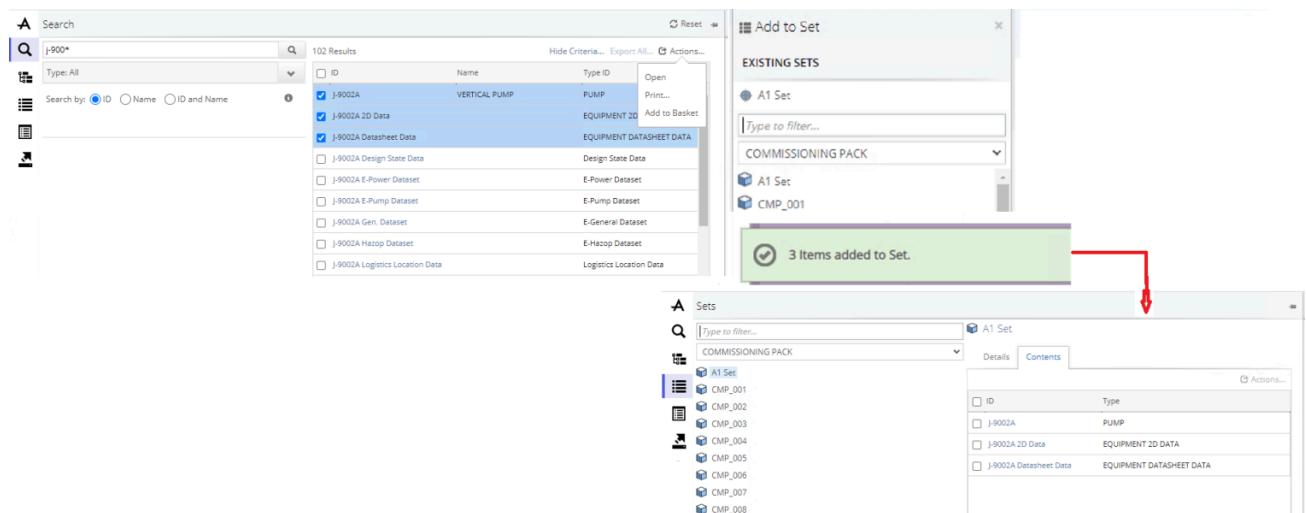
## Adding to Sets

To add to Sets:

1. Select the item(s), and then select the Actions... menu at the top-right of the panel.
2. Select the **Add to Set** option.  
The recently used Sets appear.
3. Select the Set to which you want to add the items.

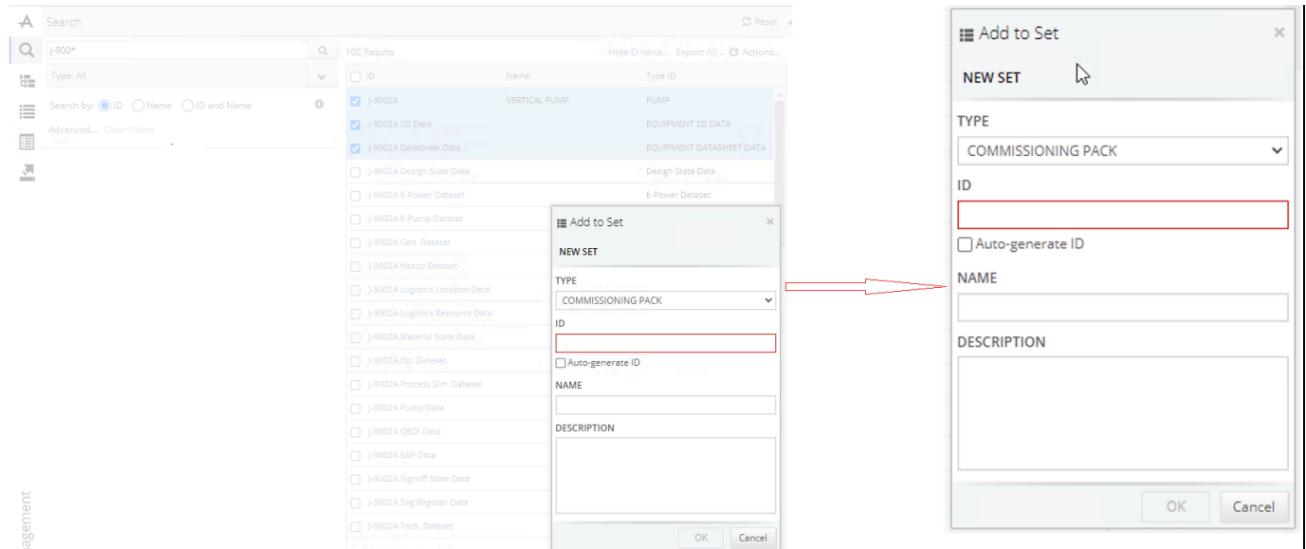
The selected items are added to the Set.

**Note:** You cannot add a Set to the Set Headers. If no Set is shown by the Set icon available under the Header, you must create a new Set.



- If you want to add the selected items to a new Set, select **Create**.

The **Add to Set** window opens.



- In the **Type** drop-down box, select the arrow, and select a type.
  - Select **Auto-generate ID**, or enter a unique identifier in the ID box.
  - Add a Name and Description for your Set, and then select **OK**.
- A confirmation message displaying "A Set has been created, and items added to the Set" appears.
- If you do not want to continue with creating a new Set, select **Cancel**.

## Open Documents in a new Browser Tab

The Open in Browser Tab option allows the user to open documents in a new browser tab alongside the top-level Dashboard tab.

Only documents that can be natively displayed by the browser will be opened in this way, for example, PDF, JPEG, and SVG files (subject to configuration).

Files that cannot be displayed in the browser are offered for download, for example, DOCX, XLSX, DGN, and DWG files (subject to configuration).

To open files in a new browser tab, the user needs to select the files and select "Open in Browser Tab" under the **Actions** menu. For example:

ID	Name	Type ID
905675	Piping & Instrumentation Diagram Deethaniser	P&ID
905676	Piping & Instrumentation Diagram C3 / C4 Splitter	P&ID
905677	Piping & Instrumentation Diagram Splitter Reflux Drum	P&ID
905678	Piping & Instrumentation Diagram Propane Dryer	P&ID
905679	Piping & Instrumentation Diagram Header	P&ID
905680	Piping & Instrumentation Diagram Header	P&ID
905681	Piping & Instrumentation Diagram Header	P&ID

**Note:** The Dashboard requires permission to open multiple browser tabs. For example, in Chrome, the user will need to allow popups:

Currently, a maximum of 5 files is allowed to be opened at the same time. If the user attempts to open more than 5 files, a warning message will appear.

Tags and 3D models cannot be opened in a new browser tab and, if selected, will be removed from the list of items to be opened. For example:

**Note:** When a document has more than one file, the primary file (default file) will be opened or downloaded.

This functionality is provided in the **Actions** menu of the following functional areas:

- Browse
- Search
- Sets
- Summary View (Related Items, Related Documents, 2D View)
- Query Form search results
- Document Content Card (Related Items tab, Contents tab)
- Basket

## Print Class Attributes

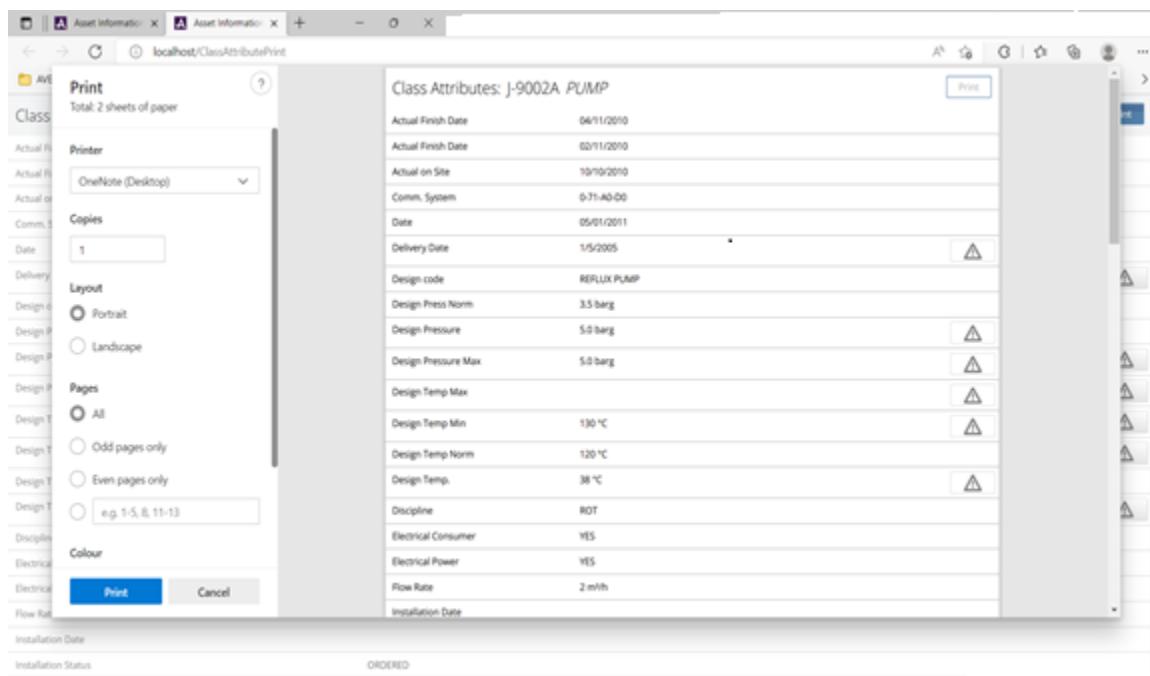
When viewing a **Tag Summary View**, the Class Attributes can be printed by selecting the **Print** link in the top-right of the panel. The link is available whether the panel is collapsed or expanded.

The screenshot shows the AVEVA Asset Information Management interface. At the top, there are navigation tabs: Home, E-9002, EQUI-15A-EQUIP, and J-9002A. Below the tabs, the title bar displays 'J-9002A /PUMP'. The main content area is divided into several sections: 'Details' (with fields for ID, Name, Type ID, and Lifecycle Statuses), 'Key Attributes' (with fields for Plant, Area, and System), and 'Related Items' (listing relationships like 'has dataset', 'is a part of', etc.). On the left, there's a sidebar for 'Class Attributes' and a 'Related Documents' section. A vertical toolbar on the right contains icons for Print, Copy, Paste, and Delete. A blue circle highlights the 'Print' icon in the toolbar. The bottom of the screen shows the AVEVA Asset Information Management logo.

When the user selects the **Print** link, a new browser tab is opened showing the **Class** attributes, and their values, in a printable format. Any warning triangles (denote clashing data) are preserved.

Class Attributes: J-9002A_PUMP	
Actual Finish Date	04/11/2010
Actual Finish Date	02/11/2010
Actual on Site	10/10/2010
Comm. System	0-71-A0-00
Date	05/01/2011
Delivery Date	1/5/2005
Design code	REFLUX PUMP
Design Press Norm	3.5 barg
	5.0 barg
Design Pressure Max	5.0 barg
Design Temp Max	
Design Temp Min	130 °C
Design Temp Norm	120 °C
Design Temp.	38 °C
Discipline	ROT
Electrical Consumer	YES
Electrical Power	YES
Flow Rate	2 m³/h
Installation Date	
Installation Status	ORDERED

When selecting the **Print** button in the top-right of the page to print, a **Print** dialog is displayed.



## Find Information

Selecting the following functionalities from the *Global Navigation Panel* enables you to find information relevant to a document, item or a tag:

- Search
- Browse
- Query Forms
- Faceted Search

## Use Search

The **Search** functionality provides you with a criteria-driven ability to find information. Using search keywords, wildcard characters or pre-configured filters (defined in the class library), you can find information about items, tags or documents.

Selecting  from the **Global Navigation Panel** enables you perform the following types of search:

- Simple Search
- Advanced Search
- Load Search

The search results grid displays items matching the search criterion you entered in the *Search* box.

### Search with Wildcard Characters

Using the wildcard characters, you can execute search without entering the complete name or ID of the document, item or tag you are looking for. The wildcard characters compatible for search in AVEVA Asset Information Management – Discovery are as follows:

- % (percent) and \* (asterisk)

These two wildcard characters behave similarly when used for executing a search. A wildcard can match any number of characters.

---

**Note:** The system has been configured to append a wildcard.

- \_ (underscore)

Use \_ (underscore) to specify a single character. For instance, when you perform a search for t\_st, the results return all available instances where there is a single character between t and st.

- [ ] (square brackets)

Use the [ ] (Square brackets) when you are searching for an object that contains any of the special characters, for example, [\_] or [\*] or [%].

### Execute a CONTAINS-style Search

**CONTAINS** is used when the input search term is enclosed with '%' on both sides (for example, "%string%").

**CONTAINS** functionality primarily supports the searching for words within strings and is therefore best suited to searching text-based fields. Searching within a Tag or Document identifier is not recommended with CONTAINS. CONTAINS is based on a standard Microsoft database querying technology.

If an entire **Tag ID** is known, it is recommended to search without using wildcards.

During **CONTAINS**-style search, most of the punctuation marks, such as comma, colon, question mark, ellipsis, exclamation mark, single quotation marks, double quotes, semicolon, parentheses and apostrophe, are ignored. However, some punctuation marks, such as hyphen, underscore and forward slash, are not ignored except when used to combine words.

**Examples:**

- %2%" – ignores the double quotes and matches any word that contains "2".
- %area-piping% – ignores the hyphen and searches for phrases that have a word starting with "area", which is next to a word starting with "piping", for example, "area piping".
- %area piping% – searches for phrases that have a word starting with "area", which is next to a word starting with "piping", for example, "area piping".
- %\*mand\*% – searches for strings within a word, so besides bringing back "mandatory", it would also return "Command".
- %w/c% – matches any word starting with "w/c".
- %n% or %nn% – looks for one or two numbers respectively or an occurrence of "nn" in a string.

**Note:** For more information on the CONTAINS function, refer to the following Microsoft site:  
<https://docs.microsoft.com/en-us/sql/t-sql/queries/contains-transact-sql?view=sql-server-2017>

## Execute a Simple Search

*Simple Search* refers to the searches performed using a part of a keyword, pre-configured filters defined in the class library or wildcard character.

To execute a *Simple Search*:

1. In the *Global Navigation Panel*, select  .  
The *Search Panel* opens, docked in Dashboard.
2. In the drop-down box, select the arrow to select the type of item.
3. The default **Search by** option is **ID and Name**. You can limit the search results by selecting either the **ID** option or the **Name** option as appropriate.

Search by:  ID  Name  ID and Name

4. Enter an **Item ID**, or **Name** or a **wildcard character** in the **Search** box, and then select  .  
The search results appear as a list.

**Note:** If you add a wildcard to the front of your search, the automatically appended wildcard is removed, and will need to be manually added if required.

## Loading Search

The *Load Search* functionality at the bottom of the *Search Panel* enables you to load the previously saved search results. By selecting  **Load Search**, you can view the saved searches by their name, and select the one to load into the *Search Panel*.

Searches loaded into the Search UI are modified to be compatible with the search UI. This means all **ItemIdentifierCriteria** are stripped from the search and the obligatory ID or NAME and CLASSID are added to the beginning of the search. This means the Search UI does not support complex criteria including **ItemIdentifierCriteria** in the search even though this can be defined in the configuration for the search itself.

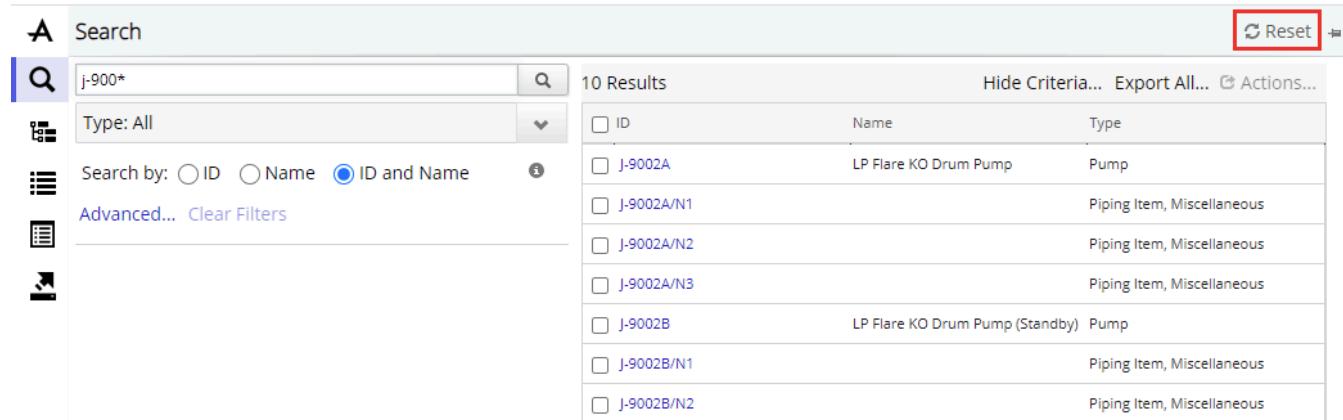
**Note:** This only applies to the Search UI and does not apply to the searches configured to run through the WebAPI.

## Resetting Search Criteria

The **Reset** option:

- Is enabled in the *Search Panel*, only after a search is executed, and the search results are displayed.
- Clears both the search criterion and its search results.
- Enables you to enter a new search criterion, and execute a fresh search.

By selecting  **Reset** in the *Search Panel* displaying search results, the search criteria as well as its search results are cleared. And, you can enter a new search criteria to perform a new search.



The screenshot shows the AVEVA AIM Discovery interface. On the left, there's a search bar with 'j-900\*' entered, a dropdown for 'Type: All', and filter options for 'Search by: ID', 'Name', or 'ID and Name'. Below these are 'Advanced...' and 'Clear Filters' buttons. On the right, a table displays '10 Results' with columns for 'ID', 'Name', and 'Type'. The results list various items like 'J-9002A' (LP Flare KO Drum Pump, Pump), 'J-9002A/N1' (Piping Item, Miscellaneous), etc. At the top right of the panel, there are buttons for 'Hide Criteria...', 'Export All...', and 'Actions...'. The 'Reset' button at the top right is specifically highlighted with a red box.

ID	Name	Type
J-9002A	LP Flare KO Drum Pump	Pump
J-9002A/N1		Piping Item, Miscellaneous
J-9002A/N2		Piping Item, Miscellaneous
J-9002A/N3		Piping Item, Miscellaneous
J-9002B	LP Flare KO Drum Pump (Standby)	Pump
J-9002B/N1		Piping Item, Miscellaneous
J-9002B/N2		Piping Item, Miscellaneous

## Opening a Search Item and Viewing

To open a search item and view:

1. From the search results displayed in the *Search Panel*, select an item.
2. Select  **Actions...**, and then select **Open**. You can also directly select on the item to open it.  
If the item selected to view is a tag, it opens in the *Summary View*.
3. If you select to view a 2D Diagrams and Documents View document, it opens in the *Document View*.

You can change the view mode from *Document View* to *Summary View* using the  **View** option.

## Saving a Search

Saving a search enables you to retrieve the search results, based on a criteria of any previously executed search. Using the **Save Search** option, you can save the search results for a specific search criteria.

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**Note:** To save a Search, ensure you are in a role that has the **CreateAdvancedFind** right, such as **Core Team Admin** or **Power User**.

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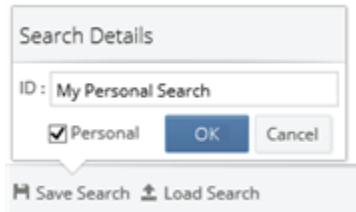
To save a search:

1. In the bottom-left of the *Search Panel* displaying the search results, select  **Save Search**.  
The **Search Details** window appears.
2. Enter a **Name** for the search results you want to save, and then select **OK**.  
A message appears confirming the Save Search success.

## Saving Personal Searches

If you have the [CreateAdvancedFind](#) permission, you can create **Advanced Searches**, **Save Searches** and manage the **Saved Searches**.

You can also save a search as **Personal**, which means the search can only be viewed by the author of the Saved Search.



If the **Personal** checkbox is not selected, then the **Saved Search** becomes **Public** and all users can view it.

The **Load Search** panel shows all of the Public Saved Searches and all of your Personal Saved Searches.

## Managing Saved Searches

You can use the **Manage Saved Searches** panel to modify multiple Saved Searches at once.

The **Type** column in the panel differentiates the **Personal** searches from the **Public** searches.

Icon	Description
	Represents a Personal Saved Search
	Represents a Public Saved Search

The following table lists the various operations that you can perform using the **Actions...** menu on the panel:

Use this option	To do this
Set to Personal	To set multiple Public Searches to Personal
Set to Public	To set multiple Personal Searches to Public
Clear Selections	To clear all the selections made in the Manage Saved Searches panel

**Note:** If you have the **CreateAdvancedFind** permission, you can set a **Public** search as a **Personal** search, after which the search is visible only to yourself.

### Filtering Saved Searches by Type

You can use the filter icon in the **Manage Saved Searches** panel to filter the searches based on their types – **Personal** or **Public**.

The screenshot shows the 'Manage Saved Searches' interface. At the top right is a 'Actions...' button with a gear icon. Below it is a filter icon (a funnel with a minus sign) followed by a dropdown menu with three options: 'All' (highlighted in blue), 'Personal', and 'Public'. The main list contains five items, each with a checkbox, a name, an owner icon, and a delete icon. The items are: 'All Cables' (owner: [redacted]), 'All Documents' (owner: [redacted]), 'All Equipments' (owner: [redacted]), and 'All Lines' (owner: [redacted]). At the bottom left are 'Save Search', 'Load Search', and 'Manage Searches' buttons.

Selecting the filter icon shows the three options: **All**, **Personal**, **Public**.

**Note:** When filtering on the Personal Saved Searches, the **Set to Personal** option in the **Actions...** menu is not visible. When filtering on the Public Saved Searches, the **Set to Public** option in the **Actions...** menu is not visible.

### Deleting a Saved Search

The **Manage Search** option enables you to delete a saved search.

**Note:** You must have appropriate rights to delete a search.

To delete a saved search:

1. In the **Manage Saved Searches** panel, select to delete the saved search.  
A message confirming **You are about to delete the Saved Search: <Search Name>. Do you wish to continue?** appears.
2. Select **OK** to delete. Select **Cancel** if you do not want to Delete.

## Execute an Advanced Search

The *Advanced Search* functionality enables you to filter your search results, based on the criteria that certain users (with appropriate rights) have created for others to execute. The criteria can be:

- Constituent class of the Items
- Attribute relationship between Items
- Lifecycle status of the Items
- Attributes of related Items

If you do not know the exact attribute value to filter your search results, you can enter an alphabet or wildcard character, and get a list of all the available values, starting with the entered term.

When a **Related Item** criteria is used, matches are made against the related objects, but the source objects are displayed in the results.

The **Like** operator has an implied wildcard on the end of the filter. For example, Like=A is interpreted as Like=A%.

When the **Not** option is used on a **Related Item** criteria, the logic applied is NOT (association AND related type AND filter).

To execute an **Advanced Search**:



1. In the *Global Navigation Panel*, select .

The *Search Panel* opens, displaying an option under the **Search** box, to toggle between *Simple Search* and *Advanced Search*.

2. Select [Advanced...](#).
3. If you want the ID or name of the search filters to be displayed, select **Prompt**.
4. In the **Add Filters** pane, select for each filter to add a filter criteria.
5. In the drop-down box for each filter, type an alphabet or a wildcard character, and then select the arrow. All the available filter criteria appear in a scrolling list.

Search

Enter an ID or Name

Type: All

Search by:  ID  Name  ID and Name

Simple... Clear Filters

Add Filters:  Attribute  Lifecycle Status  Related Item

PO Number

Like

AQ866

EB732

EB734

EE130

EE131

EE136

EE138

EE173

Prompt? Remove

Management

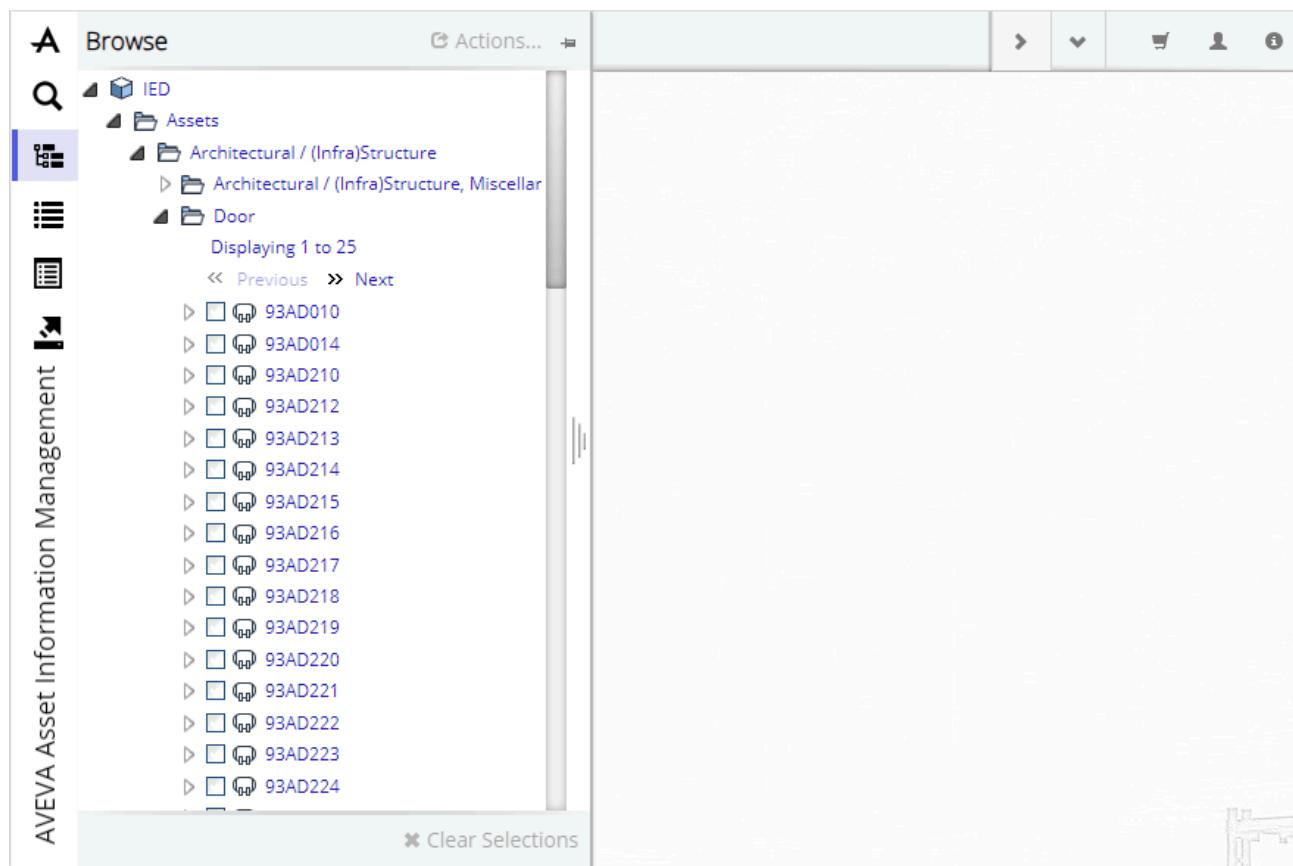
6. Select a filter criteria, and then select .
- The search results are displayed in a list.

## Use Browse

The *Browse* functionality enables you to find information by navigating through the root nodes, and expanding the breakdown nodes. It helps you to instantly retrieve inter-related or independent documents, Items, or tags, without the need to specify any search criteria.

To use *Browse*:

1. In the **Global Navigation Panel**, select .
- The *Browse Panel* opens, docked in Dashboard.
2. In the *Browse Panel*, select to expand the root node, and then select a breakdown node.
- The node expands, displaying tags, items and documents under the respective folder.
3. Select **» Next** to view more objects, or **« Previous** to go back.



## Use Query Forms

The *Query Forms* enable you to:

- Find information, using a form-based search mechanism.
- Further your advanced search through the database.
- Define criteria and modify it, while executing searches.
- Generate search results, listing the data related to one or more item in the database.

The following command buttons appear in the *Query Form*:

Selecting	Enables
<b>Search</b>	Executing search based on the criteria selected and entered in the box.
<b>Reset</b>	Returning to the search criteria used, after the search result appears in the search criteria box.
<b>Select All</b>	Auto-selecting all the search criteria check boxes.

Selecting	Enables
	Deselecting all the search criteria check boxes.
	Clearing a selected search criteria check box.

The Query Form search results display the following icons:

Icon	Functionality
	Indicates the existence of multiple search results, related to a search criterion. Selecting this icon enables you to view a list of search results.
	Indicates clashing search result values, as the search criterion is fetching results of multiple datasets with differing or missing values. Selecting this icon enables you to view a list of datasets containing your search criterion and their respective values. <b>Note:</b> Clashes are case-insensitive.
	Opens the Summary View of the search result item, corresponding to the search ID.
	Enables navigating through the search results, beyond the first record of the search result displayed in the search criteria box. Displays the total number of search result records, and the record under viewing in an instance. Selecting the backward arrows enables returning to the previous, or first search result record. Selecting the forward arrows enables navigating to the next, or last search result record. Entering a specific record number in the <i>Item</i> box enables viewing the record instantly in the <i>Query Form</i> .

## Create Query Forms

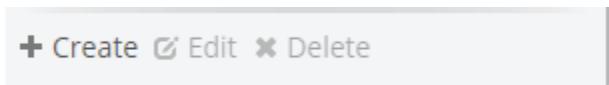
To create a **Query Form**:

1. Ensure that you have got the **QueryFormCreation** permission.

2. Select the **Query Forms** icon in the **Global Navigation Bar**.



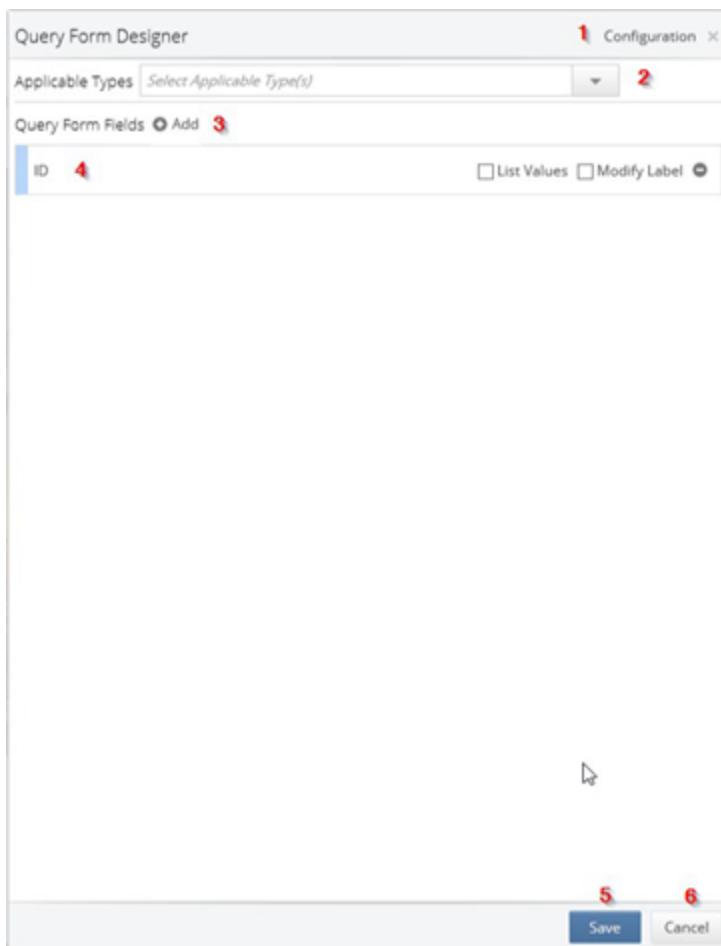
3. Select the **Create** button from the bottom of the **Query Form** dialog.



The **Query Form Designer** appears.

## Knowing the Query Form Designer

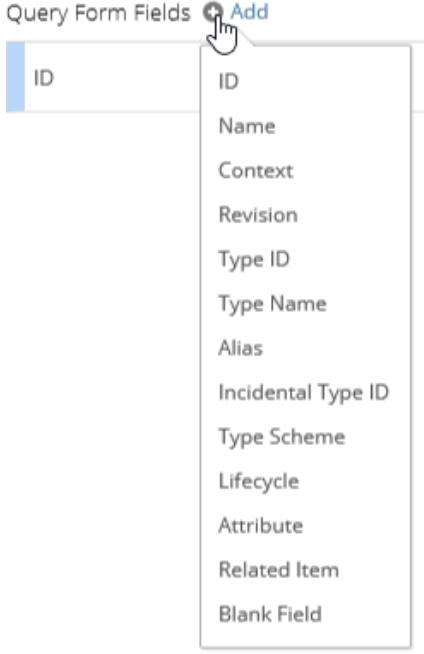
The **Query Form Designer** is a web-based tool built into *AIM Dashboard* that allows those with the appropriate permission to create pre-defined searches based on certain applicable types.



The following table describes the various buttons or elements available on the Query Form Designer:

Icon	Description	Function
1	Configuration	Enables you to set specific options for this Query Form.

Icon	Description	Function								
	<p>The screenshot shows a 'Configuration' dialog box with the following settings:</p> <ul style="list-style-type: none"> <li>No. of Columns: One</li> <li><input checked="" type="checkbox"/> Ignore Empty Values</li> <li><input checked="" type="checkbox"/> Compare as Numbers</li> </ul>	<table border="1"> <thead> <tr> <th>Specification</th><th>Description</th></tr> </thead> <tbody> <tr> <td>No. of Columns</td><td>The number of columns shown in the Form View</td></tr> <tr> <td>Ignore Empty Values</td><td>If this check box is selected, then the clash should not occur and empty values must be ignored.</td></tr> <tr> <td>Compare as Numbers</td><td> <p>If this check box is selected, then the clash does not occur for 3.6 and 3.60 as both are considered as identical.</p> <p>For numbers, leading and trailing, spaces and zeros (trailing when after the decimal point) are ignored and if a number match is made, then no clash occurs.</p> </td></tr> </tbody> </table>	Specification	Description	No. of Columns	The number of columns shown in the Form View	Ignore Empty Values	If this check box is selected, then the clash should not occur and empty values must be ignored.	Compare as Numbers	<p>If this check box is selected, then the clash does not occur for 3.6 and 3.60 as both are considered as identical.</p> <p>For numbers, leading and trailing, spaces and zeros (trailing when after the decimal point) are ignored and if a number match is made, then no clash occurs.</p>
Specification	Description									
No. of Columns	The number of columns shown in the Form View									
Ignore Empty Values	If this check box is selected, then the clash should not occur and empty values must be ignored.									
Compare as Numbers	<p>If this check box is selected, then the clash does not occur for 3.6 and 3.60 as both are considered as identical.</p> <p>For numbers, leading and trailing, spaces and zeros (trailing when after the decimal point) are ignored and if a number match is made, then no clash occurs.</p>									
2	Applicable Class Types	Enables you to select the classes of objects this Query Form should apply to.								
3	Add	Selecting this displays a list of possible field types that can be added to the Query Form.								

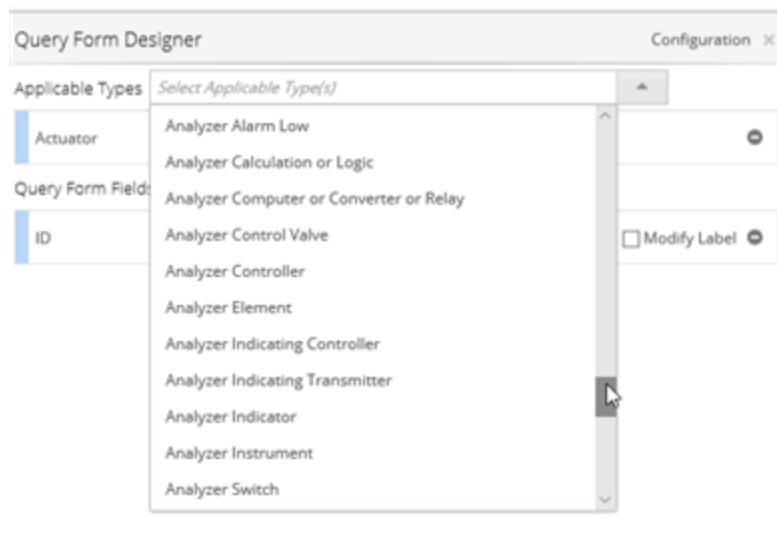
Icon	Description	Function
		
4	Default field	One default field is always added to a Query Form (ID). ID is the tag, document ID or other identifier used to uniquely identify an object within AIM. When you select the ID fields in a Query Form, they open a new tab within AIM Dashboard.
5	Save	Selecting this opens the <b>Save</b> Dialog.
6	Cancel	Selecting this closes the Query Form Designer without saving.

#### Selecting Applicable Classes

You must select the type of objects that the Query Form should search.

To select the applicable classes for a Query Form:

1. Select the **Applicable Types** drop-down list to see all possible class types.
2. Select the appropriate class type (for example, Equipment) from the list of values.



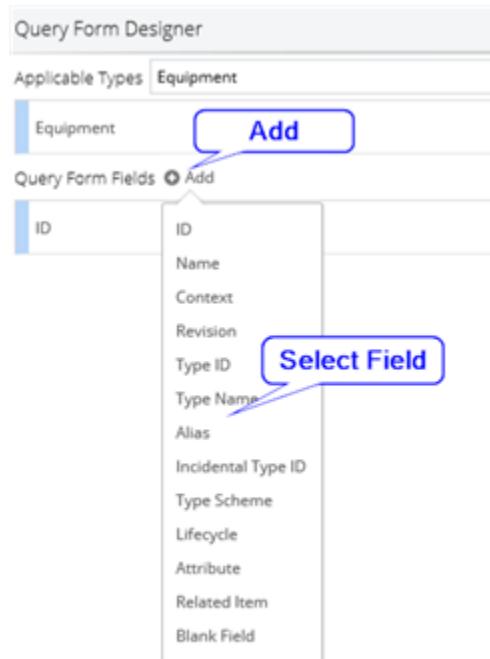
After a class has been selected, you may add others by choosing the next from the list of **Applicable Types**.

To remove a class, you may select the symbol to remove it.

## Adding Fields to a Query Form

To add a field to the query form:

1. Select the **Add** button to display possible field types.



The following table lists the **Query Form Fields** and their descriptions.

Query Form Fields	Description
ID	Object identifier which will be selectable and will open in a new tab.
Name	The object's name
Context	The object's AIM context
Revision	The object's revision label
Type ID	The object's type identifier
Type Name	The object's type name
Alias	The object's aliases
Incidental Type ID	The type ID for its incidental class.
Type Scheme	The scheme type
Lifecycle	The object's current lifecycle
Attribute	An attribute to display
Related Item	Display a related item (if present)
Blank Field	A blank space

2. After you have added a field type, it places a new field onto the **Query Form Designer**.

3. To remove a field type, select the  symbol next to it.

Every field has a label. The default label is always the individual field types identifier. For example, ID is always default to the text ID. However, you can change the label.

4. To do the label, select the **Modify Label** checkbox.

After that, the label becomes editable.



Depending on the type of field, there may be different options, as described in the following table:

Options	Description
List Values	Populates a drop-down list of values.
Modify Label	Enables you to change the displayed label.
Match All	Verifies the values of all the attributes with this name that belong to an object and its datasets, and only produces a match if they all have the same

Options	Description
	<p>value.</p> <p>For example, use this option to find all objects where the attribute does not yet have a value either on the object or in any of its dataset by specifying an empty value and the Match All option.</p>

**Note:** Different Field Types may ask for additional information.

## Lifecycle

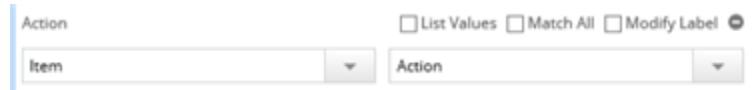
**Lifecycle** requires the selection of a lifecycle group.



## Attribute

**Attribute** requires selecting the source of the attribute. **Item** is the currently selected object's own attributes, otherwise you must select a dataset that may be attached to the class object in which the attribute exists. Then you must select the individual attribute to display.

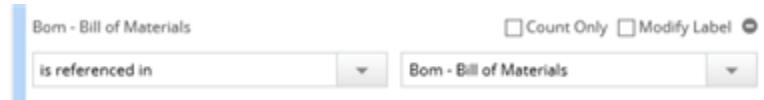
In the following example, the item's own attribute is being returned and the attribute is **Action**.



## Related Item

**Related Item** requires selection of an association type and a class of object that may be related to the current class. You will then be asked to add fields from the associated object class to display.

The **Count Only** checkbox enables you to return only the number of results rather than the values.



## Saving the Query Form

After the query form has been built to your specifications, you can save the query form.

To do so:

1. Select the **Save** button to open the **Save Query Form** dialog.



The dialog box is titled "Save Query Form". It contains four input fields: "TYPE" (set to "Query Form"), "ID" (highlighted with a red border), "NAME" (empty), and "DESCRIPTION" (empty). At the bottom are "Save" and "Cancel" buttons.

**Note:** The **Type** cannot be changed.

2. Type a unique **ID** for this query form. This is required.
3. Type a **Name** that will represent this query form in the list of Query Forms. This is optional.
4. In the **Description** text box, type a short description about this query form and its purpose. This is optional.
5. Select the  button to complete the save action.

## Execute a Query Form Search

You can execute a Query Form search by entering the search criteria in the fields configured by your System Administrator. You can also include wildcard characters in the search criteria. By default, a Query Form opens under the Form View tab. Selecting the Table View enables you to view the search results in a table. For more details about the Table View, see the *Changing Search Results View to Table View* section in this topic.

When a **Related Item** criteria is used, matches are made against the related objects, but the source objects are displayed in the results.

The **Like** operator has an implied wildcard on the end of the filter. So, for example, Like=A is interpreted as Like=A%.

When **Match All** is selected in the **Query Form Designer**, then, at execution time, all associated Datasets that have that attribute are searched and all of these attribute values must match the value given in the search criteria.

When **List of Values** is selected in the **Query Form Designer**, then, at execution time, a list of all the values is provided.

To execute a Query Form search:



1. In the *Global Navigation Panel*, select .  
The *Query Forms Panel* opens, displaying all the pre-configured Query Forms.
2. To open a Query Form, select its name.  
The Query Form of the selected name opens.



- Select the search criteria check box, enter a keyword or wildcard character in the box.

The screenshot shows the 'QF1 (Query Form)' interface. On the left, there's a vertical sidebar labeled 'AVEVA Asset Information Management'. The main area has tabs for 'Form View' (selected) and 'Table View'. Below the tabs are buttons for 'Search', 'Reset', 'Select All', 'Deselect All', and 'Clear Selected'. A search criteria box for 'ID' is set to 'Like J-900'. Below the search bar are several empty input fields for 'Name', 'Context', 'Type ID', 'Type Name', 'Incidental Type ID', 'Design Temperature Max', and 'Design Temperature Min'. At the bottom, there's a navigation bar with arrows and a page indicator 'Item 1 of 0'.

- Select **Search** to see the most closely-matched search results.

- In the **Form View**, select .

The item opens in the *Summary View*.

- To view the next search result, select .

The search result appears in the search criteria box used while executing search.

- To view the previously viewed search results, select the backward arrows.

### Changing Search Results View to Table View

After executing a Query Form search, selecting the **Table View** tab enables you to view the search results in a tabular format (printer-friendly view). Each row in the table represents a search result.

From the **Table View** tab, you can do the following tasks with the selected search result items:

- Open

- Add to
- Sets
- Baskets
- Export Items
- Export All Items
- Print

## Query Form CSV Export

While performing a CSV Export of the Query Forms, you must configure the following details as part of the Export Definition:

**Primary data separator:** This is the character (or characters) that will separate the columns of data in the CSV file.

**Secondary data separator:** Columns might contain many values. For example, in the Object aliases column, if one of the items in the Search results is 'V-2', then the aliases for this item could be 'SRP|VPD|/V-2' and 'SRP|PDS|Valve-2'. In the CSV file, the secondary data separator in the Object aliases column would separate these two values.

**Include Clash Information:** When choosing the primary and secondary data separators, you must ensure that the actual values that appear in the columns in the CSV file do not contain either of these separators. In this case, the user should choose a different separator and export the data again.

Selecting this option includes information at the bottom of the CSV file about any clashes detected during the creation of the file where values did contain instances of either of the separators. The line number (in the file) and the column number of any clashes are given. If no clashes were detected, then no clash information is included in the file.

**Include Column Header Information:** Select this option if the user would like an initial record in the CSV file that contains a header for each column. Selecting this option causes additional fields to be made visible on the page where the user can insert the header text for each column. If the user leaves a field blank, then a system defined header will be used which is based on the column type. A text box with the text "UOM" will be displayed next to the attribute field when this option is selected, and a Property is added in the User Defined Columns section of the Export Search Results Screen.

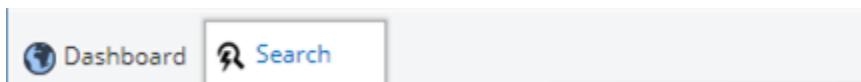
**Format for Excel:** Select this option if the user intends to view the downloaded CSV file using Microsoft Excel. Using this option prevents Excel doing its own (sometimes misleading) interpretation of the CSV data.

## Use Faceted Search

This section provides a description of the faceted search functionality.

### The Search Tab

Faceted search provides a static tab named **Search**.



**Note:** The **Search** tab is only visible to an AIM Dashboard user if the Faceted Search feature is enabled in their

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environment.

To initiate a search request:

1. Specify the search term in the search textbox.
2. Select the search icon present on the right of the textbox or press **Enter**.



3. To refine your search, you can select a high-level category – **Tags**, **Documents** and **All** – from the dropdown list.




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**Note:** Selecting **All** means searching both Tags and Documents.

After a search request is issued, the search window is updated.

The search window is divided into three main sections:

- Facet pane – displays names of all attributes and their values for the search criteria
- Search results pane – displays the results for the search criteria
- Attributes pane – displays names of the attributes and their values for a specific object

The screenshot shows the search results window with the following details:

- Facet pane:** Displays various search filters like Area, Criticality, Manufacturer, ModelNumber, PONumber, System, and VendorName.
- Search results pane:** Shows a list of search results. One result is selected (highlighted in blue):
  - Full ID: AssetVisualisation | ED | TAG | J-9002-A-HOA
  - Type: Pump
  - Name: DEETHANIZER REFLUX PUMP
- Attributes pane:** Displays detailed attributes for the selected object:
  - Master Dataset: J-9002B
  - Area: CS
  - EDSLearn0: AssetVisualisation
  - EDSLearn1:
  - EDSLearn2: HO
  - Context: HO
  - Criticality: 3
  - Description: DEETHANIZER REFLUX PUMP
  - Tag300Data: J-9002B
  - EDSLearn3: AssetVisualisation
  - EDSLearn4:
  - EDSLearn5: HO
  - Bore: millimetre
  - Context: HO
  - Description: DEETHANIZER REFLUX PUMP
  - Duty: not set
  - TagEquipmentTechnical: J-9002B

4. To view the search results beyond the first 50, select **Next**.

Showing 1-50 of 927 [Previous](#) [Next](#)

## Wildcard Searches

Wildcard searching enables you to enter a search term that matches any characters.

You can use an asterisk character (\*) to specify a wildcard, which will match zero or more characters.

For example, "test\*" will match any word that starts with "test", such as "test", "test1", "testable".

However, it is NOT recommended to start a search term with a wildcard, for example "\*test", because it may impact the performance of the search operation.

## Search for a Phrase

To search for exact phrases present in tag or document data, enclose the search term within double quotes.

As shown in the following screenshot, the "ball valve" search term is enclosed within double quotes so the search results get only those values in which the whole phrase "ball valve" appears:

The screenshot shows a search interface with a search bar containing "Tags \* ball valve". Below the search bar, a message indicates "Found 29236 results". On the left, there are filters for "Area", "Manufacturer", "Vendor", and "System". The main results area shows a single item: "MANIFOLD BALL VALVE".

**Note:** Currently, it is NOT recommended to use a wildcard character (\*) inside a search phrase as it may lead to unpredictable results. Also, currently, when using a search phrase, the ordering based on relevance of individual fields is not supported.

## Compound Searches

Compound searches enables you to provide multiple search criteria within a single search term by using the plus character (+) and the vertical bar character (|). A + provides an AND operation. A | provides an OR operation.

Currently, search terms support either + or | but not both at the same time.

For example, consider the case where you need to search for the exact phrase "ball valve" and results must mention the word "pump". The search term would be "ball valve" + pump.

The screenshot shows a search interface with a search bar containing "Tags \* ball valve" + pump". Below the search bar, a message indicates "Found 66 results". On the left, there are filters for "Area", "Manufacturer", "Vendor", and "System". The main results area shows a single item: "BV-4550-23". Below the item, detailed information is provided: Full ID: BV-4550-23, Type: Ball Valve, Name: Ball Valve, Cooling Medium Pump Drain.

## Warning

If a search response has more than 50 records (and the **Next** button is visible) and you modify the facet filter criteria but do not select **Apply**, then, a warning message will be displayed and the pagination will not happen:

A yellow warning message box is displayed with the text: "⚠ Request is not processed. Please apply or clear the modified facet criteria to continue." There is a close button "X" in the top right corner.

If you have searched for "pump" in the Tags category and selected **Apply**, but now you change the search term to "pumps12", without searching or applying, and then try to load more facets or navigate to the next page, then

the search text would be modified back to "pump". This is because you did not apply the modified search term "pumps12" and the actions that you are performing now are based on the results that came when you searched for "pump".

## Search Categories

Faceted search enables you to search for any specific term which can appear in any of the below mentioned fields with respect to the category.

## Search for Tags

The search term entered in the **Tags** category will be matched against the following fields, in the given order of importance, for all tags in the system:

1. Tag name
2. Tag ID
3. Class name

Therefore, if the search term matches the tag name of a specific tag, then it will be considered as more relevant to the user when compared to other search terms, such as **Class Name**.

## Search for Documents

The search term entered in the **Documents** category will be matched against the following fields, in the given order of relevance, for all documents in the system:

1. File content
2. Document name
3. Document ID
4. File ID
5. Document type (class name)

The relevance order is used in calculating the relevance of a result.

## Search Tags and Documents (All)

The search term entered in the **All** category will be matched against the **Tags** and the **Documents** fields as mentioned previously.

As shown in the following screenshot

- The search term "pacpp" will be searched in both the **Tags** and the **Documents** categories.
- The results shown match either tags or documents.

Found 32 results

All Tags (1) Documents (31)

IED

Full ID: AssetVisualisation/IED

Type: EDLevel3

IEDEquipmentList

Full ID: AssetVisualisation/IED/IEDEquipmentList

File ID: IED-EquipmentList.xlsx

Type: Es - List

Content: PID-PD-905675 PC CXN D-20-A0-D0 100 PS-201 PUMP Pressure Vessel Mechanical PID-905675 SW SCH D-CX4 SPLITTER REFLUX PUMP Mechanical PID-905676 RA CXN D-50-A0-D0 100 F-2003 DRUM Mechanical PID-PD Mechanical PID-905675 SW SCH D-20-A0-D0 100 J-9028 PCMP Storage Tank Mechanical PID-905675

IEDPipeList

Full ID: AssetVisualisation/IED/IEDPipeList

File ID: IED-PipeList.xlsx

Type: Es - List

Content: D-30-A0-D0 100 40-RV 90010-BFL3 PIPELINE Schematic Dept PID-905675 PID-905681 RAH Process D-20-A0-D0; S-05-A0-D0 100 50-SL-90023-BBL3 PIPELINE Schematic Dept PID-905675 PID-905680 RCH D-30-A0-D0 100 80-A-80006-AA83 PIPELINE Schematic Dept PID-905675 PID-905680 RAH Process D-

PIDIED905678

Full ID: AssetVisualisation/IED/PIDIED905678

File ID: PID-905678.png

Type: Pd - Pdf

Name: PID Drawing PIDIED905678

Content: Jeremy Calla 12/12/2013 9:03:00 AM 21 90-A0-5678 NTS L-8020 L-8020/N1 80 L-8020/N2 80 L-8020/N3 0

PIDIED905681

Full ID: AssetVisualisation/IED/PIDIED905681

File ID: PID-905681.pdf

Type: Pdf - Pdf

Name: PID Drawing PIDIED905681

## Search File Content

A match within the content of a physical file is the greatest factor in calculating the relevance of a result and it directly affects the order of relevance in the results. The order of relevance is:

- File content
- Document name
- Document ID
- File ID
- Document type (class name)

A match may be derived from each word in the search phrase, as in shown the following example:

The screenshot shows the AVEVA Asset Information Management software interface. The top navigation bar includes 'Home' and 'Search' buttons. On the left, there's a sidebar with icons for Home, Search, Find, Filter, Sort, and a magnifying glass. Below the sidebar, a 'Found Results' section lists various search filters: 'BOSLevel1', 'BOSLevel2', 'BOSLevel3', 'Content', 'Criticality', 'Discipline', 'DocumentCategory', 'DocumentType', 'LifeCycleCode', 'PONumber', 'Revision', 'Title', 'UDLCode', and 'Vendor'. Each filter has a corresponding checkbox and a detailed description below it. At the bottom of the sidebar are 'Apply' and 'Clear' buttons. The main content area displays a search result for document ID 905675. The result shows a preview of the document content, which includes a table with columns 'Content', 'File ID', 'Type', and 'Name'. The 'Content' column contains several large redacted sections. The 'File ID' column shows '905675' repeated. The 'Type' column shows 'Ex - List' for all items. The 'Name' column shows file names like '905675 PC.CXN 0-20-A0-D0 100.PB-201.PUMP Pressure Vessel Mechanical.IED-905675.SW SCH 0-20-A0-D0 100.J', '905675 PDI.Dwg', '905675 PDI.Dwg', and '905675 UOH.Dwg'. There are also three empty checkboxes labeled 'BOSLevel1', 'BOSLevel2', and 'BOSLevel3' at the top of the main content area.

**Note:** You can enclose the search phrase in double quotes to get a match for the exact phrase.

## Search Indexing Limitations

The maximum file size enabled for indexing is 2 GB and the file must have one of the following mime types, otherwise, the file will not be indexed:

- application/msword
  - application/pdf
  - application/rtf
  - application/vnd.ms-excel
  - application/vnd.openxmlformats-officedocument.spreadsheetml.sheet
  - application/vnd.openxmlformats-officedocument.wordprocessingml.document
  - image/svg+xml
  - image/vnd.dgn
  - image/vnd.dwg
  - text/plain

**Note:** The indexing of files uses the available text within the file and does not include an OCR process.

## Compound Searches

Compound searches enables you to provide multiple search criteria within a single search term by using the plus character (+) and the vertical bar character (|). A + provides an AND operation. A | provides an OR operation.

Currently, search terms support either + or | but not both at the same time.

For example, consider the case where you need to search for the exact phrase "ball valve" and results must mention the word "pump". The search term would be "ball valve" + pump.

The screenshot shows a search results page with the following details:

- Search bar: Tags \* "ball valve" + pump
- Facet sidebar: Area, Manufacturer, Vendor, System
- Result card:
  - Full ID: BV-4550-23
  - Type: Ball Valve
  - Name: Ball Valve, Cooling Medium Pump Drain

## Facets

Facets are where attribute values are grouped by their attribute names.

For example, if there are tags T1 and T2, T1 has attributes "Manufacturer" and "Area-pump room", and T2 has attributes "Manufacturer" and "Area-machinery", the facet list will appear as:

- Manufacturer (2)
- Area-pump room (1)
- Area-machinery (1)

The following are the facet views that you can see when searching for data using categories (**All|Tags|Documents**).

For **All**, the facet view will have an aggregated count of tags and documents, which match the specified search term.

Found 1007 results

All

[Tags \(927\)](#)  
[Documents \(80\)](#)

The values are hyperlinks and selecting a value will help you navigate to the respective category.

See the following example of Tags facets:

The screenshot shows a search interface with several facets:

- Manufacturer:** testmanufacturer1 (1), testmanufacturer10 (1), testmanufacturer100 (1), testmanufacturer101 (1), testmanufacturer102 (1), testmanufacturer103 (1), testmanufacturer104 (1)
- Vendor:** fgfdhgddg345454 (1), vendor1 (1), vendor10 (1), vendor100 (1), vendor101 (1), vendor102 (1), vendor103 (1)
- System:** PX->CO2: CO2 REMOVAL (414)
- Criticality:** 10 (1), 100 (1), 101 (1), 102 (1), 103 (1), 104 (1), 105 (1)

At the bottom are two buttons: **Apply** and **Clear**.

## Load More Facets

The system is configured to initially show a maximum of 10 facets sorted alphanumerically.

If available, more facets can be dynamically loaded by scrolling down to the bottom of the list. The text **Loading...** will be displayed.

Found 2018 results

Manufacturer

- testmanufacturer10 (1)
- testmanufacturer100 (1)
- testmanufacturer101 (1)
- testmanufacturer102 (1)
- testmanufacturer103 (1)
- testmanufacturer104 (1)
- testmanufacturer105 (1)
- testmanufacturer106 (1)

Loading...

To search for the attribute value, type in the text box provided under each facet.

For example, enter "baldor" to find the "Baldor" value.

Manufacturer

- Baldor (248)

---

**Note:** The search term is case-insensitive.

---

## Facet Filter

Faceted search enables you to further narrow down the search results based on the required attribute values.

In the example below, the results are filtered based on the **Manufacturer** attribute having values of "testmanufacturer1" or "testmanufacturer10" and with a Vendor of "vendor10".

When you select **Apply**, the results will be updated accordingly.

The screenshot shows the AIM Discovery interface with four facets:

- Manufacturer:** Displays two selected values: "testmanufacturer1" (1) and "testmanufacturer10" (1). Below them is a list of other manufacturer entries:
  - testmanufacturer1 (1)
  - testmanufacturer10 (1)
  - testmanufacturer100 (1)
  - testmanufacturer101 (1)
  - testmanufacturer102 (1)
  - testmanufacturer103 (1)
  - testmanufacturer104 (1)
- Vendor:** Displays one selected value: "vendor10" (1). Below it is a list of vendor entries:
  - vendor1 (1)
  - vendor10 (1)
  - vendor100 (1)
  - vendor101 (1)
  - vendor102 (1)
  - vendor103 (1)
  - vendor104 (1)
  - vendor105 (1)
- System:** No values are listed.
- Criticality:** No values are listed.

At the bottom are two buttons: **Apply** (highlighted in blue) and **Clear**.

Selecting **Clear** removes all the selected facet values and takes you back to the full list.

---

**Note:** The **Apply** button is enabled if there is at least one selected or modified facet value. The **Clear** button will be enabled if there is at least one filter applied.

When selecting the "X" next to an attribute, it removes the search criteria (update with the **Apply** button).

The facets that are shown to you are strongly coupled with the search results and applied filter criteria (if any). If you do not see all the facets in the system, you must do one of the following:

- clear the facet criteria applied
- modify the criteria by clearing the checkbox
- closing the filter cards as needed

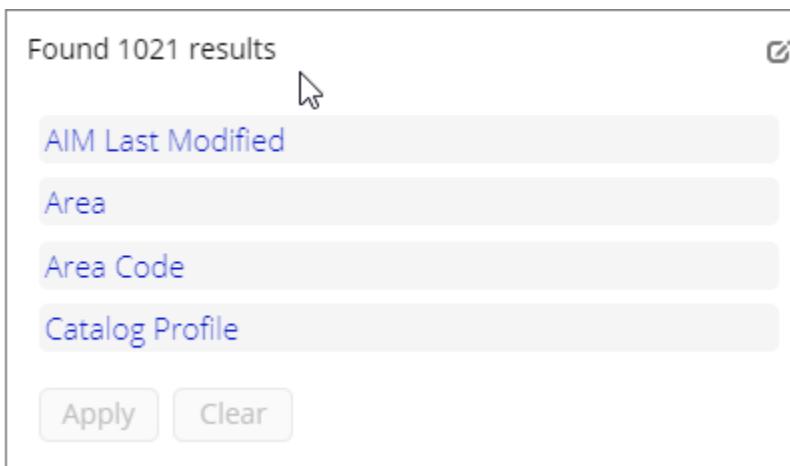
---

**Note:** Facets are combined with an AND operation, for example, Manufacturer and Vendor. Attribute values within a facet are combined with an OR operation, for example, testmanufacturer1 or testmanufacturer10.

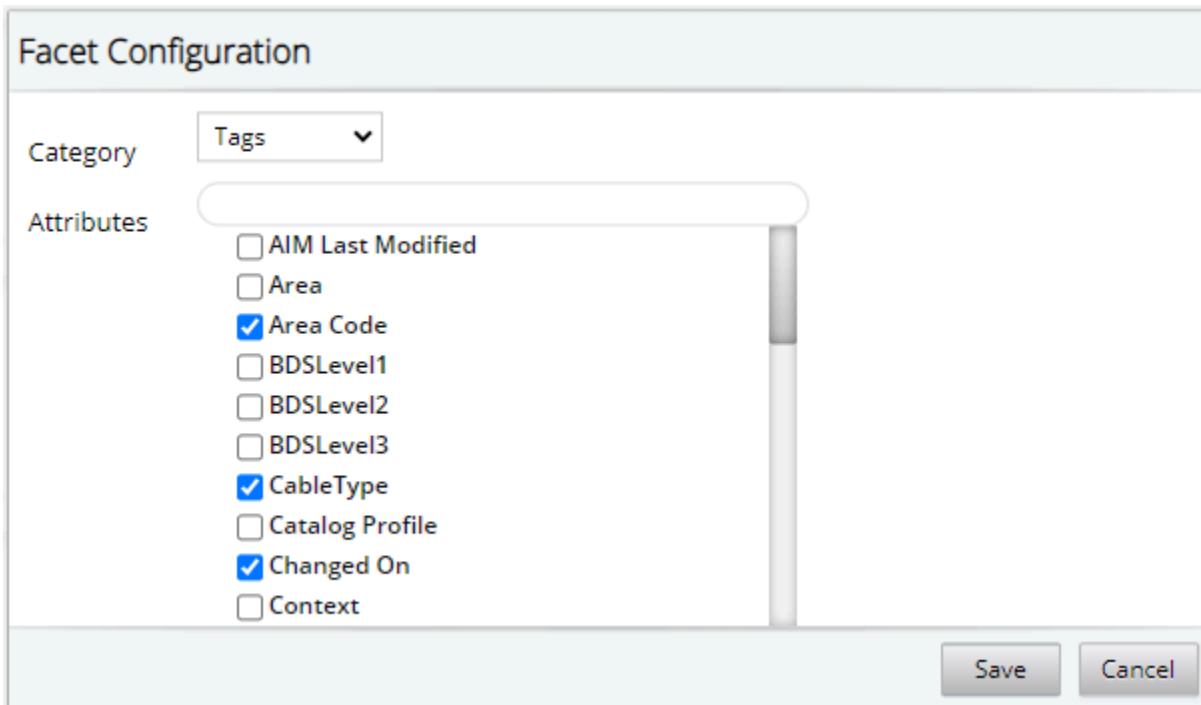
## Facet Configuration

If a user has the **Core Team Admin** role, and switches to that role, a **Configure facets** icon  will be available in

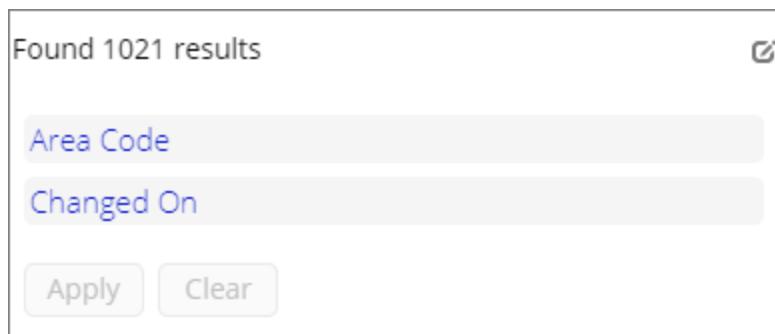
the results panel.



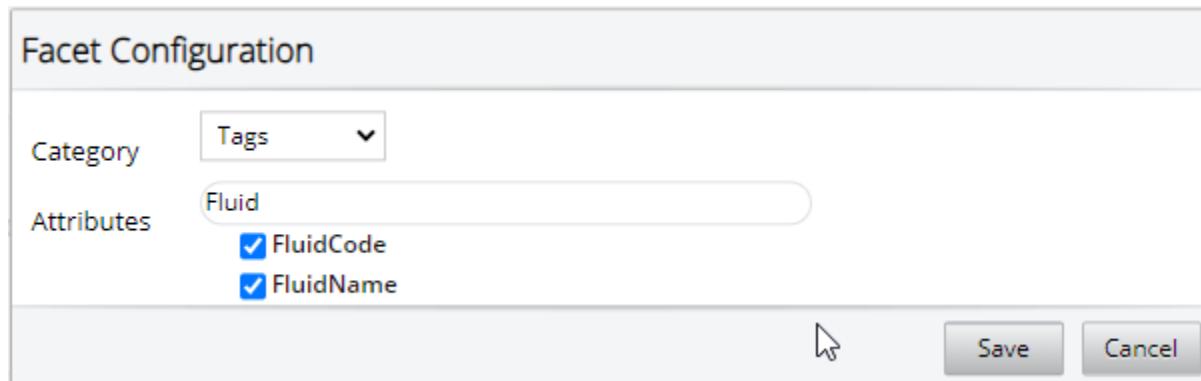
Selecting the icon will show a dialog that allows the user to add and remove **Attributes** for each **Category** selected. For example, set the category to **Tags** and choose the following three attributes. Select **Save**.



In this case, facet attributes will be available for any of the three attributes chosen and that have values within the set of search results. So, if there are no results with the CableType attribute, the following two attributes will be listed.



In the **Facet Configuration** dialog, the field at the top of the **Attributes** list allows the list to be filtered. For example:



## Attributes

If an object card is selected, all attributes and their values are displayed in the object's attributes panel on the right of the search window.

**Attributes** are grouped under their data set.

Master Dataset V-5399	
Area	
BDSLevel0	AssetVisualisation
BDSLevel1	
BDSLevel2	
BDSLevel3	IED
Context	IED
Criticality	
Description	

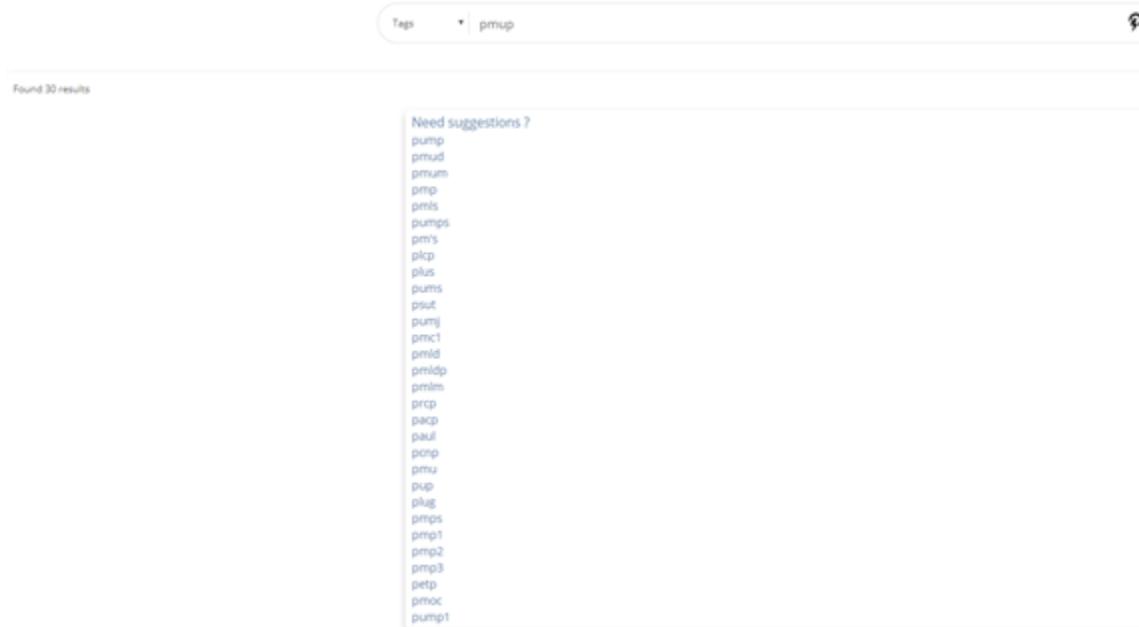
## Suggestions

**Suggestions** is a way of finding similar search values.

You can use this to account for variations or mistakes in spellings. For example, as shown below, if you enter "pmup" instead of "pump", it brings in zero search results along with an option asking you whether you are interested in knowing the possible suggestions for the search term.



If you select on **Need suggestions?**, then suggestions will be retrieved for the text "pmup" as shown in the following screenshot:



## View Information

The information you select to view can constitute a document, item or tag, independent or inter-related to each other. The following sections explain the procedures for:

- [View Tags](#)
- [View Content Cards](#)
- [View 2D Documents](#)
- [View 3D Models using 3DVIs](#)
- [View AVEVA Point Cloud Manager files](#)
- [Highlight Tag IDs from Related Items](#)
- [Expand Tags and Interpolate Them](#)

## View Tags

To view information for a tag, select the tag from the Browse tree or from the Search results. Its Summary View opens displaying the information in the panels configured.

For example, available panels are:

- Location
- Details
- Connections
- Class Attributes
- Grouped Attributes
- 2D View
- Related Documents
- Event Status Category
- Child Items
- Related Sets

---

**Note:** 3D views are not supported on Tag Summary Views.

---

To maximize or minimize a panel, select .

For the **Attributes** panel, attributes can be filtered by typing into the **Filter** text box. And when ticking the **Hide Empty** checkbox, all attribute rows with empty values are removed and the counts on the attribute groups updated accordingly.

For **2D Views**, use the mouse wheel to zoom the document in and out..

## View Content Cards

A **Content Card** displays all the information known about a document or tag.

To open a **Document Content Card**, view a document and select the  icon that appears after the name of the document in the top-left of the document viewer.

To open a **Tag Content Card**, select a hot-spotted tag in the document and the **Tag Content Card** appears in the top-right of the document viewer.

The following table lists the various tabs that can be shown in a **Content Card**.

Properties	Description
Details	Lists the basic information for a tag or document.
Attributes	Lists the attributes and their values for a tag or document. Attribute names can be filtered by typing into the <b>Filter</b> text box. When the <b>Hide Empty</b> checkbox is selected, all attribute rows with empty values are removed and the

Properties	Description
	Counts on the attribute groups updated accordingly.
Related Items	Lists the items associated to a tag or document.
Files	Lists the actual files that can be rendered to display a document (Document Content Cards only).
Contents	Displays the tags that are related to a document (Document Content Cards only).
Related Documents	Lists the documents associated to a tag (Tag Content Cards only).
Views	Displays the external views that can be shown for a document (Document Content Cards only).

## View 2D Documents

Selecting a two-dimensional vector-based graphic from a 2D Document folder enables you to view these drawings rendered in the SVG file format (.svg). By default, the selected 2D Document opens in the *Document View*. Using the  **View** menu at the top-right of the *Document View* area, you can change the view to *Summary View*.

### General 2D Viewing

### Navigate in 2D Documents

Selecting the **Navigation** menu at the *2D Document View* provides you with the following options to navigate in a 2D drawing:

Use this mode	To
 Pan	Move the model anywhere inside the <i>Document Viewing</i> area.
 Marquee Zoom	Mark a rectangular area of the model to be magnified.
 Zoom	Magnify the model size by selecting the mouse and moving upward. Reduce the model size by selecting the mouse and moving downward.

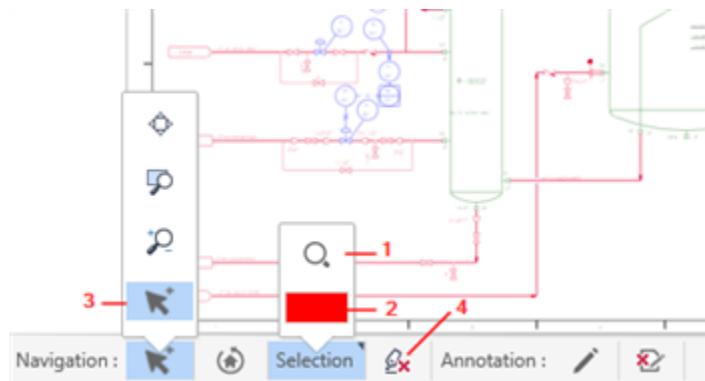
The  icon enables you to restore the drawing to its original form and position.

## Highlight Elements in 2D Drawing

To highlight collections of elements:

1. Open the **2D Document Viewer** and make selections using any of the following:

- Search results
- Browse tree
- Content card
- Sets

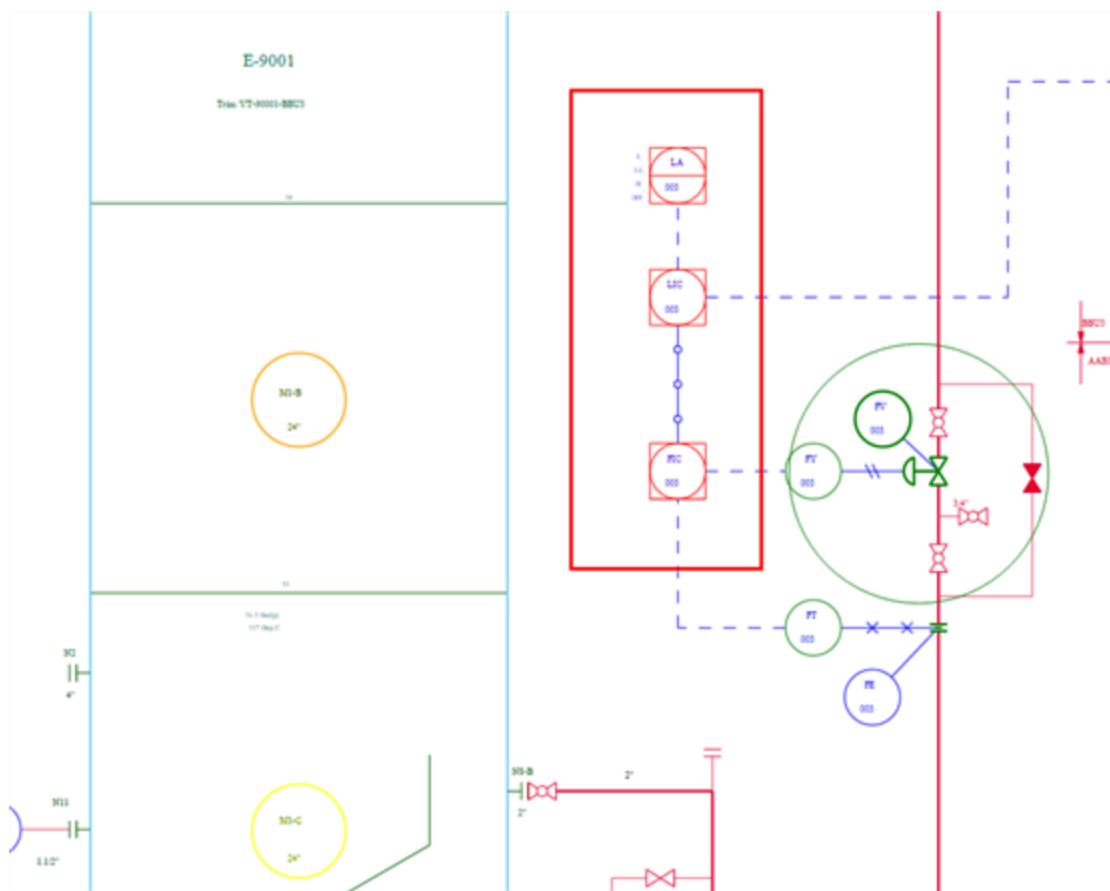


2. Select the **Selection** menu in the toolbar.
3. Select a highlight colour (2) to change the colour of the selected items.

**Note:** You can pick multiple items in the viewer either by holding down **Ctrl** while selecting on the items or by using the **Add to Selection** icon (3) from the **Navigation** menu.

4. Select the **Zoom to Selection** icon (1) to see a closer view.

**Note:** You can subsequently save (as Markup), print or export any modifications to the document in the viewer. The modifications can be annotations, highlighting or a combination of both (see the example below). For information on Markup, see [Mark up 2D Documents](#).



5. Select the **Clear All Highlighting** icon to clear any highlighting modifications.

## Visual Reporting

The  Tools menu in the SVG viewer provides a Visual Reporting option.

Visual Reporting enables you to implement visual changes to your search results, comprising of 2D Drawing components.

It enables you to:

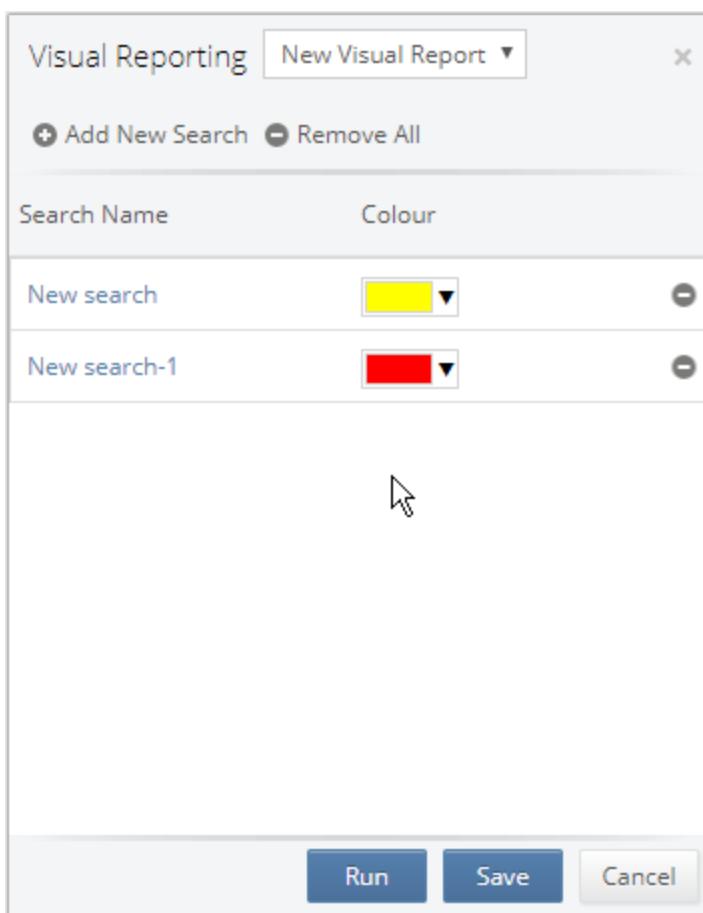
- Categorize 2D Drawing components and alter their colours.
  - Save the Visual Report to re-use later.

By default, you will be able to apply visual changes to the search results; but the **Save** button will be enabled only if you have appropriate rights granted by your System Administrator.

To apply visual changes to the search results:

1. In the **SVG viewer**, select the  Tools menu, and then select **Visual Reporting**.

The Visual Reporting pane opens.



2. In the drop-down box, select the arrow to select **New Visual Report**.  
The searches saved under the selected Visual Report appear as a list.
3. In the **Colour** box, click the arrow to select the colour, and then select **Set Colour**.
4. Select **Apply**.

The visual changes are applied to the 2D Drawing components in that saved search.

---

**Note:** If the search criteria used in a saved search finds more results than the limits configured under: **Settings Panel > Site > General > Visual Reports (Max list items for Visual Reports)** (the default limit is set as 25000), a warning message appears. If this happens, consider changing this setting; but be careful to not exceed the combined performance of the system, the hardware and the network latency.

---

The following functionality of Visual Reporting for 2D Drawings works the same as for Visual Reporting for 3D models (see Visual Reporting):

- **Visual Reporting** drop-down to create a new visual report (select **New Visual Report**) or to load an existing visual report
- **Add New Search** link to add new search
- **Remove All** link to remove all searches
- **New Search** link to open prompt
- Colour picker to select colour of search result
- **Run** button to apply highlight with selected colour on search results

- **Save** button to save a new visual report with ID and description

## View 3D Models using 3DVis

This section describes the various actions that you can perform while viewing 3D Models, such as:

- General 3D Viewing
- Visual Reporting

### General 3D Viewing

#### Demo of 3DVis Cloud Streaming Service

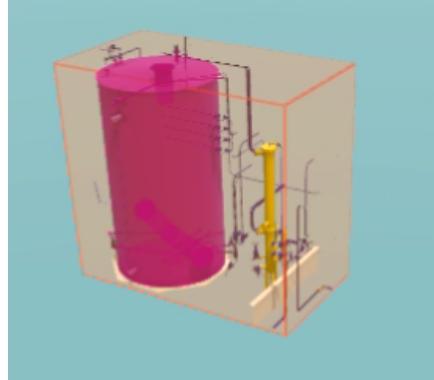
[https://player.vimeo.com/video/1027670401?badge=0&autoplay=0&player\\_id=0&app\\_id=58479](https://player.vimeo.com/video/1027670401?badge=0&autoplay=0&player_id=0&app_id=58479)

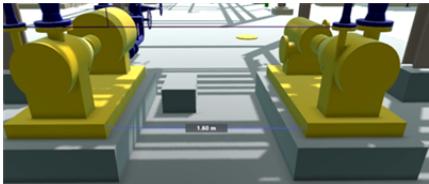


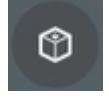
You can use the following actions when viewing 3D models:

Name	Action/Button	Description
Select	Click an item with the left mouse button	Selects an item in the model. For example, used with opening the Content Card or selecting an item to rotate around.
Pan	Drag with the right mouse button	Pans the model in all directions.
Zoom	Scroll the mouse wheel	Zooms the model in and out.
Undo		The application automatically saves the camera position every time a user performs certain actions, such as rotating or panning the model. This action steps back through previous camera positions.
Redo		The application automatically saves the camera position every time a user performs certain actions, such as rotating or panning the model. This action steps forward through saved camera positions.

Name	Action/Button	Description
Reset		Resets the model to its initial load state.
Rotate	  Select the button, then drag with the left mouse button	Rotate navigation mode (default). When an item is selected, the view will orbit around the selected item. When no item is selected and the cursor is over a model element, the view will orbit around the initial cursor position. When no item is selected and the cursor is not over a model element, the view will orbit around the centre of the model's bounding box.
Fly	  Select the button, then drag with the left mouse button	Fly navigation mode. Move forwards through the model, with a fixed velocity, in the direction of the cursor.
Walk	  Select the button, then drag with the left mouse button	Walk navigation mode. Move forwards and backwards through the model at a fixed elevation, using the cursor to steer left and right. Velocity is determined by how far the cursor is dragged up/down the screen. Best used after teleporting to a position in the model.
Clip		This tool is only active when an item is selected. The Clip tool isolates the selected element by creating a 6-plane clipping box around it. The sides of the clipping box can be dragged to modify the clipping volume. When the Clip tool is active, a Hide button  is

Name	Action/Button	Description
		<p>displayed, allowing the visibility of the clipping box to be toggled on or off.</p> 
Section		<p>The Section tool takes a 3-plane slice out of the model. Each plane can be selected and dragged to change the position of the sections. Each of the 3 planes is notionally infinite in size.</p> <p>When the Section tool is active, a</p>  <p>Hide button is displayed, allowing the visibility of the section planes to be toggled on or off.</p> 
Measure		<p>The Measure tool displays the distance between selected points in the model.</p> <p>When active, a side bar menu</p>

Name	Action/Button	Description
		<p>appears providing access to the following measure tools:</p>  <p><b>Point to Point.</b> This is the default mode. It displays the distance between two consecutively chosen points in the model.</p>   <p><b>Path.</b> A continuous string of measurements. It displays the distance between each consecutively chosen point in the model as well as a total for the complete path.</p> <p>Disabling the measure tool by clicking the Measure button on the main menu will confirm the measurement.</p>   <p><b>Delete.</b> When this mode is active, select an existing measure line to remove it from the view.</p>  <p><b>Units.</b> Repeatedly select to cycle the units between metres (m), centimetres (cm), inches (in) and feet (ft). Changing the units</p>

Name	Action/Button	Description
		<p>only affect subsequent measurements.</p>  <p><b>Lock.</b> Allows measure lines to be optionally constrained to certain axis.</p> <ul style="list-style-type: none"> <li> <b>No lock.</b> Draw measure lines using all the axes.</li> <li> <b>Z lock.</b> Draw measure lines only on the Z-axis.</li> <li> <b>XY lock</b> - Draw measure lines only on the XY plane.</li> </ul>  <p><b>Delete All.</b> Removes all measurements from the view. When using the Measure tool rotating the model is disabled.</p>
Hide & Isolate		<p>The Hide &amp; Isolate tool opens a side menu giving control over the visibility of objects in the scene.</p>  <p><b>Hide.</b> Removes the currently selected objects from the scene.</p>  <p><b>Isolate.</b> Removes all</p>

Name	Action/Button	Description
		elements except the currently selected objects from the scene.   <b>Show All.</b> Redisplays all previously hidden objects.
Views		The Views tool displays a popup menu giving access to tools that affect the appearance of the model in the display.  <b>X-Ray:</b> Turn X-Ray mode on/off. Turning on makes the model translucent, so highlighted objects become more visible.  <b>Shadows:</b> Turn Shadows on/off. Turning off shadows can help make dark areas of the model more visible.  <b>Insulation&amp;Ob:</b> Toggles the visibility of any insulation and obstruction volumes in the model. This only applies to AVEVA E3D models that contain INSU or OBST elements.
Teleport	 Drag the icon with the left mouse button	When dropped over the model, the view teleports to that position 1.8m above the surface.
Collapse		Collapses the toolbar.
Expand		Expands the toolbar.

You can use the following touch actions when viewing 3D models:

Name	Action	Description
Select	Tap with one finger	Selects an item in the model.
Zoom	Pinch in and out	Draw fingers together to zoom out, draw fingers apart to zoom in.
Rotate	 Tap the button, then drag with one finger	Rotate navigation mode (default). Drag finger over the model to orbit around a selected item.
Fly	 Tap the button, then drag with one finger	Fly navigation mode. Move forwards through the model, with a fixed velocity, in the direction of the finger contact.
Walk	 Tap the button, then drag with one finger	Walk navigation mode. Move forwards and backwards through the model at a fixed elevation, using the finger contact to steer left and right. Velocity is determined by how far the finger contact is dragged up/down the screen. Best used after teleporting to a position in the model.
Teleport	 Drag the icon with one finger	Release the teleport icon over the model, the view teleports to that position 1.8m above the surface.

## Visual Reporting

Visual Reporting enables you to implement visual changes to your search results, comprising of 3D Model components.

It enables you to:

- Categorize 3D Model components, altering its colours and transparency levels.
- Save the changes after adding description, enabling quick identification of those components later.

## Applying Visual Changes to Search Results

With default permissions, you can apply visual changes to the search results, but the **Save** button is only enabled

if you have a role with appropriate rights granted by your System Administrator.

To apply visual changes to search results:

1. In the *3D Model View* area, select the  Tools menu, and then select Visual Reporting.  
The **Visual Reporting** pane opens.
2. In the drop-down box, select the arrow to select the Visual Report.  
The Searches saved under the selected Visual Report appears as a list.
3. In the Colour box, select the arrow to select the colour, and then select Set Colour.
4. In the Transparency box, select the arrow to select the transparency rate.
5. Select the way that objects which are not satisfied by any of the search criteria are shown:
  6. **Show All** – objects are opaque.
  7. **X-ray Mode** – objects are translucent.
  8. **Isolate Results** – objects are removed from the view.
9. Select Run.

The visual changes are applied to the 3D Model components in that saved search.

---

**Note:** If the search criteria used in a saved search finds more results than the limits configured under: **Settings Panel > Site > General > Visual Reports (Max list items for Visual Reports)** (the default limit is set as 25000), a warning message appears. If this happens, consider changing this setting; but be careful to not exceed the combined performance of the system, the hardware and the network latency.

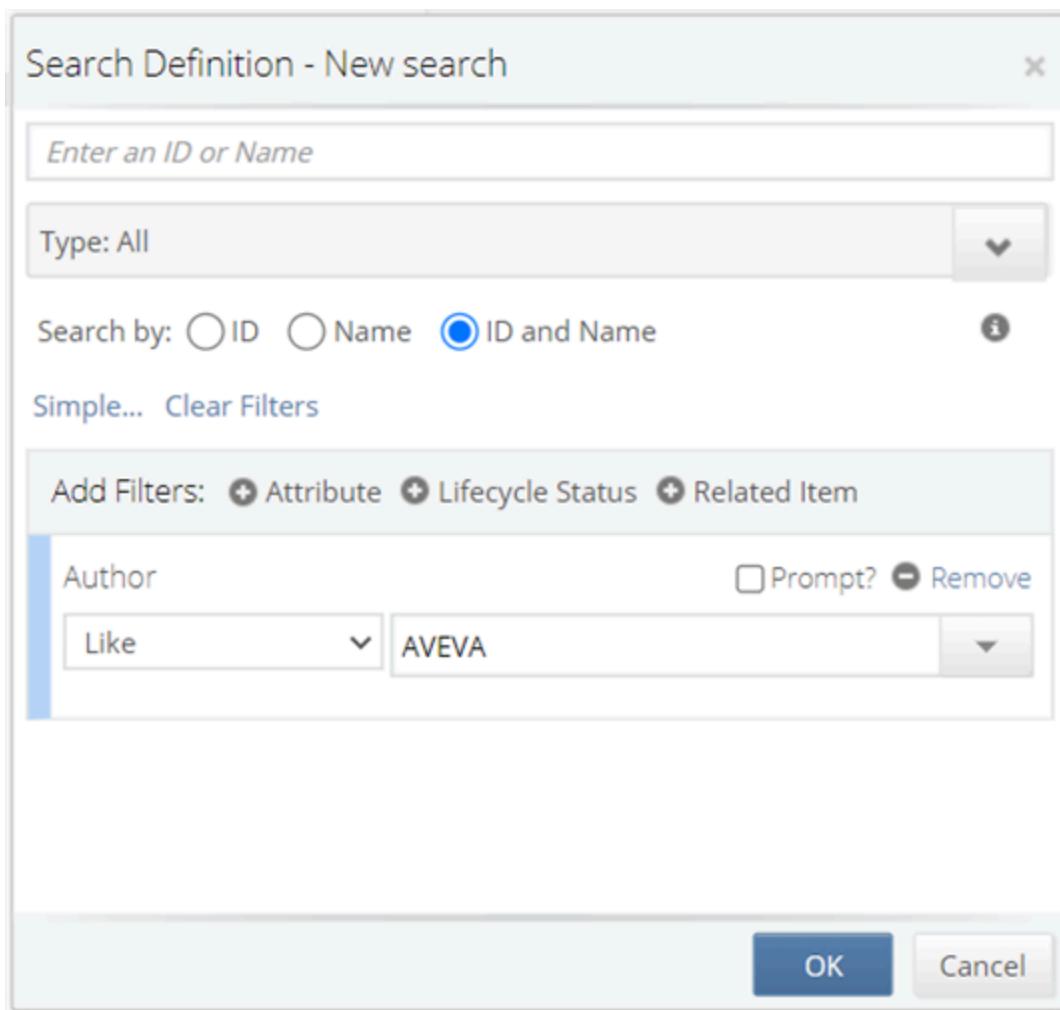
---

## Adding New Search to a Visual Report

To add new search to a Visual Report:

1. In the Visual Reporting drop-down box, select the arrow to select a Visual Report.
2. Select  Add New Search.  
The newly added search appears.
3. Select **New Search**.

The following **Search Definition - New search** window appears (an example attribute has been added):

**Notes:**

- If you select the **Prompt?** check box under the **Add Filters:** section, a text box is displayed where you can enter a new label for the search criteria.
  - In *Simple Search* mode, for each search criteria that has been marked as **Prompt?**, you are prompted to enter the value for the criteria. Any search criteria that has not been marked as **Prompt?** is hidden.
  - By default, Search Definitions of Visual Reports open in *Simple Search* mode.
4. Select **OK**.

### Removing Searches from a Visual Report

To remove searches from a Visual Report:

1. In the Visual Reporting drop-down box, select the arrow to select a Visual Report.
2. To remove all the searches under a Visual Report, select **Remove All**.
3. To remove the searches one at a time, select **-** at the right-end of each search name.

### Saving a Visual Report

You must have appropriate rights for saving a Visual Report. If not, the **Save** button will not be available in the

Visual Reporting pane.

To save a Visual Report:

1. In the Visual Reporting drop-down box, select the arrow and select New Visual Report.
2. If you want to create new searches to implement the new Visual Report, select  Add New Search.
3. To apply visual changes to the searches, select the colour and transparency rate, and then select **Apply**.
4. Select **Save**.

**Note:** The Save button will be available, only if you have the rights granted by your System Administrator.

The Save Visual Report Definition window opens.

5. Enter a unique identifier for the new Visual Report in the ID box, a Name and Description, and then select Save.
6. If you do not want to continue saving the new Visual Report, select Cancel.
7. To view the newly created Visual Report, select the arrow in the Visual Reporting drop-down box.

## View AVEVA Point Cloud Manager files

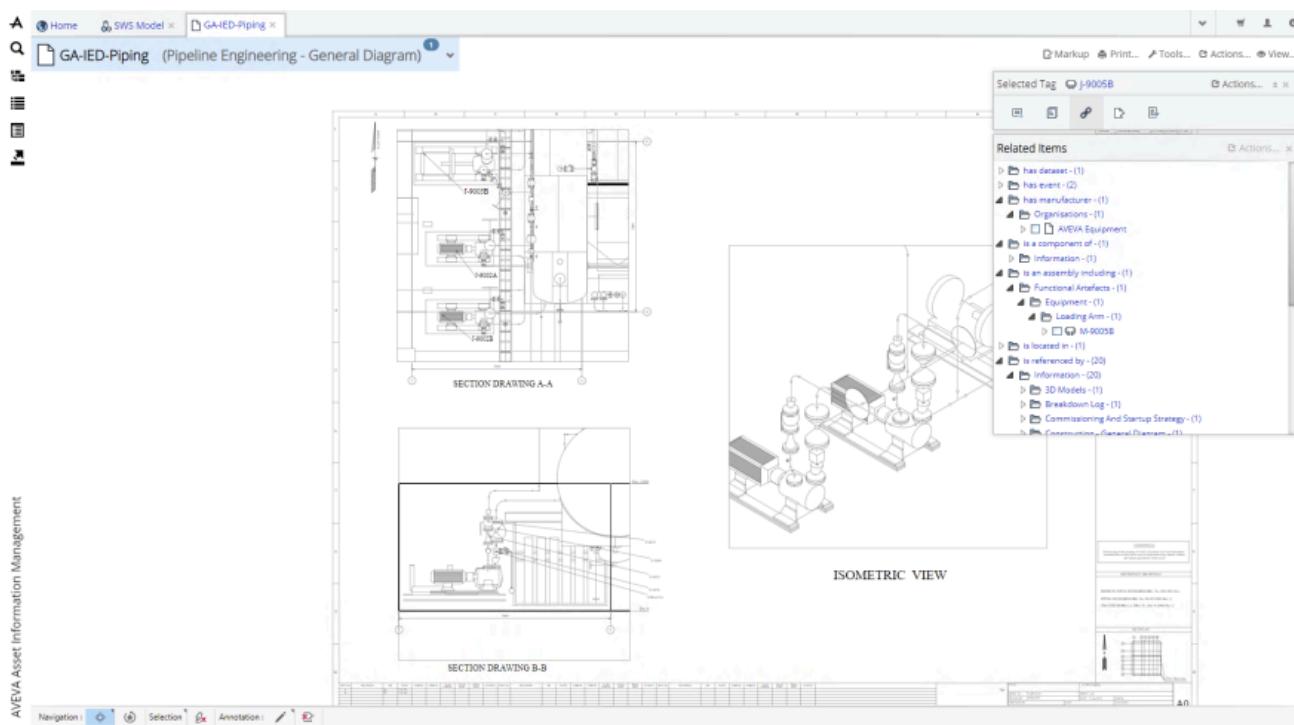
AVEVA Point Cloud Manager files can be viewed in the AVEVA Point Cloud Manager Viewer.

For more information, see [AVEVA Point Cloud Manager - Viewer](#).

## Highlight Tag IDs from Related Items

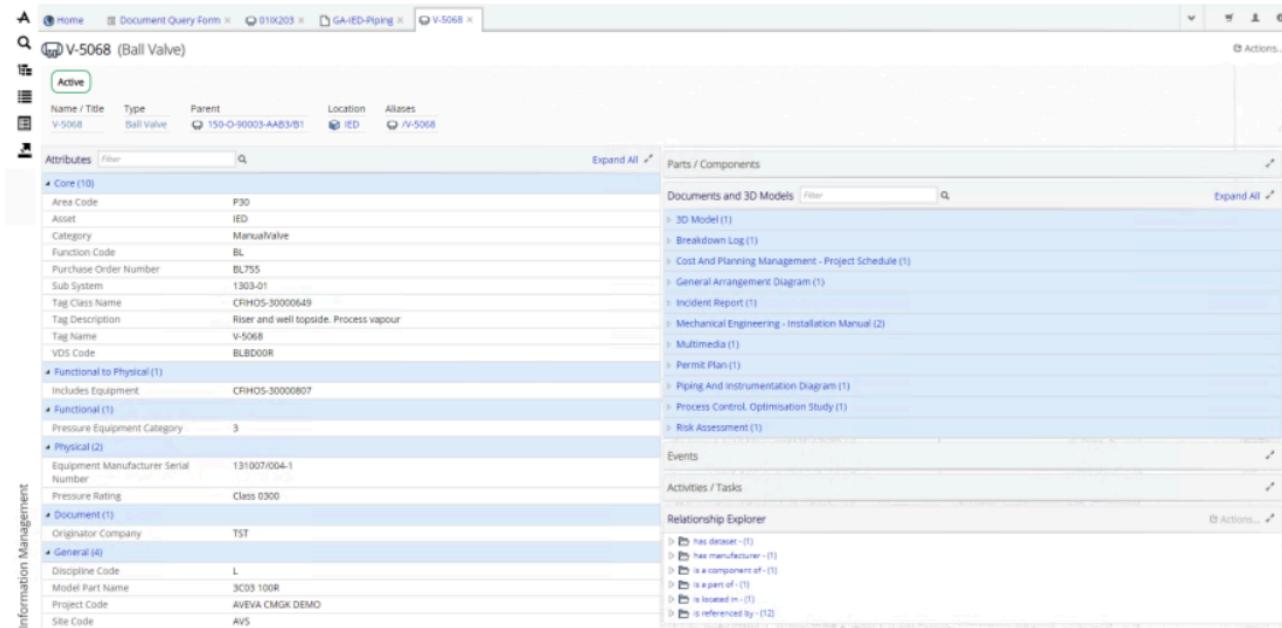
You can highlight tag IDs via the **Related Items** panel in a Content Card for a selected item.

1. While viewing a P&ID, open a document by selecting it from **Selected Tag > Content Card > Related Items** tab.



A new tab opens in the Accusoft Viewer with the selected tag ID Content Card open and the tag ID highlighted in the document. All instances of the tag ID are highlighted throughout the document. Selecting on the highlighted tag ID pops up the selected tag Content Card if the tags to document associations have been processed.

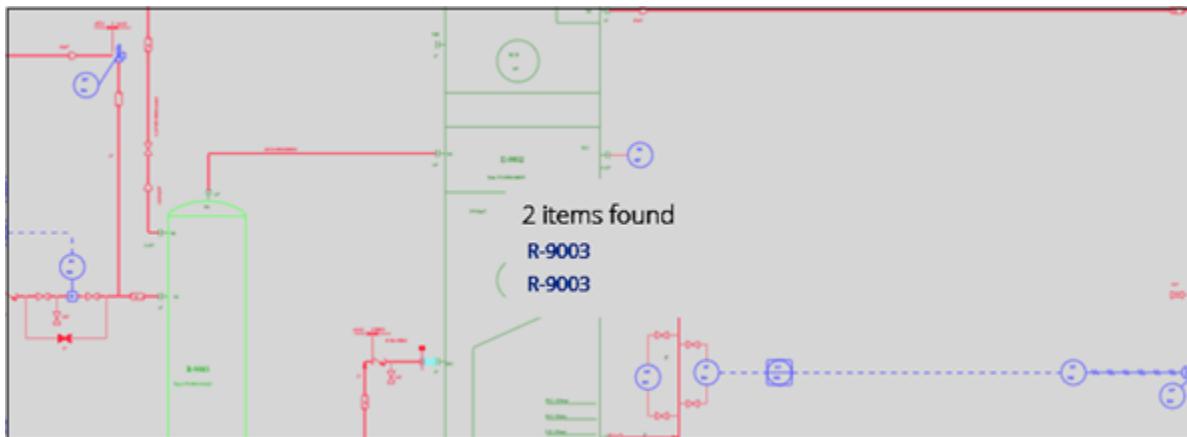
2. Select the results to open the related tag and view the Tag Summary. Tag Summary also shows the various components, models, events and activities related to this tag.



## Expand Tags and Interpolate Them

Many drawings (2D) contain tag references that use a shorthand notation to reference more than one object, for example J-9002A/B. AVEVA Gateways provides support to split labels with the information on all referenced items that are embedded within the SVG (drawing).

The following example shows an image of how the screen looks when you select on a split label in the **2D File Viewer**:



Using the returned list of matches, a pop-up list of real objects is presented, from which you can view the details of the selected tag in the item's **Content Card**.

In the following example, selecting on R-9003 from the pop-up dialog in the **File Viewer** updates the **Content Card** accordingly:

A screenshot of the Content Card for the selected tag R-9003. The card is divided into sections: 'Selected Tag' (showing R-9003), 'Actions...' (with a trash icon), and 'Details'. The 'Details' section contains the following information:

ID	R-9003
Name	HORIZONTAL VESSEL
Type ID	HEAT TRANSFER
Lifecycle Statuses	
Aliases	/R-9002 /R-9003

## Use Markup to Collaborate

The *Markup* functionality enables you to collaborate through annotating the 2D Diagrams and Documents, displayed in:

- AVEVA Asset Information Management – Discovery File Viewer
- Accusoft Viewer

## Understand User Rights for Markup

As a default user, you can:

- Mark up 2D Diagrams and Documents View documents, using the Annotation tools.
- Select and load the Markups created and saved by the other users.

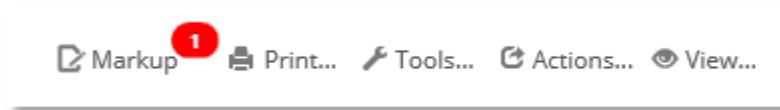
However, you must have the appropriate rights granted by a user with administrative privileges, to execute the following actions:

To do this action	You must have this right
Create a Markup	CreateMarkup
Save a Markup	
Edit your own Markup	
Delete your own Markup	
Edit other users' Markup	EditMarkup
Export a Markup	ExportMarkup

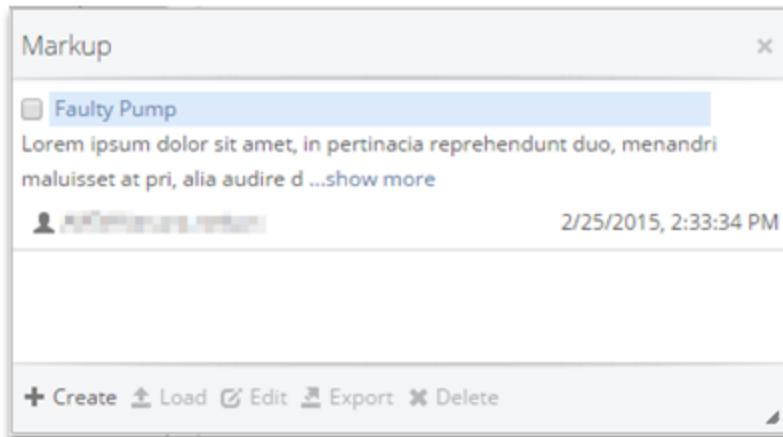
## View the Markups

As a default user, you can view the Markup created and saved by the other users.

- The number of saved Markups pertaining to an opened document appears as a superscript of the Markup icon in a red circle.



- Selecting the Markup icon opens the Markup panel, listing the name and description of all the saved Markups, with the saved date and time.



- Selecting a Markup's name displays that Markup on the opened document.

## Create, Edit and Delete Markups

You must have the CreateMarkup right to create, edit or delete your Markups in the documents. If not, these command buttons will be unavailable.

To create, edit and delete Markups:

1. Add a Markup in the document.
2. Select the Markup icon.  
The Markup panel opens.
3. To create a Markup, select the Create icon.
4. In the New Markup panel, enter the Name and Description and then select Save.

After the information is saved, the message "Markup has been created" appears at the bottom-right corner. The new Markup Name, Description, Saved Date and Time, appear in the Markup Panel. Also, the number in the red circle, appearing as a superscript of the Markup icon, increases with every new Markup creation.

5. To edit a Markup, select the check box next to the Markup you want to edit.  
The Edit button is enabled.
6. Select the Edit icon.

When a Markup is selected for editing, its annotations are loaded into the viewer, replacing any existing annotations.

7. In the Edit Markup Panel, make the updates, and then select Save.
8. If you do not want to save the edits, select Cancel.
9. To delete a Markup, select the check box next to the Markup you want to delete.
10. Select the Delete icon.

A confirmation message displaying, the number of Markups you are deleting and if you would wish to continue, appears.

11. To confirm the deletion, select OK. If not, select Cancel.

Upon your confirmation to delete, a message "Markup has been deleted" appears at the bottom-right corner.

## View the Markup Descriptions

The **Markup Description** can be expanded or collapsed as follows:

- If the Markup description is more than 100 characters, selecting the **...show more** link expands the remaining text visibility.
- Selecting the **show less...** link collapses the expanded description.

## Resize the Markup Panel

To resize the **Markup Panel**:

1. Rest the mouse pointer on the panel border.
2. When the pointer becomes a double-headed arrow, drag the pointer left or right to move the split line.  
The panel height or width is resized, providing a larger area for *document viewing*.

## Preserve the Markup State

The state of the **Markup Panel** and the annotations (saved or otherwise) in a document model are preserved, while navigating around *AVEVA Asset Information Management – Discovery*. Therefore, you can add some annotations to a document, navigate away from the page to view a different document, and then navigate back to the **File Viewer** to finalize your Markup, without losing your work. The state of the Markup in an open document is persisted, until the document's tab is closed.

## Relocate and Resize Markups

To relocate and resize Markups:

1. To move a Markup to another area in the drawing, select the Marked up shape, and then drag it.
2. To increase or decrease the Markup size, select the **Markup**, and then rest the mouse pointer on the border.
3. When the pointer becomes a double-headed arrow, drag the pointer inward or outward.

## Load Markups

You can load the Markups saved by you or the other users, into an opened document.

To load Markups:

1. Select the **Markup** icon.

The **Markup** panel opens, displaying all the saved Markups relevant to the opened document.

2. Select the check boxes next to the Markups you want to load.
3. At the bottom of the **Markup** panel, select the Load icon.

All the selected Markups appear in the opened document.

---

**Important:** This action will clear all the other Markups under viewing, and will show only the Markups you selected to load.

---

## Merge Markups

To merge Markups:

1. Select the **Markup** icon.

The **Markup** panel opens, displaying all the saved Markups relevant to the opened document.

2. Select the check boxes next to the Markups you want to load.

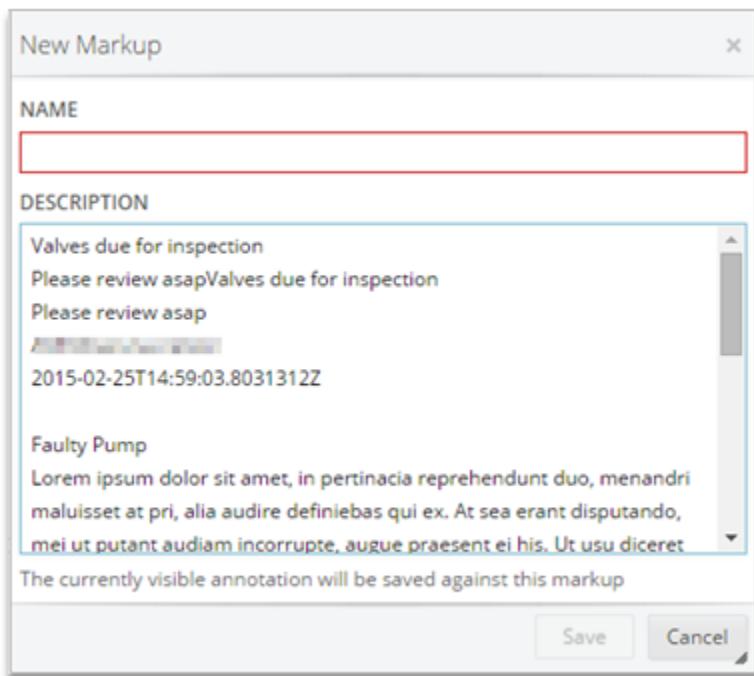
3. At the bottom of the Markup panel, select the *Load* icon.

All the selected Markups appear in the opened document.

**Important:** This action will clear all the other Markups under viewing, and will show only the Markups you selected to load.

4. Create a new Markup from the merged result.

The *New Markup* panel opens, displaying the merged result of all the loaded Markups.



5. To save the merged Markup, select **Save**. If not, select **Cancel**.

## Distribute Markup URLs

Each Markup is identified by a unique URL in your browser's address bar. You can share this URL with the other users, who can directly navigate to that document's Markup. Sharing the Markup URLs enables instantaneous collaboration.

**Note:** If you are a default user without the rights assigned to create, edit, save or export Markups, you can add the Markups and send the URL to the other users.

For example, the following URL enables you to directly navigate to the Markup with the ID, [VNED System|Markup|MARKUP\\_00009](#), added for the item with the ID, [IPE|C905677](#).



## Mark up Documents in File Viewer

You can mark up documents opened in **File Viewer**, using the **Annotation** tools at the bottom-left corner of the **File Viewer**.

### Mark up 2D Documents

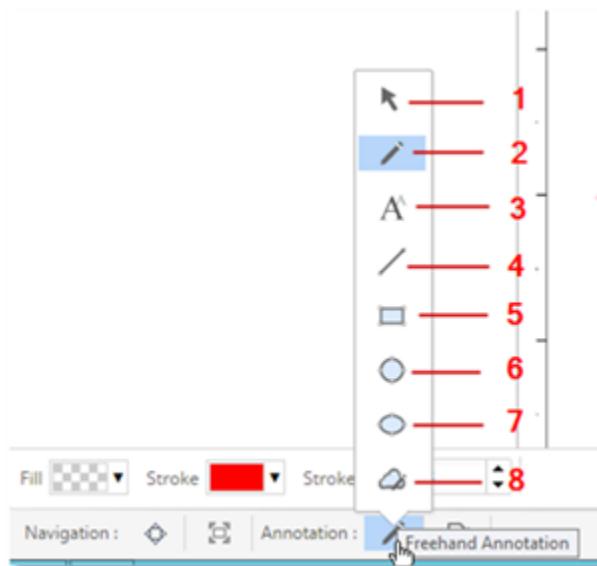
The **Annotation** tools at the bottom-left of the 2D File Viewer enables you to mark up the 2D Documents.



To mark up 2D Documents:

1. Select the **Freehand Annotation** icon.

**Note:** The freehand pencil icon is the default annotation tool. However, from the expanded **Annotation** toolbar, if you select any Annotation tool, that icon is displayed in the place of the freehand pencil.



2. From the expanded **Annotation** toolbar, select any of the following as required, and then go to the 2D Documents:

Icon	Description	Select this Icon to
1	Select Annotation	Select one or more Markups
2	Freehand Annotation	Draw freehand Markup
3	Text Annotation	Add a text Markup
4	Line Annotation	Draw a line Markup
5	Rectangle Annotation	Draw a rectangular (filled) Markup

Icon	Description	Select this Icon to
6	Circle Annotation	Draw a circular (filled) Markup
7	Ellipse Annotation	Draw an elliptical (filled) Markup
8	Cloud Annotation	Draw a cloud (filled) Markup

3. Rest the mouse pointer in the area you want to mark up, and then draw the shapes.

### Adjust the Markup Texture

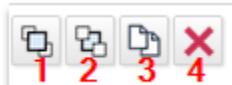
You can format the appearance of a Markup shape, using the following tools at the bottom-left of the File Viewer of an opened document:



Use this Tool	To
Fill	Select a colour to fill a Markup. <b>Note:</b> The default Fill is transparent.
Stroke	Select a colour to draw the Markup outline.
Stroke Width	Define the thickness of the Markup outline.

### Adjust the Markup Layout

When you add a Markup, or select a Markup drawn in a document, the following layout options appear at the bottom-left of the **File Viewer**:



Select any of the following, as required:

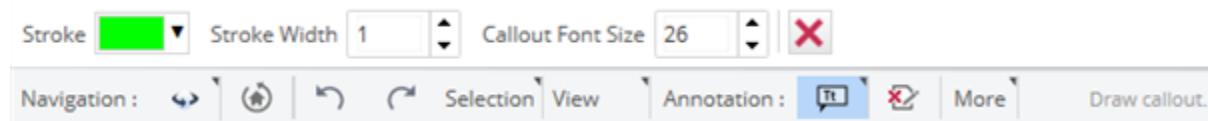
Select this Icon	To
1	Bring a selected Markup element in the drawing, to the front in the order stack.
2	Send a selected Markup element in the drawing, to the back in the order stack.
3	Duplicate a selected Markup, so that the same Markup shape appears twice.
4	Delete a selected Markup. <b>Note:</b> If you have duplicated a Markup, and then immediately selecting the Delete icon, the duplicated Markup will be removed.

## Format Text Markups

When you perform any of the following actions, the **Text Annotation Styles** toolbar appears at the bottom-left corner of the **File Viewer**:

- Select the **Text Markup** icon from the **Annotation** toolbar.
- Add a **Text Markup** in a document.
- Select an already added **Text Markup**.

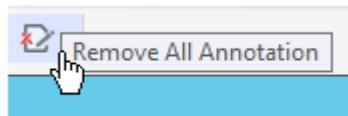
You can format the Markup text styles, adjusting the settings here:



**Note:** Changing the **Markup Callout Font Size** also changes the size of the text added by the Dimensioning tools.

## Remove All Markups

When you add a Markup, or select a Markup drawn in a document, the **Remove All Annotation** icon appears at the bottom-left of the File Viewer:

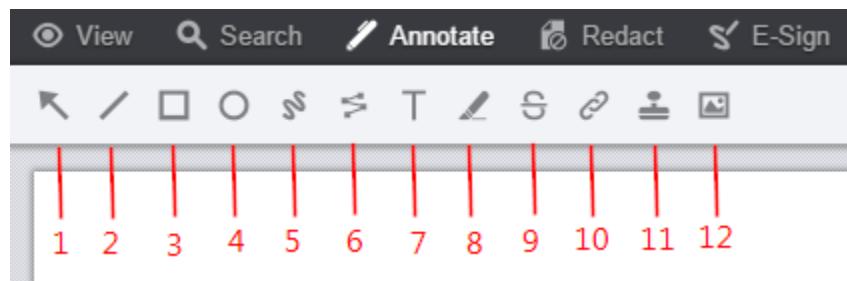


Selecting the **Remove All Annotation** icon enables you to remove all the Markups currently added in an opened document.

**Note:** This does not delete a markup already saved; it merely hides it from view.

## Mark up Documents in Accusoft Viewer

The Annotation tools, available under the Annotate tab at the top-left corner of the Accusoft Viewer, enable you to mark up the documents.



**Note:** For more information about the Accusoft Markup toolbars and menus, refer to the PrizmDoc help link (<http://help.accusoft.com/PrizmDoc/v12.0/HTML/webframe.html>).

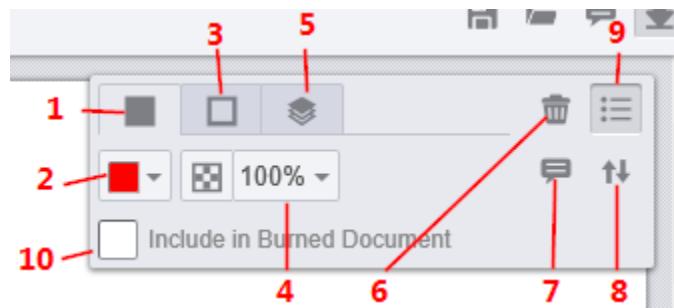
The following table describes the usage of Annotation tools in the Accusoft Viewer:

Icon	Description	Select this icon to
1	Arrow Annotation	Draw an arrow Markup.
2	Line Annotation	Draw a line Markup.

Icon	Description	Select this icon to
3	Rectangle Annotation	Draw a rectangular or square Markup.
4	Ellipse Annotation	Draw an elliptical or circular Markup.
5	Freehand Annotation	Draw freehand Markup.
6	Polyline Annotation	Draw polyline Markup.
7	Text Annotation	Add a text Markup.
8	Highlight Annotation	Highlight text.
9	Strikethrough Annotation	Add strikethrough Markup.
10	Text Hyperlink Annotation	Add text hyperlink Markup.
11	Stamp Annotation	Create a stamp Markup.
12	Image Stamp Annotation	Create image stamp Markup.

### Use the Annotation Context Menu

When you select an Annotation tool, or a Markup drawn, a context menu appears at the top-right with the options specific to the selected Annotation.



The following table describes the icons on the **Annotation** context menu:

Icon	Description
1	Displays the currently selected Annotation tool icon.
2	Fill colour picker.
3	Border colour tab.
4	Opacity Selector.
5	Layer menu tab for Text annotation.
6	Deletes the selected annotation.

Icon	Description
7	Enables adding comment for a selected annotation.
8	Moves the context menu location up and down.
9	Collapses or expands the context menu.
10	If selected, chosen annotations will be burned in the document when downloading by selecting chosen option in the Annotation dropdown under the Download option.

### Work with the Common Toolbar

When you select the **Annotate**, **Redact**, or **E-sign** tabs, a common toolbar appears at the top-right of the **Accusoft Viewer**.



Icon	Description	Select this icon to
1	Comment Panel	View comments added to an annotation, in a separate pane at the right.
2	Download	Download the original/PDF, redacted, signed or redacted and signed document.  <b>Note:</b> You must have the appropriate rights to download. If not, the Download icon is unavailable.

### Redact Documents

The **Redact** toolbar provides tools for highlighting and blocking text within a document, as well as applying text based stamps. These redaction annotations are only available as Markup layers within *AVEVA Asset Information Management – Discovery* and do not redact the default document view presented to the user. However, redactions are applied to documents when exported or printed from the Markup tool.



Icon	Description	Select this Icon to
1	Filled Rectangle	Draw opaque, black rectangular redactions.
2	Text Redaction	Write text redactions.
3	Text Selection Redaction	Select and redact text blocks. <b>Note:</b> When text is selected, the highlight converts to rectangular redactions. If multiple lines of text are selected, each line is redacted with a rectangular redaction.
4	Stamp Redaction	Add redactions using the stamp tool.
5	Image Stamp Redaction	Add redactions using a stamp showing a particular image.
6	Redact Full Pages	Add redactions to full pages.
7	Redaction View Mode	Show the redaction view mode.

### E-sign Documents

The **E-Signature** tools under the **E-Sign** tab enable you to sign and manage the signatures on an opened document.



Icon	Select this icon to
1	Create new e-signatures, or manage the existing ones.
2	Insert a freehand signature.
3	Sign with texts.
4	Place a signature on the document.
5	Place the current date on the document.
6	Place the text input signature in the document.

## Categorize and Group Items

You can categorize and group a collection of items based on any specific criteria, and view it later using the following features:

- Sets
- Basket

### Use Sets

The **Sets** functionality allows you to categorize and group a selection of items, and store it with unique identifiers for future use. Using the **Add to** option under the  **Actions...** menu, you can include items to Sets from the following areas in Dashboard:

- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- **Related Items** area in the *Summary View*
- **Related Documents** area in the *Summary View*
- **Related Query Form** area in the *Summary View*
- **Related Items** area in a *Document Content Card*
- Items displayed under the **Contents** tab in a *2D Diagrams and Documents View Document Content Card*
- Items displayed under the **Related Items** tab in a *2D Diagrams and Documents View Tag Content Card*
- Documents displayed under the **Related Documents** tab in a *2D Diagrams and Documents View Tag Content Card*
- *Basket Panel*

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**Note:** The areas in the Summary View, Document Content Card, and Tag Content Card are configurable to include Relationships, Metadata or Characteristics. Hence, the naming of the areas can differ based on the configuration.

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You can execute the following actions with Sets:

- Create a new Set
- Add items from one Set to the other
- Edit Sets
- Delete Sets
- Exports items in Sets
- Print items in Sets

### View Sets

To view Sets:



1. On the *Global Navigation Panel*, select . The *Sets Panel* opens docked in the *Content Viewer*.
2. In the drop-down box, select the arrow to select a **type of Set**. If any **Sets** have been created of that type, they are displayed as a list.
3. Select a **Set**, and in the expanded *Set Panel*:

ID	Name	Type
A-66003	80-A-66003-AFU3	Pipeline
C-9007	AIR BLOWN COOLER (FORCED)	Heat Transfer
DS-50004	200-DS-50004-AFU3	Pipeline
DW-50101	20-DW-50101-BFU3	Pipeline
E-9002	HORIZONTAL VESSEL	Columns and Towers
FG-633		Flow Gauge
FT-008	PEGS_ITEM_118	Flow Transmitter
FV-006		Flow Control Valve
FV-10039		Unknown
FV-11032		Unknown
FV-11932		Unknown
FV-12733		Unknown
FV-15408		Unknown

4. Select the **Details** tab, to view the description of the **Set**.
5. Select the **Contents** tab, to view the items of the **Set**. For each item in the set, its **ID**, **Name** and **Type** are displayed.
6. Select to dock the *Sets Panel*.

## Create Sets

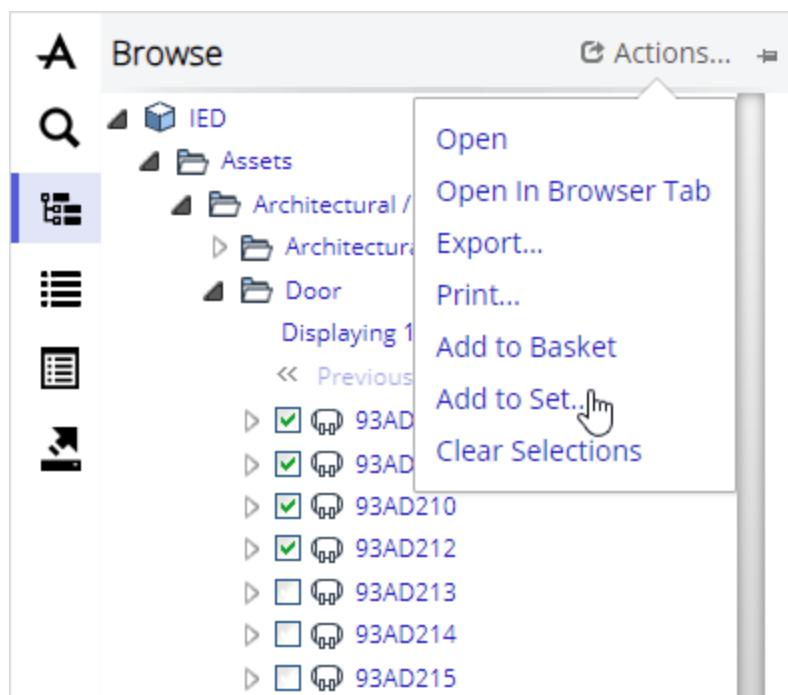
You must have appropriate rights ([SetCreation](#)) granted by your System Administrator for creating Sets.

To create Sets:

1. In the *Sets Panel*, select the arrow to select a Type of Set from the drop-down box.
2. Go to the bottom-left corner, and then select . The **New Set** dialog appears in the expanded right panel.

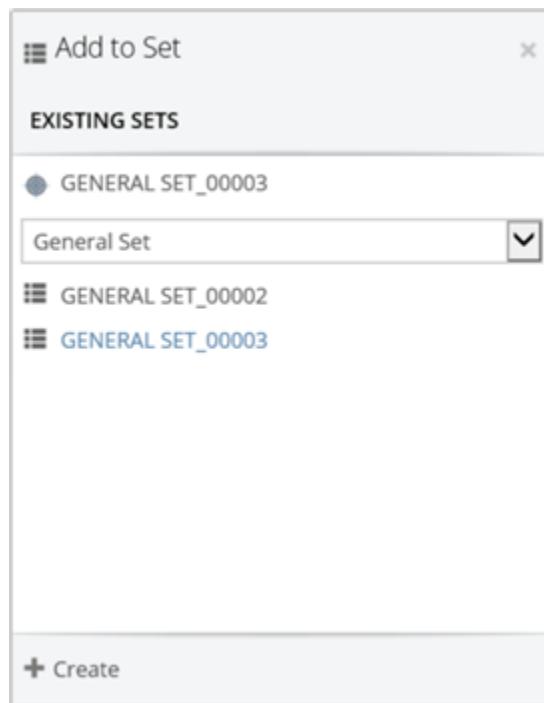
The screenshot shows the 'New Set' dialog box. The 'Details' tab is active. The 'ID' field is empty and has a red border around it. There is a checkbox labeled 'Auto-generate ID' next to it. The 'NAME' field contains the text 'NAME'. The 'TYPE' field is a dropdown menu currently showing 'Maintenance Work Pack'. The 'DESCRIPTION' field is empty. The 'AUTHOR' field contains a small user icon and a blurred name. At the bottom right are 'Save' and 'Cancel' buttons.

3. Select the **Details** tab, and select **Auto-generate ID**, or enter a unique identifier in the **ID** box.
4. Type the Set name in the **Name** box.
5. In the **Type** drop-down box, select a type.
6. In the **Description** box, type a note that describes the new Set, and then select **Save**.
7. To add items to the new **Set**, select  and then select **Add to Set**.



The *Add to Set* panel opens.

8. In the drop-down box, select the arrow, and choose the type of Set to include the selected Items.



All the Sets under the selected type appears.

9. Select the newly created Set.

The items are added to the Set, and a message displaying the number of items successfully added to the Set appears.

## Edit Sets

To edit Sets:

1. In the **Sets Panel**, select the arrow to select a **type of Set** from the drop-down box. The **Sets** of the selected type appear in a list.
  2. Select the **Set** you want to edit, and in the bottom-left corner, select  **Edit**.
  3. Edit the details, and if you want to remove items from the **Set**, select the **Contents** tab.
  4. Select  for each item you want to remove.

**A** Sets

**Q** Type to filter...

**COMMISSIONING SYSTEM**

**Details** **Contents**

**Clear Set**

<input type="checkbox"/> ID	Name	Type	
<input type="checkbox"/> A-66003	80-A-66003-AFU3	Pipeline	
<input type="checkbox"/> C-9007	AIR BLOWN COOLER (FORCED)	Heat Transfer	
<input type="checkbox"/> DS-50004	200-DS-50004-AFU3	Pipeline	
<input type="checkbox"/> DW-50101	20-DW-50101-BFU3	Pipeline	
<input type="checkbox"/> E-9002	HORIZONTAL VESSEL	Columns and Towers	
<input type="checkbox"/> FG-633		Flow Gauge	
<input type="checkbox"/> FT-008	PEGS_ITEM_118	Flow Transmitter	
<input type="checkbox"/> FV-006		Flow Control Valve	
<input type="checkbox"/> FV-11932		Unknown	
<input type="checkbox"/> FV-12733		Unknown	
<input type="checkbox"/> FV-15408		Unknown	
<input type="checkbox"/> FV-2571		Unknown	
<input type="checkbox"/> FV-4436		Unknown	

**AVEVA Asset Information Management**

**Save** **Cancel**

- To remove all the items in the Set, select **Clear Set**.
  - Select **Save**.  
Your edits to the details and contents of the Set are saved.
  - If you do not want to save the changes, select **Cancel**.

## Delete Sets

To delete Sets:

1. In the *Sets Panel*, select the arrow to select a **type of Set** from the drop-down box.  
The Sets of the selected type appear in a list.

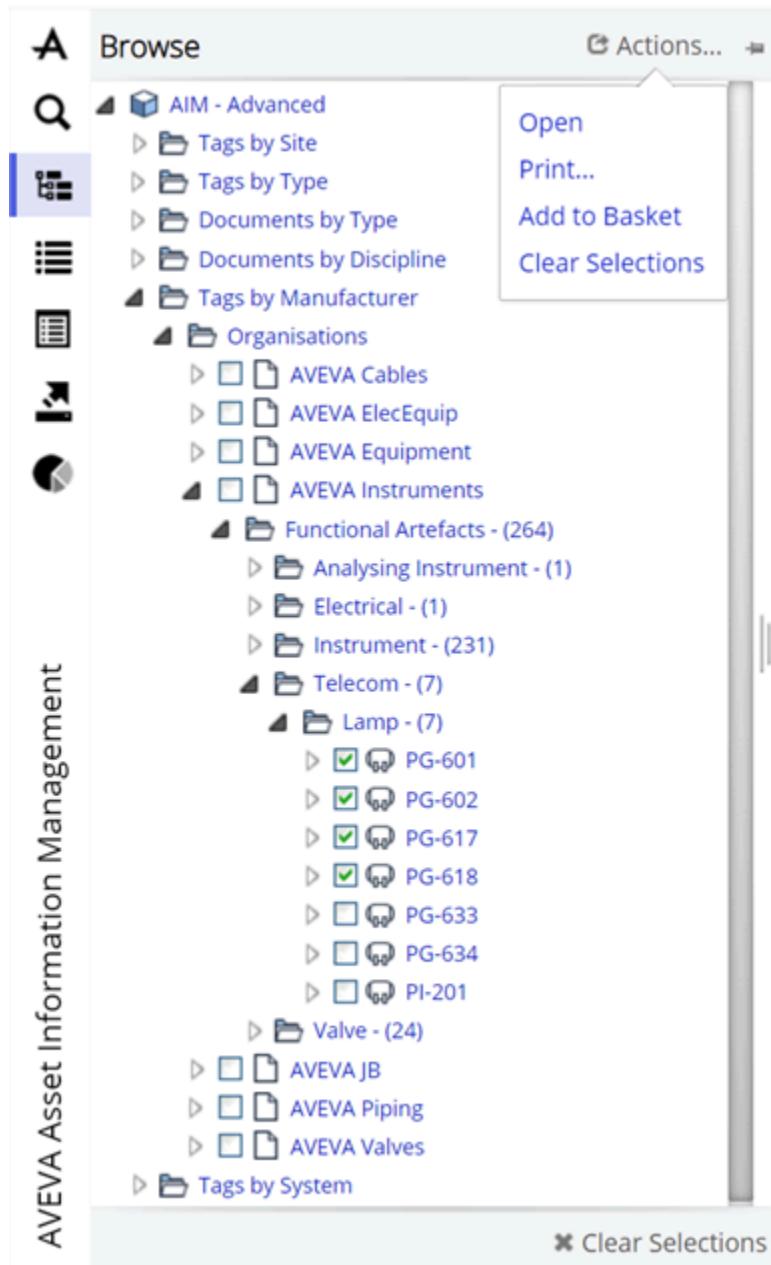
2. Select the *Set* you want to delete, and in the bottom-left corner, select  **Delete**.  
A message "You are about to delete the Set: {Set Name}. Do you wish to continue?" appears.
3. Select **Yes** to delete or **No** to cancel the action.

## Use the Basket

The Basket functionality enables a personalized grouping and storing of frequently used items, for using it later.

To use Basket:

1. Select the item(s), and then select the  **Actions...** menu.



2. Select the **Add to Basket** option.

The selected items can be added to Basket from the following areas in *Asset Information Management – Advanced*:

- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- **Related Items** area in the *Summary View*
- **Related Documents** area in *Summary View*
- **Related Query Form** area in *Summary View*
- **Related Items** area in an *Document Content Card*
- Items displayed under the **Contents** tab in a *2D Diagrams and Documents View Document Content Card*
- Items displayed under the **Related Items** tab in a *2D Diagrams and Documents View Tag Content Card*
- Documents displayed under the **Related Documents** tab in a *2D Diagrams and Documents View Tag Content Card*

Selecting the **Add to Basket** option from the top-right of the following areas also enables you to add items to the Basket:

- *Summary View* of documents, tags
- *Document View* of documents, tags
- *Query Form*

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**Note:** The areas in the **Summary View**, **Document Content Card**, and **Tag Content Card** are configurable to include Relationships, Metadata or Characteristics. Hence, the naming of the areas can differ based on the configuration.

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## Manage Exports

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**Important:** The maximum limit for the number of items that can be exported at a time is set during configuration (for example, 10000 items). If you are exporting more than the limit set, a warning message appears.

---

The Export functionality enables you to export one or more items, tags, or documents selected from the following panels:

- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- **Related Items** area in the *Summary View*
- **Related Documents** area in the *Summary View*
- **Related Query Form** area in the *Summary View*
- **Related Items** area in a *Document Content Card*
- Items displayed under the **Contents** tab in a *2D Diagrams and Documents View Document Content Card*
- Items displayed under the **Related Items** tab in a *2D Diagrams and Documents View Tag Content Card*
- Documents displayed under the **Related Documents** tab in a *2D Diagrams and Documents View Tag Content Card*
- *Basket Panel*

---

**Note:** The areas in the Summary View, Document Content Card and Tag Content Card are configurable to include Relationships, Metadata or Characteristics. Hence, the naming of the areas can differ based on the configuration.

---

## Create Export Definitions

The Export Definition selected while executing an export determines the column headings and data elements, to be included in the Export. The exported items displayed or saved in the .csv or .xlsx file format include only the data elements, defined in the Export Definition. *Asset Information Management – Discovery* provides you with a default Export Definition. However, creating new Export Definitions enables you to have a more customized export.

---

**Note:** You must have the [CreateExports](#) rights to create Export Definitions. If not, the **Create** option will not be available in the Export Panel.

---

You can add or remove any of the following columns available by default, while creating an Export Definition:

- Object ID
- Object context
- Object name
- Object aliases
- Class IDs
- Class names
- Incidental class IDs
- Incidental class names
- Class Scheme
- Life-Cycle Status

Additionally, you can create new columns as follows:

- Object attribute for a source class
- Associated attribute
- Number of associated items

To create Export Definitions:

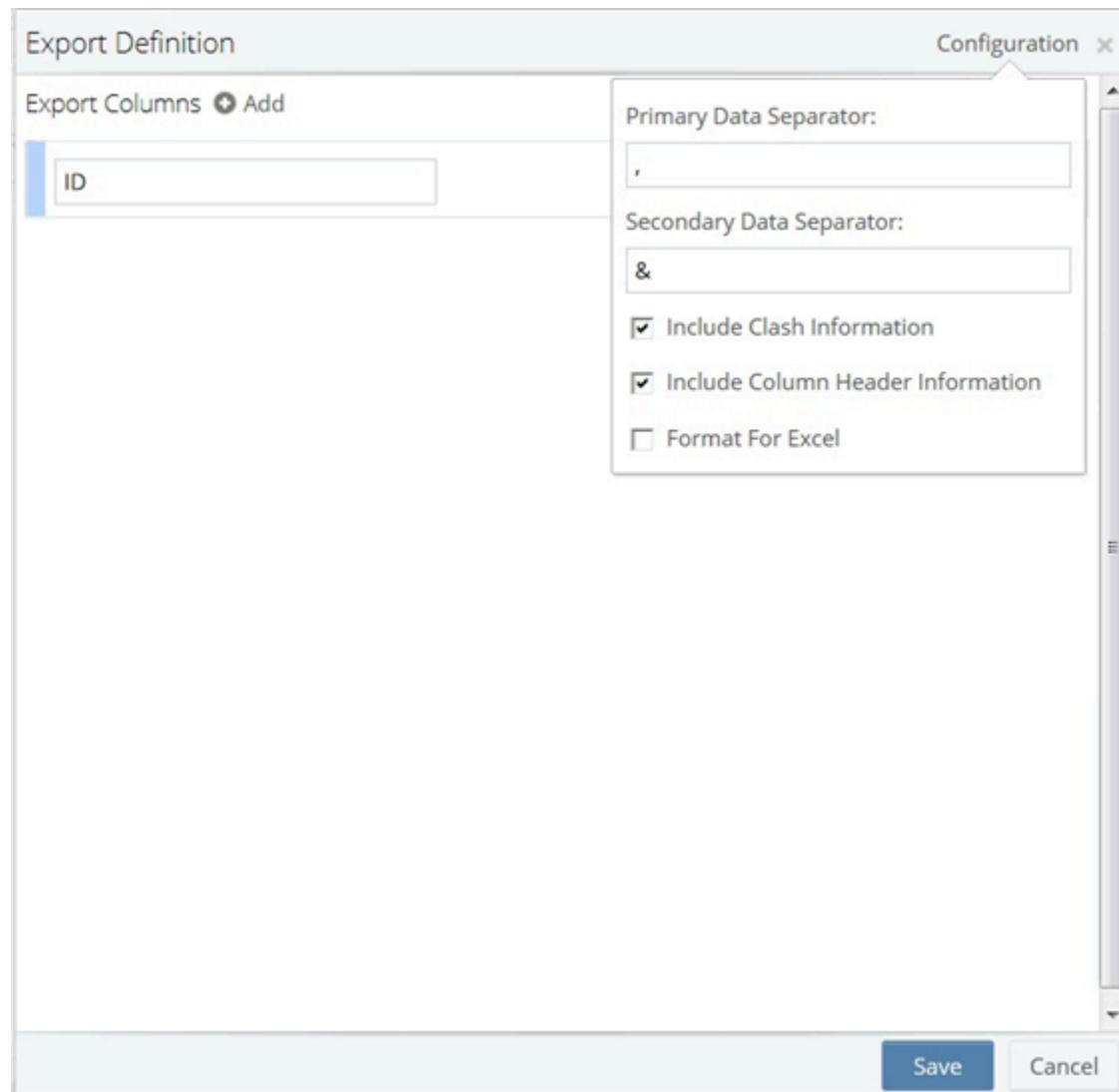


1. In the *Global Navigation Panel*, select  .  
The *Export Panel* opens, docked in Dashboard.
2. In the drop-down box, select the arrow to select an Export Definition.
3. Go to the left-bottom corner, and select  **Create**.  
The **Export Definition** window opens.
4. Select  **Add** for Export Columns, and then select the new Export Columns.  
The newly added Export Columns appear as a list.

5. To edit the name of the Export Columns, select **Modify Label**.
6. To remove the newly added Export Columns, select .
7. To save the Export Definition, select **Save**. If you do not want to save the new Export Definition, select **Cancel**.

### Configure the Export Data Display

If you have the [CreateExport](#) appropriate rights, you can configure how the exported data should be displayed in the file exported in the CSV file format (.csv), as shown in the following figure:



### Edit Export Definitions

Selecting an Export Definition, and selecting  from the bottom-left corner of the *Export Panel* enables you to modify and save the Export Definition.

**Note:** You must have appropriate rights ([CreateExport](#) rights) to save the edited Export Definitions. If you do not have [CreateExport](#) rights, you can only edit the Export Definition, but cannot save it.

To edit an Export Definition:



1. In the *Global Navigation Panel*, select .  
The Export Panel opens, docked in Dashboard.
2. In the drop-down box, select the arrow to select the **Export Definition**.  
The Export Definitions appears in a list.
3. **Select an Export Definition**.
4. Go to the left-bottom corner, and then select .  
The **Export Definition** window opens.
5. Edit the Export Definition.
6. To save the updates, select **Save**. If you do not want to save the updates, select **Cancel**.

## Delete Export Definitions

By selecting at the bottom-left of the *Export Panel*, you can delete the Export Definitions. You must have appropriate rights ([CreateExport](#) rights) to execute a deletion.

To delete an Export Definition:



1. In the Global Navigation Panel, select .  
The Export Panel opens, docked in Dashboard.
2. In the drop-down box, select the arrow to select the Export Definition.  
The Export Definitions appears in a list.
3. **Select an Export Definition**.
4. Go to the left-bottom corner, and select .  
A message displaying "**You are about to delete the Export Definition. Do you want to continue?**" appears.
5. To continue with deletion, select **OK**. If you do not want to delete, select **Cancel**.

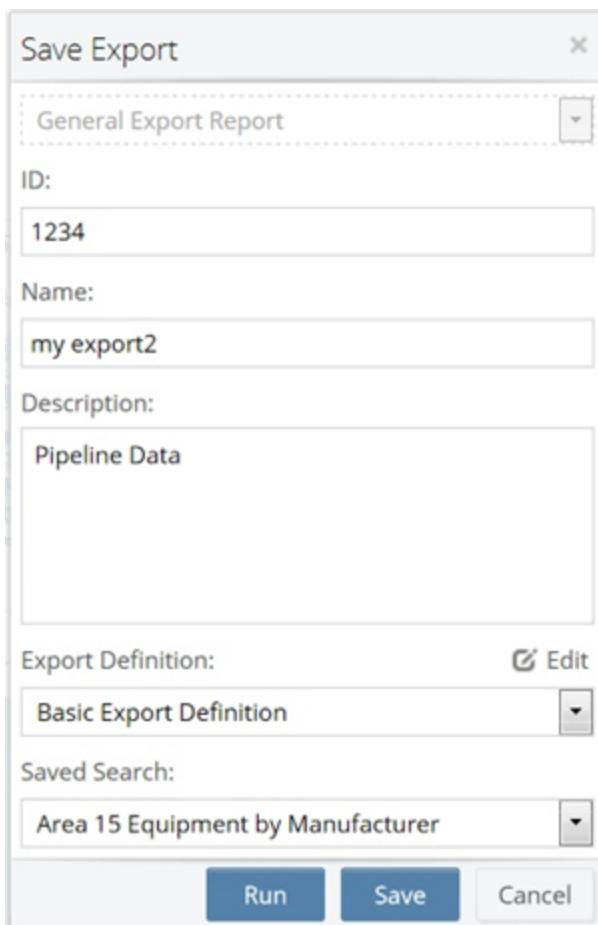
## Create Exports to Save

You can create and save exports of your saved searches with a unique ID, Name, Description and Export Definition. Saving the exports enables you to instantly export data at a later time. You must have the appropriate right (CreateExport rights) to save your exports.

To create exports to save:



1. In the *Global Navigation Panel*, select .  
The *Exports Panel* opens, docked in Dashboard.
2. In the drop-down box, select the arrow to select the export.
3. Go to the left-bottom corner of the *Export Panel*, and select .  
The **Save Export** window opens.



The dialog box is titled "Save Export". It contains fields for "ID" (1234), "Name" (my export2), and "Description" (Pipeline Data). Below these are dropdown menus for "Export Definition" (Basic Export Definition) and "Saved Search" (Area 15 Equipment by Manufacturer). At the bottom are buttons for "Run", "Save", and "Cancel".

4. In the **ID** box, enter a unique identifier, and in the **Name** box, type a name.
5. In the **Description** box, enter details about the export.
6. In the **Export Definition** box, select the arrow, and select an Export Definition.
7. In the **Saved Search** box, select the arrow, and select a Saved Search.
8. To save the export, select **Save**.
9. To open and view the export, select **Run**.
10. Go to the panel at the bottom displaying **Do you want to open or save the .csv and .xlsx file:**
  - **Open:** Select this to view the export.
  - **Save:** Select this to save the export in your local machine.
  - **Cancel:** Select this if you do NOT want to save your export.A message displaying "**The Export process has been started**" appears.

## Run a Saved Export

To run a saved export:



1. In the Global Navigation Panel, select .

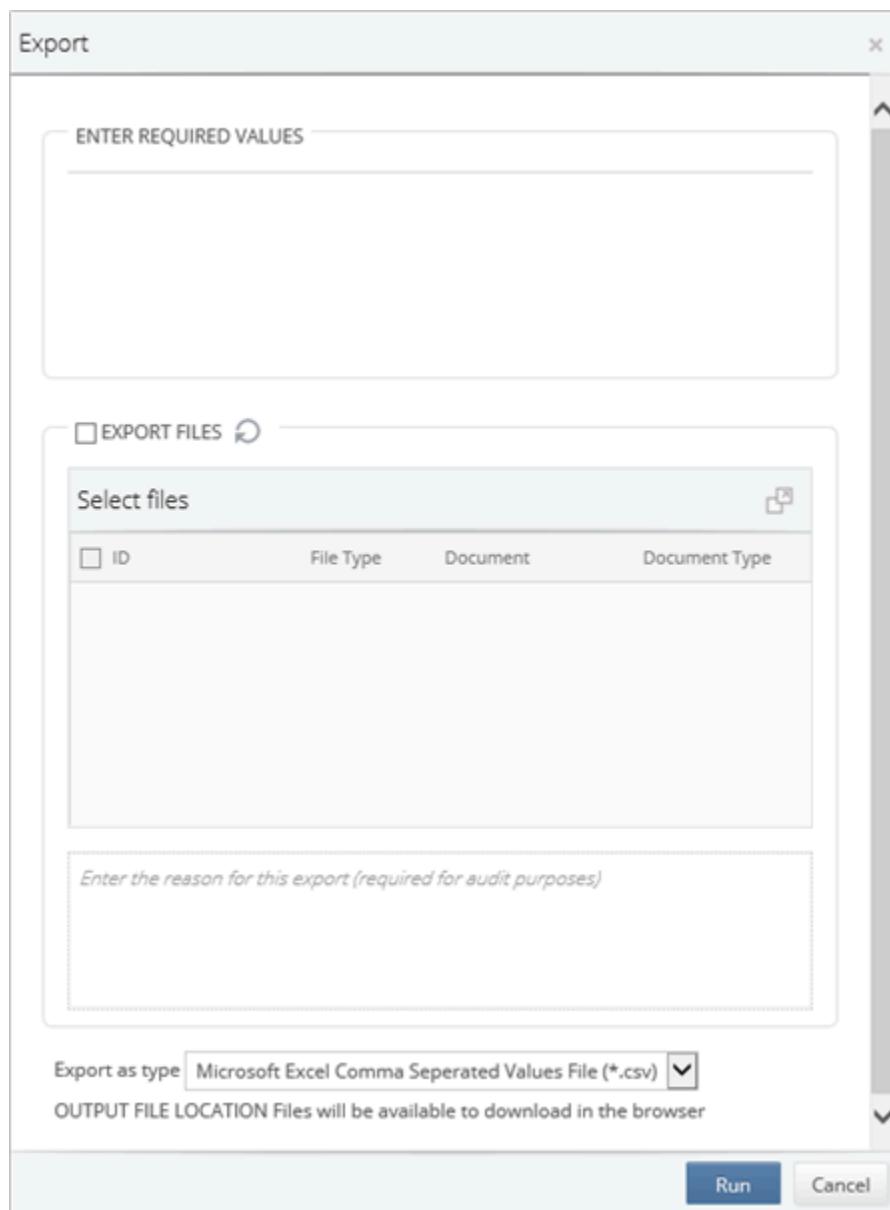
The *Export Panel* opens, docked in Dashboard.

2. In the drop-down box, select the arrow to select the export.

The saved exports are displayed in a list.

3. Select a saved export.

The Export window opens.



4. In the Enter the reason for this export box (required for audit purposes), type the details.

The pre-configured export package output path appears at the bottom of the Export window.

5. Select the appropriate file format from the **Export as type** drop-down list.

6. Select Run.

A message displaying "**The Export process has been started**" appears.

7. In the panel at the bottom displaying Do you want to open or save the .csv or .xlsx file:

- **Open:** Select this to view the export.
- **Save:** Select this to save the export in your local machine.

- **Cancel:** Select this if you do NOT want to save your export.

---

**Note:** When running a Query Form and exporting to a CSV file, then any cells in columns that appertain to Related Items may have multiple values. However, some values for the Related Items may be blank. So, in order to correspond a value to the ID or Name of the Related Item, then delimiters are used to preserve the order. For example, if there are 4 Related Items and only the 3rd item has an attribute value of "xyz" (the others having a blank values), then the cell would contain & & xyz &. The 3 ampersands correspond to 4 values, where all are blank except for the 3rd value. This will correspond to the IDs of the Related Items for example, P101 & P102 & P103 & P104. So P103 has a value of xyz for the attribute in question.

---

### Export of Records

This executes a query and downloads a file that contains the results to the client machine.

- The data is downloaded into a **.csv** or **.xlsx** file.
- If the data results are < 1,000, the output file is generated without any prompts.
- If the data results are >= 1,000 and < 10,000, then the following message is displayed: **Your Export report is greater than 1,000 items. Do you wish to continue?**
- If the data results are >= 10,000, then the following message is displayed: **You Export exceeds the maximum size of 10,000 items. Data beyond the first 10,000 items will be excluded from this export. Do you wish to continue with the Export?**

### Export of Files

This executes a query that creates a **.zip** file that is downloaded to the client machine. The **.zip** file contains:

- The downloaded files that are stored in a Files subfolder
- A Manifest file that contains a list of all the downloaded files
- The results of the query in a downloaded **.csv** or **.xlsx** file

For each export, a maximum of 100 files is downloaded.

### Edit Saved Exports

Selecting a saved export, and selecting  **Edit** from the bottom-left corner of the Export Panel enables you to modify your saved export.

To edit saved exports:



1. In the *Global Navigation Panel*, select .
- The *Export Panel* opens, docked in Dashboard.
2. In the drop-down box, select the arrow to select the export.
- The saved exports are displayed in a list.
3. Select a saved export.
4. Go to the bottom-left corner, and select  **Edit**.
- The **Save Export** window opens.
5. Make updates, and then select **Save**.

Your updates are saved.

6. To open and view the updated export, select **Run**.
7. Go to the panel at the bottom displaying "Do you want to open or save the .csv file:"
  - **Open:** Select this to view the export.
  - **Save:** Select this to save the export in your local machine.
  - **Cancel:** Select this if you do NOT want to save your export.

A message displaying "The Export process has been started" appears.

## Delete Saved Exports

Selecting a saved export, and then selecting  **Delete** at the bottom-left of the *Export Panel* enables you to delete your saved exports. You must have appropriate rights to execute this action.

To delete saved exports:

1. In the *Global Navigation Panel*, select .
- The *Export Panel* opens, docked in Dashboard.
2. In the drop-down box, select the arrow to select the export.
- The saved exports are displayed in a list.
3. Select a saved export.
4. Go to the bottom-left corner, and select  **Delete**.
- A message displaying **You are about to delete the Export. Do you want to continue?** appears.
5. To continue with deletion, select **OK**. If you do not want to delete, select **Cancel**.

## Administer AIM-D

Administrators can load data into AIM-D and monitor progress of the loads; integrate with other systems; generate reports; and configure the AIM-D Dashboard.

## Integrate CONNECT Services with AIM-D

### 3DVis Integration

1. Log into your AVEVA CONNECT account.
2. Go to **Folder Management**.
3. Open the folder where your AIM-h service is enabled, to further enable the 3DVis Cloud Streaming Service in the same folder.

## AVEVA™ Connect

The screenshot shows the AVEVA Connect interface. On the left is a navigation sidebar with the following items:

- Home
- Folder management** (selected)
- User management >
- Integrations >
- Flex credits >
- Reports >
- Audit
- Services catalog
- Settings >

The main content area is titled "Folder management". It displays two folder entries:

- AIMA Petrochemical (with a thumbnail icon)
- AIMA Petrochemical2 (with a thumbnail icon)

4. After selecting the Folder, identify the **3DVis Cloud Streaming Service** and open the sub-menu using the vertical 3 dots.

The screenshot shows the "3DVis Cloud Streaming Service" settings. It includes the following elements:

- A blue gear icon.
- The title **3DVis Cloud Streaming Service**.
- A description: "Adds the capability to convert and render 3D models."
- A "Region:" dropdown set to "EU-West".
- An "On" toggle switch.
- A vertical ellipsis button (three dots) for more options.

5. Select Manage integrations.  
All the 3DVis integration points for the CONNECT account will be listed.
6. Enable the correct integration for the Folder/environment.

## Manage Integrations for 3DVis Cloud Streaming Service



Current folder: AIMD Test

1 Select integration ————— 2 Select context ————— 3 Configuration ————— 4 Summary

Integration name:	AIM-D to 3DVis Cloud
Description:	Integrates 3DVis Cloud with Asset Information Management Discovery
Service:	Asset Information Management Discovery
Folder:	APCMIntegration

Integration name:	AIM-D to 3DVis Cloud
Description:	Integrates 3DVis Cloud with Asset Information Management Discovery
Service:	Asset Information Management Discovery
Folder:	DRScen

- After selecting the Folder, identify the **3DVis Cloud Streaming Service** and open the sub-menu using the vertical 3 dots.
- To apply roles, open the sub-menu using the vertical 3 dots on **3DVis Cloud Streaming Service** and select **Manage roles**.

The screenshot shows the AVEVA Asset Information Management interface. On the left, there's a card for the **3DVis Cloud Streaming Service** which adds the capability to convert and render 3D models. It includes a Region dropdown set to EU-West, an 'On' toggle switch, and a vertical ellipsis menu. The ellipsis menu is expanded, showing three options: **Manage roles**, **Manage integrations**, and **View audit log**. On the right, there's another card for the **Asset Information Management** service, which is tailored to owners and operators looking to improve governance for asset life cycle information and lower cost of asset ownership.

- After selecting **Manage roles**, the **Roles** screen will open. Use **Assign role** to create any new role assignments

as follows:

Type= **Service role**

Service = **3DVis Cloud Streaming Service**

Folder = <The folder associated to the AIM instance>

Role = **Render User**

Models The access tags = **Any**

Groups = <Your CONNECT group you may wish to apply, for example, Power User>

Users = <specific usernames outside of groups>

10. Select **Save**.

## Dashboard Settings

User's with the **Core Team Admin** role can use the **Settings** dialog to update certain settings.

This capability can be given to other roles (except for restricted roles, for example, the Default User role), by providing them the **ManageSiteSettings** right. This can be applied using the **Roles Register** in the **Data Definition Template**.

---

**Note:** when updating the roles register it should be followed with an **iisrest**.

---

Using the **Settings** panel you can change some of the ways *the AIM Dashboard* looks and behaves. You must be logged on with the *ManageSettings Right* to see the **Settings** menu.

---

**Note:** Changes to **Site** settings are seen by all users.

To change **Site** settings:

1. Open *the AIM Dashboard*, select **Settings** (  ), **Settings**.
2. Select the **Site** tab.
3. Change the settings (see the following table).
4. Select **Save**.
5. The screen refreshes, and the new settings take affect.

Following are the fields and the corresponding descriptions for a Site:

### Site Settings - Print

Parameter	Description
<b>Banner Text</b>	
Top - Left	Location of banner text when printing
Top - Centre	<b>Note:</b> Banner Text and Watermark will NOT be applied to documents under the following print operations:  1. Printing from the Accusoft PrizmDoc Viewer 2. Printing a 3D model 3. Printing from the Report Viewer
Top - Right	
Bottom - Left	

Parameter	Description
Bottom - Center	4. A query form printer-friendly view
Bottom - Right	
<b>Watermark</b>	
Default Watermark	<p>Text for the watermark when printing. This value is overridden by the attribute-base watermark where applicable.</p> <p><b>Note:</b></p> <p>Due to limitations in Accusoft's PrizmDoc Viewer: Any watermarks that are set will appear not only on the output of the print but also in the Document Viewer when viewing documents in PrizmDoc. Watermarks do not appear on <a href="#">DGN</a> or <a href="#">DWG</a> files.</p>
Attribute-based Watermark	When an attribute is selected, the value of this attribute on the Document to be printed will be used instead of the Default Watermark.

# AIM

*AVEVA Asset Information Management (AVEVA AIM)* is a powerful web-based solution that supports users in organizing, validating and collaborating on asset data and documents irrespective of source and location, providing the ability to link project teams situated in various locations via one unique application.

AVEVA AIM turns data from multiple information sources and systems into trusted actionable insights, identifying and cross-referencing all the relationships between equipment, documents, drawings, and various data formats. This structure enables users across businesses to securely access, visualize, validate, and collaborate on the digital twin data.

## Key Benefits

- Accelerates information discovery and links distributed teams to a common data asset via one unique application.
- Facilitates better decision-making based on data to optimize project schedules, operational performance, and safety while reducing risk.
- Delivers a continuously evolving single source of information across an asset's life cycle.
- Provides governance and stewardship of information to support decision-making and achieves effective project and asset performance management.

## Key Features

- Provides customers with a Digital Twin which comprises the following key components:
  - AIM Workhub for secure, storage and organization of versioned and status managed plant data and documentation.
  - AIM Dashboard for web-based access, searching, visualisation and interaction with drawings, documents, data and models, irrespective of source or format.
  - AVEVA Gateways for collection, collation, validation, translation and publication of information from source systems to AIM.
- Allows disconnected data sources to be progressively inter-connected and any information quality issues to be identified and resolved.
- Enables controlled, real-time access to information, irrespective of geographical location and independent of data authoring tools, using the latest web technologies with unique, in-built visualisation tools.
- Creates, manages and provides access to a multi-dimensional network of high-quality information that connects together the people, processes and systems involved in facility operation, maintenance and modification.
- Organizes and accesses information using an object centric solution.
- Helps find the information in a fast and effective manner with an object association model.
- Links identifiable physical objects such as facilities and their associated assets to related information sources such as structured data imports, documents, drawings, CAD and GIS models, and third party applications.
- Accesses, visualizes and works with 2D and 3D CAD information and allows users to view and interact with a

wide range of 2D CAD files and 3D models without needing the native authoring software. With AVEVA's Gateway technology, the system automatically hot-spots objects within both drawings and models, acquires and validates information.

- Monitors the system and generates the reports in a wide range of presentational formats:
  - Data grids, sophisticated tables with drill-down capabilities.
  - Graphical data views such as bar charts, pie charts, s-curves, linear graphs and Gantt charts.
  - Screen-based reports to show key performance indicators (KPI's) and visual alerts which highlight items requiring attention.

## Product Overview

*AVEVA Asset Information Management (AVEVA AIM)* is a powerful web-based solution that supports users in organizing, validating and collaborating on asset data and documents irrespective of source and location, providing the ability to link project teams situated in various locations via one unique application.

AIM allows information of any type and from any source to be stored and viewed in a secure environment. Related information is automatically linked together to add context, can be compared, navigated, visualized and reported upon to provide a single environment to view and understand information from multiple systems.

AIM is a necessity for any organization involved in designing, building or operating complex engineering assets. It enables organizations to maintain a digital replica of their asset throughout its lifecycle, and enables the information therein to be accessible to support the many business processes which make up the life cycle of such an asset.

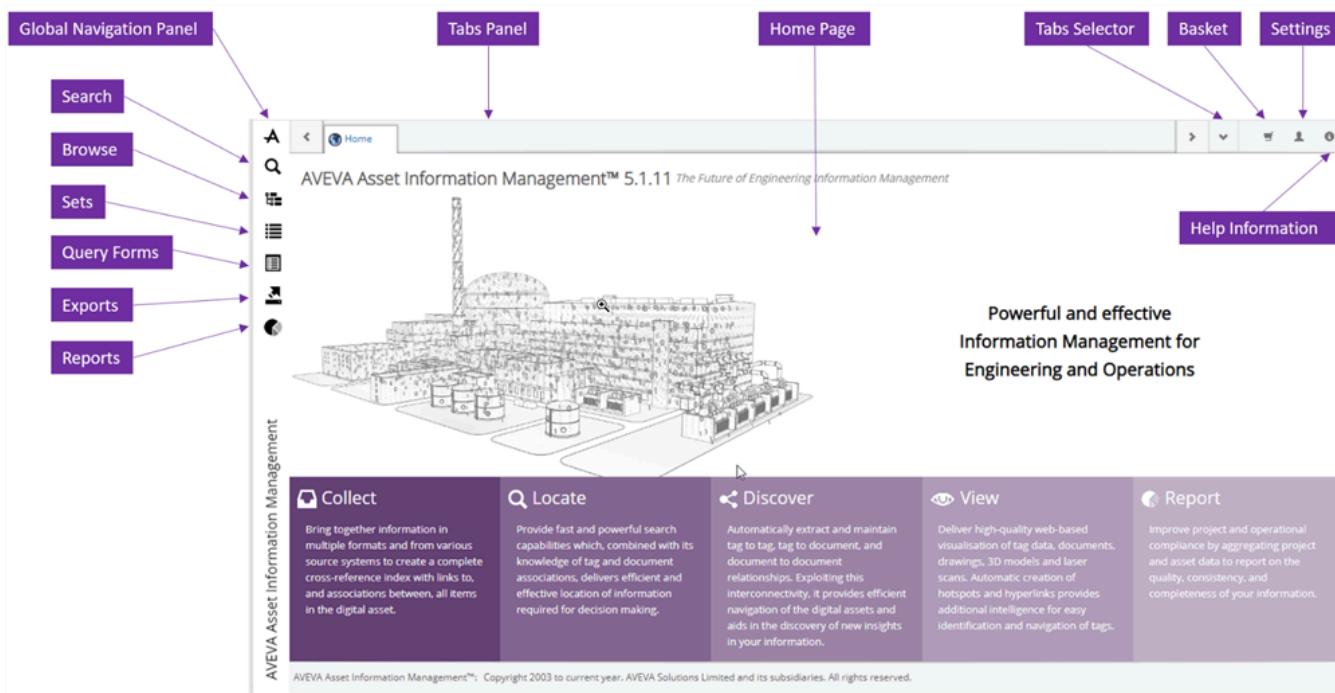
*AVEVA AIM Dashboard* is a browser-based application for accessing the engineering data stored in AVEVA Asset Information Management Workhub. They are fundamental components of AVEVA's Project Data Visualization and Asset Visualization Solutions.

The following illustration shows an example configuration of *AVEVA AIM Dashboard*.

---

**Important:** The *AVEVA AIM Dashboard* Home Page and features available in the panels are configurable. If you are unable to access any of the features described in this guide, contact your System Administrator for configuring it and granting access rights. For more information about configuring the *AVEVA AIM Dashboard* Home Page and its features, refer to the *AVEVA AIM Dashboard Installation*.

---



The following table describes the panels and primary features in *AVEVA Asset Information Management Dashboard*:

Panel and Feature	Description
Global Navigation Panel	<p>A global side bar in the left margin that displays the following features:</p> <ul style="list-style-type: none"> <li>• Browse</li> <li>• Search</li> <li>• Reports</li> <li>• Sets</li> <li>• Query Forms</li> <li>• Export</li> </ul> <p><b>Note:</b> Based on the configuration settings, any of these features can be hidden or disabled.</p>
Tabs Panel	<p>Displays tabs for the items, tags or documents you open in Dashboard.</p> <p>All the tabs in the Tabs Panel can be closed after use, except the Dashboard tab.</p>
Tab Selector	<p>A drop-down arrow, if selected displays all the open tabs.</p> <p>Enables navigating to a tab, or closing any or all of the tabs.</p>

Panel and Feature	Description
Custom Home Page	<p>The main area of Dashboard that is customizable, based on your organizational requirements.</p> <p><b>Note:</b> Any modifications to AVEVA AIM Dashboard must continue to display the original copyright statement, as initially displayed in the 'out of the box' home page. It must appear in the same place and in the original HTML style on any new home pages hosted in AVEVA AIM Dashboard.</p>
 Search	<p>Enables finding information using Search keywords (for example, attributes, class and items), wildcard characters or pre-configured filters (defined in the class library). See also <a href="#">Using Search</a></p>
 Browse	<p>Enables finding information, by expanding the nodes, and then selecting the associated documents, items or tags. See also <a href="#">Using Browse</a>.</p>
 Sets	<p>Enables a grouped-storage of a list of items, for further use of all users. See also <a href="#">Using Sets</a></p>
 Query Forms	<p>Enables an alternate form-based advanced search method using search keywords, wildcard characters, or pre-configured filters (defined in the class library). See also <a href="#">Using Query Forms</a></p>
 Exports	<p>Enables creating Export Definition. Run or save exports using a specific Export Definition, for each saved search. See also <a href="#">Export Items</a> and <a href="#">Manage Exports</a></p>
 Reports	<p>Enables viewing reports pre-configured by your System Administrator. See also <a href="#">Working with Reports</a></p>
 Basket	<p>Enables personalized storing of a selection of frequently used items. See also <a href="#">Using Basket</a></p>
 Settings	<p>Allows managing the configuration settings, if you have the ManageSettings rights.</p>
 Help Information	<p>Provides the information about Dashboard, and a link to the Help documentation.</p>

## Use AIM

*AVEVA AIM Dashboard* is a browser-based application for accessing the engineering data stored in *AVEVA AIM Workhub*. They are fundamental components of AVEVA's Project Data Visualization and Asset Visualization Solutions.

### Log In/Out

By default, you can log on to *AVEVA AIM Dashboard* without any prompt to enter credentials, if:

- Your organizational domain network credentials are configured by your System Administrator.
- You are accessing Dashboard from your organization's network domain computer.

However, if you are accessing Dashboard from outside the domain network of your organization, you must enter your domain credentials to log on.

To log on to *AVEVA Asset Information Management Dashboard*:

1. In your web browser, type the URL configured by your System Administrator and press **ENTER**.

**Note:** A typical URL to access the Dashboard can be in the following format:

`http://{myserver}:{myportnumber}/`

Dashboard can be configured to use Secure Sockets Layer (SSL). If SSL is used, you must prefix the URL with **https** in place of **http**.

When you are logging on from your organization's network domain PC, and a Windows Security window opens prompting you to enter credentials, contact your System Administrator to enable **Automatic Logon** in the browser security settings.

On a VPN, you are prompted for credentials even if automatic logon is switched ON, as your login credentials can be different from your domain credentials.

2. When prompted, enter your Windows domain credentials, and then select **OK**.

A browser window opens displaying the Dashboard.

### Accessing AIM Dashboard

You can access *AVEVA AIM Dashboard* in your local language, if configured. *AVEVA AIM Dashboard* is compatible with the following Web browsers:

Browser	Supported Version
Microsoft® Edge™	Latest
Google Chrome™	Latest
Safari	Latest

Your System Administrator configures the user roles and assigns access rights. You must have appropriate access rights granted by your System Administrator to access the Dashboard features.

Also, the Security Access Groups (SAGs) can allow or restrict your access rights. SAG is a mechanism to control access to specific objects, allowing only its members to access certain protected objects.

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**Note:** For more information about the user roles, rights and groups, refer to the *Administer AIM* section of this online help.

---

## Log out of AIM Dashboard

If the **Log Out** command is enabled during configuration, it appears under the   icon at the top-right corner of the Dashboard. Selecting the **Log Out** command allows you to exit from your current session in Dashboard.

**Note:** Logging out of AVEVA Asset Information Management Dashboard does not log you out of your chosen Identity Provider or release network credentials for a domain. This means, when you log out of AVEVA Asset Information Management Dashboard and try logging in again, you are not prompted for credentials. To release credentials, you must close your browser session.

---

## Navigate

After logging on to AVEVA Asset Information Management Dashboard, you can navigate through its features in any sequence of your choice, starting from the *Global Navigation Panel*. The following sections explain the procedure for working with the features common to the panels that open in Dashboard:

- Resize the Panels
- Dock/Undock Panels
- Change the View Modes
- Maximize and Minimize Viewing Area
- Open Items from Tab Panel
- Use Actions Menu in Panels

---

**Note:** In the Dashboard, web links to objects, such as documents and tags, can be opened in a new browser tab by selecting the link and holding down the CTRL key.

---

## Resize the Panels

If you select any of the features from the *Global Navigation Panel*, the associated panel opens in the Dashboard:

- *Search Panel*
- *Browse Panel*
- *Query Form Panel*
- *Sets Panel*
- *Reports Panel*
- *Export Panel*

---

**Note:** The height of the panels conform to the height of the window displaying Dashboard. However, you can resize the panel width.

---

To resize the panels:

1. Rest the mouse pointer on the panel border.
2. When the pointer becomes a double-headed arrow, drag the pointer left or right to move the split line.

The panel width is resized, providing you larger area for the *Summary View* or *Document View*.

---

**Note:** The resized panel width remains the same through a session in Dashboard, including when it is reopened. The panels have a default minimum width that cannot be reduced further.

---

## Dock/Undock Panels

By default, the following panels open in a docked ( unpinned) state. Undocking the panels by selecting  enables a wider viewing area for an opened document. This action auto-hides the original panel through which you navigate to open a document. Docking ( pinning) enables you to keep the original navigation panel open, and view the opened document side-by-side:

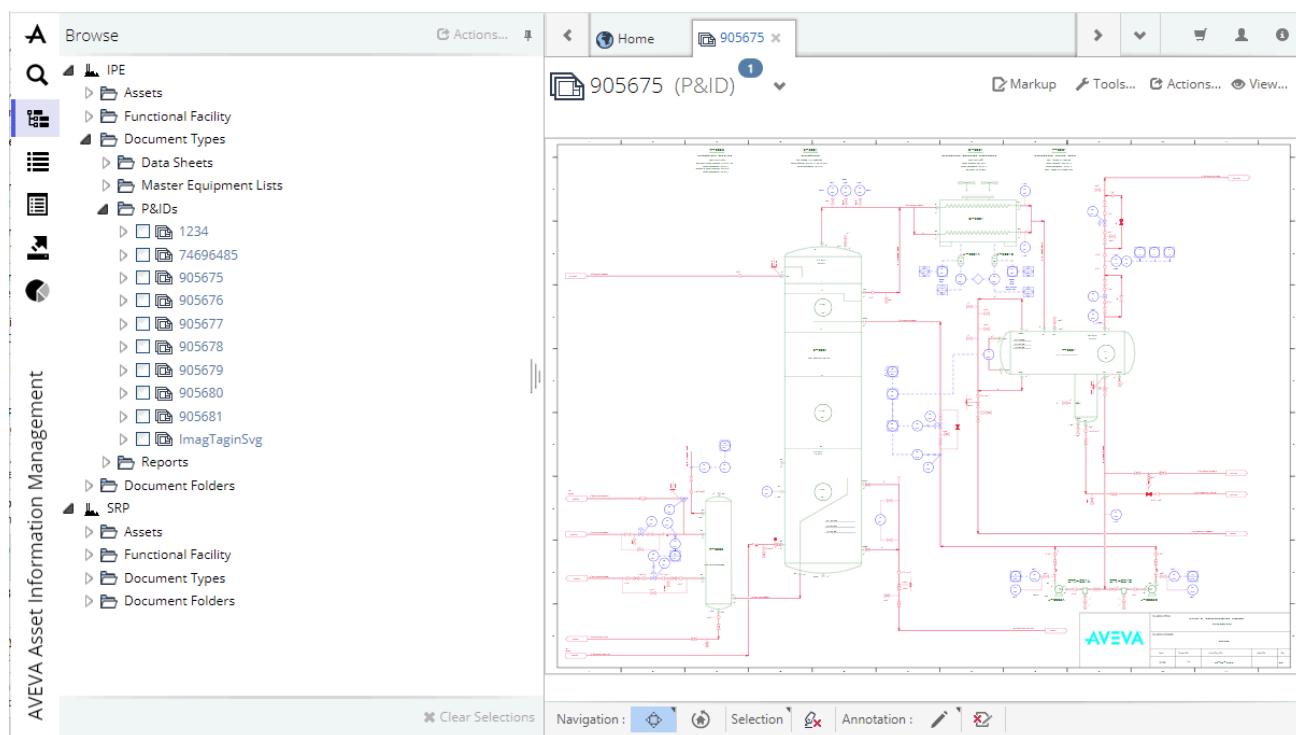
- *Search Panel*
- *Browse Panel*
- *Query Form Panel*
- *Sets Panel*
- *Reports Panel*
- *Export Panel*

To undock panels:

- Select .
- The panel is expanded.

To dock panels:

- Select .
- The panel is collapsed.



By docking a navigation panel, the tabs for opened documents shift to the right in the *Tab Panel*.

**Note:** You can resize the docked ( pinned) navigation panel by resting the mouse pointer on the panel border. When the pointer becomes a double-headed arrow, drag the pointer left or right to move the split line. See also [Resize the Panels](#).

## Change the View Modes

The **View** menu enables you to view the documents and reports in any of the following modes.

- *Summary View*
- *Document View*

**Note:** The documents can be SVG files (Scalable Vector Graphics/two-dimensional (2D) Drawings), non-SVG files (for example, MS Office documents, DWGs, PDFs) or three-dimensional digital simulations (3D Model).

Any item representing a tag, when selected from Browse, Search, Query Forms, Sets or Basket Panel automatically opens in the *Summary View* mode. The *Summary View* can be configured to display information in the zones representing relationships, metadata or characteristics. For example, it can be configured with the following zones:

- Details
- Key Attributes
- Attributes
- Related Items
- Related Documents

- Related Query Forms
- 2D View
- 3D View

---

**Note:** By default, a report opens in the *Document View*.

---

## View Documents in Summary View

Any item representing a document selected from a documents folder initially opens in the *Document View*. You can change the view mode from *Document View* to *Summary View* using the  **View** option. The *Summary View* mode enables you to get an overview of a document in zones that are configurable. For example, the zones can be:

- Details
- File Viewer
- Attributes
- Revisions
- Related Items

To view documents in the *Summary View*:

1. In the top-right of the *Document View*, select  **View**.
  2. From the **View** options, select **Summary View**.
- The view mode changes to *Summary View*.

## View Documents in Document View

To view documents in *Document View*:

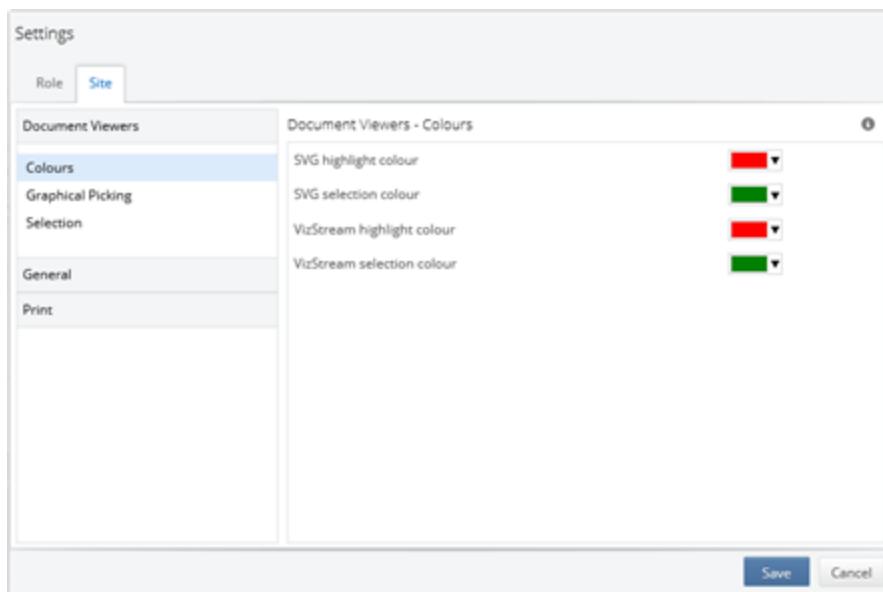
1. In the top-right of the *Summary View*, select  **View**.
  2. From the **View** options, select **Document View**.
- The view mode changes to *Document View*.

### Default Viewers - Colours

The **Document Viewers** in Dashboard (such as the 3D VizStream viewer and the 2D SVG viewer) use colours to indicate the highlighted or selected items. Using the **Colours** dialog, you can specify default colours used to indicate these states.

To change a default colour:

1. Select on the existing colour in the dialog.
2. A colour picker is displayed allowing you to choose a colour.



**Note:** In some viewers, you can override the default colours temporarily. The default colours are reinstated after the current session ends.

## Maximize and Minimize Viewing Area

By selecting  at the top-right of the viewing areas in the *Summary View*, you can maximize or minifies the viewing area.

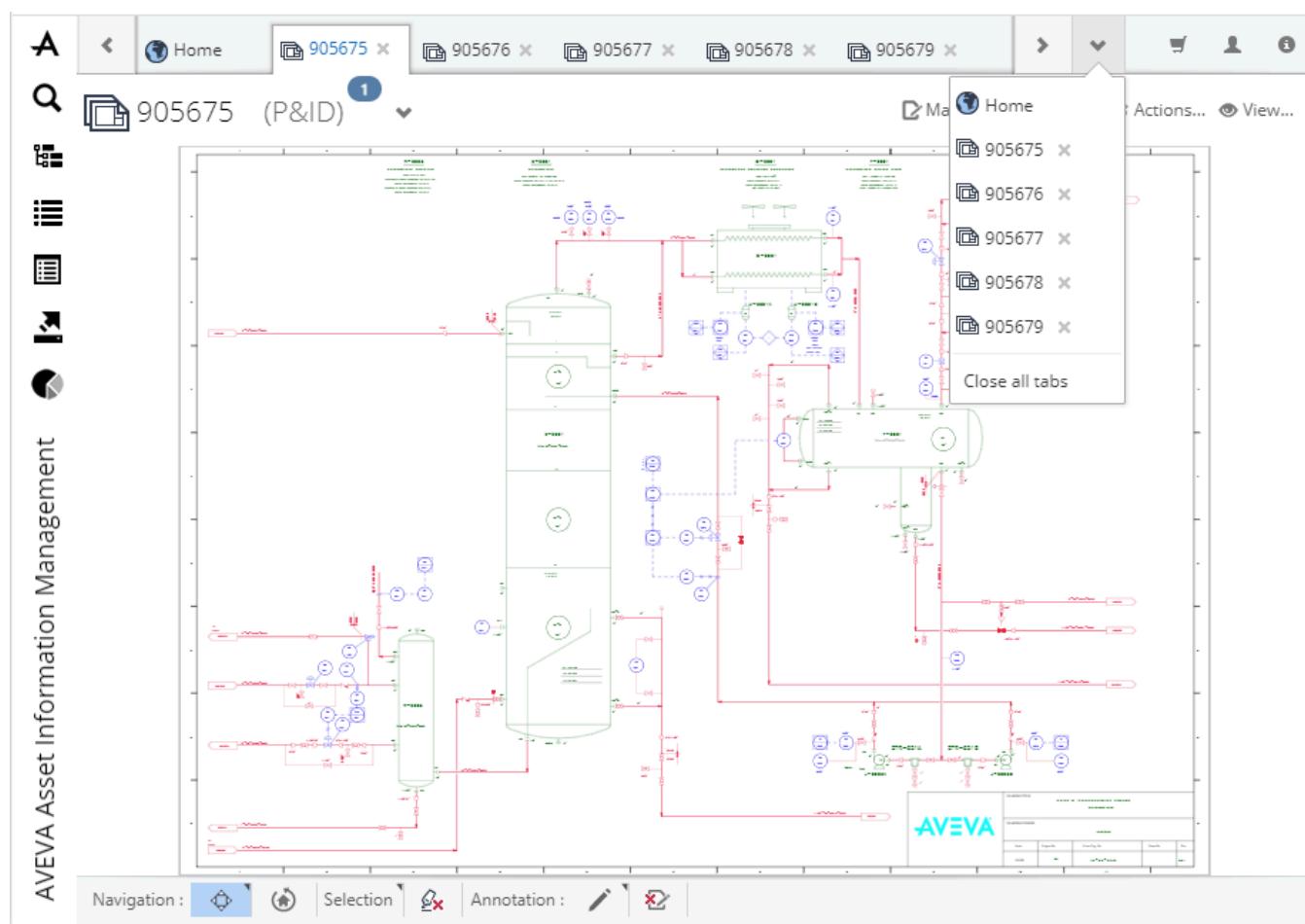
## Open Items from Tab Panel

When a searched document is opened, it opens in a new tab in the *Tabs Panel*. Each tab is represented with the ID of the opened item and its associated icon. You can open multiple documents from your search results, and retain it for further viewing until you close its tab in the *Tabs Panel*. By selecting each document's tab from the *Tabs Panel*, you can:

- View one selected document at a time.
- Return to the previously viewed documents, and work on it again.

You can close a tab and its opened document by selecting  on a tab.

If you open a large number of items, navigation arrows appear at the left and right of the *Tab Panel*. Selecting the drop-down arrow at the right end of the *Tab Panel* enables you to select a document to view, from a list of all the open tabs. You can close a document from the list by selecting  or you can close all open documents by selecting Close all tabs.



## Use Actions Menu in Panels

The **Actions...** menu appears at the top-right of the respective panels:

When you	From	Displaying a list of
Select the <i>Documents, Items or Tags</i>	<i>Search Panel</i>	Search result documents, items or tags.
	<i>Browse Panel</i>	Documents, Items or tags under the break-down nodes.
	<i>Sets Panel</i>	Documents, items or tags under the <i>Content</i> tab of a set.
	<i>Related Items</i> area in <i>Summary View</i>	Related items of a Browse, Search, Query Form search result and Reports.
	<i>Related Documents</i> area in <i>Summary View</i>	Documents associated with Browse, Search, Query Form search

When you	From	Displaying a list of
		result and Reports.
	<i>Related Query Form area in Summary View</i>	Related Query Form of a Browse, Search, Query Form search result.
	<i>Related Items area in a Document Content Card</i>	Items related to a <i>3D Model/2D Drawing</i> document.
	<i>Contents tab in a 3D Model/2D Drawing Document Content Card</i>	Elements contained in a <i>3D Model/2D Drawing</i> .
	<i>Related Items tab in a 3D Model/2D Drawing Tag Content Card</i>	Related Items of a <i>3D Model/2D Drawing Tag</i> .
	<i>Related Documents tab in a 3D Model/2D Drawing Tag Content Card</i>	Related Documents of a <i>3D Model/2D Drawing Tag</i> .
	<i>Basket Panel</i>	Documents, Items or tags in the Basket.

Selecting the **Actions** menu enables you to execute the following tasks with the selected items:

- Open
- Open in Browser Tab
- Export Items
- Add to
- Sets
- Basket
- Print
- Clear Selections

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**Note:** Your System Administrator can configure the options available under the *Action* menu.

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## Open Items

To open an item:

1. Select the item(s), and then select the  **Actions...** menu at the top-right of the panel.
2. Select **Open**.

The *Summary View* opens with a tab in the *Tab Panel* for the selected item, displaying its details.

## Open Documents in a new Browser Tab

Use the **Open in Browser Tab** to open documents in a new browser tab alongside the top-level Dashboard tab.

Only documents that can be displayed by the browser are opened in this way, for example, PDF, JPEG, and SVG files (subject to configuration).

Files that cannot be displayed in the browser are offered for download, for example, DOCX, XLSX, DGN, and DWG files (subject to configuration).

To open files in a new browser tab, select the files and select "Open in Browser Tab" under the Actions menu.

For example:

ID	Name	Type ID
905675	Piping & Instrumentation Diagram Deethaniser	P&ID
905676	Piping & Instrumentation Diagram C3 / C4 Splitter	P&ID
905677	Piping & Instrumentation Diagram Splitter Reflux Drum	P&ID
905678	Piping & Instrumentation Diagram Propane Dryer	P&ID
905679	Piping & Instrumentation Diagram Header	P&ID
905680	Piping & Instrumentation Diagram Header	P&ID
905681	Piping & Instrumentation Diagram Header	P&ID

**Note:** The Dashboard requires permission to open multiple browser tabs. For example, in Chrome, the user will need to allow pop-ups:

Currently, a maximum of 5 files can be opened at the same time. If you attempt to open more than 5 files, a warning message appears.

Tags and 3D models cannot be opened in a new browser tab and, if selected, will be removed from the list of items to be opened. For example:

**Note:** When a document has more than one file, the primary file (default file) will be opened or downloaded.

This is provided in the **Actions** menu of the following functional areas:

- **Browse**
- **Search**
- **Sets**
- **Summary View** (Related Items, Related Documents, 2D View)
- **Query Form** search results
- **Document Content Card** (Related Items tab, Contents tab)
- **Basket**

## Export Items

The **Exporting Items** option allows you to export one or more items (Documents and associated files with metadata, Tags) from Dashboard to your local machine in a CSV file format (.csv). If the items exported are more than 1000, a warning message appears.

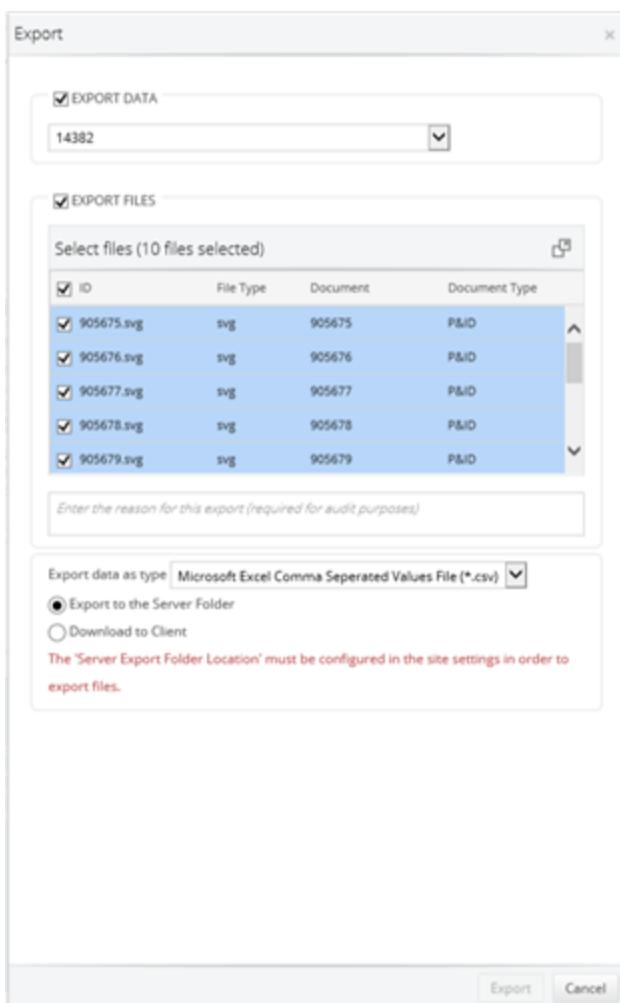
By selecting the Export Items option from the  Actions... menu, you can export items selected from the following panels:

- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- **Related Items** area in the *Summary View*
- **Related Documents** area in the *Summary View*
- **Related Query Form** area in the *Summary View*
- *Query Form search results*
- **Related Items** area in a *Document Content Card*
- Items displayed under the **Contents** tab in a *3D Model/2D Drawing Document Content Card*
- Items displayed under the **Related Items** tab in a *3D Model/2D Drawing Tag Content Card*
- Documents displayed under the **Related Documents** tab in a *3D Model/2D Drawing Tag Content Card*
- *Basket Panel*
- Reports displayed in the *Document View*

To export items:

1. In the panel from which you are exporting, select the item(s).
2. Select the  Actions... menu, and then select **Export Items**.

The *Export* window opens.



3. To export item metadata, select the Export Data check box.
4. In the **Export Definition** box, select the drop-down arrow, and then select an Export Definition.
5. To include files in the export package, select the Export Files check box.
6. To expand the Select files section, select  at the top-right of the Select files section.
7. To filter the files shown in the Select files section, use the following filters:
  - File ID
  - File Type
  - Document ID
  - Document Type

**Note:** The Select Files section displays files associated with the first 100 documents, by default. A document can have more than one associated file. Hence, a message appears at the top of the Select files section, displaying the number limit for documents shown.

8. Select the check boxes for the files you want to export.
9. If you have expanded the **Select** files section by selecting , select **OK** to return to the **Export** window.
10. In the Enter the reason for this export box, type the details.

The pre-configured export package output path appears at the bottom of the Export window. For more

information about configuring the output file location, see [Configure File Export](#).

11. From the following two options, select the appropriate export method:

- **Export to Server Folder:** Exports the files to the export location as provided in the Settings.
- **Download to Client:** Downloads the export files to the client.

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**Notes:**

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- If you have the **Run Export** right, then you can export data through the **Actions** panel.
- If you have the **Run Export** and **Export To Server** rights, then the **Export to the Server Folder** option is visible to you.
- If you have the **Run Export** and **Download to Client** rights, then the **Download to Client** export option is visible to you.

12. Select **Export**.

You will see one of the following results corresponding to the action taken in Step 11:

- If you have selected the **Export to the Server Folder** option, the message **The export will be copied to 'output location'** appears.
- If you have selected the **Download to Client** option, the message **The Download process has been started** appears.

In the bottom panel, which displays the message **Do you want to open or save the .csv/.xlsx file**, choose one of the following options:

- **Open:** Select this to view the export.
  - **Save:** Select this to save your export in your local machine.
  - **Cancel:** Select this if you do NOT want to save your export.
- If you have selected the **Export Data** check box and the **Export Files** check box is cleared, data is exported and the message **The Download process has been started** appears.

In the bottom panel, which displays the message **Do you want to open or save the .csv/.xlsx file**, choose one of the following options:

- **Open:** Select this to view the export.
- **Save:** Select this to save your export in your local machine.
- **Cancel:** Select this if you do NOT want to save your export.

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**Note:** Files that are exported, either to the client or to the server, are stored in a zip file. Inside that zip file, you can see a **Files** folder, under which there are specific folders for each document whose file(s) has been exported. So, all files for a document are placed inside the same folder. The folder name becomes the document full name separated by a hyphen. For example, if a document is called [SRP|Context 2|A doc{rev 2}](#), then its folder is called [SRP-Context 2-A doc-rev 2](#).

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**Note:** When running a Query Form and exporting to a CSV file, then any cells in columns that appertain to Related Items may have multiple values. However, some values for the Related Items may be blank. So, in order to correspond a value to the ID or Name of the Related Item, then delimiters are used to preserve the order. For example, if there are 4 Related Items and only the 3rd item has an attribute value of "xyz" (the others having a blank values), then the cell would contain **& & xyz &**. The 3 ampersands correspond to 4 values, where all are blank except for the 3rd value. This will correspond to the IDs of the Related Items for example, **P101 & P102 & P103 & P104**. So P103 has a value of xyz for the attribute in question.

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## Get Set to Print

The Printing functionality relies on the Accusoft PrizmDoc viewer to render printable version of different document types stored in AVEVA Asset Information Management Dashboard.

The print option will not be available in AVEVA Asset Information Management Dashboard while:

- A document is open in its native viewer, for example, Microsoft Office.
- A report is displayed in the Document View (the Report Viewer has its own print button).
- *Accusoft PrizmDoc* client is not deployed.

Selecting the Print option from the  menu enables you to print one or more items selected from the following panels:

- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- **Related Items** area in the *Summary View*
- **Related Documents** area in the *Summary View*
- **Related Query Form** area in the *Summary View*
- **Related Items** area in a *Document Content Card*
- Items displayed under the Contents tab in a 3D Model/2D Drawing Document Content Card
- Items displayed under the Related Items tab in a 3D Model/2D Drawing Tag Content Card
- Documents displayed under the Related Documents tab in a 3D Model/2D Drawing Tag Content Card
- Basket Panel

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**Important:** You must configure the browser pop-up blockers, to allow pop-ups from the Dashboard Website before printing.

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## Configuring Pop-up Blocker Exceptions in Edge

To configure pop-up blocker exceptions in Edge:

1. Open the **Edge** browser.
2. In the top-right corner, select the "3 dots" icon , and then select **Settings**.
3. Select **Cookies and site permissions**.
4. Select **Pop-ups and redirects**.
5. Under **Allow** select **Add**.
6. Enter the website address, and then select **Add**.
7. Close the **Settings** window.

## Configuring Pop-up Blocker Exceptions in Chrome

To configure pop-up blocker exceptions in Chrome:

1. Open the **Chrome** browser.

2. In the top-right corner, select , and then select **Settings**.
3. Go to the bottom, and then select **Show advanced settings**.
4. Under **Privacy**, select the **Content settings** button.
5. Scroll down and under **Pop-ups**, select **Manage Exceptions**.  
The Pop-up exceptions window opens.
6. In the **Hostname pattern** box, enter the domain name for which you want to create an exception.
7. In the **Behavior** drop-down box, select the arrow and select **Allow**.
8. Select **Done**.

**Note:** For more information, see <https://support.google.com/chrome/answer/95472?hl=en-GB>

## Print Items

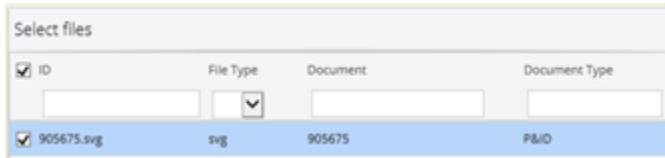
To print items:

1. In the panel from which you want to execute print, select the item(s).
2. Select the the  **Actions...** menu, and then select **Print**.

The **Select Files** window opens, listing the printable documents.

**Note:** The 3D Models, tags, and datasets are NOT printable. The **Select Files** window will be empty, if the selected documents are not printable.

3. Select the **ID** check box for items to print, and then select **OK**.



A confirmation message displaying "Preparing item for printing" appears at the bottom of the screen. After the items complete processing, and are ready for printing, the **Print** window opens.

4. Select the printer, select the **Print Settings**, and then select **Print**.

The documents are sent to the printer for printing.

### Notes:

- Your System Administrator can configure a maximum limit for the number of pages that can be printed. If the limit exceeds, a warning message appears, and the print process is cancelled. Also, if your banner text is enabled during configuration, the page setup (header and footer) must be configured accordingly.
- Your System Administrator can configure background and foreground colours when printing SVG documents.

For more information, see [Dashboard Settings](#).

## Clear Selection

To clear the selection:

1. Select the  menu at the top-right of the panel.

2. Select the **Clear Selection** option.

Your item selections are cancelled, clearing the item check boxes.

## Add Items to Sets/Basket

The **Add to** menu under the  menu at the top-right of the following panels, allows you to add the documents, items or tags selected from the respective panels to Basket/Sets.

When you	From	Displaying a list of
Select Documents, Items or Tags	<i>Search Panel</i>	Search result documents, items or tags.
	<i>Browse Panel</i>	Documents, items or tags under Class break-down nodes.
	<i>Sets Panel</i>	Documents, items or tags under the <i>Content</i> tab of a set.
	<i>Related Items</i> area in <i>Summary View</i>	Related items of a Browse, Search, Query Form search result and Reports.
	<i>Related Documents</i> area in <i>Summary View</i>	Documents associated with Browse, Search, Query Form search result and Reports.
	<i>Related Query Form</i> area in <i>Summary View</i>	Related Query Form of a Browse, Search, Query Form search result.
	<i>Related Items</i> area in a <i>Document Content Card</i>	Items related to a <i>3D Model/2D Drawing</i> document.
	<i>Contents</i> tab in a <i>3D Model/2D Drawing Document Content Card</i>	Elements contained in a <i>3D Model/2D Drawing</i> .
	<i>Related Items</i> tab in a <i>3D Model/2D Drawing Tag Content Card</i>	Related Items of a <i>3D Model/2D Drawing Tag</i> .
<i>Basket Panel</i>	<i>Related Documents</i> tab in a <i>3D Model/2D Drawing Tag Content Card</i>	Related Documents of a <i>3D Model/2D Drawing Tag</i> .
	<i>Basket Panel</i>	Documents, items or tags in the Basket.

You can also access the  menu from the top-right corner of the following areas in Dashboard:

- *Summary View* of documents, tags, reports

- *Document View* of documents, tags, reports
- *Query Form* in *Form View* and *Table View*

## Adding to Basket

To add to Basket:

1. Select the item(s), and then select the  **Actions...** menu at the top-right of the panel.

2. Select the **Add to** option.

The **Add to window** opens.

3. Select **Basket**.

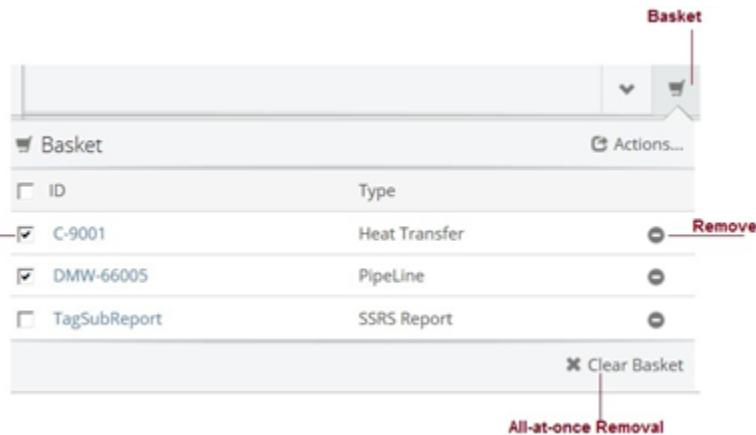
The selected items are added to the Basket and a confirmation message appears.

## Removing Items/Clearing Basket

Using these features at the bottom-right corner of the *Basket Panel*, you can remove any or all items of your Basket.

Select this	To
 Remove	Remove the Basket content one by one.
 Clear Basket	Execute an all-at-once removal of your Basket content.

The following image depicts the procedure for removing items/clearing Basket:



## Adding to Sets

To add to Sets:

1. Select the item(s), and then select the  **Actions...** menu at the top-right of the panel.

2. Select the **Add to Set** option.

The **Add to Set** window opens, displaying the most recently used Sets.

3. Select the Set to which you want to add the items.

The selected items are added to the Set.

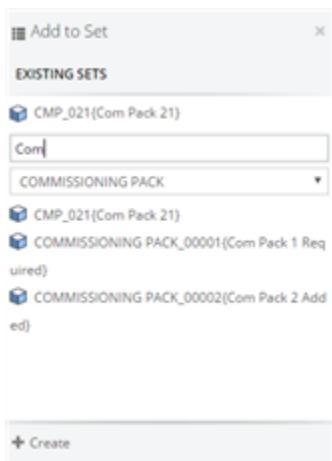
4. If you want to add the selected items to a new Set, select **Create**.

The **Add to Set** window opens.



5. In the **Type** drop-down box, select the arrow, and select a type.
6. Select **Auto-generate ID**, or enter a unique identifier in the ID box.
7. Type the name of the Set in the Name box, and then select **OK**.  
A confirmation message displaying "A Set has been created, and items added to the Set" appears.
8. If you do not want to continue with creating a new Set, select **Cancel**.
9. If you want to filter the **Existing Sets**, type the filter term in the **Type to filter...** field in the **Add to Set** window.

The Sets Label containing the filter term are displayed, as shown in the screenshot below:



## Find Information

Selecting the following functionalities from the *Global Navigation Panel* enables you to find information relevant to a document, item or a tag:

- Search
- Browse
- Query Forms

## Use Search

The **Search** functionality provides you with a criteria-driven ability to find information. Using search keywords, wildcard characters or pre-configured filters (defined in the class library), you can find information about items, tags or documents.



Selecting from the Global Navigation Panel enables you perform the following types of search:

- Simple Search
- Advanced Search
- Load Search

The search results grid displays items matching the search criterion, you entered in the *Search* box.

### Search with Wildcard Characters

Using the wildcard characters, you can execute search without entering the complete name or ID of the document, item or tag you are looking for. The wildcard characters compatible for search in AVEVA Asset Information Management Dashboard are as follows:

- % (percent) and \* (asterisk)

These two wildcard characters behave similarly when used for executing a search. A wildcard can match any number of characters.

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**Note:** The system can be configured to automatically append a wildcard.

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- \_ (underscore)

Use \_ (underscore) to specify a single character. For instance, when you perform a search for t\_st, the results return all available instances where there is a single character between t and st.

- [ ] (square brackets)

Use the [ ] (Square brackets) when you are searching for an object that contains any of the special characters, for example, [\_] or [\*] or [%].

### Execute a CONTAINS-style Search

**CONTAINS** is used when the input search term is enclosed with '%' on both sides (for example, "%string%").

**CONTAINS** functionality primarily supports the searching for words within strings and is therefore best suited to searching text-based fields. Searching within a Tag or Document identifier is not recommended with CONTAINS. CONTAINS is based on a standard Microsoft database querying technology.

If an entire **Tag ID** is known, it is recommended to search without using wildcards.

During **CONTAINS**-style search, most of the punctuation marks, such as comma, colon, question mark, ellipsis, exclamation mark, single quotation marks, double quotes, semicolon, parentheses and apostrophe, are ignored. However, some punctuation marks, such as hyphen, underscore and forward slash, are not ignored except when used to combine words.

Examples:

- %2%" – ignores the double quotes and matches any word that contains "2".
- %area-piping% – ignores the hyphen and searches for phrases that have a word starting with "area", which is next to a word starting with "piping", for example, "area piping".
- %area piping% – searches for phrases that have a word starting with "area", which is next to a word starting with "piping", for example, "area piping".
- %\*mand\*% – searches for strings within a word, so besides bringing back "mandatory", it would also return "Command".
- %w/c% – matches any word starting with "w/c".
- %n% or %nn% – looks for one or two numbers respectively or an occurrence of "nn" in a string.

**Note:** For more information on the CONTAINS function, refer to the following Microsoft site:

<https://docs.microsoft.com/en-us/sql/t-sql/queries/contains-transact-sql?view=sqlserver-2017>

## Execute a Simple Search

*Simple Search* refers to the searches performed using a part of a keyword, pre-configured filters defined in the class library or wildcard character.

To execute a *Simple Search*:



1. In the *Global Navigation Panel*, select .  
The *Search Panel* opens, docked in Dashboard.
2. In the drop-down box, select the arrow to select the type of item.
3. The default **Search by** option is **ID and Name**. You can limit the search results by selecting either the **ID** option or the **Name** option as appropriate.

Search by:  ID  Name  ID and Name

4. Enter an **Item ID**, or **Name** or a **wildcard character** in the **Search** box, and then select .  
The search results appear as a list.

**Note:** If you add a wildcard to the front of your search, the automatically appended wildcard is removed, and will need to be manually added if required.

## Loading Search

The *Load Search* functionality at the bottom of the *Search Panel* enables you to load the previously saved search results. By selecting **Load Search**, you can view the saved searches by their name, and select the one to load into the *Search Panel*.

Searches loaded into the Search UI are modified to be compatible with the search UI. This means all **ItemIdentifierCriteria** are stripped from the search and the obligatory ID or NAME and CLASSID are added to the beginning of the search. This means the Search UI does not support complex criteria including **ItemIdentifierCriteria** in the search even though this can be defined in the configuration for the search itself.

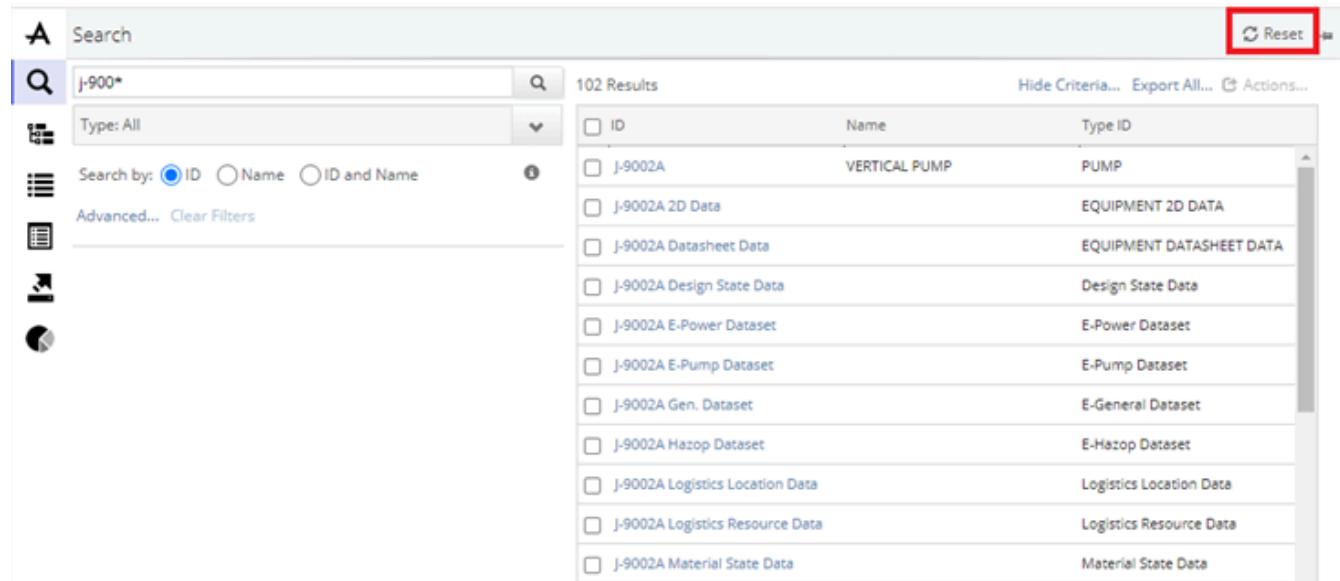
**Note:** This only applies to the Search UI and does not apply to the searches configured to run through the WebAPI.

## Resetting Search Criteria

The **Reset** option:

- Is enabled in the *Search Panel*, only after a search is executed, and the search results are displayed.
- Clears both the search criterion and its search results.
- Enables you to enter a new search criterion, and execute a fresh search.

By selecting  **Reset** in the *Search Panel* displaying search results, the search criteria as well as its search results are cleared. And, you can enter a new search criteria to perform a new search.



The screenshot shows the AVEVA AIM Search Panel. On the left, there's a search bar with 'j-900\*' entered, a search icon, and a dropdown menu set to 'Type: All'. Below the search bar are filter options: 'Search by: ID' (selected), 'Name', and 'ID and Name'. There are also 'Advanced...' and 'Clear Filters' buttons. The main area displays a table of search results with columns for 'ID', 'Name', and 'Type ID'. The results list various datasets related to 'J-9002A' such as 'VERTICAL PUMP', 'EQUIPMENT 2D DATA', and 'EQUIPMENT DATASHEET DATA'. At the bottom of the results table is a 'Material State Data' entry. The top right of the panel has buttons for 'Hide Criteria...', 'Export All...', and 'Actions...'. The 'Reset' button is located at the very top right of the panel area, which is highlighted with a red box.

## Opening a Search Item and Viewing

To open a search item and view:

1. From the search results displayed in the *Search Panel*, select an item.
2. Select  **Actions...**, and then select **Open**. You can also directly select on the item to open it.  
If the item selected to view is a tag, it opens in the *Summary View*.
3. If you select to view a 2D Diagrams and Documents View document, it opens in the *Document View*.  
You can change the view mode from *Document View* to *Summary View* using the  **View** option.

## Saving a Search

Saving a search enables you to retrieve the search results, based on a criteria of any previously executed search. Using the **Save Search** option, you can save the search results for a specific search criteria.

**Note:** To save a Search, ensure you are in a role that has the **CreateAdvancedFind** right, such as **Core Team Admin** or **Power User**.

To save a search:

1. In the bottom-left of the *Search Panel* displaying the search results, select  **Save Search**.  
The **Search Details** window appears.

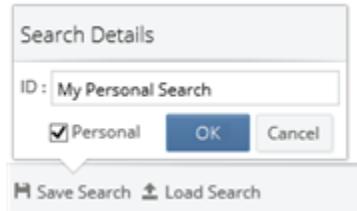
2. Enter a **Name** for the search results you want to save, and then select **OK**.

A message appears confirming the Save Search success.

### Saving Personal Searches

If you have the [CreateAdvancedFind](#) permission, you can create **Advanced Searches**, **Save Searches** and manage the **Saved Searches**.

You can also save a search as **Personal**, which means the search can only be viewed by the author of the Saved Search.



If the **Personal** checkbox is not selected, then the **Saved Search** becomes **Public** and all users can view it.

The **Load Search** panel shows all of the Public Saved Searches and all of your Personal Saved Searches.

### Managing Saved Searches

You can use the **Manage Saved Searches** panel to modify multiple Saved Searches at once.

The **Type** column in the panel differentiates the **Personal** searches from the **Public** searches.

Icon	Description
	Represents a Personal Saved Search
	Represents a Public Saved Search

The following table lists the various operations that you can perform using the **Actions...** menu on the panel:

Use this option	To do this
Set to Personal	To set multiple Public Searches to Personal
Set to Public	To set multiple Personal Searches to Public
Clear Selections	To clear all the selections made in the Manage Saved Searches panel

**Note:** If you have the **CreateAdvancedFind** permission, you can set a **Public** search as a **Personal** search, after which the search is visible only to yourself.

### Filtering Saved Searches by Type

You can use the filter icon in the **Manage Saved Searches** panel to filter the searches based on their types – **Personal** or **Public**.

The screenshot shows the 'Manage Saved Searches' interface. At the top right is a 'Actions...' button with a filter icon. A dropdown menu is open, showing three options: 'All' (highlighted in blue), 'Personal', and 'Public'. Below the dropdown is a table listing five saved searches: 'All Cables', 'All Documents', 'All Equipments', and 'All Lines'. Each entry has a checkbox next to its name and a 'Delete' icon (a small trash bin) to its right. At the bottom of the panel are buttons for 'Save Search', 'Load Search', and 'Manage Searches'.

Selecting the filter icon shows the three options: **All**, **Personal**, **Public**.

**Note:** When filtering on the Personal Saved Searches, the **Set to Personal** option in the **Actions...** menu is not visible. When filtering on the Public Saved Searches, the **Set to Public** option in the **Actions...** menu is not visible.

### Deleting a Saved Search

The **Manage Search** option enables you to delete a saved search.

**Note:** You must have appropriate rights to delete a search.

To delete a saved search:

1. In the **Manage Saved Searches** panel, select to delete the saved search.
2. A message confirming **You are about to delete the Saved Search: <Search Name>. Do you wish to continue?** appears.
3. Select **OK** to delete. Select **Cancel** if you do not want to Delete.

## Execute an Advanced Search

The *Advanced Search* functionality enables you to filter your search results, based on the criteria that certain users (with appropriate rights) have created for others to execute. The criteria can be:

- Constituent class of the Items
- Attribute relationship between Items
- Lifecycle status of the Items
- Attributes of related Items

If you do not know the exact attribute value to filter your search results, you can enter an alphabet or wildcard character, and get a list of all the available values, starting with the entered term.

When a **Related Item** criteria is used, matches are made against the related objects, but the source objects are displayed in the results.

The **Like** operator has an implied wildcard on the end of the filter. For example, Like=A is interpreted as Like=A%.

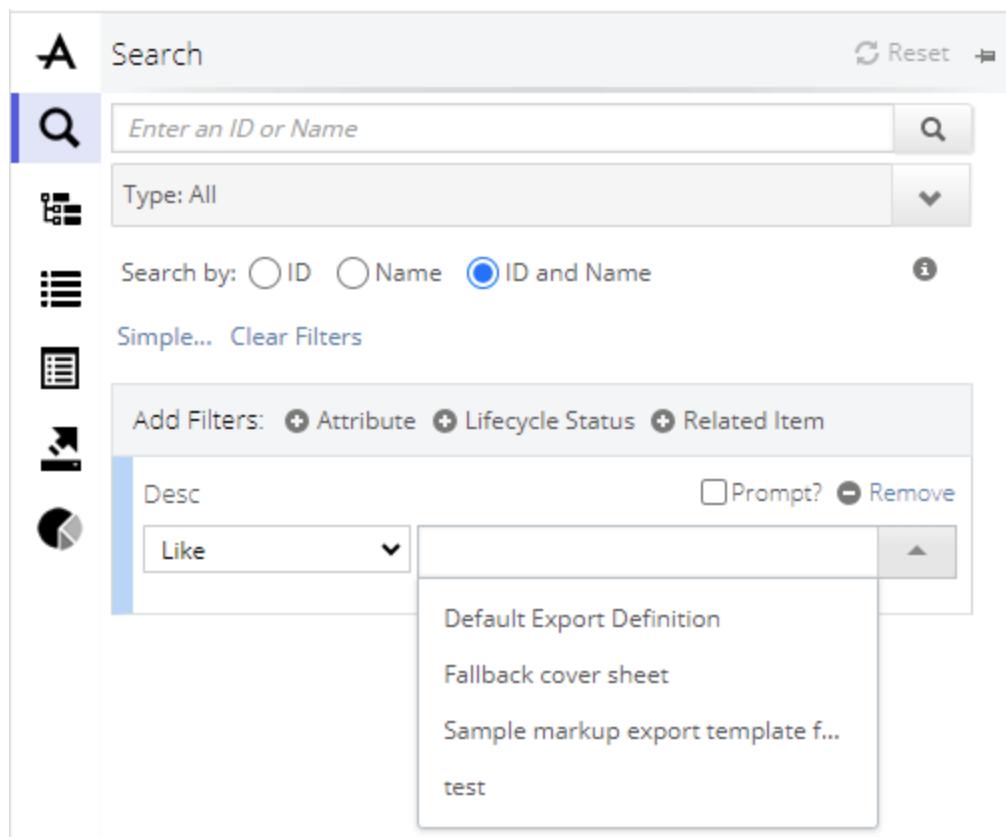
When the **Not** option is used on a **Related Item** criteria, the logic applied is NOT (association AND related type AND filter).

To execute an **Advanced Search**:

1. In the *Global Navigation Panel*, select 

The *Search Panel* opens, displaying an option under the **Search** box, to toggle between *Simple Search* and *Advanced Search*.

2. Select [Advanced...](#).
3. If you want the ID or name of the search filters to be displayed, select **Prompt**.
4. In the **Add Filters** pane, select  for each filter to add a filter criteria.
5. In the drop-down box for each filter, type an alphabet or a wildcard character, and then select the arrow. All the available filter criteria appear in a scrolling list.



6. Select a filter criteria, and then select .

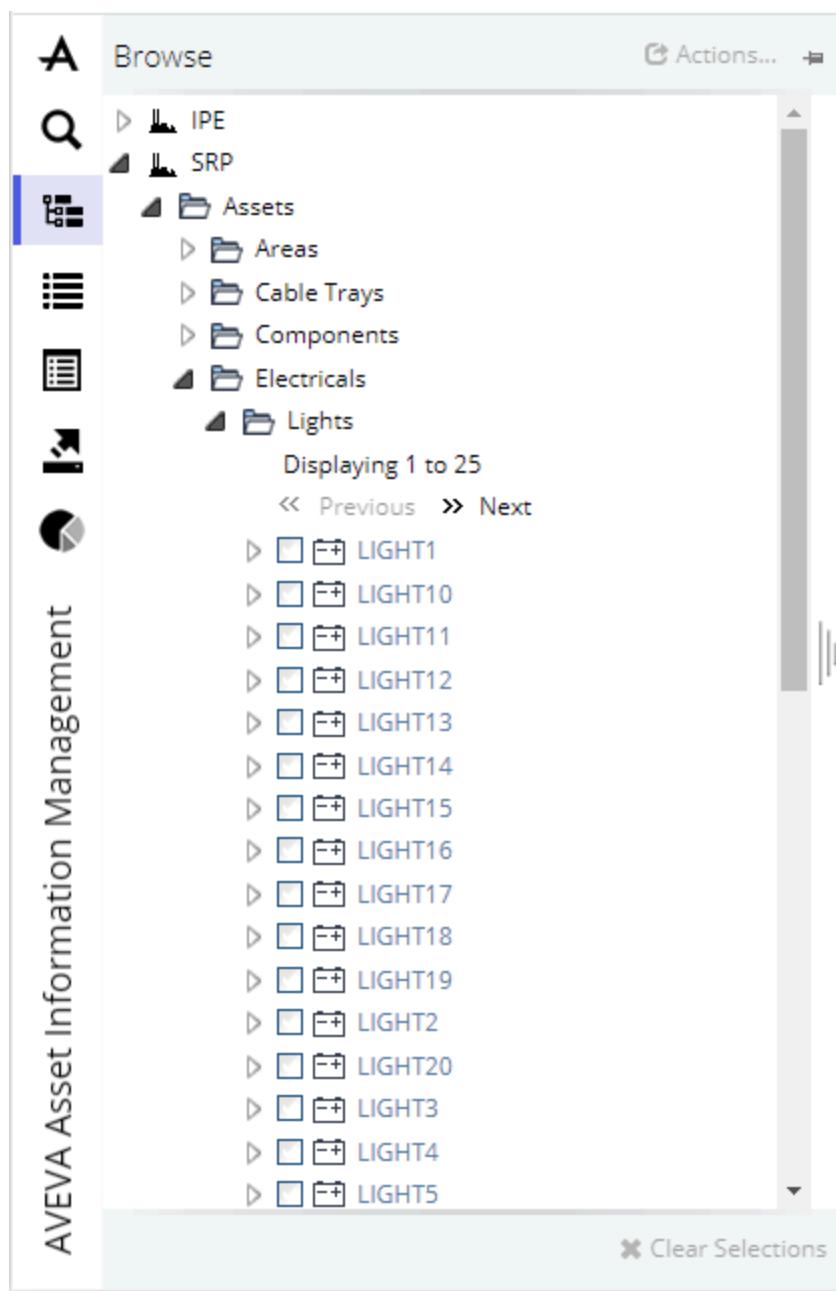
The search results are displayed in a list.

## Use Browse

The *Browse* functionality enables you to find information by navigating through the root nodes, and expanding the breakdown nodes. It helps you to instantly retrieve inter-related or independent documents, Items, or tags, without the need to specify any search criteria.

To use *Browse*:

1. In the *Global Navigation Panel*, select  *Browse*.
- The *Browse Panel* opens, docked in the Dashboard.



2. In the *Browse Panel*, select to expand the root node, and then select a breakdown node.

The node expands, displaying tags, items, and documents under the respective folder.

---

**Note:** Your System Administrator can configure the number of tags/documents to be displayed. If you want to a larger number of browse results to be displayed, contact your System Administrator.

3. Select **» Next** to view more objects, or **« Previous** to go back.

## Use Query Forms

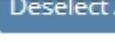
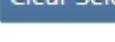
The *Query Forms* enable you to:

- Find information, using a form-based search mechanism.

- Further your advanced search through the database.
- Define criteria and modify it, while executing searches.
- Generate search results, listing the data related to one or more item in the database.

**Note:** Your System Administrator can create and design tailor-made Query Forms, using the *Query Form Designer Panel*.

The following command buttons appear in the *Query Form*:

Selecting	Enables
 Search	Executing search based on the criteria selected and entered in the box.
 Reset	Returning to the search criteria used, after the search result appears in the search criteria box.
 Select All	Auto-selecting all the search criteria check boxes.
 Deselect All	Deselecting all the search criteria check boxes.
 Clear Selected	Clearing a selected search criteria check box.

The Query Form search results display the following icons:

Icon	Functionality
	Indicates the existence of multiple search results, related to a search criterion. Selecting this icon allows you to view a list of search results.
	Indicates clashing search result values, as the search criterion is fetching results of multiple datasets with differing or missing values. Selecting this icon enables you to view a list of datasets containing your search criterion and their respective values. <b>Note:</b> Clashes are case-insensitive.
	Opens the Summary View of the search result item, corresponding to the search ID.
	Enables navigating through the search results, beyond the first record of the search result displayed in the search criteria box. Displays the total number of search result records, and the record under viewing in an instance.

Icon	Functionality
	Selecting the backward arrows enables returning to the previous, or first search result record. Selecting the forward arrows enables navigating to the next, or last search result record. Entering a specific record number in the <i>Item</i> box enables viewing the record instantly in the <i>Query Form</i> .

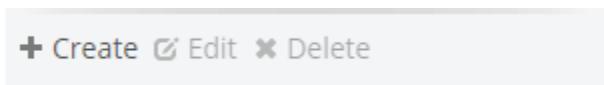
## Create Query Forms

To create a **Query Form**:

1. Ensure that you have got the **QueryFormCreation** permission.
2. Select the **Query Forms** icon in the **Global Navigation Bar**.



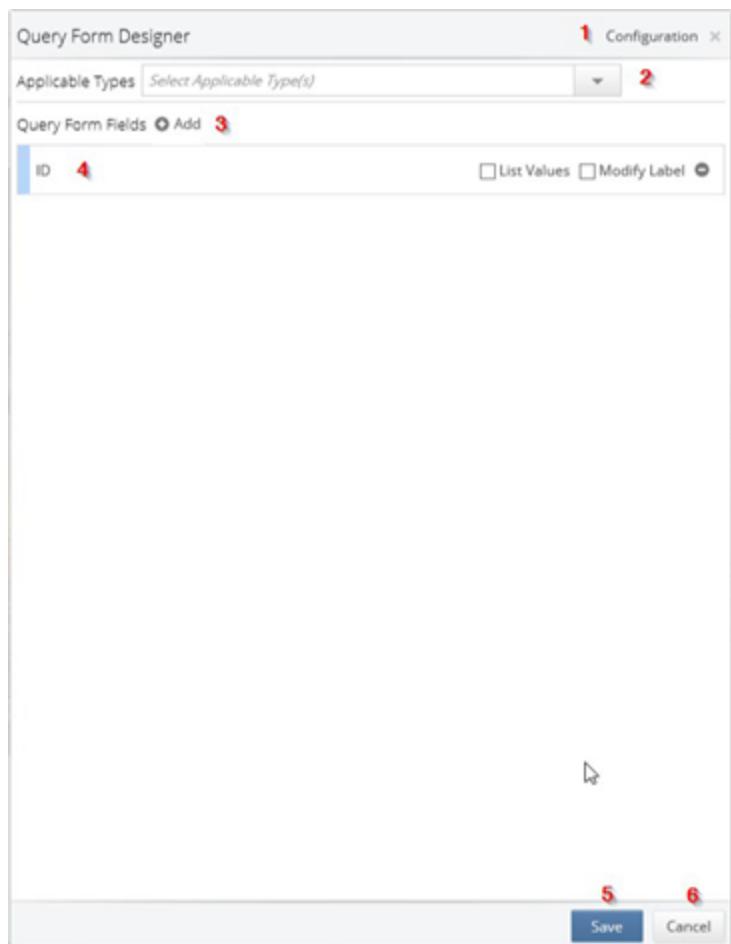
3. Select the **Create** button from the bottom of the **Query Form** dialog.



The **Query Form Designer** appears.

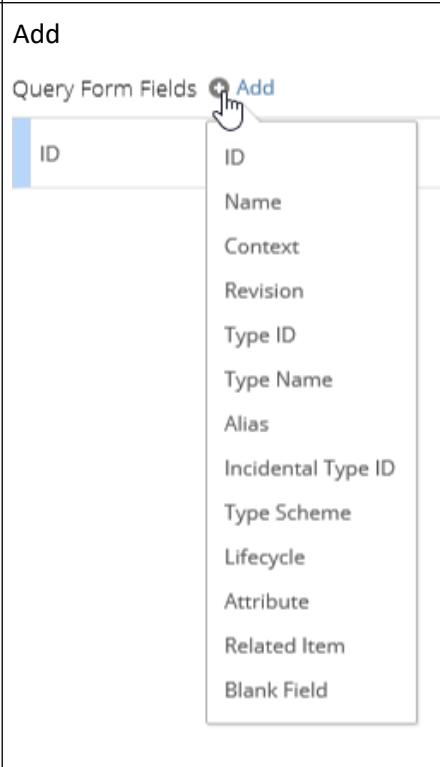
Knowing the Query Form Designer

The **Query Form Designer** is a web-based tool built into *AIM Dashboard* that allows those with the appropriate permission to create pre-defined searches based on certain applicable types.



The following table describes the various buttons or elements available on the Query Form Designer:

Icon	Description	Function												
1	<p>Configuration</p> <table border="1"> <thead> <tr> <th>Specification</th><th>Description</th></tr> </thead> <tbody> <tr> <td>No. of Columns</td><td>The number of columns shown in the Form View</td></tr> <tr> <td>Ignore Empty Values</td><td>If this check box is selected, then the clash should not occur and empty values must be ignored.</td></tr> </tbody> </table>	Specification	Description	No. of Columns	The number of columns shown in the Form View	Ignore Empty Values	If this check box is selected, then the clash should not occur and empty values must be ignored.	<p>Enables you to set specific options for this Query Form.</p> <table border="1"> <thead> <tr> <th>Specification</th><th>Description</th></tr> </thead> <tbody> <tr> <td>No. of Columns</td><td>The number of columns shown in the Form View</td></tr> <tr> <td>Ignore Empty Values</td><td>If this check box is selected, then the clash should not occur and empty values must be ignored.</td></tr> </tbody> </table>	Specification	Description	No. of Columns	The number of columns shown in the Form View	Ignore Empty Values	If this check box is selected, then the clash should not occur and empty values must be ignored.
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Icon	Description	Function
		<p>Compare as Numbers</p> <p>If this check box is selected, then the clash does not occur for 3.6 and 3.60 as both are considered as identical.</p> <p>For numbers, leading and trailing, spaces and zeros (trailing when after the decimal point) are ignored and if a number match is made, then no clash occurs.</p>
2	Applicable Class Types	Enables you to select the classes of objects this Query Form should apply to.
3	<p>Add</p>  <p>The screenshot shows a 'Query Form Fields' dialog box with an 'Add' button. A mouse cursor is hovering over the 'Add' button. Below the button is a list of field types: ID, Name, Context, Revision, Type ID, Type Name, Alias, Incidental Type ID, Type Scheme, Lifecycle, Attribute, Related Item, and Blank Field.</p>	Selecting this displays a list of possible field types that can be added to the Query Form.

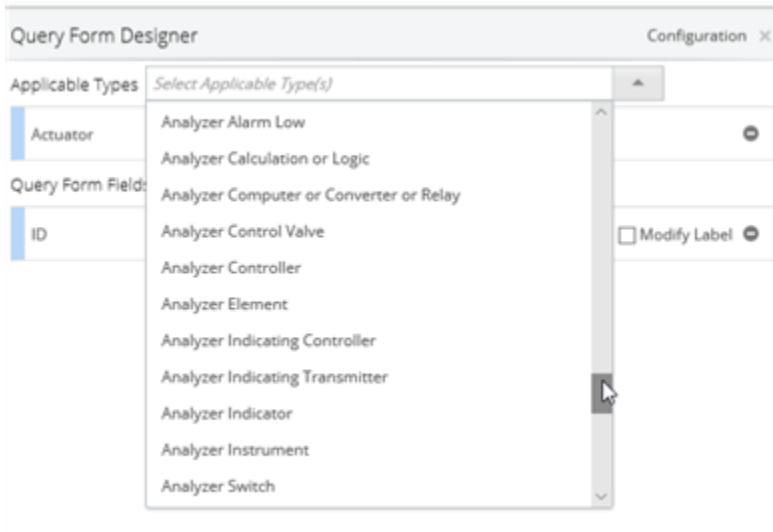
Icon	Description	Function
4	Default field	One default field is always added to a Query Form (ID). ID is the tag, document ID or other identifier used to uniquely identify an object within AIM. When you select the ID fields in a Query Form, they open a new tab within AIM Dashboard.
5	Save	Selecting this opens the <b>Save</b> Dialog.
6	Cancel	Selecting this closes the Query Form Designer without saving.

### Selecting Applicable Classes

You must select the type of objects that the Query Form should search.

To select the applicable classes for a Query Form:

1. Select the **Applicable Types** drop-down list to see all possible class types.
2. Select the appropriate class type (for example, Equipment) from the list of values.



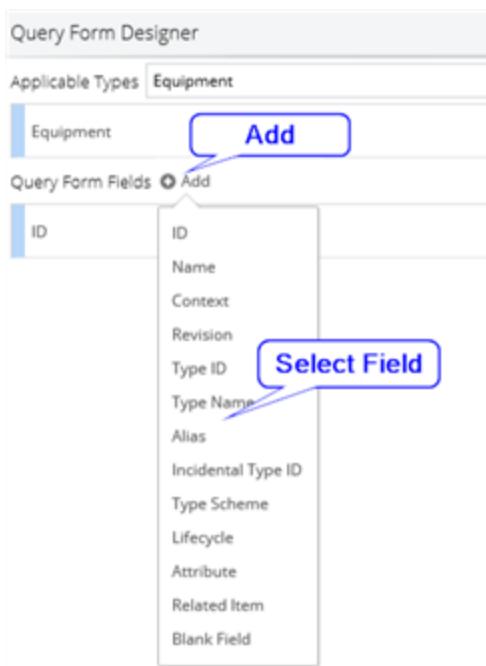
After a class has been selected, you may add others by choosing the next from the list of **Applicable Types**.

To remove a class, you may select the symbol to remove it.

### Adding Fields to a Query Form

To add a field to the query form:

1. Select the **Add** button to display possible field types.



The following table lists the **Query Form Fields** and their descriptions.

<b>Query Form Fields</b>	<b>Description</b>
ID	Object identifier which will be selectable and will open in a new tab.
Name	The object's name
Context	The object's AIM context
Revision	The object's revision label
Type ID	The object's type identifier
Type Name	The object's type name
Alias	The object's aliases
Incidental Type ID	The type ID for its incidental class.
Type Scheme	The scheme type
Lifecycle	The object's current lifecycle
Attribute	An attribute to display
Related Item	Display a related item (if present)
Blank Field	A blank space

2. After you have added a field type, it places a new field onto the **Query Form Designer**.

3. To remove a field type, select the  symbol next to it.

Every field has a label. The default label is always the individual field types identifier. For example, ID is always default to the text ID. However, you can change the label.

4. To do the label, select the **Modify Label** checkbox.

After that, the label becomes editable.



Depending on the type of field, there may be different options, as described in the following table:

Options	Description
List Values	Populates a drop-down list of values.
Modify Label	Enables you to change the displayed label.
Match All	<p>Verifies the values of all the attributes with this name that belong to an object and its datasets, and only produces a match if they all have the same value.</p> <p>For example, use this option to find all objects where the attribute does not yet have a value either on the object or in any of its dataset by specifying an empty value and the Match All option.</p>

**Note:** Different Field Types may ask for additional information.

## Lifecycle

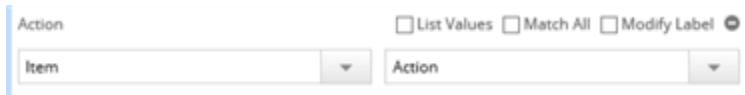
**Lifecycle** requires the selection of a lifecycle group.



## Attribute

**Attribute** requires selecting the source of the attribute. **Item** is the currently selected object's own attributes, otherwise you must select a dataset that may be attached to the class object in which the attribute exists. Then you must select the individual attribute to display.

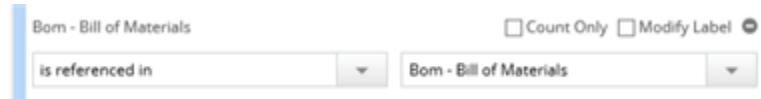
In the following example, the item's own attribute is being returned and the attribute is **Action**.



## Related Item

**Related Item** requires selection of an association type and a class of object that may be related to the current class. You will then be asked to add fields from the associated object class to display.

The **Count Only** checkbox enables you to return only the number of results rather than the values.



## Saving the Query Form

After the query form has been built to your specifications, you can save the query form.

To do so:

1. Select the button to open the **Save Query Form** dialog.



**Note:** The **Type** cannot be changed.

2. Type a unique **ID** for this query form. This is required.
3. Type a **Name** that will represent this query form in the list of Query Forms. This is optional.
4. In the **Description** text box, type a short description about this query form and its purpose. This is optional.
5. Select the button to complete the save action.

## Execute a Query Form Search

You can execute a Query Form search by entering the search criteria in the fields configured by your System Administrator. You can also include wildcard characters in the search criteria. By default, a Query Form opens under the Form View tab. Selecting the Table View enables you to view the search results in a table. For more details about the Table View, see the *Changing Search Results View to Table View* section in this topic.

When a **Related Item** criteria is used, matches are made against the related objects, but the source objects are displayed in the results.

The **Like** operator has an implied wildcard on the end of the filter. So, for example, Like=A is interpreted as Like=A%.

When **Match All** is selected in the **Query Form Designer**, then, at execution time, all associated Datasets that have that attribute are searched and all of these attribute values must match the value given in the search criteria.

When **List of Values** is selected in the **Query Form Designer**, then, at execution time, a list of all the values is provided.

To execute a Query Form search:

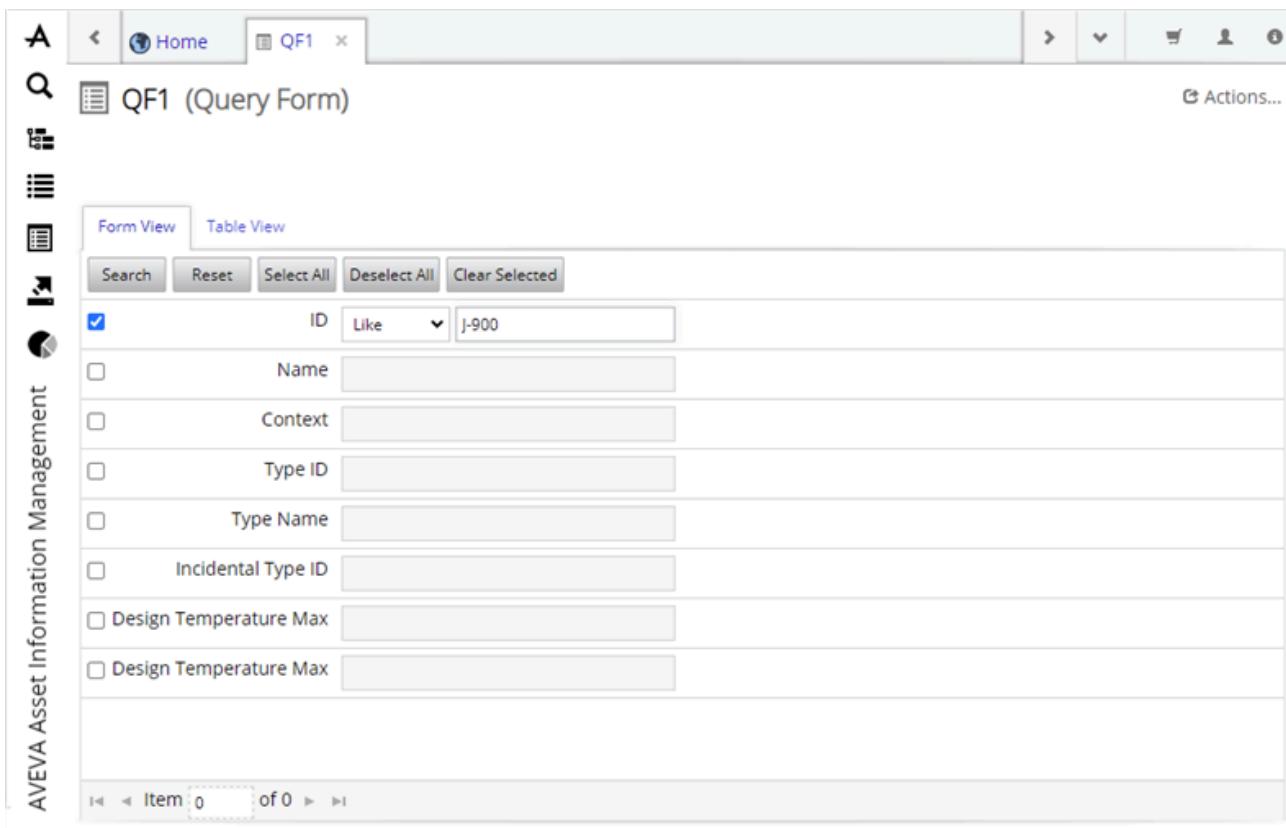
1. In the *Global Navigation Panel*, select  .  
The *Query Forms Panel* opens, displaying all the pre-configured Query Forms.
2. To open a Query Form, select its name.  
The Query Form of the selected name opens.



The screenshot shows the 'Query Forms' panel with a list of available query forms. The first item, 'Design Pressure', has a cursor pointing at it, indicating it is selected or about to be selected.

- Design Pressure
- Equipment
- Item Properties
- ...

3. Select the search criteria check box, enter a keyword or wildcard character in the box.



The screenshot shows the 'QF1 (Query Form)' search interface. The search criteria section includes a checked checkbox for 'ID Like J-900'. Below this, there are several other search fields for 'Name', 'Context', 'Type ID', 'Type Name', 'Incidental Type ID', 'Design Temperature Max', and 'Design Temperature Min'. At the bottom, there is a pagination bar showing 'Item 0 of 0'.

4. Select  to see the most closely-matched search results..

5. In the **Form View**, select .

The item opens in the *Summary View*.

6. To view the next search result, select .

The search result appears in the search criteria box used while executing search.

7. To view the previously viewed search results, select the backward arrows.

### Changing Search Results View to Table View

After executing a Query Form search, selecting the **Table View** tab enables you to view the search results in a tabular format (printer-friendly view). Each row in the table represents a search result.

From the **Table View** tab, you can do the following tasks with the selected search result items:

- Open
- Add to
- Sets
- Baskets
- Export Items
- Export All Items
- Print

### Query Form CSV Export

While performing a CSV Export of the Query Forms, you must configure the following details as part of the Export Definition:

**Primary data separator:** This is the character (or characters) that will separate the columns of data in the CSV file.

**Secondary data separator:** Columns might contain many values. For example, in the Object aliases column, if one of the items in the Search results is 'V-2', then the aliases for this item could be 'SRP|VPD|/V-2' and 'SRP|PDS|Valve-2'. In the CSV file, the secondary data separator in the Object aliases column would separate these two values.

**Include Clash Information:** When choosing the primary and secondary data separators, you must ensure that the actual values that appear in the columns in the CSV file do not contain either of these separators. In this case, the user should choose a different separator and export the data again.

Selecting this option includes information at the bottom of the CSV file about any clashes detected during the creation of the file where values did contain instances of either of the separators. The line number (in the file) and the column number of any clashes are given. If no clashes were detected, then no clash information is included in the file.

**Include Column Header Information:** Select this option if the user would like an initial record in the CSV file that contains a header for each column. Selecting this option causes additional fields to be made visible on the page where the user can insert the header text for each column. If the user leaves a field blank, then a system defined header will be used which is based on the column type. A text box with the text "UOM" will be displayed next to the attribute field when this option is selected, and a Property is added in the User Defined Columns section of the Export Search Results Screen.

**Format for Excel:** Select this option if the user intends to view the downloaded CSV file using Microsoft Excel. Using this option prevents Excel doing its own (sometimes misleading) interpretation of the CSV data.

## View Information

The information you select to view can constitute a document, item or tag, independent or inter-related to each other. The following sections explain the procedures for:

- [View Tags](#)
- [View Content Cards](#)
- [View 2D Documents](#)
- [View 3D Models using 3DVIs](#)
- [View 3D Models using VizStream](#)
- [Highlight Tag IDs from Related Items](#)
- [Expand Tags and Interpolate Them](#)
- [Configure View Selection](#)

## View Tags

If the information you have selected to view is of tags, its *Summary View* opens displaying the information in the zones configured to include Relationships, Metadata or Characteristics.

For example, it can be configured with zones for:

- Details
- Key Attributes
- Attributes
- Related Items
- Related Documents
- Related Query Forms
- 2D View
- 3D View

To view tags:

1. To view tag-related data, select to select that tag from the tree.

The *Summary View* opens in a tab in the *Tab Panel* for the selected item, displaying its details.

---

**Note:** You can close the tab for any selected object, by selecting  on the tab in the *Tab Panel*.

2. To view a 2D Drawing document for the selected tag, go to the *2D View area* of the *Summary View*.
3. From the **2D View** box, select a document to view.

The 2D Drawing appears in the *2D View area*.

---

**Note:** By selecting  at the top-right of the viewing areas in the *Summary View*, you can maximize or

---

minimize the viewing area.

4. Rotate the mouse wheel forward to zoom in (enlarge), or backward to zoom out (shrink) the 2D Drawing.
5. To highlight and view the tag in the 2D Drawing, rest the mouse in an area in the document.  
The tag is highlighted, zooming and displaying its ID.
6. To view a 3D Model for the selected tag, go to the *3D View* area.
7. From the **3D View** box, select a model to view.  
The 3D Model appears in the *3D View* area.
8. To view the 3D Model revolving it in a circular motion, select in any area of the document, and then move  from a selected point .

## View Content Cards

When a 3D or a 2D Drawing opens in the *Document View* mode, it displays the aspects such as Relationships, Metadata or Characteristics based on the configurations:

Content Card Types	Description
Document Content Card	Configurable to display any or all aspects relevant to a <i>3D Model or 2D Drawing</i> document.
Tag Content Card	Configurable to display aspects specific to a hot-spotted Item (tag or a component) of a <i>3D Model or 2D Drawing</i> .

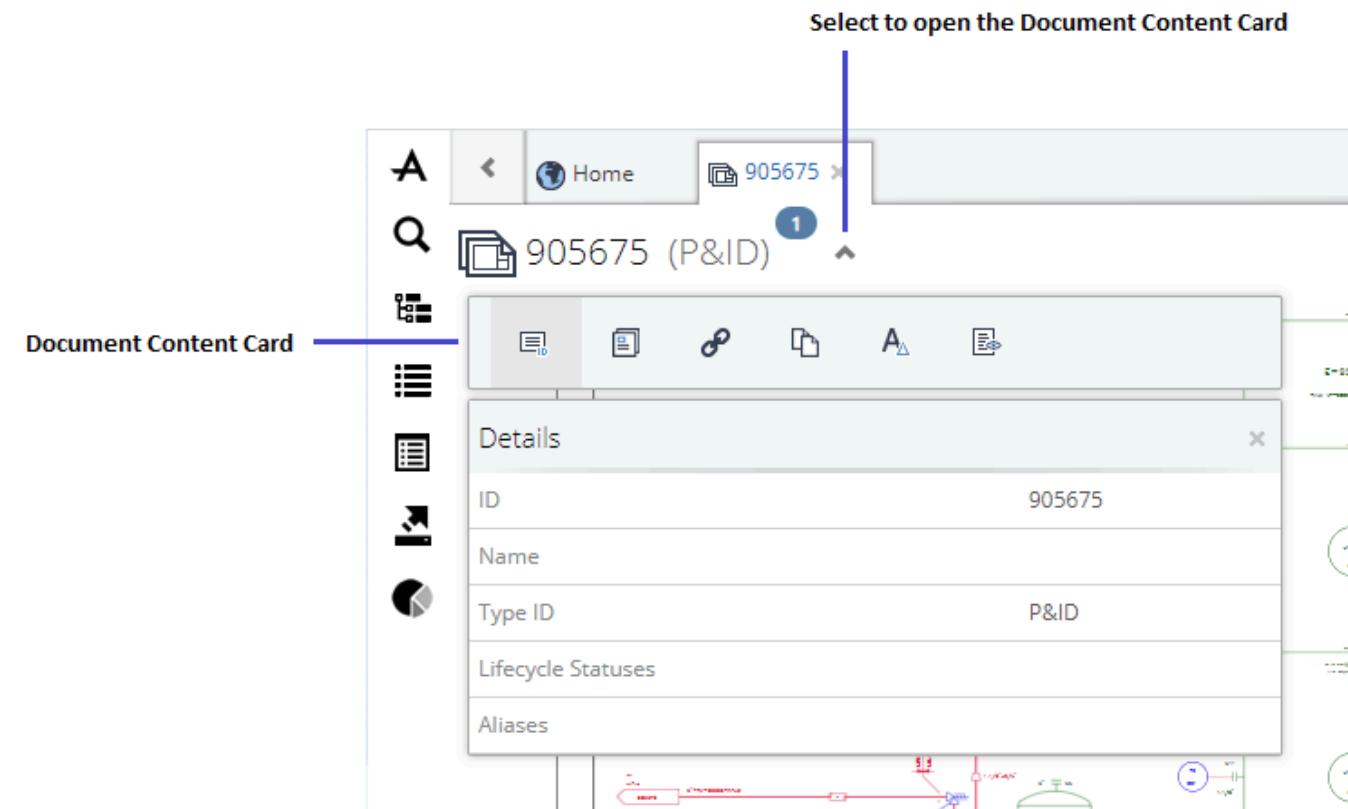
For example, a Content Card can be configured to display the following properties of a *3D Model or 2D Drawing* under each of its tabs:

Properties	Description
Details	Displays the details unique to the <i>3D Model or 2D Drawing</i> document.
Attributes	Displays the characteristics of a <i>3D Model or 2D Drawing</i> document.
Related Items	Displays the Items associated with a <i>3D Model or 2D Drawing</i> document.
Files	Displays the 3D or a 2D Drawing document rendered in different file formats.
Revisions	Displays the different versions of the <i>3D Model or 2D Drawing</i> document.
Contents	Displays the constituent elements (tags) of a <i>3D Model or 2D Drawing</i> .

## View Document Content Card

Selecting the drop-down arrow for a 3D or a 2D Drawing name in the *Document View* enables you to view its Document Content Card.

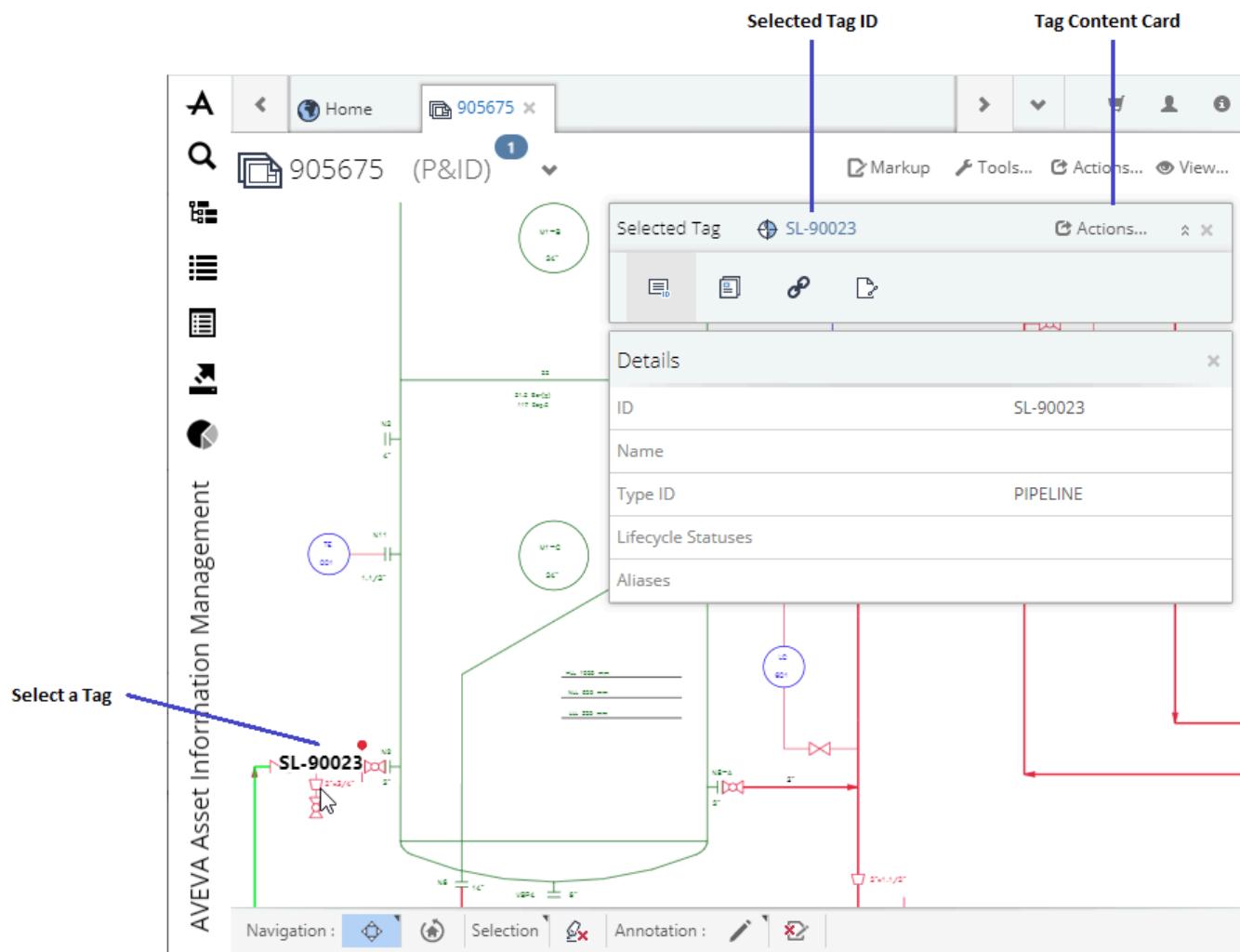
The following figure shows the Document Content Card for a 3D Model. The same procedure applies to a 2D Drawing:



## View Tag Content Card

Selecting a tag or item in a 3D or 2D Drawing in the Document View enables you to view its Tag Content Card.

The following figure shows the Tag Content Card for a 2D Drawing. The same procedure applies to a 3D Model:



## View 2D Documents

Selecting a two-dimensional vector-based graphic from a 2D Drawing document folder enables you to view these drawings rendered in the SVG file format (.svg). By default, the selected 2D Drawing opens in the *Document View*.

Using the **View** menu at the top-right of the *Document View* area, you can change the view to *Summary View*.

**Important:** For a system/server running on a non-English operating system, the system locale settings should be set to **English** before processing the files during deployment. Your System Administrator must set it to ensure proper rendering of SVG documents.

### General 2D Viewing

### Navigate in 2D Drawings

Selecting the **Navigation** menu at the *2D Drawing Document View* provides you with the following options to navigate in a 2D Drawing:

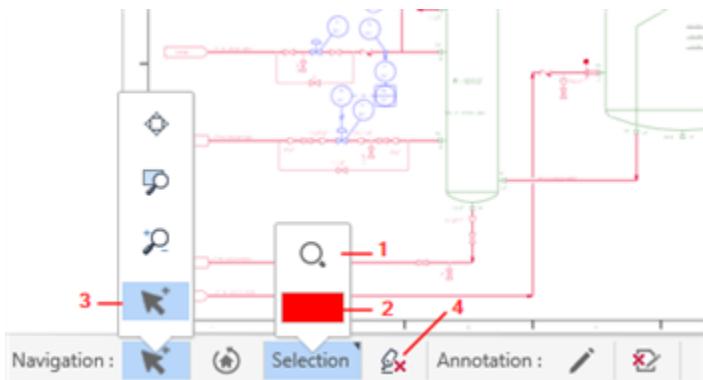
Use this mode	To
 Pan	Move the model anywhere inside the <i>Document Viewing</i> area.
 Marquee Zoom	Mark a rectangular area of the model to be magnified.
	Magnify the model size by selecting the mouse and moving upward. Reduce the model size by selecting the mouse and moving downward.

The  icon enables you to restore the drawing to its original form and position.

## Highlight Elements in 2D Drawing

To highlight collections of elements:

1. Open the **2D Document Viewer** and make selections using any of the following:
2. Search results
3. Browse tree
4. Content card
5. Sets

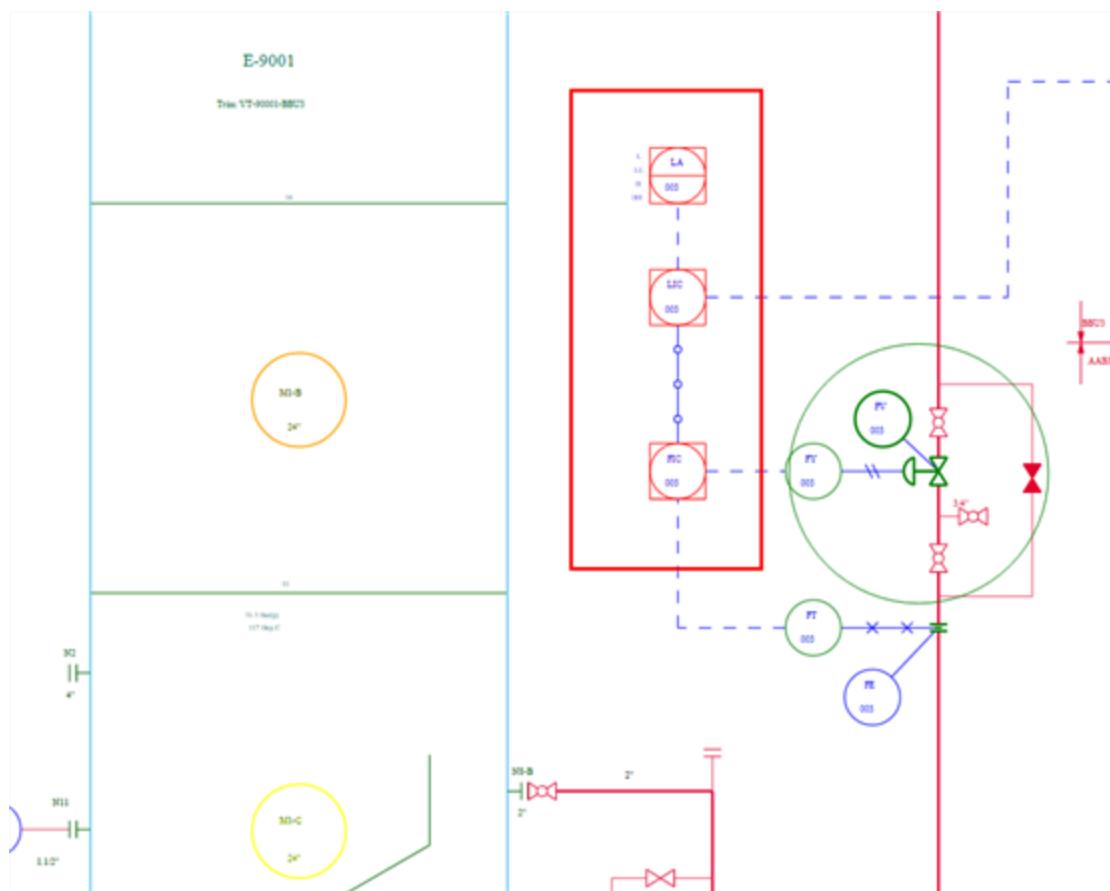


6. Using the **Actions** menu, select **Highlight**.
7. Select the **Selection** menu in the toolbar.
8. Select a highlight colour (2) to change the colour of the selected items.

**Note:** You can pick multiple items in the viewer either by holding down **Ctrl** while selecting on the items or by using the 'add to selection' icon (3) from the **Navigation** menu.

9. Select the 'zoom to selection' icon (1) to see a closer view.

**Note:** You can subsequently save (as Markup), print or export any modifications to the document in the viewer. The modifications can be annotations, highlighting or a combination of both (see the example below). For information on Markup, see [Marking up 2D Drawings](#).



10. Select the 'clear all highlighting' button to clear any highlighting modifications.

## Visual Reporting

The  Tools menu in the SVG viewer provides a Visual Reporting option.

Visual Reporting enables you to implement visual changes to your search results, comprising of 2D Drawing components.

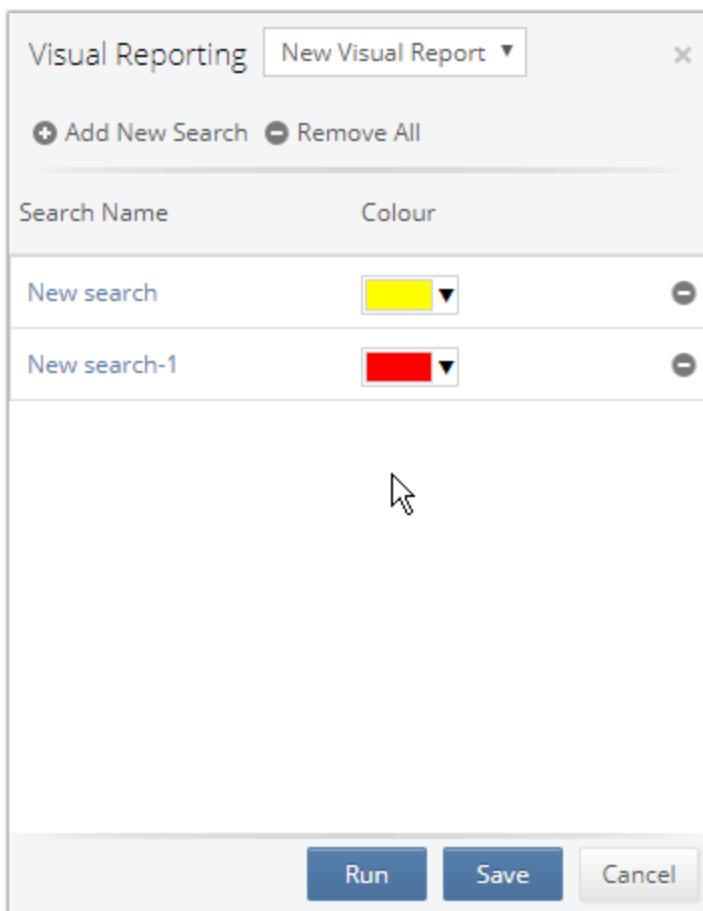
It enables you to:

- Categorize 2D Drawing components and alter their colours.
- Save the Visual Report to re-use later.

By default, you will be able to apply visual changes to the search results; but the **Save** button will be enabled only if you have appropriate rights granted by your System Administrator.

To apply visual changes to the search results:

1. In the **SVG viewer**, select the  Tools menu, and then select **Visual Reporting**.  
The Visual Reporting pane opens.



2. In the drop-down box, select the arrow to select **New Visual Report**.  
The searches saved under the selected Visual Report appear as a list.
3. In the **Colour** box, click the arrow to select the colour, and then select **Set Colour**.
4. Select **Apply**.

The visual changes are applied to the 2D Drawing components in that saved search.

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**Note:** If the search criteria used in a saved search finds more results than the limits configured under: **Settings Panel > Site > General > Visual Reports (Max list items for Visual Reports)** (the default limit is set as 25000), a warning message appears. If this happens, consider changing this setting; but be careful to not exceed the combined performance of the system, the hardware and the network latency.

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The following functionality of Visual Reporting for 2D Drawings works the same as for Visual Reporting for 3D models (see Visual Reporting):

- **Visual Reporting** drop-down to create a new visual report (select **New Visual Report**) or to load an existing visual report
- **Add New Search** link to add new search
- **Remove All** link to remove all searches
- **New Search** link to open prompt
- Colour picker to select colour of search result
- **Run** button to apply highlight with selected colour on search results

- **Save** button to save a new visual report with ID and description

## View 3D Models using 3DVis

This section describes the various actions that you can perform while viewing 3D Models, such as:

- General 3D Viewing
- Visual Reporting

### General 3D Viewing

#### Demo of 3DVis Cloud Streaming Service

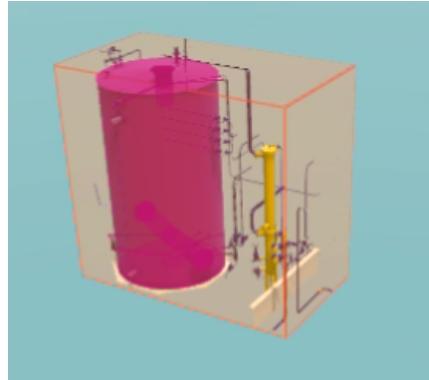
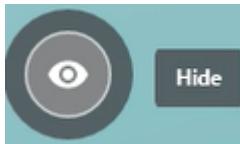
[https://player.vimeo.com/video/1027670401?badge=0&autoplay=0&player\\_id=0&app\\_id=58479](https://player.vimeo.com/video/1027670401?badge=0&autoplay=0&player_id=0&app_id=58479)

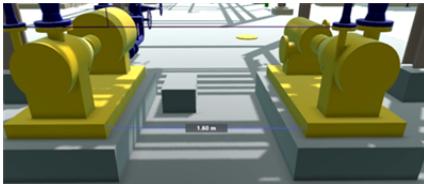


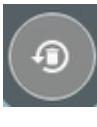
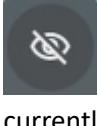
You can use the following actions when viewing 3D models:

Name	Action/Button	Description
Select	Click an item with the left mouse button	Selects an item in the model. For example, used with opening the Content Card or selecting an item to rotate around.
Pan	Drag with the right mouse button	Pans the model in all directions.
Zoom	Scroll the mouse wheel	Zooms the model in and out.
Undo		The application automatically saves the camera position every time a user performs certain actions, such as rotating or panning the model. This action steps back through previous camera positions.
Redo		The application automatically saves the camera position every time a user performs certain actions, such as rotating or panning the model. This action steps forward through saved camera positions.

Name	Action/Button	Description
Reset		Resets the model to its initial load state.
Rotate	  Select the button, then drag with the left mouse button	Rotate navigation mode (default). When an item is selected, the view will orbit around the selected item. When no item is selected and the cursor is over a model element, the view will orbit around the initial cursor position. When no item is selected and the cursor is not over a model element, the view will orbit around the centre of the model's bounding box.
Fly	  Select the button, then drag with the left mouse button	Fly navigation mode. Move forwards through the model, with a fixed velocity, in the direction of the cursor.
Walk	  Select the button, then drag with the left mouse button	Walk navigation mode. Move forwards and backwards through the model at a fixed elevation, using the cursor to steer left and right. Velocity is determined by how far the cursor is dragged up/down the screen. Best used after teleporting to a position in the model.
Clip		This tool is only active when an item is selected. The Clip tool isolates the selected element by creating a 6-plane clipping box around it. The sides of the clipping box can be dragged to modify the clipping volume. When the Clip tool is active, a Hide button  is

Name	Action/Button	Description
		<p>displayed, allowing the visibility of the clipping box to be toggled on or off.</p> 
Section		<p>The Section tool takes a 3-plane slice out of the model. Each plane can be selected and dragged to change the position of the sections. Each of the 3 planes is notionally infinite in size.</p> <p>When the Section tool is active, a</p>  <p>Hide button is displayed, allowing the visibility of the section planes to be toggled on or off.</p> 
Measure		<p>The Measure tool displays the distance between selected points in the model.</p> <p>When active, a side bar menu</p>

Name	Action/Button	Description
		<p>appears providing access to the following measure tools:</p>  <p><b>Point to Point.</b> This is the default mode. It displays the distance between two consecutively chosen points in the model.</p>   <p><b>Path.</b> A continuous string of measurements. It displays the distance between each consecutively chosen point in the model as well as a total for the complete path.</p> <p>Disabling the measure tool by clicking the Measure button on the main menu will confirm the measurement.</p>   <p><b>Delete.</b> When this mode is active, select an existing measure line to remove it from the view.</p>  <p><b>Units.</b> Repeatedly select to cycle the units between metres (m), centimetres (cm), inches (in) and feet (ft). Changing the units</p>

Name	Action/Button	Description
		<p>only affect subsequent measurements.</p>  <p><b>Lock.</b> Allows measure lines to be optionally constrained to certain axis.</p> <ul style="list-style-type: none"> <li> <b>No lock.</b> Draw measure lines using all the axes.</li> <li> <b>Z lock.</b> Draw measure lines only on the Z-axis.</li> <li> <b>XY lock</b> - Draw measure lines only on the XY plane.</li> </ul>  <p><b>Delete All.</b> Removes all measurements from the view. When using the Measure tool rotating the model is disabled.</p>
Hide & Isolate		<p>The Hide &amp; Isolate tool opens a side menu giving control over the visibility of objects in the scene.</p>  <p><b>Hide.</b> Removes the currently selected objects from the scene.</p>  <p><b>Isolate.</b> Removes all</p>

Name	Action/Button	Description
		elements except the currently selected objects from the scene.   <b>Show All.</b> Redisplays all previously hidden objects.
Views		The Views tool displays a popup menu giving access to tools that affect the appearance of the model in the display.  <b>X-Ray:</b> Turn X-Ray mode on/off. Turning on makes the model translucent, so highlighted objects become more visible.  <b>Shadows:</b> Turn Shadows on/off. Turning off shadows can help make dark areas of the model more visible.  <b>Insulation&amp;Ob:</b> Toggles the visibility of any insulation and obstruction volumes in the model. This only applies to AVEVA E3D models that contain INSU or OBST elements.
Teleport	  Drag the icon with the left mouse button	When dropped over the model, the view teleports to that position 1.8m above the surface.
Collapse		Collapses the toolbar.
Expand		Expands the toolbar.

You can use the following touch actions when viewing 3D models:

Name	Action	Description
Select	Tap with one finger	Selects an item in the model.
Zoom	Pinch in and out	Draw fingers together to zoom out, draw fingers apart to zoom in.
Rotate	 Tap the button, then drag with one finger	Rotate navigation mode (default). Drag finger over the model to orbit around a selected item.
Fly	 Tap the button, then drag with one finger	Fly navigation mode. Move forwards through the model, with a fixed velocity, in the direction of the finger contact.
Walk	 Tap the button, then drag with one finger	Walk navigation mode. Move forwards and backwards through the model at a fixed elevation, using the finger contact to steer left and right. Velocity is determined by how far the finger contact is dragged up/down the screen. Best used after teleporting to a position in the model.
Teleport	 Drag the icon with one finger	Release the teleport icon over the model, the view teleports to that position 1.8m above the surface.

**Note:** Touch capability is not supported using AIM-hybrid with AIM 5.1.12. It will be supported at subsequent releases.

## Visual Reporting

Visual Reporting enables you to implement visual changes to your search results, comprising of 3D Model components.

It enables you to:

- Categorize 3D Model components, altering its colours and transparency levels.
- Save the changes after adding description, enabling quick identification of those components later.

## Applying Visual Changes to Search Results

With default permissions, you can apply visual changes to the search results, but the **Save** button is only enabled if you have a role with appropriate rights granted by your System Administrator.

To apply visual changes to search results:

1. In the *3D Model View* area, select the  Tools menu, and then select Visual Reporting.  
The **Visual Reporting** pane opens.
2. In the drop-down box, select the arrow to select the Visual Report.  
The Searches saved under the selected Visual Report appears as a list.
3. In the Colour box, select the arrow to select the colour, and then select Set Colour.
4. In the Transparency box, select the arrow to select the transparency rate.
5. Select the way that objects which are not satisfied by any of the search criteria are shown:
  6. **Show All** – objects are opaque.
  7. **X-ray Mode** – objects are translucent.
  8. **Isolate Results** – objects are removed from the view.
9. Select Run.

The visual changes are applied to the 3D Model components in that saved search.

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**Note:** If the search criteria used in a saved search finds more results than the limits configured under:

**Settings Panel > Site > General > Visual Reports (Max list items for Visual Reports)** (the default limit is set as 25000), a warning message appears. If this happens, consider changing this setting; but be careful to not exceed the combined performance of the system, the hardware and the network latency.

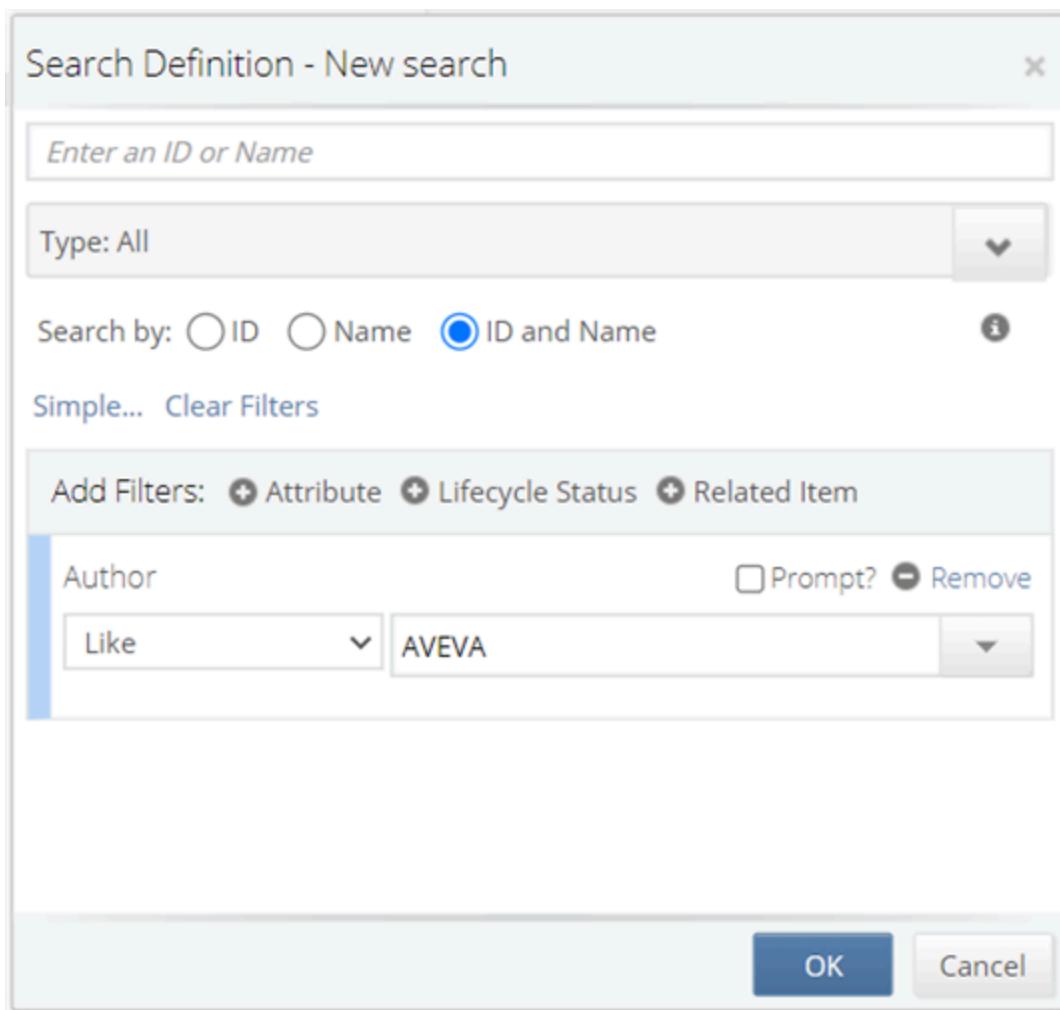
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## Adding New Search to a Visual Report

To add new search to a Visual Report:

1. In the Visual Reporting drop-down box, select the arrow to select a Visual Report.
2. Select  **Add New Search**.  
The newly added search appears.
3. Select **New Search**.

The following **Search Definition - New search** window appears (an example attribute has been added):

**Notes:**

- If you select the **Prompt?** check box under the **Add Filters:** section, a text box is displayed where you can enter a new label for the search criteria.
  - In *Simple Search* mode, for each search criteria that has been marked as **Prompt?**, you are prompted to enter the value for the criteria. Any search criteria that has not been marked as **Prompt?** is hidden.
  - By default, Search Definitions of Visual Reports open in *Simple Search* mode.
4. Select **OK**.

**Removing Searches from a Visual Report**

To remove searches from a Visual Report:

1. In the Visual Reporting drop-down box, select the arrow to select a Visual Report.
2. To remove all the searches under a Visual Report, select **Remove All**.
3. To remove the searches one at a time, select **-** at the right-end of each search name.

**Saving a Visual Report**

You must have appropriate rights for saving a Visual Report. If not, the **Save** button will not be available in the

Visual Reporting pane.

To save a Visual Report:

1. In the Visual Reporting drop-down box, select the arrow and select New Visual Report.
2. If you want to create new searches to implement the new Visual Report, select  Add New Search.
3. To apply visual changes to the searches, select the colour and transparency rate, and then select **Apply**.
4. Select **Save**.

**Note:** The Save button will be available, only if you have the rights granted by your System Administrator.

The Save Visual Report Definition window opens.

5. Enter a unique identifier for the new Visual Report in the ID box, a Name and Description, and then select Save.
6. If you do not want to continue saving the new Visual Report, select Cancel.
7. To view the newly created Visual Report, select the arrow in the Visual Reporting drop-down box.

## View 3D Models using VizStream

Selecting a document from a 3D Models document folder enables you to view three-dimensional digital simulations (3D Models) of engineering documents in the Document View. You can change the view mode from

Document View to Summary View, using the  View option. The following actions enable you multi-dimensional viewing of a 3D Model, adjusting its size:

- Rotating the mouse wheel forward lets you to zoom in (enlarge) and view the 3D Model.
- By rotating the mouse wheel backward, you can zoom out (shrink) the model.
- To view the 3D Model revolving it in a circular or elliptical motion, select in any area of the model, and then

move  from a selected point .

## General 3D Viewing

### Navigate in the 3D Model

The *Navigation* menu in the 3D Model Document View provides you with options to move around the 3D Model, and view it from multiple dimensions.

It enables you to focus on any particular tag constituting a 3D Model item.

Use this Mode	To
 Fly	Move the model at a faster pace in any direction.
 Look	Rotate the viewing dimensions of a model, so that you can view it from different angles.
 Orbit Point	Revolve around the mouse-down cursor position.

Use this Mode	To
 Orbit Selected	Revolve around the selected item(s).
 Pan	Move the model anywhere inside the <i>Document Viewing</i> area.
 Slide	Slowly move the model as if through a perpendicular line.  <b>Note:</b> This mode moves the model in the opposite direction of the mouse pointer movement.
 Walk	Slowly move the model forward and backward.  <b>Note:</b> Selecting the mouse and moving vertically upward magnifies the model, and moving downward reduces the model size.
 Zoom	Magnify the model size, by selecting the mouse and moving upward.  Reduce the model size, by selecting the mouse and moving downward.

## Make View Selections

The **Selections** menu at the bottom-left of a *3D Model Document Viewing* area provides you with the following features:

Click	To
<b>Select</b>	Choose a specific tag in a 3D Model.
<b>View Selection</b>	View a selected tag in a 3D Model in the following dimensions: <ul style="list-style-type: none"> <li>• Front View</li> <li>• Back View</li> <li>• Right View</li> <li>• Left View</li> <li>• Top View</li> <li>• Bottom View</li> </ul>
<b>Zoom to Selection</b>	Zoom in (magnify), and view a selected tag.

Click	To
<b>Highlight</b>	Make a selected tag appear brighter and stand apart from other tags in a 3D Model.
<b>Isolate</b>	Separate out a tag, and view it as a stand-alone object.
<b>Isolate Parent</b>	Isolate the parent tag of the currently isolated tag.
<b>Make Translucent</b>	Change the appearance of a selected tag, to view it as a transparent object.
<b>Add to</b>	Add a selected tag in a 3D Model to the Set/Basket.
<b>Select Parent</b>	Highlight and view the parent tag of a selected tag in a 3D Model.
<b>Hide</b>	Hide a selected tag from the 3D Model.
<b>Show</b>	Restore a tag in a 3D Model, hidden using the Hide feature.

### Selecting a Tag to View

To select a tag to view:

1. In the bottom-left of the *Document View* area, select **Selection**, and then select  **Select**.
2. Go to the 3D Model, and select a tag.  
The tag is selected.

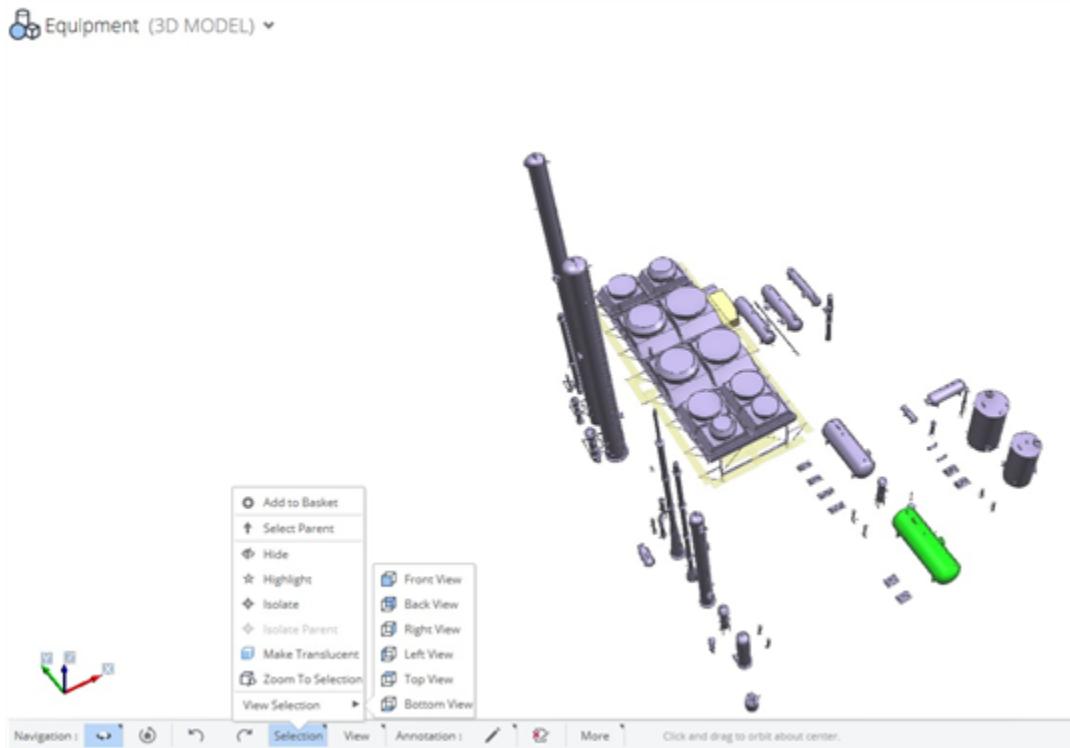
### Viewing from Various Dimensions

The *View Selection* modes enable you to view a selected tag in a 3D Model in the following dimensions:

- Front View
- Back View
- Right View
- Left View
- Top View
- Bottom View

To view from various dimensions:

1. In the 3D Model, select a tag.
2. In the bottom-left of the *Document View* area, select **Selection**, and then **View Selection**.  
The view selection modes are displayed.



3. Select the view mode in which you want the model to be displayed.  
The model is displayed in the selected mode.

### Zooming a Selection

The *Zoom to Selection* feature enables you to zoom in (magnify) and view a selected tag.

To zoom a selection:

1. In the 3D Model, select a tag.
2. In the bottom-left of the *Document View* area, select **Selection**, and then select **Zoom to Selection**.  
The selected tag zooms in.

### Highlighting a Selection

The *Highlight* feature enables a selected tag to appear brighter and stand apart from other tags in a 3D Model.

To highlight a selection:

1. In the bottom-left of the *Document View* area, select **Selection**, and then select **Highlight**.
2. Go to the 3D Model, and select a tag.  
The tag is highlighted.

### Isolating a Selected Tag

The *Isolate* feature enables you to separate out a tag, and view it as a stand-alone object.

To isolate a selected tag:

1. In the 3D Model, select a tag.
2. In the bottom-left of the Document View area, click Selection, and then select Isolate.  
The selected Tag appears isolated, with rest of the 3D Model hidden.

### Isolating the Parent Tag

The *Isolate Parent* feature enables you to separate out the parent tag of an isolated item.

To isolate the parent tag of an isolated item:

1. In the 3D Model, select a tag.
2. In the bottom-left of the Document View area, click Selection, and then select Isolate.
3. Select Isolate Parent.

The parent tag of the isolated item appears isolated, with rest of the 3D Model hidden.

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**Note:** The selected tag must be isolated before isolating its parent tag.

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### Making a Selection Translucent

The *Make Translucent* feature enables you to view a selected tag as a transparent object.

To make a selection transparent:

1. In the 3D Model, select a tag.
2. In the bottom-left of the Document View area, click **Selection**, and then select **Make Translucent**.  
The selected tag appears as transparent.

### Adding a Selected Tag to a Set/Basket

Using the Add to feature, you can add a selected tag in a 3D Model to the Basket.

To add a selected tag to a Set/Basket:

1. In the 3D Model, select a tag.
2. In the bottom-left of the Document View area, click **Selection**, and then select **Add to**.  
The Add to window opens.
3. To add to **Basket**, select **Basket**.
4. To add to a **Set**, select the arrow in the drop-down box to select a set type, and then select a **Set**.

### Viewing a Selected Tag's Parent

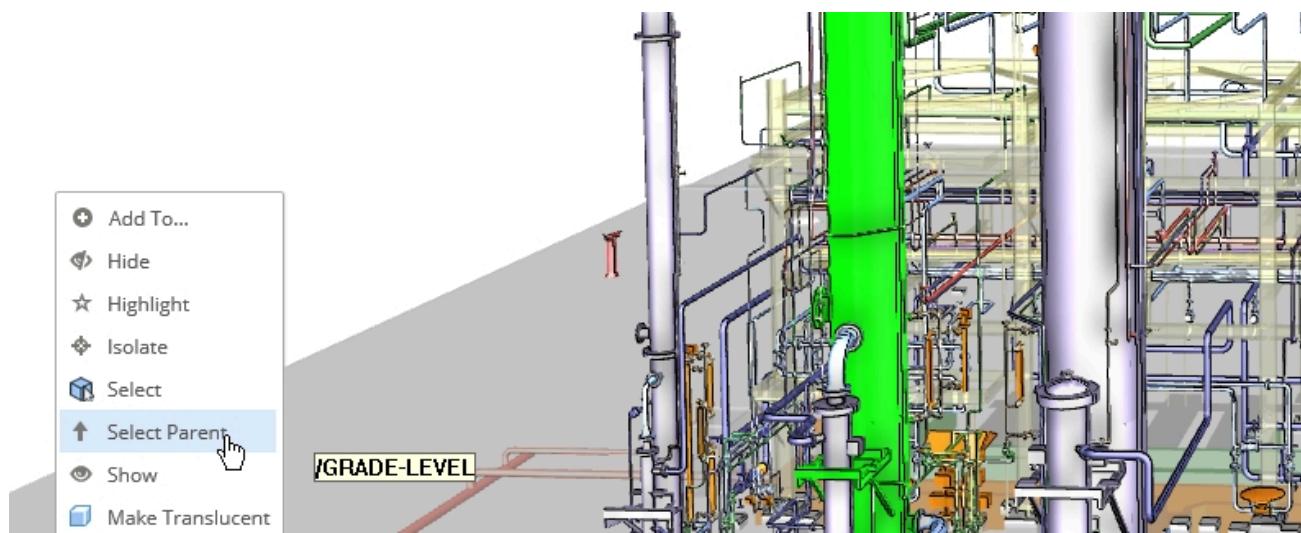
The Select Parent feature enables you to:

- View the parent of a selected tag in a 3D Model, if that tag has a parent.
- If the selected tag does not have any parent, no other tags will be highlighted.

To view a selected tag's parent:

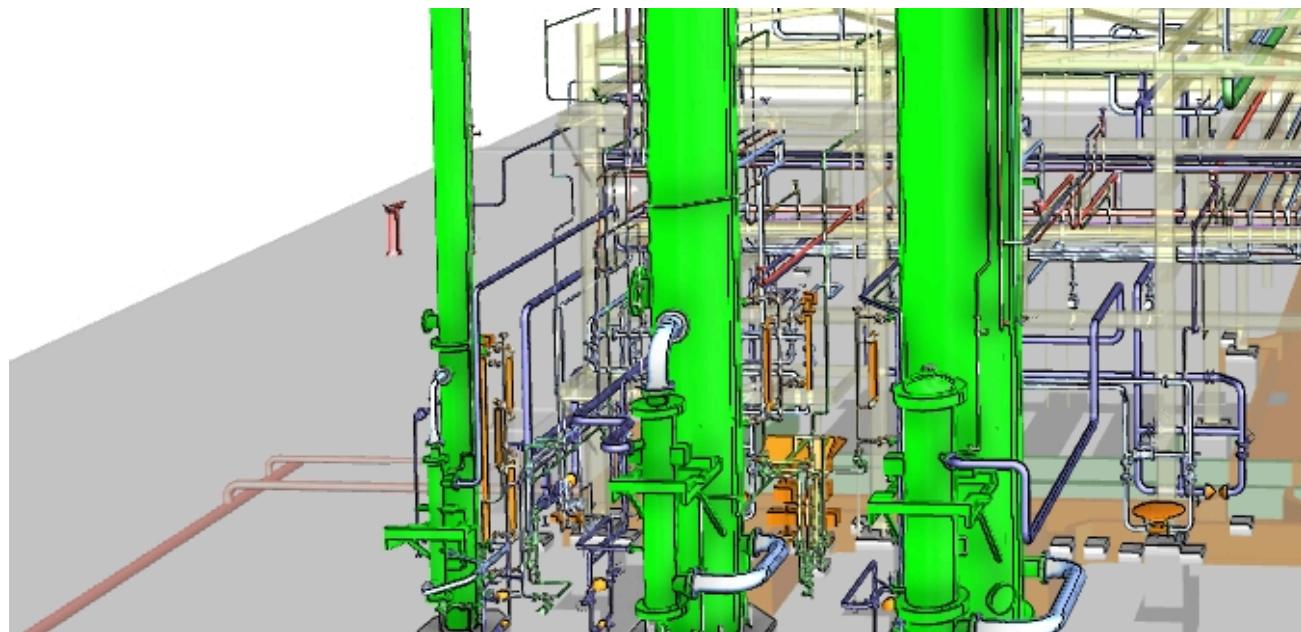
1. In the 3D Model, select a tag.
2. In the bottom-left of the Document View area, click **Selection**, and then click **Select Parent**.

The selected tag appears as highlighted.



3. In the bottom-left of the **Document View** area, click **Selection**, and then select **Select Parent**.

The parent of the selected tag is highlighted.



**Note:** If the selected tag has no parent tags associated with it, nothing will be highlighted.

## Hiding a Tag

Using the Hide feature, you can hide a selected tag from the 3D Model.

To hide a tag:

1. In the 3D Model, select a tag.
2. In the bottom-left of the **Document View** area, click **Selection**, and then select **Hide**.

The selected tag is hidden from view.

### Unhiding a Tag

The Show feature enables you to restore a tag in a 3D Model that is hidden using the Hide feature.

To unhide a tag:

1. In the 3D Model, select a hidden tag.
2. In the bottom-left of the **Document View** area, click **Selection**, and then select **Show**.  
The hidden tag reappears.

## Do More with 3D Models

Selecting the **More...** option at the bottom-left of the *3D Model Document View* enables you to do the following:

Action	Description
Copy the image	Copies the image opened in the <i>Document View</i> , to the Windows clipboard.
Save as Tiff	Save the image to your local machine in the Tiff file format.
Clipping	Displays the tools to crop areas of the image, allowing you to observe it closely. Clicking the following icons, and then selecting any part of the image enables you to do the following:  Create Clip Plane  Remove Clip Plane  Rotate Clip Plane about Point  Slide Clip Plane along Normal  Modify Clip Box  Remove Clip Box

Action	Description
Dimensioning	<p>Displays the tools to measure the components of the image or the distance between selected points.</p> <p>Selecting the following icons, and then selecting any two points in the image enables you to do the following:</p> <ul style="list-style-type: none"> <li> Measure Geometry</li> <li> Measure Angle of Arc</li> <li> Measure Face Perpendicular Distance</li> <li> Measure Point to Point Distance</li> <li> 2D Projection Distance Markup</li> <li> Shortest Distance Dimension</li> <li> Along Axis Dimension</li> <li> Dimension XYZ Mode</li> </ul>
Remove all Modifications	Clears off all the mark-ups and highlights, so that you can view the image in its original form.
Allow Free Rotation	Enables you to freely move the image in a circular motion.
Select Significant Elements	Enables you to highlight and view elements of importance for you in a 3D Model.
Options	<p>Opens a window with options to set Appearance, Units of measurement, Performance, and Lighting for 3D Models.</p> <p><b>Note:</b> The Lighting option is not available in WebGL</p>

Action	Description
	Viewer.
Network Status	Displays network connection status logs, for traffic to various ports of AVEVA Asset Information Management Dashboard Server.
About	Displays information about the VizStream Viewer that renders 3D Model display.
Help	Opens a Web Help page for 3D Model.
View Model	Allows viewing the model in the following dimensions: <ul style="list-style-type: none"> <li>• Front View</li> <li>• Back View</li> <li>• Right View</li> <li>• Left View</li> <li>• Top View</li> <li>• Bottom View</li> <li>• Isometric View (All the three dimensions viewable at full scale, so that all the three lines parallel to the three major axes are measurable)</li> </ul>

## Undo/Redo/Revert Actions with 3D Models

The following table depicts the features to undo/redo/reverse actions performed on a 3D Model:

To	Select this Icon
Undo the actions	
Redo the actions	
Revert to original	

## VizStream Viewer Shortcuts

While using the VizStream viewer, you can use the following shortcuts for suitable browsers:

Shortcuts = What they mean	Edge in IE Mode (ActiveX)	Edge (WebGL)	Chrome (WebGL)
H = Home	Yes	Yes	Yes
I = Isolate	N/A	Yes	Yes
X = Zoom to Model Extents	Yes	Yes	Yes
F = Fly Mode	Yes	Yes	Yes
L = Look Mode	Yes	Yes	Yes
O = Orbit Mode	Yes	Yes	Yes
W = Walk Mode	Yes	Yes	Yes
C = Circle Annotation	Yes	Yes	Yes
E = Highlight Annotation	N/A	Yes	Yes
T = Rectangle Annotation	Yes	Yes	Yes
M = Measure Geometry	N/A	Yes	Yes

## Visual Reporting

Select the  Tools menu in the 3D Model viewing area, then select Visual Reporting.

Visual Reporting enables you to implement visual changes to your search results, comprising of 3D Model components.

It allows you to:

- Categorize 3D Model components, altering its colours and transparency levels.
- Save the changes after adding description, enabling quick identification of those components later.

### Applying Visual Changes to Search Results

By default, you are able to apply visual changes to the search results, but the *Save* button is enabled only if you have appropriate rights granted by your System Administrator.

To apply visual changes to search results:

1. In the *3D Model View* area, click the  Tools menu, and then select Visual Reporting.  
The **Visual Reporting** pane opens.
2. In the drop-down box, click the arrow to select the Visual Report.  
The Searches saved under the selected Visual Report appears as a list.
3. In the Colour box, click the arrow to select the colour, and then select Set Colour.
4. In the Transparency box, click the arrow to select the transparency rate.
5. Select Apply.

The visual changes are applied to the 3D Model components in that saved search.

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**Note:** If the search criteria used in a saved search finds more results than the limits configured under: **Settings Panel > Site > General > Visual Reports (Max list items for Visual Reports)** (the default limit is set as 25000), a warning message appears. If this happens, consider changing this setting; but be careful to not exceed the combined performance of the system, the hardware and the network latency.

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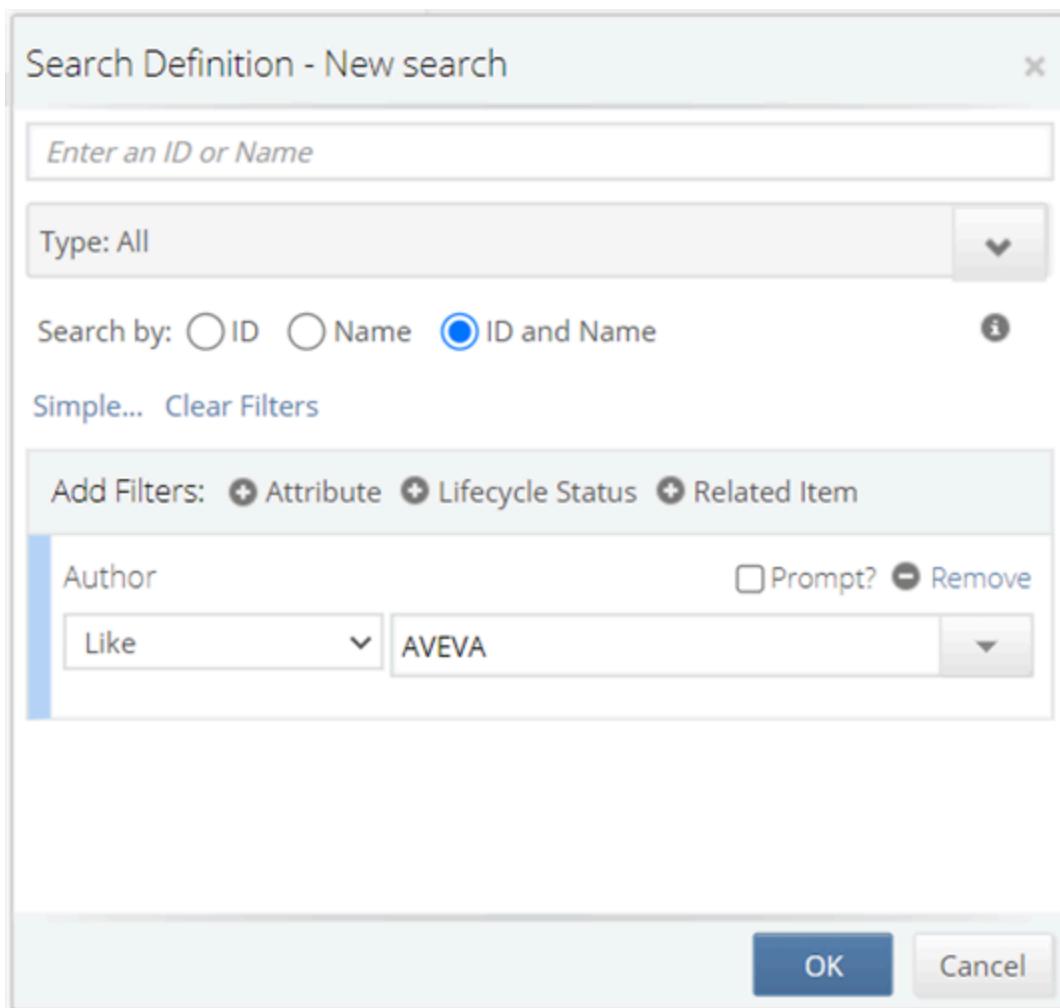
6. To isolate and view the changes for a particular saved search, select Isolate Results.

### Adding New Search to a Visual Report

To add new search to a Visual Report:

1. In the Visual Reporting drop-down box, click the arrow to select a Visual Report.
2. Select  Add New Search.  
The newly added search appears.
3. Select **New Search**.

The following **Search Definition - New search** window appears (an example attribute has been added):



**Note:** If you select the **Prompt?** check box under the **Add Filters:** section, a text box is displayed where you can enter a new label for the search criteria.

In *Simple Search* mode, for each search criteria that has been marked as **Prompt?**, you are prompted to enter the value for the criteria. Any search criteria that has not been marked as **Prompt?** is hidden.

By default, Search Definitions of Visual Reports open in *Simple Search* mode.

4. Select **OK**.

### Removing Searches from a Visual Report

To remove searches from a Visual Report:

1. In the Visual Reporting drop-down box, click the arrow to select a Visual Report.
2. To remove all the searches under a Visual Report, click **Remove All**.
3. To remove the searches one at a time, click **-** at the right-end of each search name.

### Saving a Visual Report

You must have appropriate rights for saving a Visual Report. If not, the **Save** button will not be available in the Visual Reporting pane.

To save a Visual Report:

1. In the Visual Reporting drop-down box, click the arrow and select New Visual Report.
2. If you want to create new searches to implement the new Visual Report, click  Add New Search.
3. To apply visual changes to the searches, select the colour and transparency rate, and then select Apply.
4. Select Save.

**Note:** The Save button will be available, only if you have the rights granted by your System Administrator.

The Save Visual Report Definition window opens.

5. Enter a unique identifier for the new Visual Report in the ID box, a Name and Description, and then select Save.
6. If you do not want to continue saving the new Visual Report, click Cancel.
7. To view the newly created Visual Report, click the arrow in the Visual Reporting drop-down box.

## Model Composition

Select the  Tools menu in the 3D Model viewing area, then select Model Composition.

A 3D Model is composed of a base model, and its constituent components represented by tags. You can use the Model Composition tool to:

- Dissect and view, any or all of the 3D Model components.
- Display only those model components that you select to view, hiding others.

You can view the model components in the following view modes:

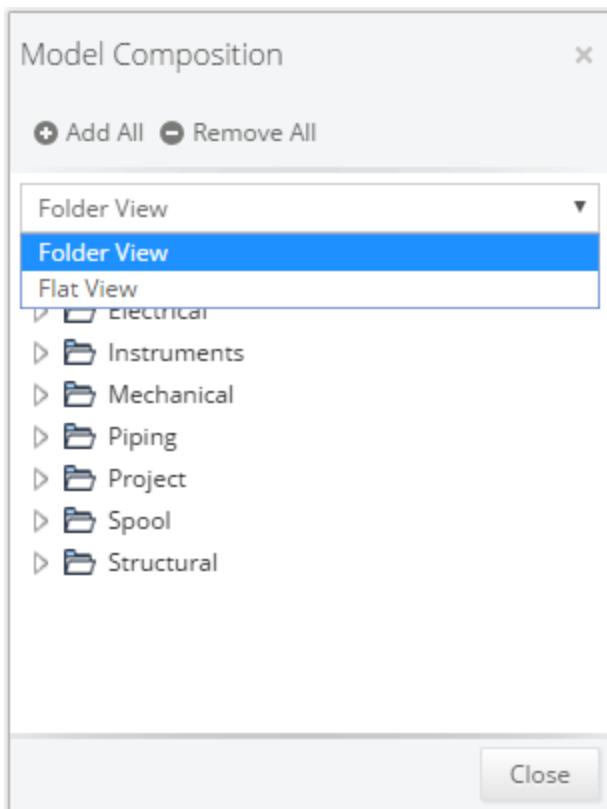
View	Description
Flat view	Displays a complete list of the constituent components of 3D Model.
Folder view	Displays 3D Model components folders in a tree hierarchy.

### Selecting Model Composition View

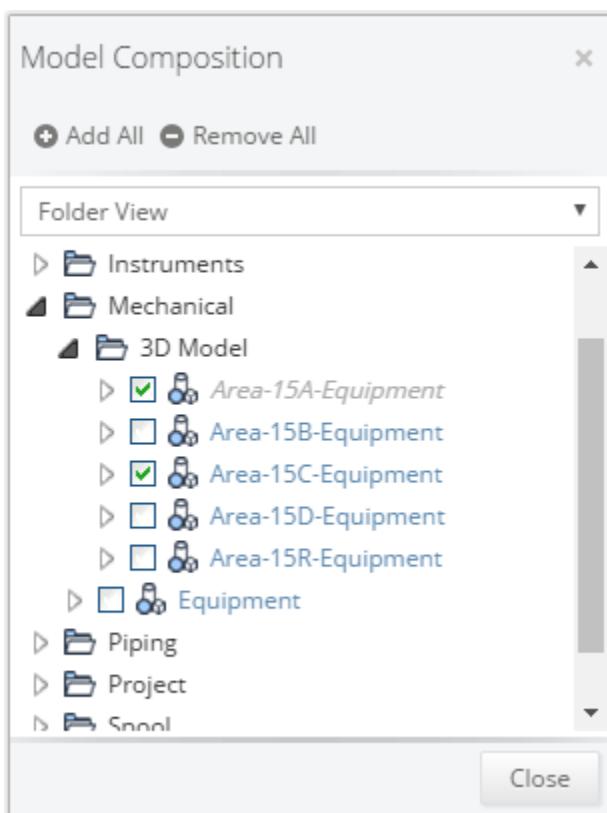
By default, the base model constituent of a 3D Model is always displayed, irrespective of the selections you make. The base model cannot be hidden by clearing the model component check box.

To select Model Composition view:

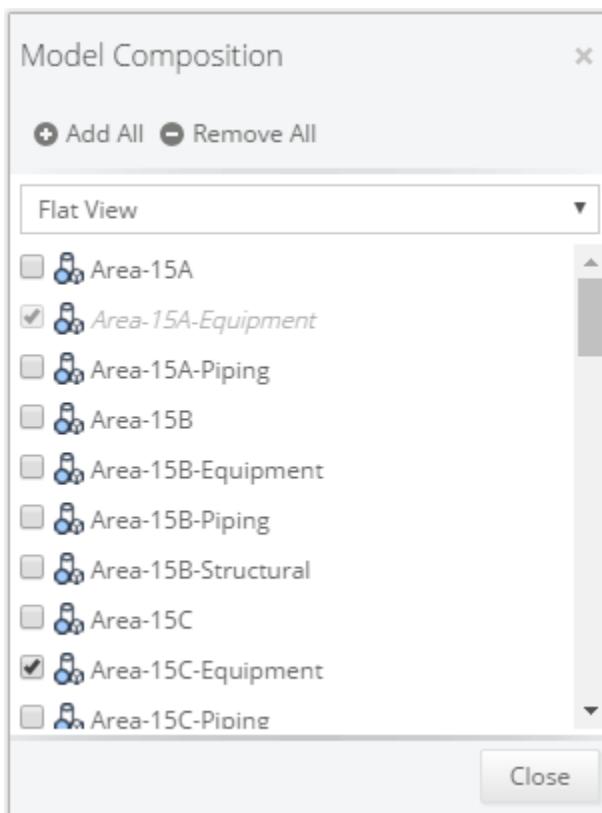
1. In the *3D Model View* area, click the  Tools menu, and then select **Model Composition**.  
The **Model Composition** pane opens.
2. In the drop-down box, click the arrow to select the view mode.



3. To view the 3D Model components categorized and organized in folders, select **Folder View**.  
The 3D Model components folders are displayed in a tree hierarchy.



4. Select the folder nodes to expand the tree.
  5. To view the all the 3D Model components as a list, select **Flat View**.
- A complete list of the constituent components of the 3D Model is displayed.



6. Do one of the following:
  - Select the model component check boxes, to display only those 3D Model constituents.
  - Select **+ Add All** to sort out all the model components (displays the complete model).
  - Select **- Remove All** to clear all the model component check boxes (displays only the base model).
7. To close the **Model Composition** pane, click at the top-right of the pane, or click the **Close** button.

## 3D Materials

Select the **Tools** menu in the 3D Model viewing area, then select 3D Materials.

The 3D Materials tool enables you to make changes to the visual properties of each element in a 3D Model.

---

**Note:** While importing the 3D Models, the names of the materials can be configured. For more information, see the 3D Materials Name Translation section in [Import Data](#).

The following table explains the features available in the 3D Materials tool:

Features	Description
Material	Represents the colour and translucency that can be applied to multiple elements in a 3D Model.
Colour	Indicates the colour of each 3D Material displayed. When you click the arrow in the box, a palette appears, using which you can change the colour of the 3D Material.
Show	Clearing the <b>Show</b> check box makes the material 100% invisible. Selecting the <b>Show</b> check box restores the colour and translucency of the 3D Material.
Translucency	Indicates the point on the scale, from transparent to opaque, of a 3D Material. By clicking the arrow in the box, you can change the translucency of the 3D Material. By default, the material is opaque (0% translucency).

## Player

Select the  Tools menu in the 3D Model viewing area, then select AVEVA Asset Information Management Player.

The AVEVA Asset Information Management Player enables you to have a simulated 3D-view of the project construction progress:

- Sequenced phase-by-phase in playback frames with customizable:
  - Actual and planned project start and end dates.
  - Activity
  - Tag
  - Progress Status
- Using animations with playback controls.

---

### Notes:

- Your System Administrator must install a separate license to enable AVEVA Asset Information Management Player. The player can be disabled, while configuring. If this feature is unavailable in your Dashboard, contact your System Administrator to enable it.
- AVEVA Asset Information Management Player is not recommended for use with WebGL.

## Applying Filters

To apply filters:

1. In the Planning Filters area, enter the criteria:

In the box for	Do this
Activity	Enter Activity ID.
Tag	Enter a tag ID or a part of the ID.
Status	Select the arrow, and select a construction progress state.  <b>Note:</b> The statuses available to select are configurable.
Filter By	Select the arrow, and select the criterion for construction progress dates.  <b>Note:</b> The criteria are configurable. For example, Planned/Actual start and end date.
From	Select  , and then select a start date based on the Filter By criterion chosen.
To	Select  , and then select an end date based on the Filter By criterion chosen.  <b>Note:</b> You can also enter the dates manually. However, if you enter the date in a wrong format, an alert message will be displayed while applying filters.

2. To retrieve the search results for the criteria you entered, select **Apply Filters**.

The number of search results appears to the left of the **Apply Filters** button.

---

**Note:** If the search criteria used in a saved search finds more results than the limits configured under **Settings Panel > Site > General > Player (Max list items for AVEVA Asset Information Management Player)** (the default limit is set as 25000), a warning message appears. If this happens, consider changing this setting; but be careful to not exceed the combined performance of the system, the hardware and the network latency.

3. To reset the criteria you entered, click Clear.
4. To view the search results, click the number of search results.
5. To view a search result in Summary View, click an item from the Activity column.

Filter Results				
6 items found, 0 tools found				
Activity	Tag	Start Date	Finish Date	Status
2100.2.1.2.4.1 RWP major equipment - D	E-9001	01/15/2012	01/20/2012	Complete
2100.2.1.2.4.1 RWP major equipment - E	E-9002	01/20/2012	01/25/2012	Late Not Started
2100.2.1.2.4.2 RWP minor equipment - E	R-9002	01/20/2012	01/25/2012	Late Not Started
2100.2.1.2.4.2 RWP minor equipment - E	R-9003	01/20/2012	01/25/2012	Late Not Started
2100.2.1.2.4.2 RWP minor equipment - E	R-9004	01/20/2012	01/25/2012	Late Not Started
2100.2.1.2.4.1 RWP major equipment - F	E-9003	01/25/2012	01/30/2012	Late In Progress

**OK**

## Using Playback Controls

After retrieving the search results using the *Apply Filters* feature, you can view the animation of the step-by-step construction progress using playback controls.

The following table represents the options that can be selected for playback:

If you select	Status calculation considers	Description
Standard mode	<p>Only Planned dates (static)</p> <p><b>Note:</b> By default, the player runs in the Standard mode.</p>	In this mode, AVEVA Asset Information Management Player determines the status of items using the value of an attribute on a dataset. This attribute is static, and its value is determined at some prior point, set as such in the EIWM that comprises the Dashboard data, and remains at this value until it is changed in the source application, a new export is performed, and the data is re-imported.
Dynamic mode	Both Actual and Planned dates	In this mode, AVEVA Asset Information Management Player dynamically calculates and assigns the status colour to an element based on the associated activity's planned/actual dates and the simulation date determined by the

If you select	Status calculation considers	Description
		current frame within the playback sequence.
Simulation	Only Planned dates	The Simulation check box will be enabled only if the Dynamic mode is selected.
Show colours	Colours configured for each status	

**Note:** Your System Administrator can configure the display name and colour for each construction progress state.

The following table represents an example configuration of status and colours for the Standard mode:

If	Status set to	Colour set to
Simulation date < Planned Start Date	Not started	BLUE
Simulation date >= Planned Start Date & (simulation date < the Actual Start Date    Actual Start Date is unset)	Late Not Started	RED
Simulation date >= Actual Start Date & simulation date <= Planned End Date & simulation date <= Actual End Date (if set)	In Progress	PURPLE
Simulation date >= Actual Start Date & simulation date > planned End Date & simulation date <= Actual End Date (if set)	Late In Progress	ORANGE
Simulation date > Actual End Date	Completed	GREEN

**Note:** In all the modes, the "Not started" configuration state will not display any model tags.

The following table represents an example configuration of status and colours for the Simulation mode:

If	Status set to	Colour set to
Simulation date < Planned Start Date	Not Started	BLUE
Simulation date >= Planned Start Date & simulation date <= Planned End Date	In Progress	PURPLE

If	Status set to	Colour set to
Simulation date > Planned End Date	Completed	GREEN

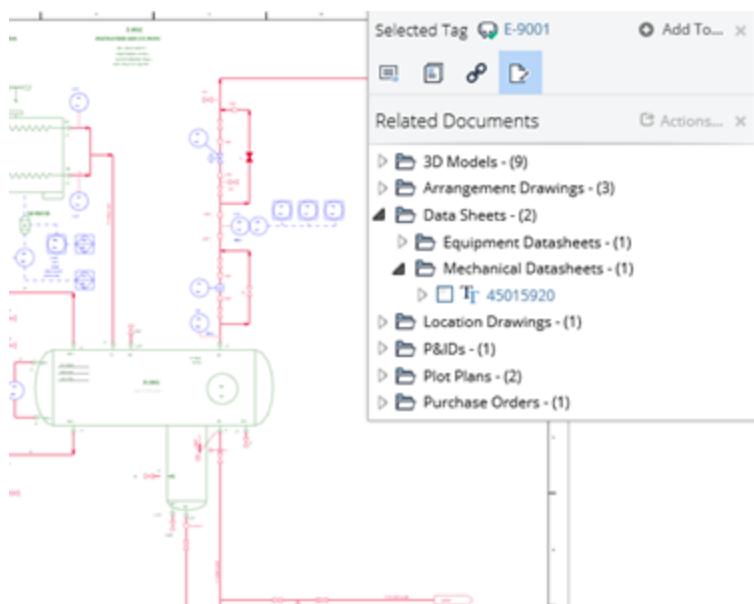
The following table represents the playback controls:

Use this feature	To
	Start the player.
	Pause the player, and retain the current view state. Selecting  again enables you to continue playing from the paused state.
	Go back to the previous frame.
	Move to the next frame.
	Turns on/off a <b>Replay</b> mode. If this mode is on, then clicking <b>Play</b> automatically replays the sequence when finished.
Interval	<p>Set the time interval for playing the frames.</p> <p><b>Note:</b> Enter only a positive numeric value.</p> <p>The time interval is calculated in milliseconds (ms). By default, interval is set to be 1000ms.</p>
	View the colour legend for construction progress status.

## Highlight Tag IDs from Related Items

You can highlight tag IDs via the **Related Items** panel in a Content Card for a selected item.

1. While viewing a P&ID, open a document by selecting it from **Selected Tag > Content Card > Related Items** tab.



A new tab opens in the Accusoft Viewer with the selected tag ID Content Card open and the tag ID highlighted in the document. All instances of the tag ID are highlighted throughout the document. Selecting on the highlighted tag ID pops up the selected tag Content Card if the tags to document associations have been processed.

2. Select on the results to navigate to the matching text in the document and see it highlighted.

PROCESS DATA SHEET			VESSEL	
			Page 1 of 3	Issue 1
			Prepared	PROCESS
			Checked	
			Approved	
			Date	11 January 2002
Project No.:	IPE	Tag No.:	E-9001	Rev.: 3
Client:	AVEVA Solutions	Application:	Separation	
Location:	Cambridge, England	Process Area:	DEETHANISER	
Document No.:		P & ID No.:	905675	
Plant:	IPE Sample			
1	Equipment Type	DEETHANISER		
2	Equipment Location	OUTDOORS		
3	Status	New		
4	Part of Package			
5	Mode of Operation	Continuous		
6	Jacket Required	Type	NO	
7	Internal Coil Required	Type	NO	
8	Vessel			Jacket
9	HC-STEAM			Internal Coil
10	Flammable	Explosive	YES	YES
11	Corrosive	Erosive	NO	NO
12	Toxic		NO	
13	Density		20	kg/m³
14	Capacity (Gross)		100	m³

## Expand Tags and Interpolate Them

Many drawings (2D) contain tag references that use a shorthand notation to reference more than one object, for example J-9002A/B. AVEVA Gateways provides support to split labels with the information on all referenced

items that are embedded within the SVG (drawing).

The following example shows an image of how the screen looks when you select on a split label in the **2D/3D File Viewer**:



Using the returned list of matches, a pop-up list of real objects is presented, from which you can view the details of the selected tag in the item's Content Card.

In the following example, selecting on R-9003 from the pop-up dialog in the File Viewer updates the Content Card accordingly:

ID	R-9003
Name	HORIZONTAL VESSEL
Type ID	HEAT TRANSFER
Lifecycle Statuses	
Aliases	/R-9002 /R-9003

## Configure View Selection

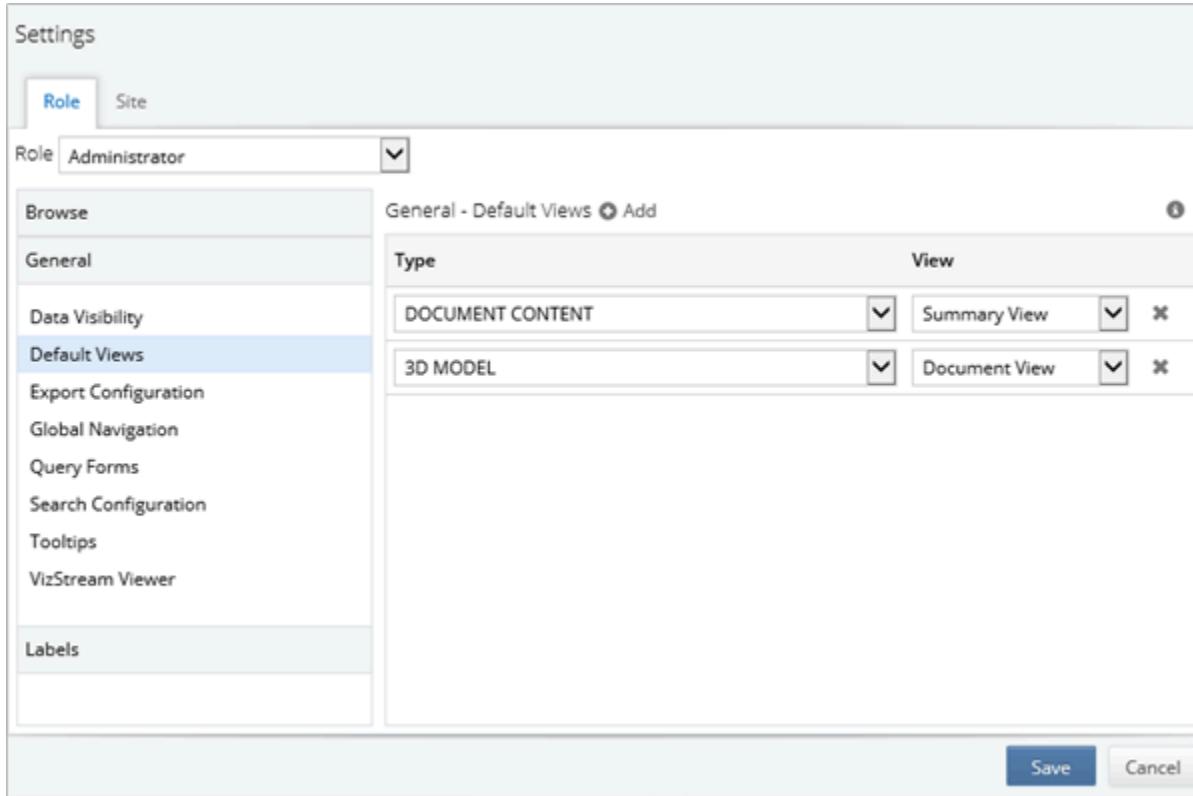
You can configure the view selection in Dashboard from **Settings > Role > General**.

## Default Views

In Dashboard, when an item is selected (for example, in the Browse tree view), a tab is opened to display information about that item.

The **Default Views** dialog enables you to specify a **View** that is used by default when the tab opens. You can specify the initial **View** based on the Type of the item being selected.

In the screenshot below, the second setting specifies that if an item of type 3D MODEL is selected, then the tab opens in **Document View**. If the item type is not present in the **Settings**, but its parent type is present, then the setting for the parent type is used.



Using this example, imagine that the 3D MODEL row has been removed. If an item of type 3D MODEL is subsequently selected, then the Summary View is displayed, because DOCUMENT CONTENT is the parent type of 3D MODEL.

**Note:** Sometimes it is not possible to use the configured View for viewing information about a selected item. For example, the **Document View** is designed to display a File of an item. If the selected item has no Files, then the **Document View** is not considered for viewing information for the item, even though the configuration settings say **Document View** should be used. In such cases, **Summary View** is displayed.

## Use Markup to Collaborate

The **Markup** functionality enables you to collaborate through annotating the 2D and 3D Model documents, displayed in:

- AVEVA Asset Information Management File Viewer
- Accusoft Viewer

### Understand User Rights for Markup

As a default user, you can:

- Mark up 2D and 3D Model documents, using the Annotation tools.
- Select and load the Markups created and saved by the other users.

However, you must have the appropriate rights granted by a user with administrative privileges, to execute the following actions:

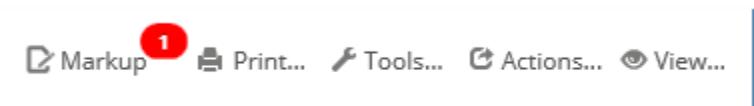
To do this action	You must have this right
Create a Markup	CreateMarkup
Save a Markup	
Edit your own Markup	
Delete your own Markup	
Edit other users' Markup	EditMarkup
Export a Markup	ExportMarkup

**Note:** For more information on User Access, see [Set Up User Access](#).

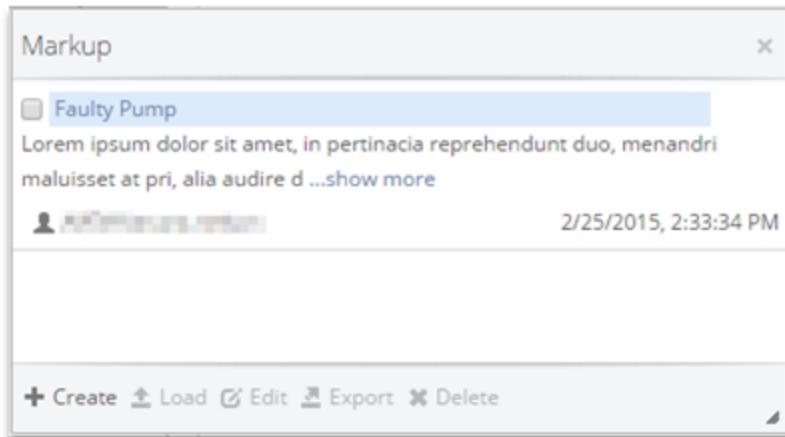
## View the Markups

As a default user, you can view the Markup created and saved by the other users.

- The number of saved Markups pertaining to an opened document appears as a superscript of the Markup icon in a red circle.



- Selecting the Markup icon opens the Markup panel, listing the name and description of all the saved Markups, with the saved date and time.



- Selecting a Markup's name displays that Markup on the opened document.

**Important:** This action will clear any currently visible annotations in the file being viewed.

## Create, Edit and Delete Markups

You must have the CreateMarkup right to create, edit or delete your Markups in the documents. If not, these command buttons will be unavailable.

To create, edit and delete Markups:

1. Add a Markup in the document.
2. Select the Markup icon.  
The Markup panel opens.
3. To create a Markup, click the Create icon.
4. In the New Markup panel, enter the Name and Description, and then select Save.

After the details are saved, the message "[Markup has been created](#)" appears at the bottom-right corner. The new Markup Name, Description, the Saved Date and Time, appears in the Markup Panel. Also, the number in the red circle appearing as a superscript of the Markup icon, increases with every new Markup creation.

5. To edit a Markup, select the check box next to the Markup you want to edit.  
The Edit button is enabled.
6. Select the Edit icon.

When a Markup is selected for editing, its annotations are loaded into the viewer, replacing any existing annotations.

7. In the Edit Markup Panel, make the updates, and then select Save.
8. If you do not want to save the edits, click Cancel.
9. To delete a Markup, select the check box next to the Markup you want to delete.

10. Select the Delete icon.  
A confirmation message displaying, the number of Markups you are deleting and if you would wish to continue, appears.
11. To confirm the deletion, click OK. If not, click Cancel.

Upon your confirmation to delete, a message "Markup has been deleted" appears at the bottom-right corner.

## View the Markup Descriptions

The Markup description can be expanded or collapsed as follows:

- If the Markup description is more than 100 characters, selecting the **...show more** link expands the remaining text visibility.
- Selecting the **show less...** link collapses the expanded description.

## Resize the Markup Panel

To resize the Markup Panel:

1. Rest the mouse pointer on the panel border.
  2. When the pointer becomes a double-headed arrow, drag the pointer left or right to move the split line.
- The panel height or width is resized, providing a larger area for *document viewing*.

## Preserve the Markup State

The state of the Markup Panel and the annotations (saved or otherwise) in a document model are preserved, while navigating around AVEVA Asset *Information Management*. Therefore, you can add some annotations to a document, navigate away from the page to view a different document, and then navigate back to the File Viewer to finalize your Markup, without losing your work. The state of the Markup in an open document is persisted, until the document's tab is closed.

## Relocate and Resize Markups

To relocate and resize Markups:

1. To move a Markup to another area in the drawing, select the Marked up shape, and then drag it.
2. To increase or decrease the Markup size, select the Markup, and then rest the mouse pointer on the border.
3. When the pointer becomes a double-headed arrow, drag the pointer inward or outward.

## Load Markups

You can load the Markups saved by you or the other users, into an opened document.

To load Markups:

1. Select the Markup icon.  
The Markup panel opens, displaying all the saved Markups relevant to the opened document.
2. Select the check boxes next to the Markups you want to load.
3. At the bottom of the Markup panel, select the Load icon.  
All the selected Markups appear in the opened document.

**Important:** This action will clear all the other Markups under viewing, and will show only the Markups you selected to load.

## Create Default Views

Default Views can only be set for 3D Models. A Default View is based on a single Markup. After you set a Default View, it will be displayed instead of the original view of the file.

To create a Default View:

1. Open the **Markup** panel on the 3D View.
2. Choose an existing Markup or create a new Markup, and then select the check box for the desired Markup.
3. Select the **Set as Default** link located on the **Markup** panel footer.

To remove a Default View:

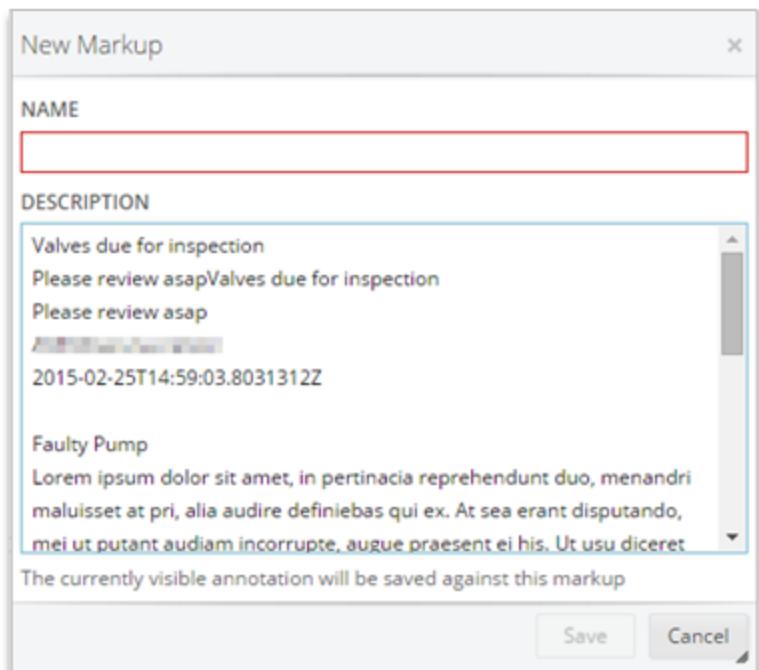
1. Open the **Markup** panel on the 3D View.
2. Select the **Remove Default View** icon against the default Markup.

## Merge Markups

**Important:** You cannot merge a combination of a 2D and 3D Markups. The combination you select to merge should consist either 2D Markups only or 3D Markups only.

To merge Markups:

1. Select the Markup icon.  
The Markup panel opens, displaying all the saved Markups relevant to the opened document.
  2. Select the check boxes next to the Markups you want to load.
  3. At the bottom of the Markup panel, select the Load icon.  
All the selected Markups appear in the opened document.
- 
- Important:** This action will clear all the other Markups under viewing, and will show only the Markups you selected to load.
4. Create a new Markup from the merged result.  
The New Markup panel opens, displaying the merged result of all the loaded Markups.



5. To save the merged Markup, select Save. If not, select Cancel.

## Distribute Markup URLs

Each Markup is identified by a unique URL in your browser's address bar. You can share this URL with the other users, who can directly navigate to that document's Markup. Sharing the Markup URLs enables instantaneous collaboration.

**Note:** If you are a default user without the rights assigned to create, edit, save or export Markups, you can add the Markups and send the URL to the other users.

For example, the following URL enables you to directly navigate to the Markup with the ID, VNET System|Markup|MARKUP\_00009, added for the item with the ID, IPE|C905677.



## Export Markups

To export Markups:

1. Select the Markup icon.

The Markup panel opens, displaying all the saved Markups relevant to the opened document.

2. Select the check boxes next to the Markups you want to Export.

3. At the bottom of the Markup panel, select the Load icon.

All the selected Markups appear in the opened document.

**Important:** This action will clear all the other Markups under viewing, and will show only the Markups you selected to load.

4. Select the Export icon.

The Cover Sheet Panel opens.

- In the Cover sheet definition box, click the arrow to select a Cover Sheet.

---

**Note:** The Cover Sheets available in the drop-down list are determined by your System Administrator. A generic Cover Sheet is available by default. However, your System Administrator can create additional custom Cover Sheets.

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- If you do not want a Cover Sheet, select No cover sheet from the drop-down list.
- Select OK.
- If you do not want to export, select Cancel.

## Mark up Documents in File Viewer

You can mark up documents opened in File Viewer, using the Annotation tools at the bottom-left corner of the File Viewer.

### Mark up 3D Models using VizStream

The Annotation tools at the bottom-left of the 3D File Viewer, enables you to mark up the 3D Model documents.



You can execute the following action, while annotating a 3D Model:

Icon	Description	Select this Icon to
1	Freehand Annotation	Draw freehand Markup.
2	Undo Annotation	Remove the last Markup you added in the drawing.
3	Redo Annotation	Retain back in place, the Markup last removed using an Undo action.
4	2D Annotation Plane View	Reorient the view to show 2D Markups.
5	Remove all annotations	Clears all the currently added Markups in an opened document.

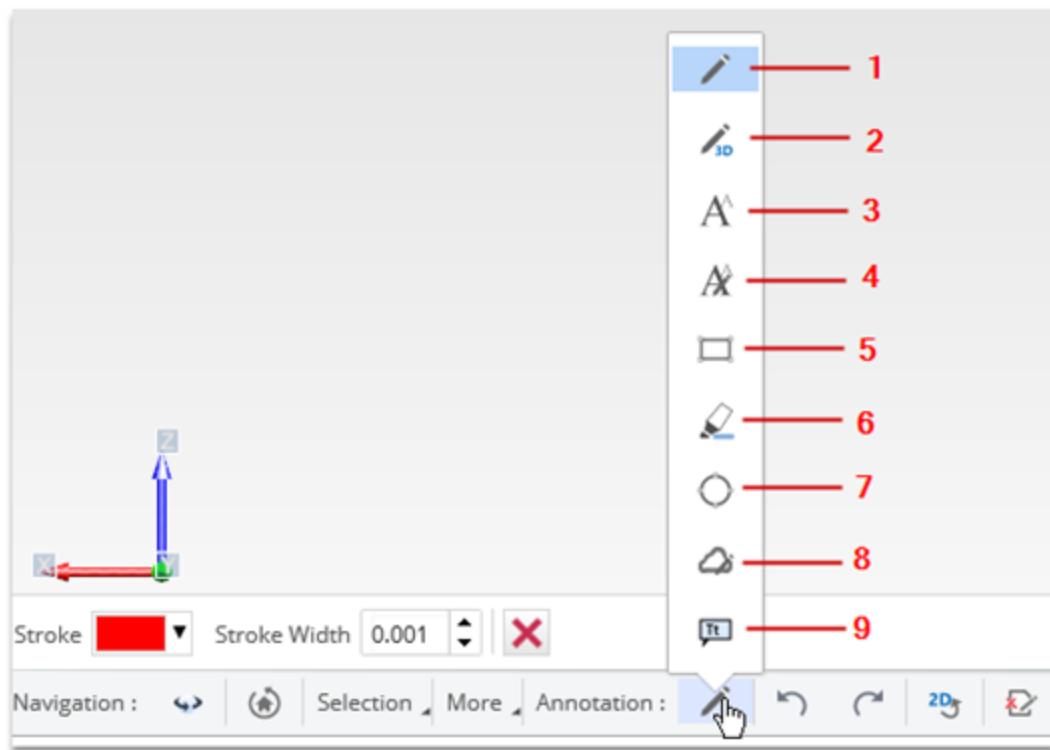
To mark up 3D Models:

- Select the Freehand Annotation icon.

---

**Note:** The freehand pencil icon is the default annotation tool. However, from the expanded Annotation toolbar, if you click any Annotation tool, that icon is displayed in the place of the freehand pencil.

---



2. From the expanded Annotation toolbar, select any of the following as required, and then go to the 3D Model:

Icon	Description	Select this Icon to
1	Freehand Annotation	Draw 2D freehand Markup
2	3D Freehand Annotation	Draw 3D freehand Markup
3	New Text Annotation	Add a text Markup
4	Edit Text Annotation	Edit selected text Markup
5	Rectangle Annotation	Draw a rectangular (unfilled) Markup
6	Highlight Annotation	Highlight a particular area in the 3D Model, with a selected colour
7	Circle Annotation	Draw a circular (unfilled) Markup
8	Cloud	Draw a cloud (unfilled) Markup
9	Callout Annotation	Draw a callout with text

3. Rest the mouse pointer in the area you want to mark up, and then draw the shapes.

## Mark up 2D Drawings

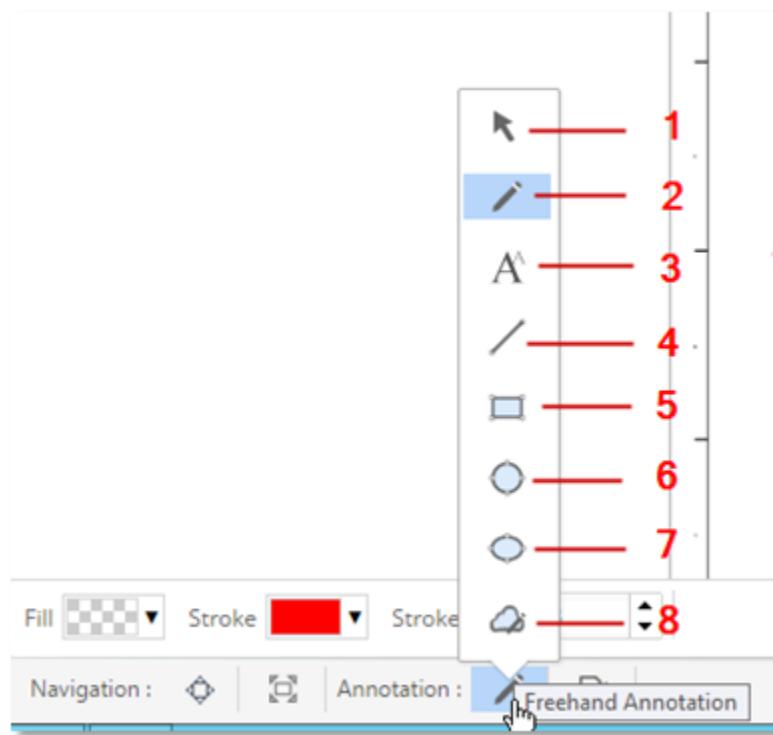
The Annotation tools at the bottom-left of the 2D File Viewer enables you to mark up the 2D Drawing documents.



To mark up 2D Drawings:

1. Select the Freehand Annotation icon.

**Note:** The freehand pencil icon is the default annotation tool. However, from the expanded Annotation toolbar, if you select any Annotation tool, that icon is displayed in the place of the freehand pencil.



2. From the expanded Annotation toolbar, select any of the following as required, and then go to the 2D Drawing:

Icon	Description	Select this Icon to
1	Select Annotation	Select one or more Markups
2	Freehand Annotation	Draw freehand Markup
3	Text Annotation	Add a text Markup

Icon	Description	Select this Icon to
4	Line Annotation	Draw a line Markup
5	Rectangle Annotation	Draw a rectangular (filled) Markup
6	Circle Annotation	Draw a circular (filled) Markup
7	Ellipse Annotation	Draw an elliptical (filled) Markup
8	Cloud Annotation	Draw a cloud (filled) Markup

3. Rest the mouse pointer in the area you want to mark up, and then draw the shapes.

### Adjust the Markup Texture

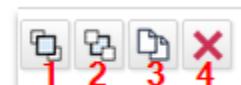
You can format the appearance of a Markup shape, using the following tools at the bottom-left of the File Viewer of an opened document.



Use this Tool	To
Fill	Select a colour to fill a Markup. <b>Note:</b> The default Fill is transparent.
Stroke	Select a colour to draw the Markup outline.
Stroke Width	Define the thickness of the Markup outline.

### Adjust the Markup Layout

When you add a Markup, or select a Markup drawn in a document, the following layout options appear at the bottom-left of the File Viewer:



Select any of the following, as required:

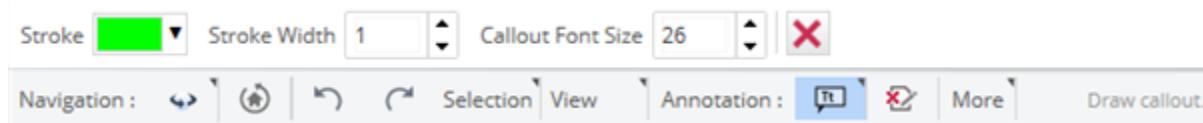
Select this Icon	To
1	Bring a selected Markup element in the drawing, to the front in the order stack.
2	Send a selected Markup element in the drawing, to the back in the order stack.
3	Duplicate a selected Markup, so that the same Markup shape appears twice.
4	Delete a selected Markup.  <b>Note:</b> If you have duplicated a Markup, and then immediately selecting the Delete icon, the duplicated Markup will be removed.

### Format Text Markups

When you perform any of the following actions, the Text Annotation Styles toolbar appears at the bottom-left corner of the File Viewer:

- Select the Text Markup icon from the Annotation toolbar
- Add a Text Markup in a document
- Select an already added Text Markup

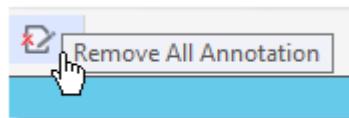
You can format the Markup text styles, adjusting the settings here:



**Note:** Changing the **Markup Callout Font Size** also changes the size of the text added by the Dimensioning tools.

### Remove All Markups

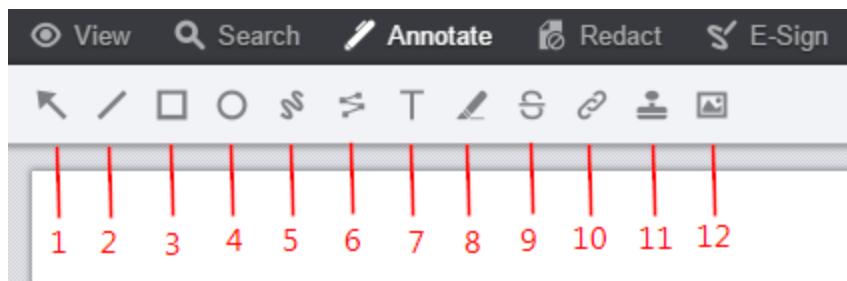
When you add a Markup, or select a Markup drawn in a document, the Remove All Annotation icon appears at the bottom-left of the File Viewer:



Selecting the **Remove All Annotation** icon enables you to remove all the Markups currently added in an opened document.

### Mark up Documents in Accusoft Viewer

The Annotation tools, available under the Annotate tab at the top-left corner of the Accusoft Viewer, enable you to mark up the documents.



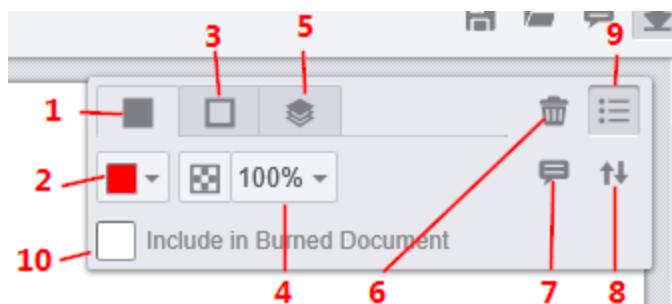
**Note:** For more information about the Accusoft Markup toolbars and menus, refer to the PrizmDoc help link:  
<https://help.accusoft.com/PrizmDoc/v13.27/HTML/prizmdoc-overview.html>

The following table describes the usage of Annotation tools in the Accusoft Viewer:

Icon	Description	Select this icon to
1	Arrow Annotation	Draw an arrow Markup.
2	Line Annotation	Draw a line Markup.
3	Rectangle Annotation	Draw a rectangular or square Markup.
4	Ellipse Annotation	Draw an elliptical or circular Markup.
5	Freehand Annotation	Draw freehand Markup.
6	Polyline Annotation	Draw polyline Markup.
7	Text Annotation	Add a text Markup.
8	Highlight Annotation	Highlight text.
9	Strikethrough Annotation	Add strikethrough Markup.
10	Text Hyperlink Annotation	Add text hyperlink Markup.
11	Stamp Annotation	Create a stamp Markup.
12	Image Stamp Annotation	Create image stamp Markup.

### Use the Annotation Context Menu

When you select an Annotation tool, or a Markup drawn, a context menu appears at the top-right with the options specific to the selected Annotation.



The following table describes the icons on the Annotation context menu:

Icon	Description
1	Displays the currently selected Annotation tool icon.
2	Fill colour picker.
3	Border colour tab.
4	Opacity Selector.
5	Layer menu tab for Text annotation.
6	Deletes the selected annotation.
7	Enables adding comment for a selected annotation.
8	Moves the context menu location up and down.
9	Collapses or expands the context menu.
10	If selected, chosen annotations will be burned in the document when downloading by selecting chosen option in the Annotation dropdown under the Download option.

### Work with the Common Toolbar

When you select the Annotate, Redact or E-sign tabs, a common toolbar appears at the top-right of the Accusoft Viewer.



Icon	Description	Select this icon to
1	Comment Panel	View comments added to an annotation, in a separate pane at the right.
2	Download	<p>Download the original/PDF, redacted, signed or redacted and signed document.</p> <p><b>Note:</b> You must have the appropriate rights to download. If not, the Download icon is unavailable.</p>

## Redact Documents

The Redact toolbar provides tools for highlighting and blocking text within a document, as well as applying text based stamps. These redaction annotations are only available as Markup layers within *AVEVA Asset Information Management* and do not redact the default document view presented to the user. However, redactions are applied to documents when exported or printed from the Markup tool.

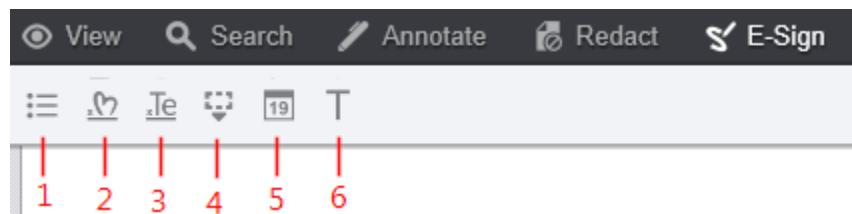


Icon	Description	Select this Icon to
1	Filled Rectangle	Draw opaque, black rectangular redactions.
2	Text Redaction	Write text redactions.
3	Text Selection Redaction	<p>Select and redact text blocks.</p> <p><b>Note:</b> When text is selected, the highlight converts to rectangular redactions. If multiple lines of text are selected, each line is redacted with a rectangular redaction.</p>
4	Stamp Redaction	Add redactions using the stamp tool.
5	Image Stamp Redaction	Add redactions using a stamp showing a particular image.

Icon	Description	Select this icon to
6	Redact Full Pages	Add redactions to full pages.
7	Redaction View Mode	Show the redaction view mode.

## E-sign Documents

The E-Signature tools under the E-Sign tab enable you to sign and manage the signatures on an opened document.



Icon	Select this icon to
1	Create new e-signatures, or manage the existing ones.
2	Insert a freehand signature.
3	Sign with texts.
4	Place a signature on the document.
5	Place the current date on the document.
6	Place the text input signature in the document.

## Categorize and Group Items

You can categorize and group a collection of items based on any specific criteria, and view it later using the following features:

- Sets
- Basket

## Use Sets

The **Sets** functionality allows you to categorize and group a selection of items, and store it with unique identifiers for future use. Using the **Add to** option under the **Actions...** menu, you can include items to Sets from the

following areas in Dashboard:

- *Search Panel*
- *Browse Panel*
- *Sets Panel*
- **Related Items** area in the *Summary View*
- **Related Documents** area in the *Summary View*
- **Related Query Form** area in the *Summary View*
- **Related Items** area in a *Document Content Card*
- Items displayed under the **Contents** tab in a *3D Model/2D Drawing Document Content Card*
- Items displayed under the **Related Items** tab in a *3D Model/2D Drawing Tag Content Card*
- Documents displayed under the **Related Documents** tab in a *3D Model/2D Drawing Tag Content Card*
- *Basket Panel*
- Reports displayed in the *Document View*

---

**Note:** The areas in the Summary View, Document Content Card, and Tag Content Card are configurable to include Relationships, Metadata or Characteristics. Hence, the naming of the areas can differ based on the configuration.

---

You can execute the following actions with Sets:

- Create a new Set
- Add items from one Set to the other
- Edit Sets
- Delete Sets
- Exports items in Sets
- Print items in Sets

## View Sets

To view Sets:



1. On the *Global Navigation Panel*, select . The *Sets Panel* opens docked in the *Content Viewer*.
2. In the drop-down box, select the arrow to select a **type of Set**. If any **Sets** have been created of that type, they are displayed as a list.
3. Select a **Set**, and in the expanded *Set Panel*:

The screenshot shows the AVEVA Asset Information Management (AIM) software interface. On the left, there is a vertical sidebar titled "AVEVA Asset Information Management" with a list of asset types and their IDs. The main area has two tabs: "Details" and "Contents". The "Details" tab includes a search bar and a dropdown menu for selecting a set type. The "Contents" tab displays a table of items with columns for "ID", "Name", and "Type". Each item row has a checkbox in the first column. At the bottom of the main area, there are buttons for "+ Create", "Edit", and "Delete".

ID	Name	Type
A-66003	80-A-66003-AFU3	PIPELINE
C-9007	AIR BLOWN COOLER (FORCED)	HEAT TRANSFER
DS-50004	200-DS-50004-AFU3	PIPELINE
DW-50101	20-DW-50101-BFU3	PIPELINE
E-9002	HORIZONTAL VESSEL	COLUMNS AND TOWERS
FG-633		FLOW GAUGE
FT-008	PEGS_ITEM_118	FLOW TRANSMITTER
FV-006		FLOW CONTROL VALVE
FV-10039		UNKNOWN
FV-11032		UNKNOWN
FV-11932		UNKNOWN
FV-12733		UNKNOWN
FV-15408		UNKNOWN

4. Select the **Details** tab, to view the description of the **Set**.
5. Select the **Contents** tab, to view the items of the **Set**. For each item in the set, its **ID**, **Name** and **Type** are displayed.
6. Select to dock the *Sets Panel*.

## Create Sets

You must have appropriate rights ([SetCreation](#)) granted by your System Administrator for creating Sets.

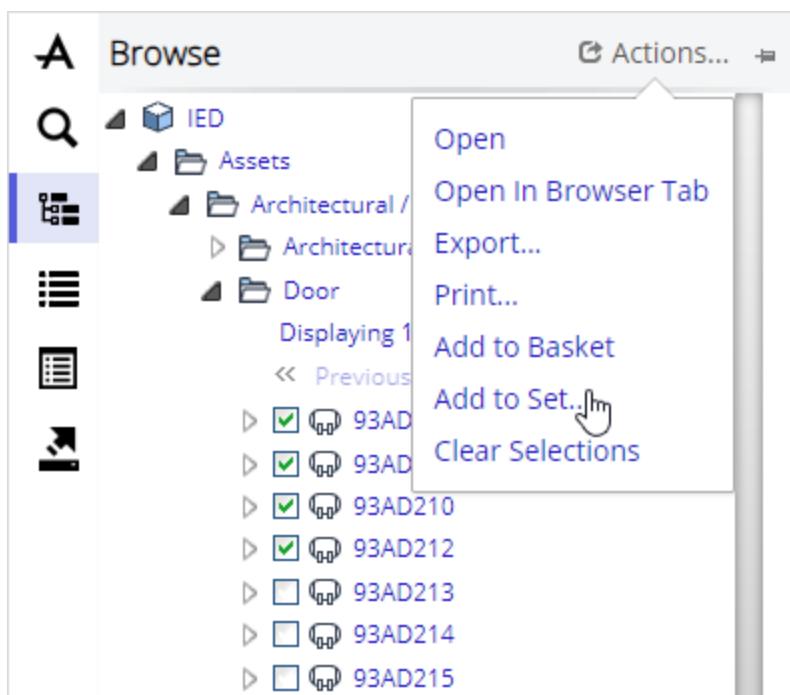
To create Sets:

1. In the *Sets Panel*, select the arrow to select a Type of Set from the drop-down box.
2. Go to the bottom-left corner, and then select **Create**.

The **New Set** dialog appears in the expanded right panel.

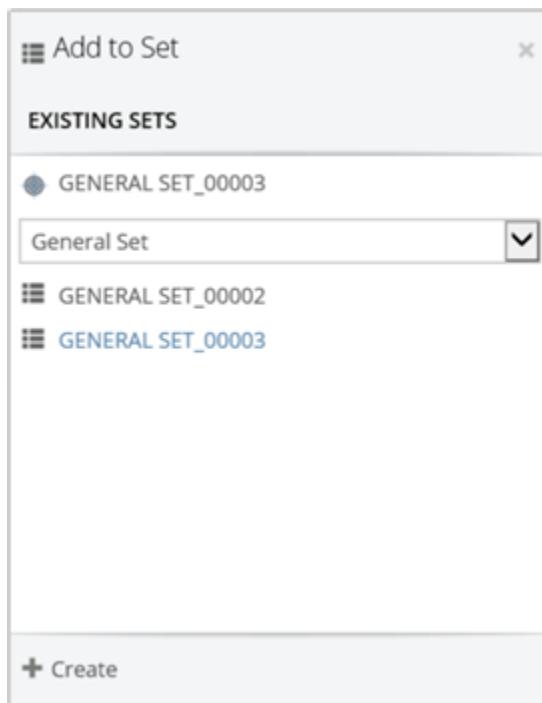
The screenshot shows the 'New Set' dialog box in the AVEVA AIM software. The 'Details' tab is active. The 'ID' field is empty and has a red border around it. There is a checkbox labeled 'Auto-generate ID' next to it. The 'NAME' field contains the text 'Maintenance Work Pack'. The 'TYPE' field is a dropdown menu currently showing 'Maintenance Work Pack'. The 'DESCRIPTION' field is empty. The 'AUTHOR' field contains a small user icon and a blurred name. At the bottom right of the dialog are 'Save' and 'Cancel' buttons.

3. Select the **Details** tab, and select **Auto-generate ID**, or enter a unique identifier in the **ID** box.
4. Type the Set name in the **Name** box.
5. In the **Type** drop-down box, select a type.
6. In the **Description** box, type a note that describes the new Set, and then select **Save**.
7. To add items to the new **Set**, select  and then select **Add to Set**.



The *Add to Set* panel opens.

8. In the drop-down box, select the arrow, and choose the type of Set to include the selected Items.



All the Sets under the selected type appears.

9. Select the newly created Set.

The items are added to the Set, and a message displaying the number of items successfully added to the Set appears.

## Edit Sets

To edit Sets:

1. In the **Sets Panel**, select the arrow to select a **type of Set** from the drop-down box. The **Sets** of the selected type appear in a list.
  2. Select the **Set** you want to edit, and in the bottom-left corner, select  **Edit**.
  3. Edit the details, and if you want to remove items from the **Set**, select the **Contents** tab.
  4. Select  for each item you want to remove.

**A** Sets

**Q** Type to filter...

**COMMISSIONING SYSTEM**

**Details** **Contents**

**Clear Set**

<input type="checkbox"/> ID	Name	Type	
<input type="checkbox"/> A-66003	80-A-66003-AFU3	Pipeline	
<input type="checkbox"/> C-9007	AIR BLOWN COOLER (FORCED)	Heat Transfer	
<input type="checkbox"/> DS-50004	200-DS-50004-AFU3	Pipeline	
<input type="checkbox"/> DW-50101	20-DW-50101-BFU3	Pipeline	
<input type="checkbox"/> E-9002	HORIZONTAL VESSEL	Columns and Towers	
<input type="checkbox"/> FG-633		Flow Gauge	
<input type="checkbox"/> FT-008	PEGS_ITEM_118	Flow Transmitter	
<input type="checkbox"/> FV-006		Flow Control Valve	
<input type="checkbox"/> FV-11932		Unknown	
<input type="checkbox"/> FV-12733		Unknown	
<input type="checkbox"/> FV-15408		Unknown	
<input type="checkbox"/> FV-2571		Unknown	
<input type="checkbox"/> FV-4436		Unknown	

**AVEVA Asset Information Management**

**Save** **Cancel**

- To remove all the items in the Set, select **Clear Set**.
  - Select **Save**.  
Your edits to the details and contents of the Set are saved.
  - If you do not want to save the changes, select **Cancel**.

## Delete Sets

To delete Sets:

1. In the *Sets Panel*, select the arrow to select a **type of Set** from the drop-down box.  
The Sets of the selected type appear in a list.

2. Select the *Set* you want to delete, and in the bottom-left corner, select  **Delete**.  
A message "You are about to delete the Set: {Set Name}. Do you wish to continue?" appears.
3. Select **Yes** to delete or **No** to cancel the action.

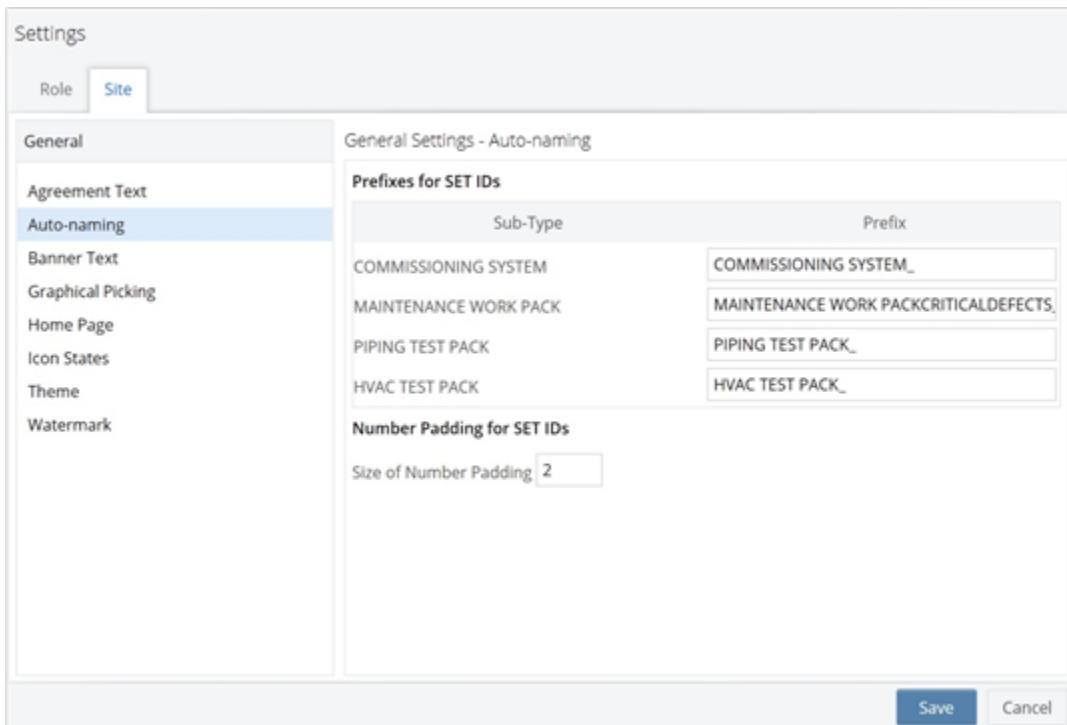
## Configure Autonaming of Set ID Prefixes

The Set ID is a unique identifier of a Set. While creating a new Set, you can either choose to auto-generate the Set ID, or specify a Set ID suiting your requirement. The autogenerated-Set ID assumes a numeric value incremental by one with every new Set created. The Settings feature in *AVEVA Asset Information Management Dashboard* enables you to configure the autonaming of Set ID prefixes, and number padding for Set IDs.

**Note:** To configure the autonaming of Set ID prefixes, you must have appropriate right (*ManageSettings*) granted by your System Administrator.

To configure autonaming of Set ID prefixes:

1. From the top-right corner of the *Tab Panel*, select , and then select **Settings**.  
The **Settings** window opens.
2. Select the **Site** tab, and in the **General** pane at left, select **Auto-naming**.

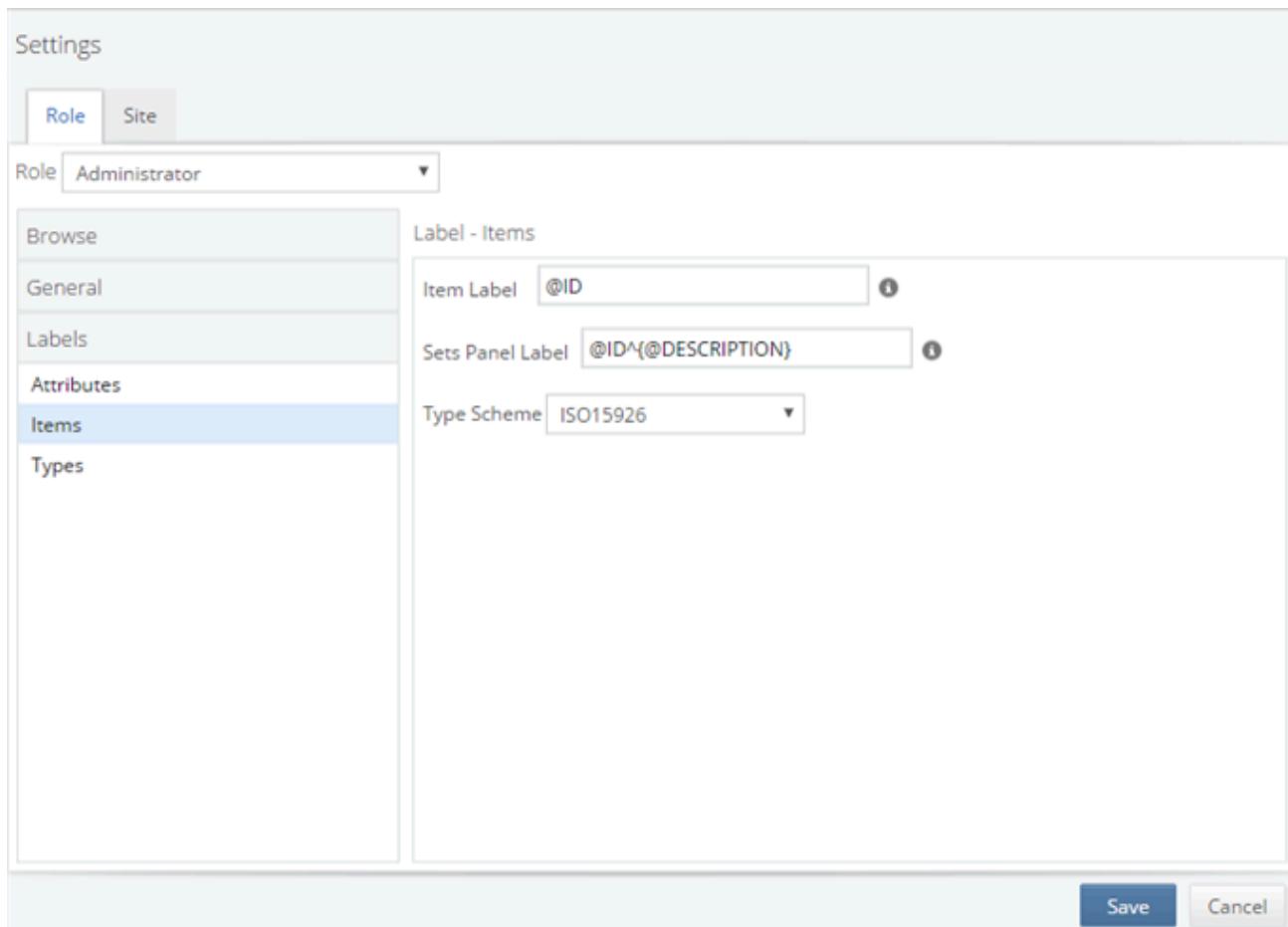


3. In the right pane, enter the names in the **Prefix** box for each **Sub-Type**.
4. If you want to change the number padding in autogenerated-Set ID, enter the number in the **Size of Number Padding** box.
5. Select **Save**.

## Create Sets Panel Label with Description

To create Sets Panel Label with description:

1. Add `@ID^{@DESCRIPTION}` in the **Sets Panel Label** box under **Settings > Role > Labels > Items** and select **Save**.



2. Select **Sets**.

The description added should be visible in the Sets Label.

### Adding a Description to the Existing Sets

To add a description to the existing Sets:

1. Select a Set and select the **Edit** icon on the bottom ribbon.
2. Add the desired description in the **Description** box under the **Details** tab and select **Save**.

The description should be visible in the Sets label.

ID	Type
O-66006	Pipeline
O-66010	Pipeline
O-69014	Pipeline
O-80006	Pipeline
O-90001	Pipeline

## Use the Basket

The Basket functionality enables a personalized grouping and storing of frequently used items, for using it later.

To use Basket:

1. Select the item(s), and then select the Actions... menu.
2. Select the **Add to** option, and then select Basket.

The selected items can be added to Basket from the following areas in *AVEVA Asset Information Management Dashboard*:

- *Browse Panel*
- *Search Panel*
- *Sets Panel*
- **Related Items** area in the *Summary View*
- **Related Documents** area in *Summary View*
- **Related Query Form** area in *Summary View*
- **Related Items** area in an *Document Content Card*
- Items displayed under the **Contents** tab in a *3D Model/2D Drawing Document Content Card*
- Items displayed under the **Related Items** tab in a *3D Model/2D Drawing Tag Content Card*

- Documents displayed under the **Related Documents** tab in a *3D Model/2D Drawing Tag Content Card*
- Reports displayed in *Document View*
  - Selecting  from the top-right of the following areas also allows you to add items to the Basket
- *Summary View* of documents, tags, reports
- *Document View* of documents, tags, reports
- *Query Form*

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**Note:** The areas in the Summary View, Document Content Card, and Tag Content Card are configurable to include Relationships, Metadata or Characteristics. Hence, the naming of the areas can differ based on the configuration.

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## Manage Exports

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**Important:** The maximum limit for the number of items that can be exported at a time is set during configuration (for example, 10000 items). If you are exporting more than the limit set, a warning message appears.

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The Export functionality enables you to export one or more items, tags or documents selected from the following panels:

- *Browse Panel*
- *Search Panel*
- *Sets Panel*
- **Related Items** area in the *Summary View*
- **Related Documents** area in the *Summary View*
- **Related Query Form** area in the *Summary View*
- **Related Items** area in a *Document Content Card*
- Items displayed under the **Contents** tab in a *3D Model/2D Drawing Document Content Card*
- Items displayed under the **Related Items** tab in a *3D Model/2D Drawing Tag Content Card*
- Documents displayed under the **Related Documents** tab in a *3D Model/2D Drawing Tag Content Card*
- *Basket Panel*
- Reports displayed in *Document View*

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**Note:** The areas in the Summary View, Document Content Card and Tag Content Card are configurable to include Relationships, Metadata, or Characteristics. Hence, the naming of the areas can differ based on the configuration.

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## Create Export Definitions

The Export Definition selected while executing an export determines the column headings and data elements, to be included in the Export. The exported items displayed or saved in the .csv file format include only the data elements, defined in the Export Definition. AVEVA Asset Information Management Dashboard provides you with a default Export Definition. However, creating new Export Definitions enables you to have a more customized export.

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**Note:** You must have appropriate rights (CreateExports rights) to create Export Definitions. If not, the **Create**

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option will not be available in the **Export Panel**.

You can add or remove any of the following columns available by default, while creating an Export Definition:

- Object ID
- Object context
- Object name
- Object aliases
- Class IDs
- Class names
- Incidental class IDs
- Incidental class names
- Class Scheme
- Life-Cycle Status

Additionally, you can create new columns as follows:

- Object attribute for a source class
- Associated attribute
- Number of associated items

To create Export Definitions:



1. In the *Global Navigation Panel*, select .  
The *Export Panel* opens, docked in the Dashboard.
2. In the drop-down box, click the arrow to select an Export Definition.
3. Go to the left-bottom corner, and select **Create**.  
The **Export Definition** window opens.
4. Select **Add** for Export Columns, and then select the new Export Columns.  
The newly added Export Columns appear as a list.
5. To edit the name of the Export Columns, select **Modify Label**.
6. To display IDs as hyperlinks that can open AVEVA Asset Information Management Dashboard in the context of the ID, select the **Hyperlink** check box.

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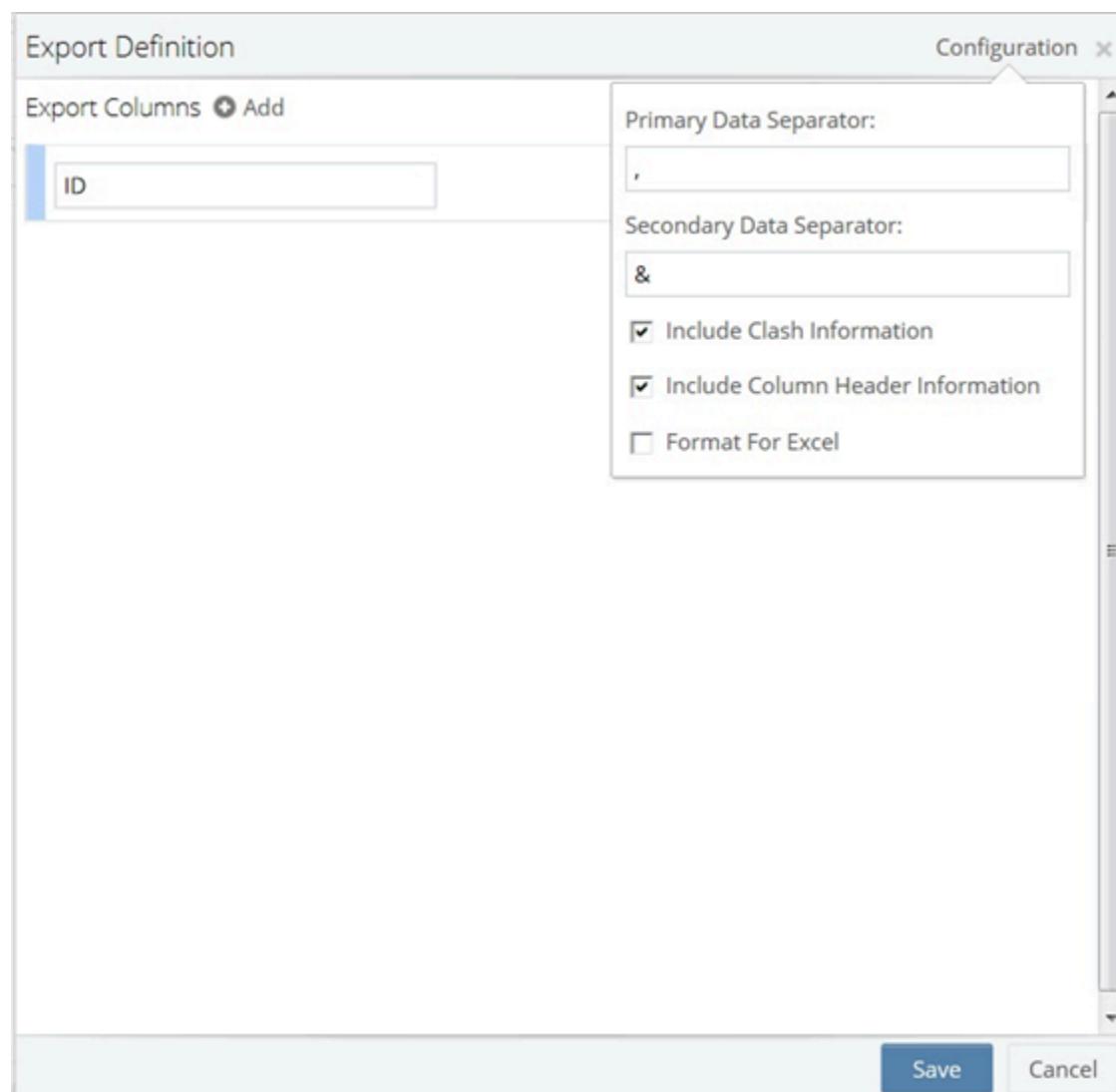
**Note:** This only applies to the IDs and the Related IDs. Hyperlinks are not displayed if there is more than one ID in the Excel spreadsheet cell (for example, if there is more than one related item).

7. To remove the newly added Export Columns, select .
8. To save the Export Definition, select **Save**.
9. If you do not want to save the new Export Definition, select **Cancel**.

## Configure the Export Data Display

If you have the appropriate rights (CreateExport rights), you can configure how the exported data should be

displayed in the file exported in the CSV file format, as shown in the following figure:



**Note:** For more information on User Access, see [Set Up User Access](#).

## Edit Export Definitions

Selecting an Export Definition, and selecting from the bottom-left corner of the *Export Panel* enables you to modify and save the Export Definition.

**Note:** You must have appropriate rights (CreateExport rights) to save the edited Export Definitions. If you do not have CreateExport rights, you can only edit the Export Definition, but cannot save it.

To edit an Export Definition:

1. In the *Global Navigation Panel*, select .  
The Export Panel opens, docked in the Dashboard.
2. In the drop-down box, select the arrow to select the Export Definition.  
The Export Definitions appears in a list.

3. Select an Export Definition.
4. Go to the left-bottom corner, and then select  Edit. The Export Definition window opens.
5. Edit the Export Definition.
6. To save the updates, select Save. If you do not want to save the updates, select Cancel.

## Delete Export Definitions

By selecting  Delete at the bottom-left of the *Export Panel*, you can delete the Export Definitions. You must have appropriate rights (CreateExport rights) to execute a deletion.

To delete an Export Definition:

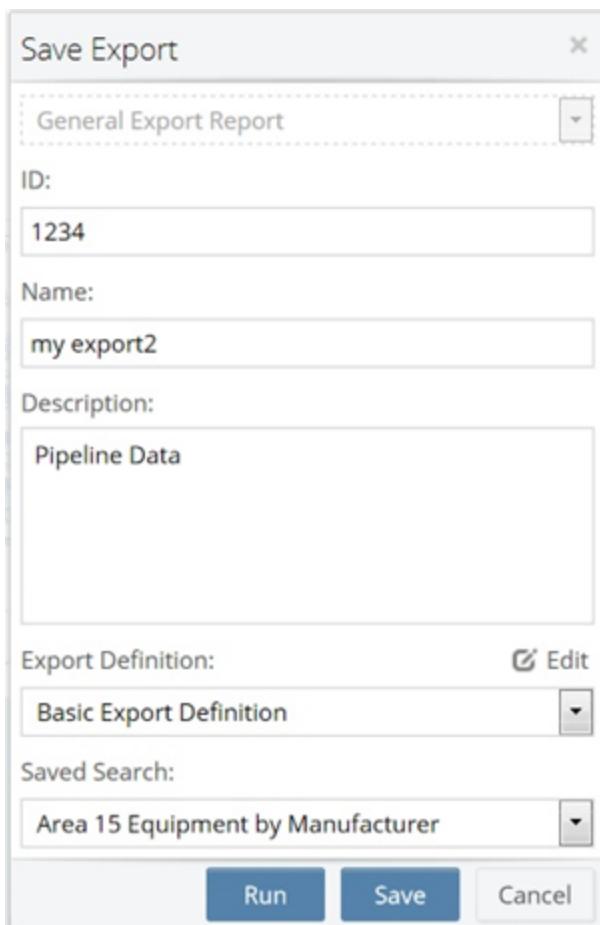
1. In the Global Navigation Panel, select .
2. The Export Panel opens, docked in the Dashboard.
3. In the drop-down box, select the arrow to select the Export Definition. The Export Definitions appears in a list.
4. Select an Export Definition.
5. Go to the left-bottom corner, and select  Delete. A message displaying "You are about to delete the Export Definition. Do you want to continue?" appears.
6. To continue with deletion, select OK. If you do not want to delete, select Cancel.

## Create Exports to Save

You can create and save exports of your saved searches with a unique ID, Name, Description and Export Definition. Saving the exports enables you to instantly export data at a later time. You must have the appropriate right (CreateExport rights) to save your exports.

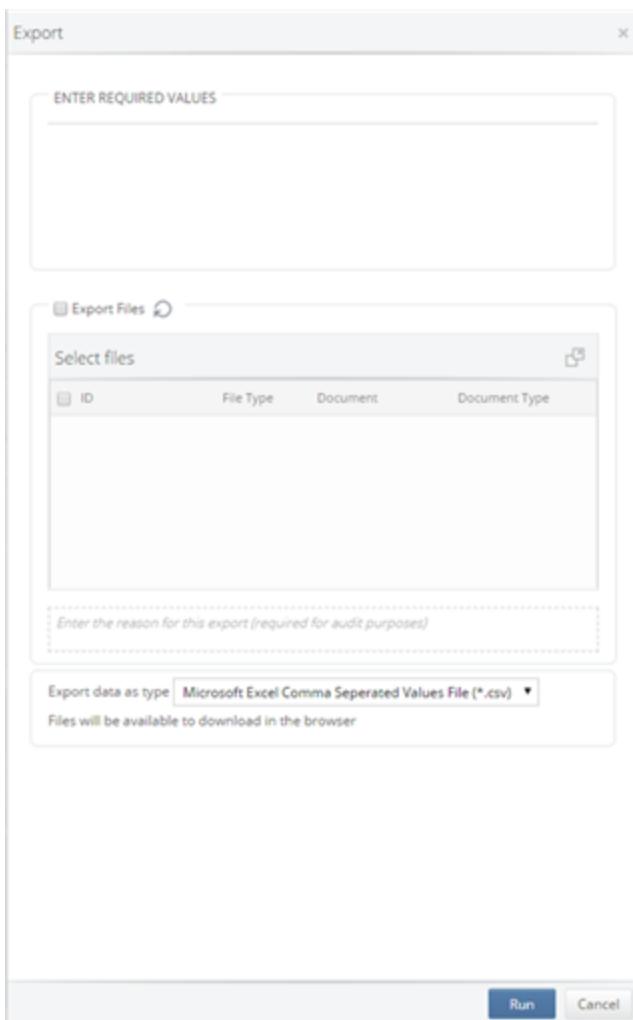
To create exports to save:

1. In the Global Navigation Panel, select .
2. The Exports Panel opens, docked in the Dashboard.
3. In the drop-down box, select the arrow to select the export.
4. Go to the left-bottom corner of the Export Panel, and select  Create. The Save Export window opens.



4. In the **ID** box, enter a unique identifier, and in the **Name** box, type a name.
5. In the **Description** box, enter details about the export.
6. In the **Export Definition** box, select the arrow, and select an Export Definition.
7. In the **Saved Search** box, select the arrow, and select a Saved Search.
8. To save the export, select **Save**.
9. To open and view the export, select **Run**.

The **Export** window opens.



10. To export item metadata, select **Run**.

The message **The Download process has been started** appears.

In the bottom panel, which displays the message **Do you want to open or save the .csv/.xlsx file**, choose one of the following options:

- **Open:** Select this to view the export.
- **Save:** Select this to save the export in your local machine.
- **Cancel:** Select this if you do NOT want to save your export.

11. To include files in the export package, select the **Export Files** check box.

The export window is updated with the export options.

12. Select **Run**.

- If you have selected the **Export to the Server Folder** option, the message **The export will be copied to 'output location'** appears.
- If you have selected the **Download to Client** option, the message **The Download process has been started** appears.

In the bottom panel, which displays the message **Do you want to open or save the .csv/.xlsx file**, choose one of the following options:

- **Open:** Select this to view the export.

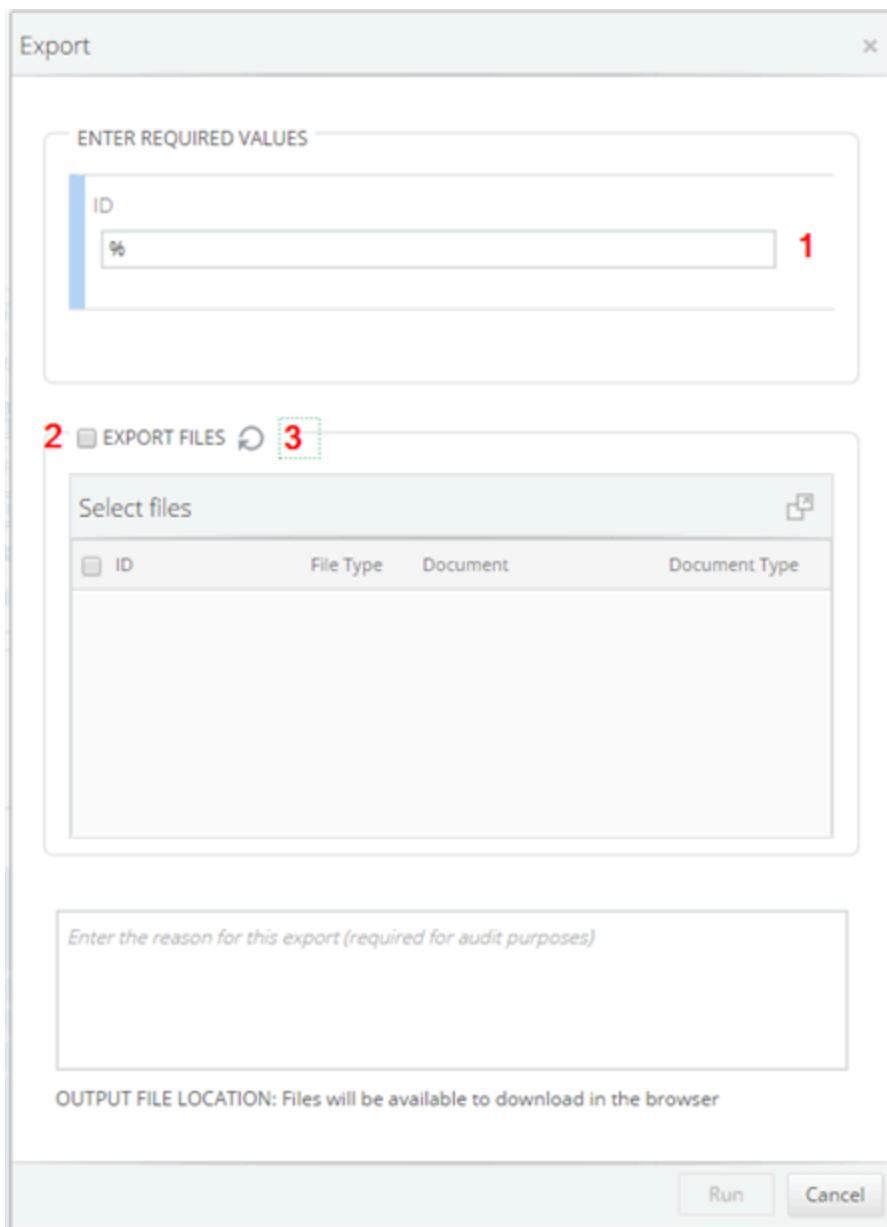
- **Save:** Select this to save the export in your local machine.
- **Cancel:** Select this if you do NOT want to save your export.

## Run a Saved Export

To run a saved export:



1. In the Global Navigation Panel, click  .  
The *Export Panel* opens, docked in the Dashboard.
2. In the drop-down box, select the arrow to select the export.  
The saved exports are displayed in a list.
3. Select a saved export.  
The Export window opens.



4. In the Enter Required Values section, type the filter criteria for the saved export.
5. To include files in the export package, select the Export Files check box.
6. To refresh the files listed in the Select files section after changing the filter criteria, select .
7. To expand the Select files section, select  at the top-right of the Select files section.
8. To filter the files shown in the Select files section, use the following filters:
  - File ID
  - File Type
  - Document ID
  - Document Type

**Note:** The Select Files section displays files associated with the first 100 documents, by default. A document can have more than one associated files. Hence, a message appears at the top of the Select files section,

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displaying the number limit for documents shown.

9. Select the check boxes for the files you want to export.
10. If you have expanded the Select files section by selecting , select OK to return to the Export window.
11. In the Enter the reason for this export box, type the details.

The pre-configured export package output path appears at the bottom of the Export window. For more information about configuring the output file location, see [Configure File Export](#).

12. To open and view the export, select **Run**.

The **Export** window opens.

13. To export item metadata, select **Run**.

The message **The Download process has been started** appears.

In the bottom panel, which displays the message **Do you want to open or save the .csv/.xlsx file**, choose one of the following options:

- **Open**: Select this to view the export.
- **Save**: Select this to save the export in your local machine.
- **Cancel**: Select this if you do NOT want to save your export.

14. To include files in the export package, select the **Export Files** check box.

The export window is updated with the export options.

15. Select **Run**.

- If you have selected the **Export to the Server Folder** option, the message **The export will be copied to 'output location'** appears.
- If you have selected the **Download to Client** option, the message **The Download process has been started** appears.

In the bottom panel, which displays the message **Do you want to open or save the .csv/.xlsx file**, choose one of the following options:

- **Open**: Select this to view the export.
- **Save**: Select this to save the export in your local machine.
- **Cancel**: Select this if you do NOT want to save your export.

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#### Notes:

- When the files are exported, either to the client or the server, they reside inside a zip file. Inside that zip file, you can see a Files folder, under which there are specific folders for each document whose file(s) has been exported. So, all files for a document are placed inside the same folder. The folder name becomes the document full name separated by a hyphen. For example, if a document is called [SRP|Context 2|A doc{rev 2}](#), then its folder will be [SRP-Context 2-A doc-rev 2](#).
- When running a Query Form and exporting to a CSV file, then any cells in columns that appertain to Related Items may have multiple values. However, some values for the Related Items may be blank. So, in order to correspond a value to the ID or Name of the Related Item, then delimiters are used to preserve the order. For example, if there are 4 Related Items and only the 3rd item has an attribute value of "xyz" (the others having a blank values), then the cell would contain **& & xyz &**. The 3 ampersands correspond to 4 values, where all are blank except for the 3rd value. This will correspond to the IDs of the Related Items for example, **P101 & P102 & P103 & P104**. So P103 has a value of xyz for the attribute in question.

## Edit Saved Exports

Selecting a saved export, and selecting  **Edit** from the bottom-left corner of the Export Panel enables you to modify your saved export.

To edit the saved exports:



1. In the *Global Navigation Panel*, select .
- The **Export Panel** opens, docked in the Dashboard.
2. In the drop-down box, click the arrow to select the export.
- The saved exports are displayed in a list.
3. Select a saved export.
4. Go to the bottom-left corner, and select  **Edit**.
- The **Save Export** window opens.
5. Make updates, and then select **Save**.
- Your updates are saved.
6. To open and view the export, select **Run**.
- The **Export** window opens.
7. To export item metadata, select **Run**.

The message **The Download process has been started** appears.

In the bottom panel, which displays the message **Do you want to open or save the .csv/.xlsx file**, choose one of the following options:

- **Open**: Select this to view the export.
  - **Save**: Select this to save the export in your local machine.
  - **Cancel**: Select this if you do NOT want to save your export.
8. To include files in the export package, select the **Export Files** check box.
  - The export window is updated with the export options.
  9. Select **Run**.
    - If you have selected the **Export to Server Folder** option, the message **The export will be copied to 'output location'** appears.
    - If you have selected the **Download to Client** option, the message **The Download process has been started** appears.

In the bottom panel, which displays the message **Do you want to open or save the .csv/.xlsx file**, choose one of the following options:

- **Open**: Select this to view the export.
- **Save**: Select this to save the export in your local machine.
- **Cancel**: Select this if you do NOT want to save your export.

## Delete Saved Exports

Selecting a saved export, and then selecting  **Delete** at the bottom-left of the *Export Panel* enables you to delete your saved exports. You must have appropriate rights to execute this action.

To delete saved exports:



1. In the *Global Navigation Panel*, select .
- The *Export Panel* opens, docked in the Dashboard.
2. In the drop-down box, select the arrow to select the export.
- The saved exports are displayed in a list.
3. Select a saved export.
4. Go to the bottom-left corner, and select  **Delete**.
- A message displaying "You are about to delete the Export. Do you want to continue?" appears.
5. To continue with deletion, select **OK**. If you do not want to delete, select **Cancel**.

## Reports

The Reports functionality enables you to view reports pre-configured by your System Administrator.

Using the Reports functionality, you can:

- Select a type of report to view
- View the reports of a selected type

And, depending upon the type of report (for SSRS), you may:

- Export the selected reports
- Print one or more reports in a group

## Select a Type of Report to View

To select a type of report to view:



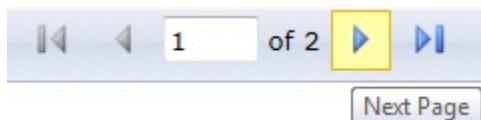
1. In the *Global Navigation Panel*, select .
- The *Reports Panel* opens, docked in the Dashboard.
2. In the drop-down box, select the arrow to select the type of report.
- The reports of the selected type appears in a list.
3. From the list, select the Report you want to view.
- The report opens in the *Document View*.

## Browse SSRS Reports

The SQL Server Reporting Services (SSRS) Reports are a type of Report generated from the Microsoft SQL Server databases. Your System Administrator configures these reports, enabling you to access it through the Reports functionality in *AVEVA Asset Information Management Dashboard*. If the reports you are viewing are of the SSRS type, you can browse through multiple reports of this type using the following procedure.

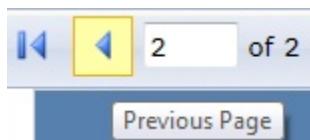
To browse the SSRS Reports:

1. To view the successive reports of the SSRS type, select the forward arrow.



The next Report opens.

2. To view the previously viewed reports again, select the backward arrows.



The previously viewed report re-appears.

## Set Report Page Width

The following figure depicts how to adjust the viewing area of the SSRS report by setting the page width:

Click this arrow to set report page width

System summary for general

System
IPE CIVI-15A (5)
IPE CIVI-15B (1)
IPE CIVI-15C (4)
IPE CIVI-15D (12)
IPE CIVI-MISC (6)
IPE EQUI-15A (6)
IPE EQUI-15B (11)
IPE EQUI-15C (21)
IPE EQUI-15D (28)
IPE EQUI-15R (7)
IPE INST-15A (7)
IPE INST-15B (12)
IPE INST-15C (20)
IPE INST-15D (12)
IPE PIPE-15A (69)

## Save Reports

Selecting from the SSRS Report menu bar in the *Document View* enables you to save a selected Report in the following file formats:

- XML
- CSV
- PDF
- MHTML
- Excel
- TIFF
- Word

## Print Reports



Selecting the printer icon from the SSRS Report menu bar in *Document View* opens the **Print** window. In the Print window, you can select a printer, and print a report.

## Export Reports

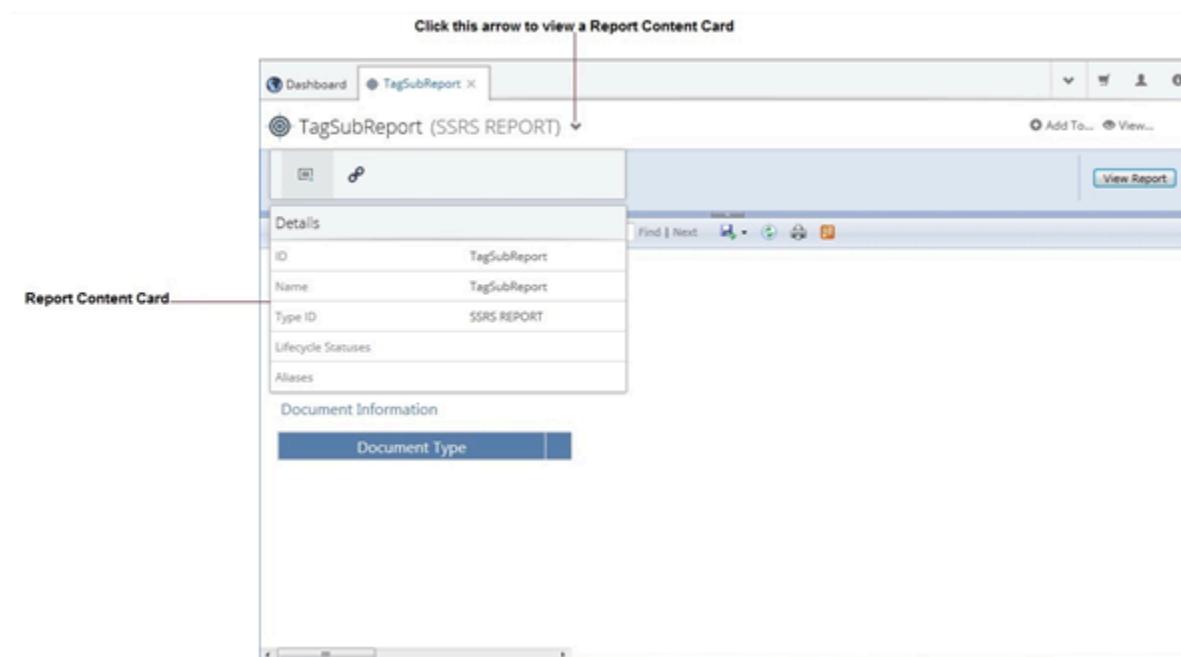


Selecting the export icon from the SSRS Report menu bar in the *Document View* enables you to export the report to your local machine.

## View Report Content Card

Selecting the drop-down arrow for a Report in the *Document View* enables you to view the *Document Content Card* for a Report.

The following figure shows the Report Content Card for an opened Report:



## Context Access Control URLs

Context Access Control provides the ability to restrict data to only the contexts that the user is interested in. The Dashboard user can provide the list of contexts that are of interest in the Dashboard URL. A single context or a list of contexts can be specified by adding an `assets` parameter, for example:

- Single context: <http://myMachine:16000/?assets=ABC#/>.
- Multiple contexts (separated by a vertical bar |): <http://myMachine:16000/?assets=ABC|XYZ#/>.
- **Search**  
When the user performs a search, then the results are restricted to the specified contexts.
- **Browse**

Browse shows the root items that satisfy the specified contexts defined in the URL. This is true if the Root Item Type (see Settings > Role > Browse > Root Items) is, for example, a PLANT or a 3D Model.

- **Query Forms**

Query Forms only display results that satisfy the specified contexts defined in the URL.

- **Export**

Export only exports items that satisfy the specified contexts defined in the URL.

- **Model Composition**

Model Composition only lists 3D Models that satisfy the specified contexts defined in the URL.

## Manage Browser Security Settings

**Note:** Your System Administrator must configure the correct browser settings for you to access AVEVA Asset Information Management Dashboard. If you encounter any problems as described in the following table, contact your System Administrator.

Browser	If your Settings are Wrong
Edge	Blank screen displayed after logging in. Security error message while downloading an export file. Blank screen for a <i>3D Model Document View</i> , with or without an add-on error message.
Google Chrome	Blank screen displayed after logging in. <b>Important:</b> The ActiveX controls required for AVEVA Asset Information Management Dashboard displays are NOT supported in the <i>Google Chrome</i> browser. Error messages on executing a command. Icons/command buttons not displayed.

## Optimize Screen Resolution

The minimum screen resolution for viewing AVEVA Asset Information Management Dashboard is 1024 x 768. If your system screen resolution is set to a value that is less than minimum, contact your System Administrator to set it to 1024 x 768 or greater, for optimal viewability.

## Use AIM Dashboard for Mobile Site

You can perform specific operations on AVEVA Asset Information Management Dashboard while accessing the application from a supported mobile device or a tablet.

Following are some of the key operations you can perform using the mobile site:

- Browse for information using the asset breakdown structure
- Search for tag and document content and filter the results by object type
- View tag summary information, including attribute data and associated documents

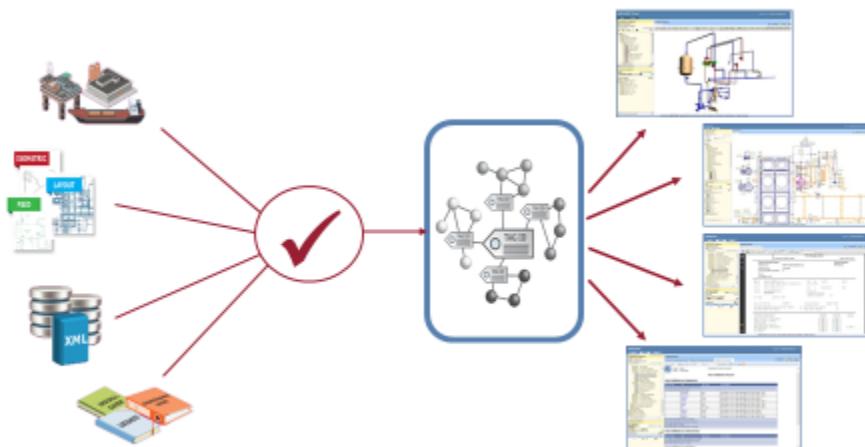
- View and navigate drawings, documents and 3D models
- Access the Basket for quick access to your saved tag and document links

The *Mobile Site* is meant for project or operations staff needing to access AVEVA Asset Information Management *Dashboard* information from mobile and tablet devices.

## Overview of AIM Dashboard - Mobile Site

This section gives an overview of AVEVA Asset Information Management *Workhub* and *Dashboard* with specific reference to its mobile site.

AVEVA Asset Information Management *Workhub* and *Dashboard* (AIM Dashboard) is a powerful and secure web-based solution for collating, contextualizing, cross-referencing and visualizing data and documents of all types, whatever their location or origin.



AVEVA Asset Information Management

The *AVEVA Gateways* are the key to the data interoperability power of AVEVA Asset Information Management. This extensive suite of interfaces provide access to all types of information, whether originating from AVEVA's or third-party software, from business systems, or from tailored applications implemented by AVEVA's Enterprise Solutions specialists. The Gateways scan the information sources and automatically extract tag to tag, tag to document and document to document relationships. Documents published through the Gateways are accurately rendered and enhanced through the automatic creation of hotspots and hyperlinks which provide additional intelligence for easy identification and navigation of tags.

The information and relationships extracted by the Gateways are securely stored and maintained within AIM *Workhub*. AVEVA Asset Information Management *Workhub* exploits this interconnectivity to provide powerful search capabilities which, combined with its knowledge of tag and document associations, delivers fast and effective location of project and asset information. Access to this information can be tailored by category, security level or detail level to suit the needs of different types of user. Through its aggregation of information from disparate sources AIM *Workhub* is also uniquely placed to report on the quality, consistency and completeness of that information, improving project compliance and enabling efficient handover to operations.

AVEVA Asset Information Management *Dashboard* provides end users with a single point of access to the aggregated, validated information. All types of project and asset information can be browsed and visualized quickly and intuitively through a simple web interface; from tag and document metadata, electronic and scanned documents, reports and project plans, to 2D drawings, 3D models and laser scans. Through the automatic

creation of hotspots and hyperlinks, which provide additional intelligence to aid in easy identification and navigation of tags, *AIM Dashboard* significantly reduces the amount of time spent looking for information, and ensures that the information found is always of known quality.

AVEVA offers a range of information management solutions, based on the unique *AVEVA Asset Information Management* technology, to meet the needs of different users at different points in the asset life cycle. These solutions deliver an open environment that provides access to information regardless of the application source, and with the appropriate level of information access, validation and control to support critical project and operational activities. The result is a single, trusted source of information that reduces risk through rapid and better-informed decision making.

You can access the AIM Dashboard using a supported mobile device or tablet.



The *AVEVA Asset Information Management Dashboard* mobile site has limited functionality and does not support the following:

- Advanced Search
- Saved Searches
- Query Forms
- Reports
- Sets
- Export
- Settings

You must access the *AVEVA Asset Information Management Dashboard* main website to perform the above operations.

## Log on to AIM Dashboard - Mobile Site

When you access the *AVEVA Asset Information Management Dashboard* using a mobile or tablet device, you are automatically redirected to the mobile version of the website. If your device has the **Request Desktop Site**

feature enabled in its browser, you can use that option to switch to the desktop version of the website.

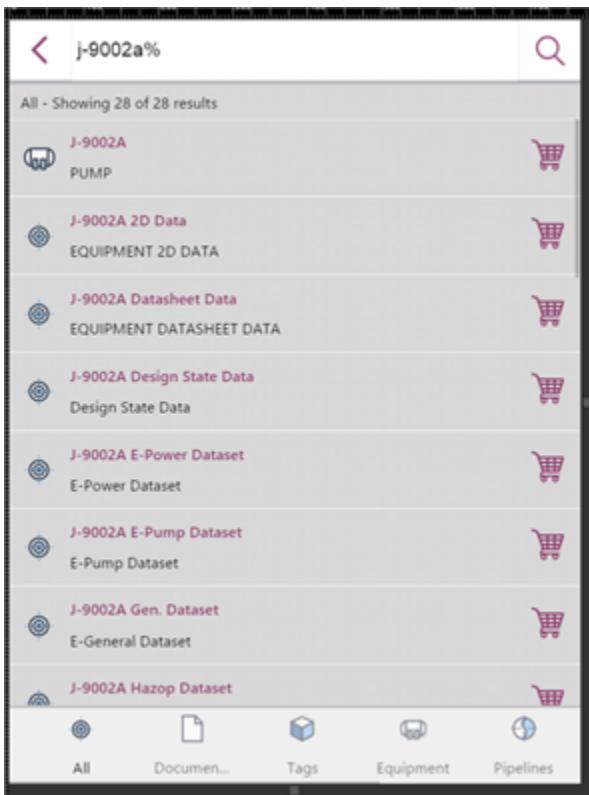
**Note:** After you have logged on to the mobile site, you can tap the user icon and then tap the **Change Role** link to switch to any of the roles you have been given access to.

## Use Search

You can search for tag and document content in the AVEVA Asset Information Management Dashboard mobile site. You can also filter the search results by object type.

To initiate a search using the AVEVA Asset Information Management Dashboard mobile site:

1. Log on to the AVEVA Asset Information Management Dashboard mobile site.  
The **Home** page is displayed.
2. Tap the search icon.  
The search page is displayed.
3. Type a search term in the search box displayed and tap the search icon again.  
The search results are displayed. The items are listed by **ID** and **Type**.



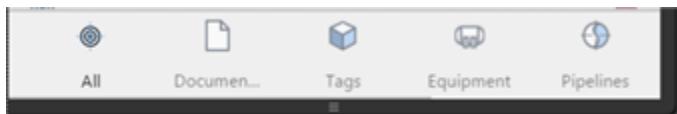
**Note:** To add items to your basket, tap the 'basket' icon on the search results page. Then, the system shows a notification confirming that the items are added to the basket. For more information, see [Using Basket](#).

4. Tap the search icon visible in the top-right of the page to initiate a new search.

## Filter the Search Results

You can filter the search results by using the configured search categories at the bottom of the search results

page.



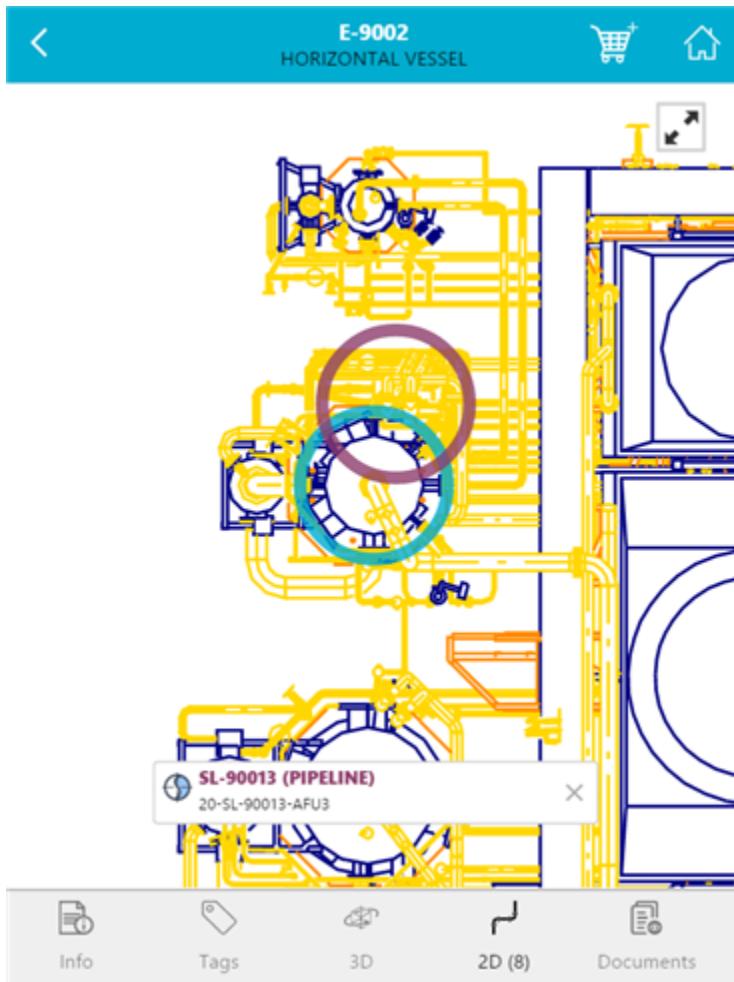
After a filter has been applied, subsequent searches from the search results page comply to the search filter criteria. If the number of categories is more than the maximum that the device screen can display, you should scroll across or swipe horizontally in the footer section to see them all.

## Navigate in the Mobile Site

When you search for an item and then tap one of the search results in the *AVEVA Asset Information Management Dashboard* Mobile site, the **Summary View** of the item is displayed.

When you tap the 2D or 3D document sections, the default 2D or 3D document is displayed and the current item is highlighted on the model. You can manipulate the model in 3D space to select any component.

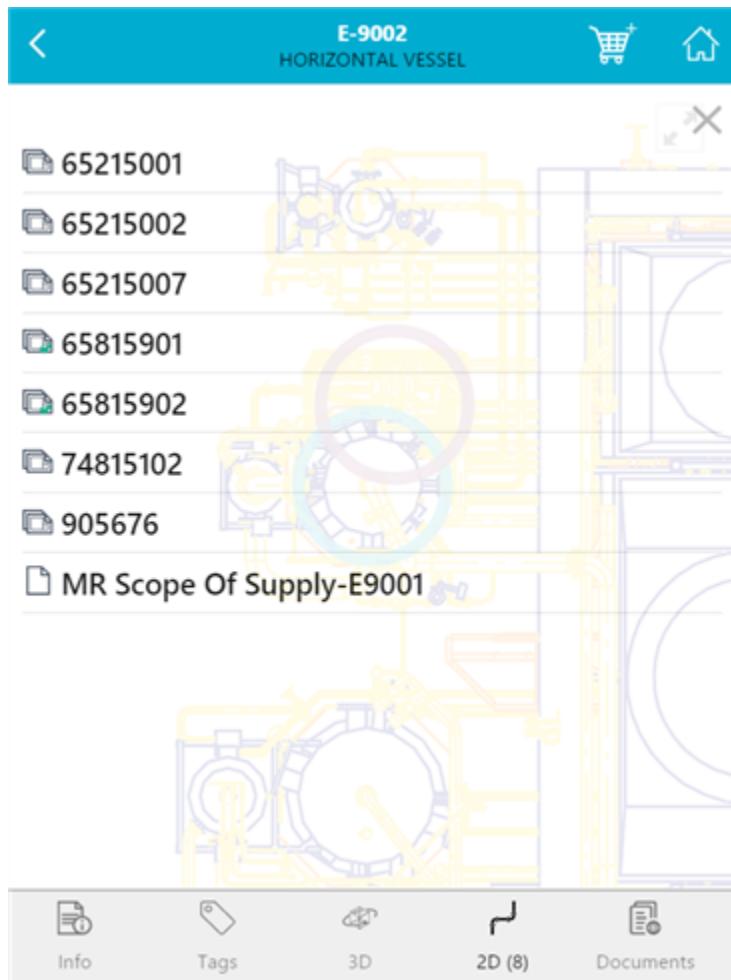
On tapping any item on the model, a Content Card is shown on the screen at the bottom of the model. The Content Card displays the ID, Name and the Type of the selected item.



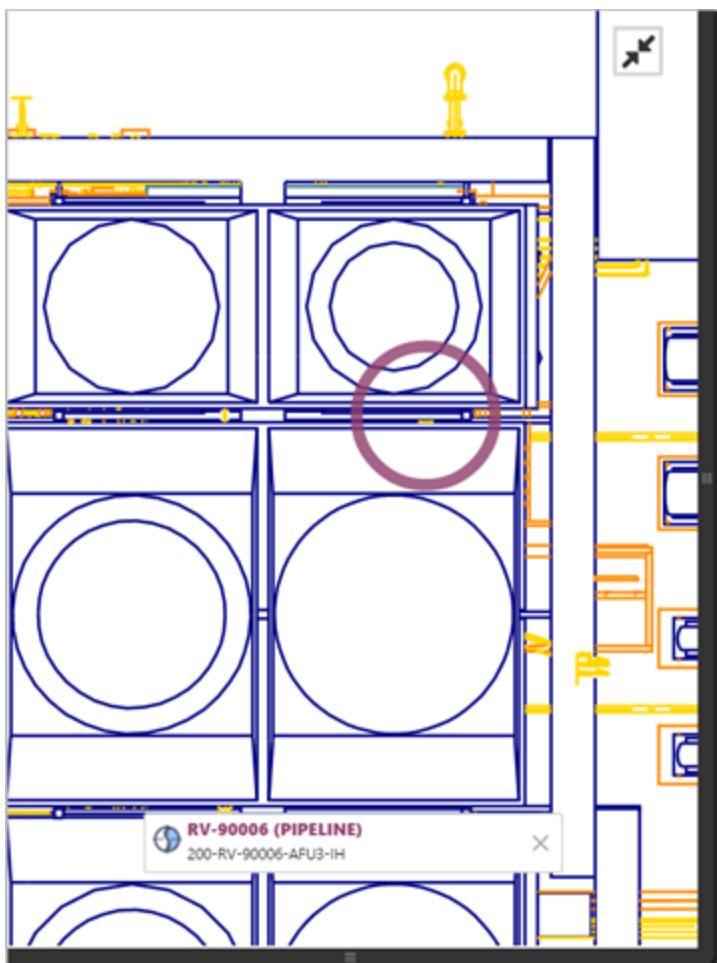
To close the Content Card, tap the close icon (X).

To show the list of documents, tap and hold the 2D or 3D menu item for a while.

To refresh the view to show the selected document, tap any of the document names in the list.



To expand the current 2D or 3D document to full screen, tap the **Full Screen** button (shown on the top-right corner). Expanding the document hides the header and the footer. Tapping the button again restores the document to normal view.



## Use Item Summary Views

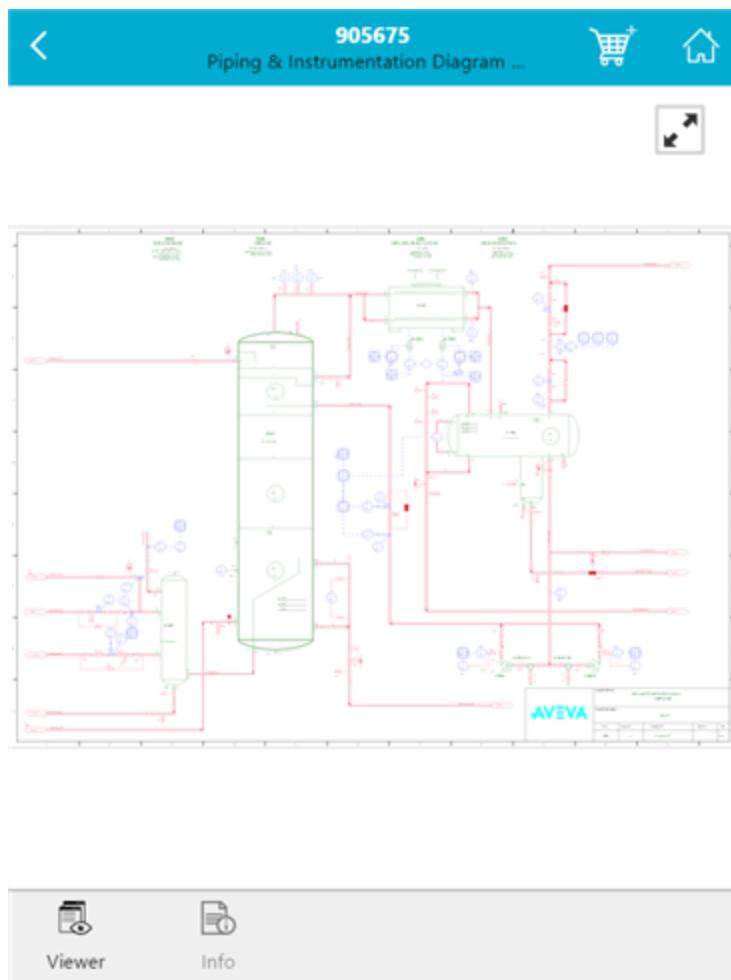
When you tap an item either in the search results or in the basket, a configurable **Item Summary View** is displayed based on the item's type. You can see the **Mobile View**, which is similar to the **Summary View** and the **Content Card View** in the *AVEVA Asset Information Management Dashboard* desktop website.

The **Mobile View** loads different HTML pages based on the item type. You can create your own versions of the [BootstrapSampleViews.xml](#) and [BootstrapSampleDataGroups.xml](#) files that can be found in the path: [\[Installation Path\]\Import\Server\Bootstrap](#).

Following are the sample HTML pages, which are used for loading the **Mobile View**:

- [mobileDefaultSummary.html](#)
- [mobileDocumentSummary.html](#)
- [mobileTagSummary.html](#)

If you open a document of type SVG, PDF, Microsoft Office document or any sub-class of Document Content, then the **Document View** (which loads the [mobileDocumentSummary.html](#)) is displayed.



If you open an item which is a sub-class of Functional Artifact, then the **Item Summary View** (which loads the [mobileTagSummary.html](#)) is displayed.

---

**Note:** The display of both **Document View** and **Item Summary View** are configurable using the desired data groups.

---

The screenshot shows the Item Summary View for item E-9003, a Horizontal Vessel. At the top, there is a back arrow icon, the item ID "E-9003", the item name "HORIZONTAL VESSEL", a shopping cart icon with a plus sign, and a home icon. Below this, there are three sections: "Details", "Key Attributes", and "Attributes".

- Details:** Shows the ID as E-9003 and the PlantUnit.
- Key Attributes:** Shows the Plant, Plant Description, Area (EQUI-15A-EQUIP), Area Description, System, and System Description.
- Attributes:** Shows a list of data sets:
  - E-9003 VPD Data Set (5)
  - E-9003 2D Data (3)
  - E-9003 SAP Data (6)
  - E-9003 Tag Register Data (10)
  - E-9003 Datasheet Data (7)

At the bottom, there is a footer bar with five icons: Info, Tags, 3D, 2D, and Documents.

In the **Item Summary View** page, you can:

- Tap the basket on the top-right corner to add the item being viewed to your basket.
- Tap the < icon to go back to the previous search results page.
- Tap the home icon on the top-right corner to go to the Home page.

The icons in the footer of the **Item Summary View** correspond to specific mobile summary sections. You can access information about an item by navigating to the different sections. These sections are configurable and can be used in a **View** to display the data in a variety of ways using data groups.

For more information, see [Configure Views](#).

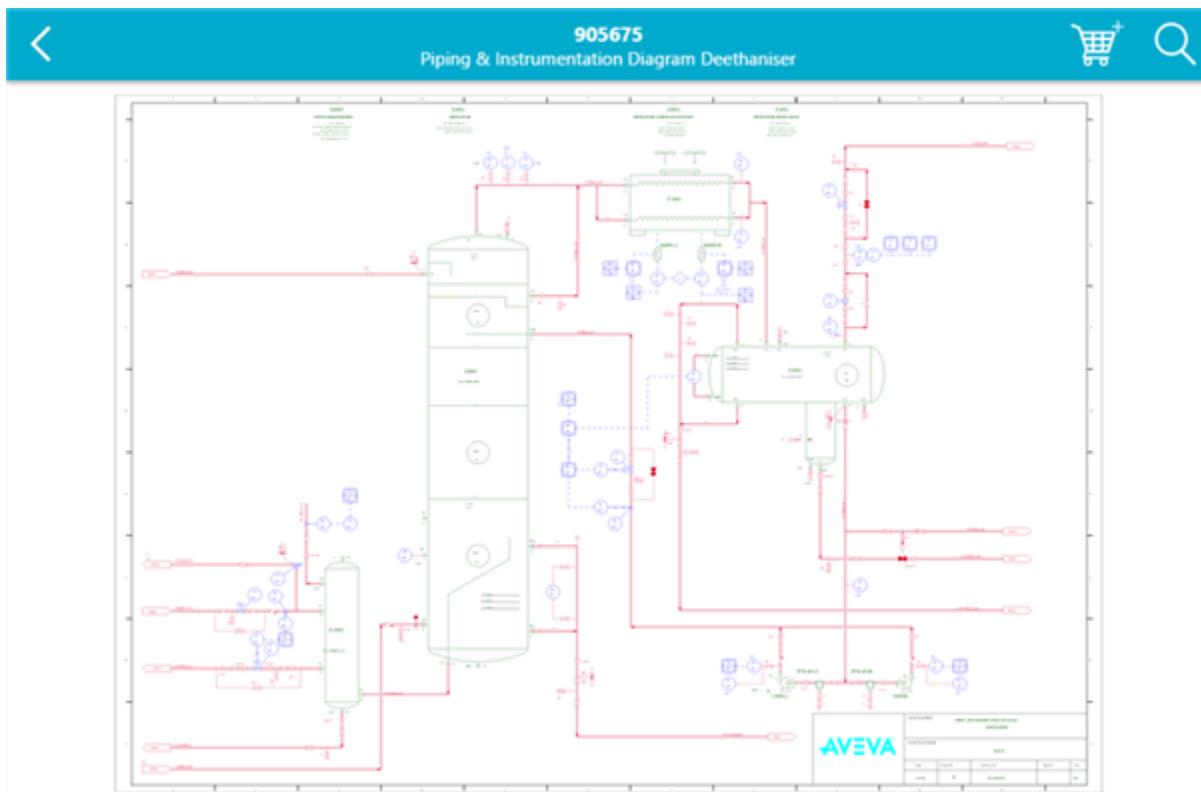
## Access Documents

You can access 2D documents (for example, PDF, SVG drawings or Microsoft Office documents) and 3D models in the *AVEVA Asset Information Management Dashboard* mobile site.

You can also view documents using the **Accusoft™ Viewer** and access the document contents from an external DMS.

## View 2D Documents

You can view 2D documents on the mobile site from either the search results or the basket. When you tap the ID of any item in the search results or the basket, you can see the corresponding item view. When you tap a 2D Document type (for example, PDF, SVG drawings or Microsoft Office documents), you are directed to the Document Viewer.



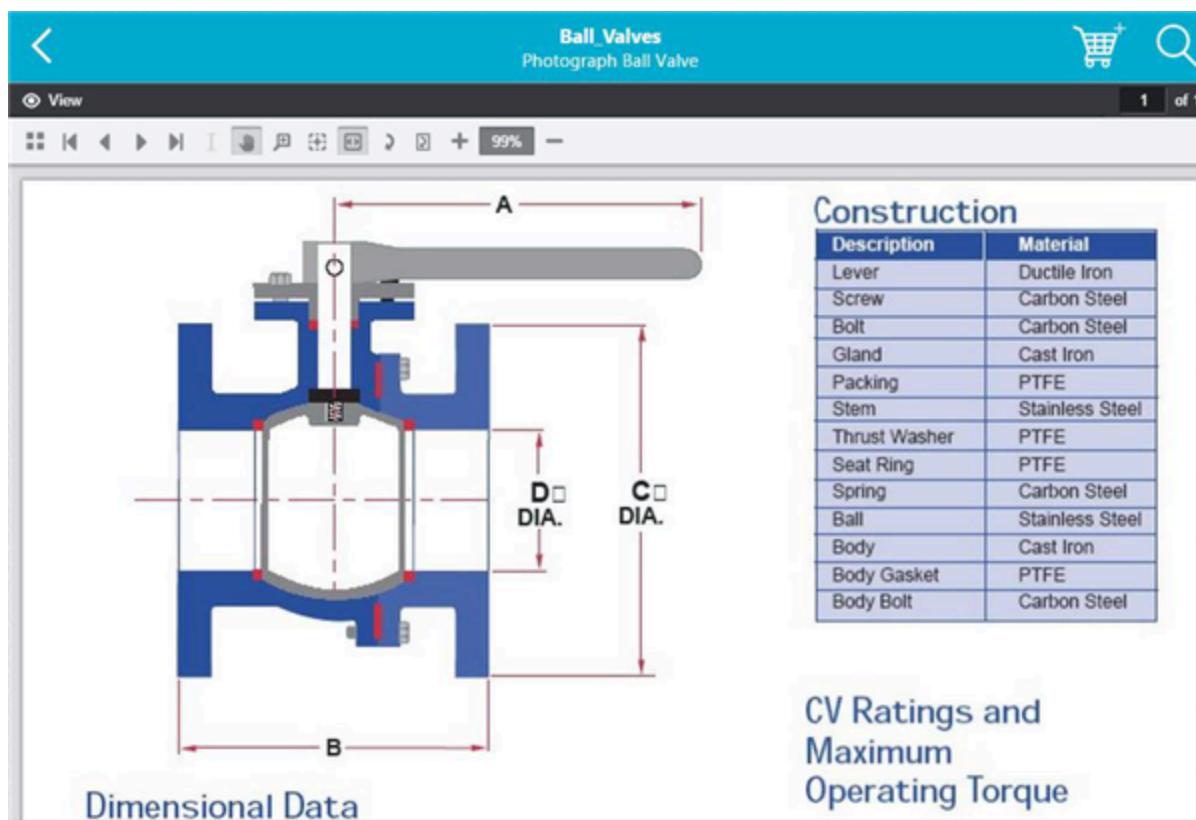
The Document Viewer displays the ID and name of the document in the header. You can scroll down a multi-page PDF or MS Word document and zoom in, zoom out and pan across an SVG document.

To start a new search, tap **Search** in the header. Tapping the **Back** icon takes you back to the previous page.

To add the document being viewed to the basket, tap **Add to Basket** in the header. The system shows a notification confirming that the item is added to the basket.

## View Documents in Accusoft™ Viewer

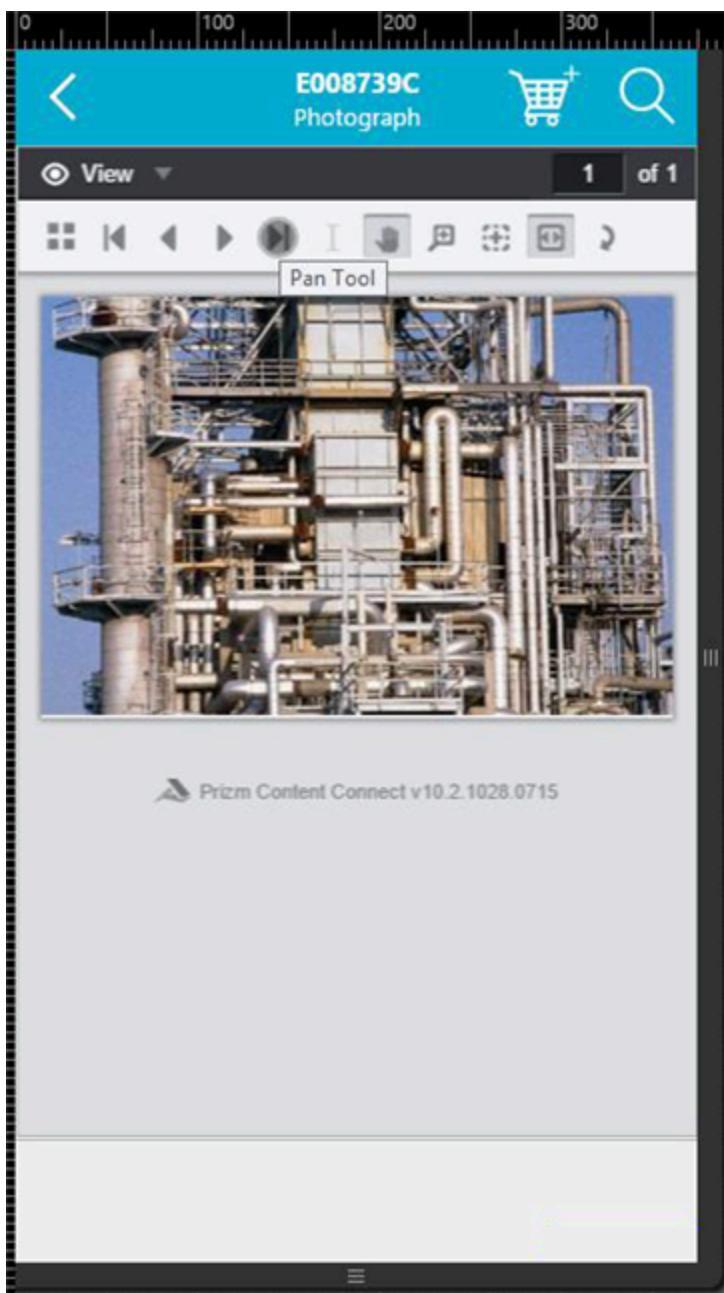
If you have deployed the Accusoft™ web deployment package and configured the Accusoft™ Server, you can view 2D documents using the Accusoft™ Viewer. All of the Accusoft™ Viewer functions that are available on the desktop site are also available on the mobile site, except the ones for the annotation tools.



The Accusoft™ viewer is fully adaptive, so it supports a wide range of screen sizes and orientations by changing how it renders certain screen elements.

For example, on devices with screen sizes below 7 inches, or resolutions below 800x600 pixels, a different icon set with bigger touch regions is displayed. Also, the layout of the toolbar adapts to fit the screen and resolution size — with specific icons being either displayed differently or hidden altogether.

The example below shows what the viewer toolbar looks like on a 5 inch screen, with the touch area highlighted. The 'zoom' toolbar icon changes from a '+' and '-' with a scale factor in between, to a magnifying glass, to make the most use of the screen space.

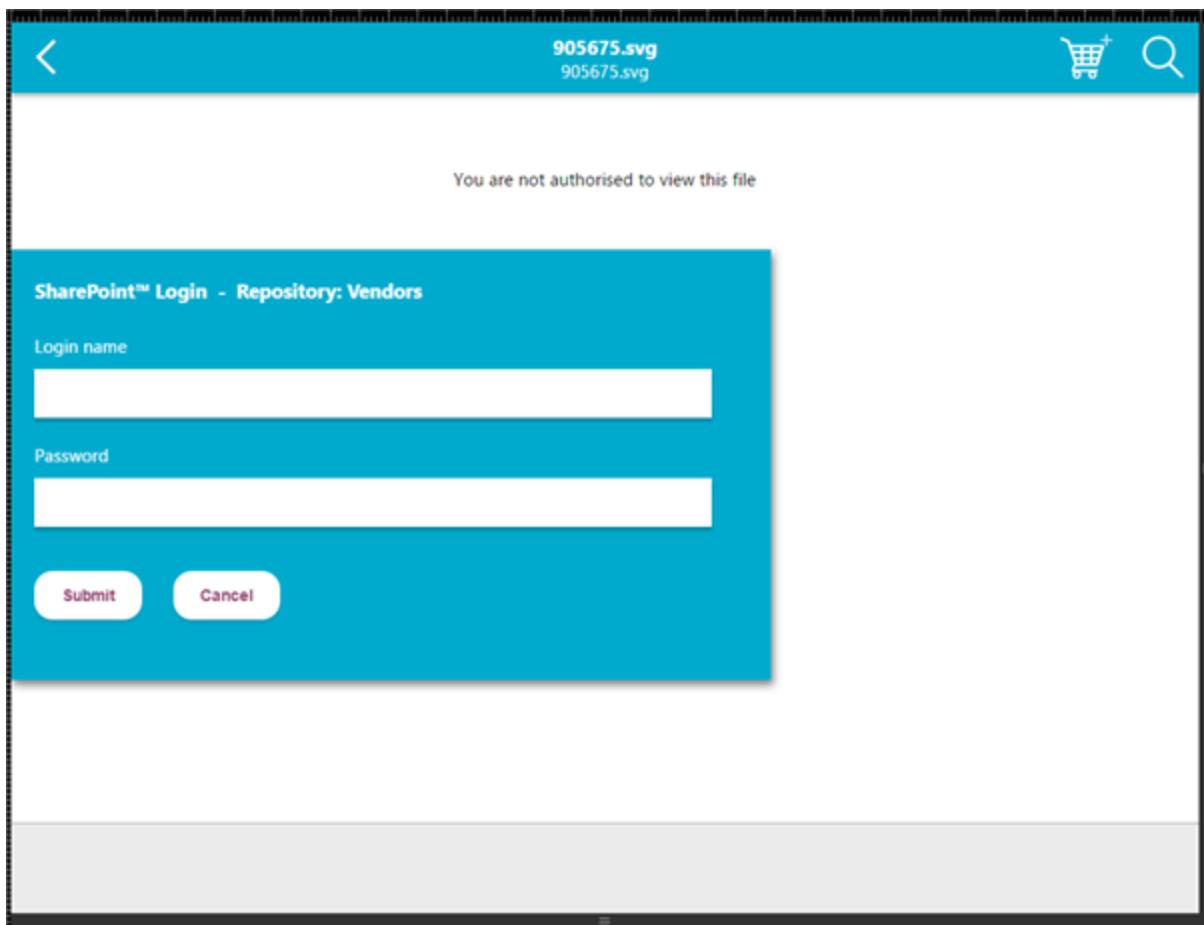


### Access Document Contents from an External DMS

You can view the files stored in an external DMS (such as SharePoint™ or Documentum™) within the Document Viewer on the mobile site when:

- The requisite configuration is present in the web configuration file, and
- You have the correct rights to view the document.

If you as a user have not been authenticated to view the file in the current session on either the desktop or the mobile site, a dialog box similar to the following is displayed where you must enter your user credentials for the DMS. This prompt occurs only once per session.



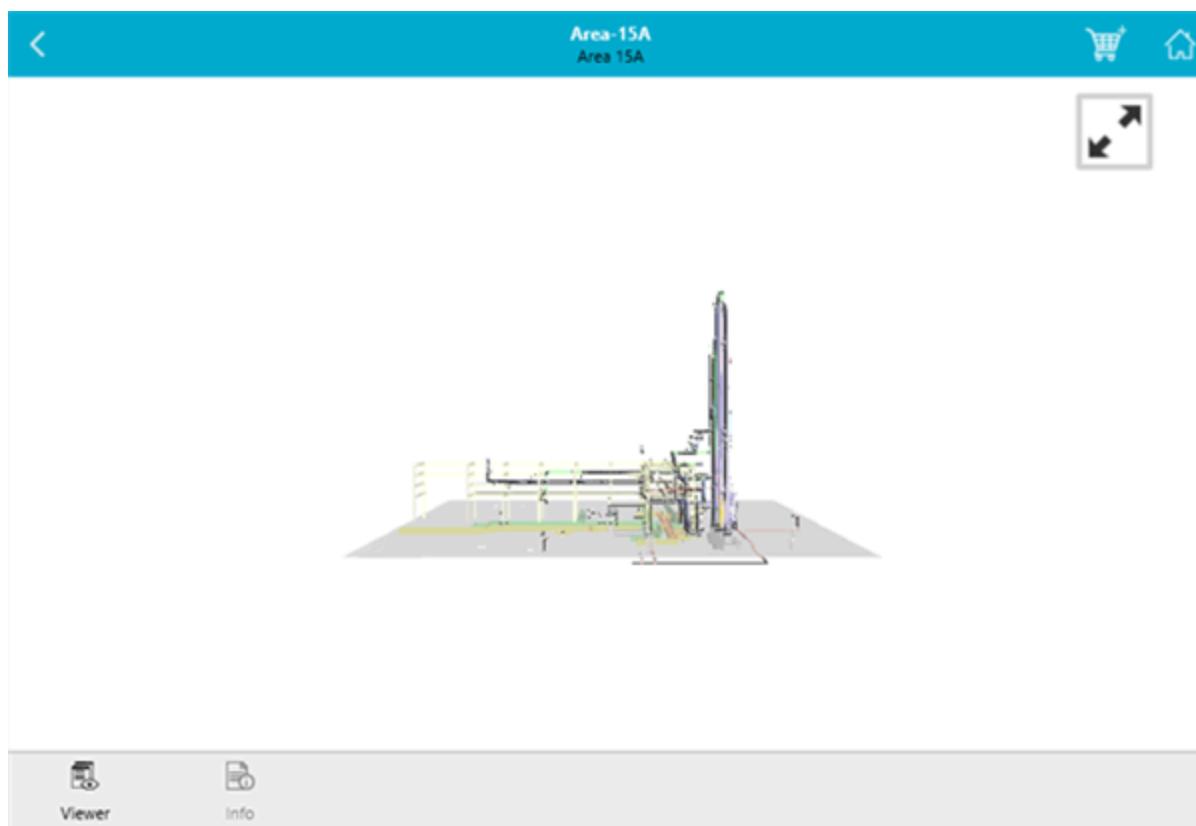
After you authenticate, you can view the files in the Document Viewer.

## View 3D Models

You can view **3D Models** on the mobile site from either the search results or the basket.

When you tap on an item of **3D Models** type from either the search results or the basket, you are redirected to the Document View showing the 3D model. You can manipulate the model in the 3D space to select any of its component.

When you tap on a specific component of the 3D model, the Content Card is shown on the screen. The Content Card displays the basic details of the selected component. Tapping on the Content Card header refreshes the page to display the *Summary View* of the selected item.



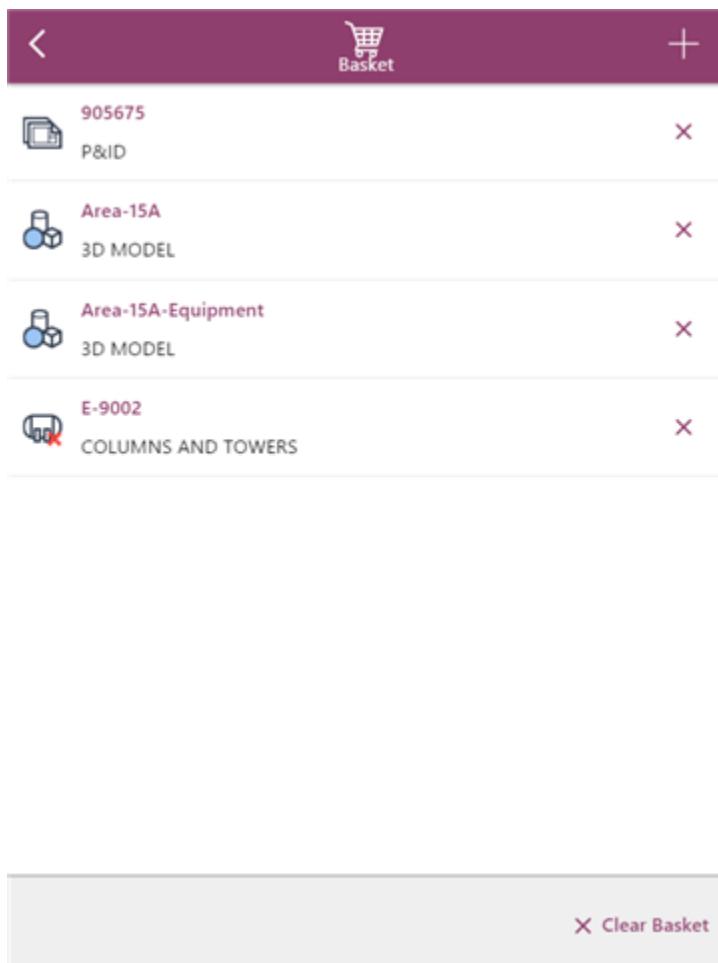
## Use Basket

After you log on to the mobile site, you are taken to the **Home** page, where you can see the number of items you have in your basket. The basket icon has a badge only when there are items in the basket. In the example screenshot given below, the number of items in the basket are four.



The contents of the basket are the same on the desktop and the mobile site:

- Tap the basket to see the contents inside it.



- To remove an item from the basket, tap the corresponding remove icon (X).
- To empty the basket, tap **Clear Basket** at bottom-right of the page.
- To start a new search, tap the 'add' icon (+) at top-right of the page .
- To navigate to the previous page, tap the '<' button. Using this button, you can navigate all the way back to the **Home** page.

**Note:** To add items to your basket, tap the basket icon on the search results page. A notification is shown confirming that the items are added to the basket.

All - Showing 26 of 26 results

J-9002A PUMP	Cart
J-9002A 2D Data EQUIPMENT 2D DATA	Cart
J-9002A Datasheet Data EQUIPMENT DATASHEET DATA	Cart
J-9002A Design State Data Design State Data	Cart
J-9002A E-Power Dataset E-Power Dataset	Cart
J-9002A E-Pump Dataset E-Pump Dataset	Cart
J-9002A Gen. Dataset E-General Dataset	Cart
J-9002A Hazop Dataset	Cart

All Documents Tags (✓) Items added to Basket.

## Administer AIM

This section describes how to install AVEVA AIM, configure data, administer AIM Dashboard and integrate it with other applications.

## Get Started

This section introduces the components and tools that make up AIM, and gives an overview of the various methods of installation.

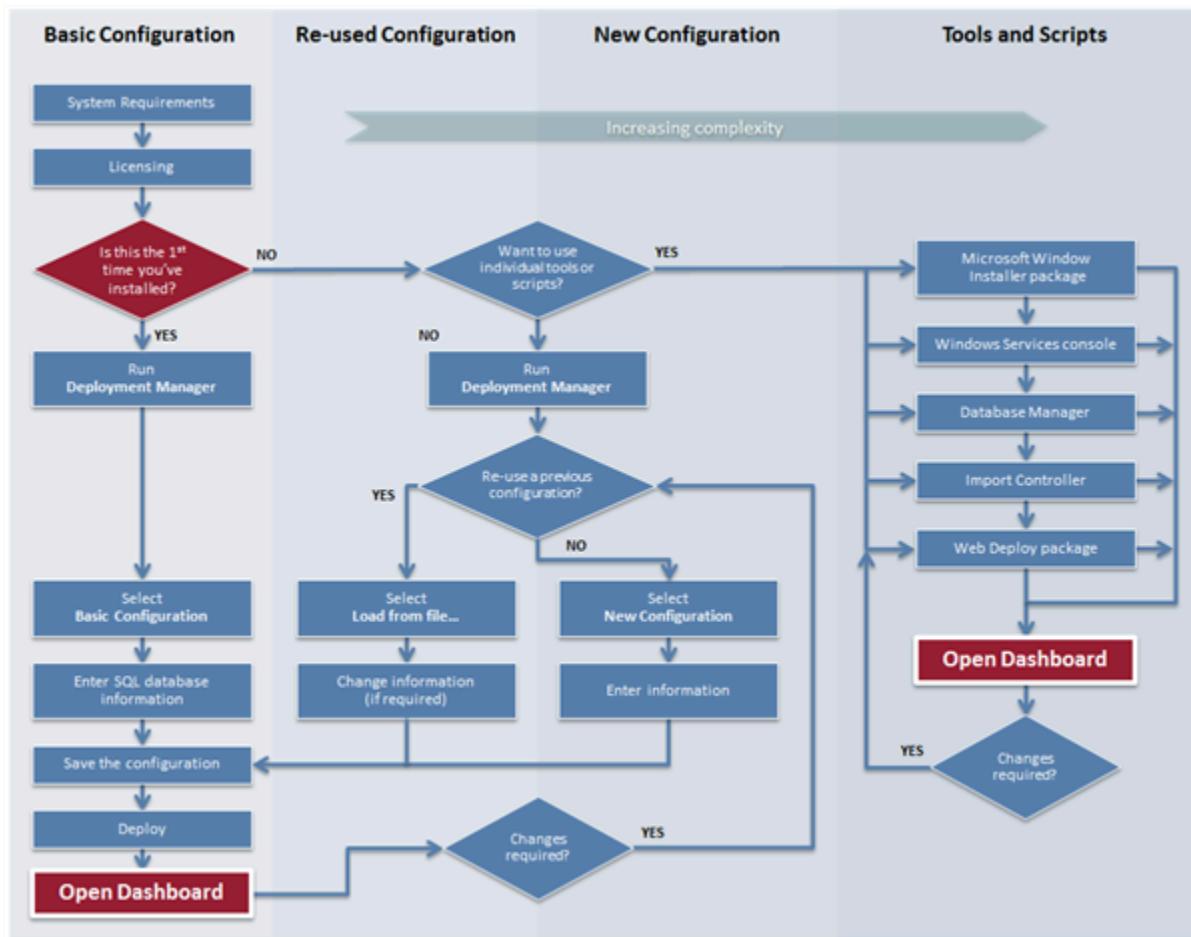
This section describes System Administrators how to install, configure and deploy *AVEVA Asset Information Management (AIM)*.

It is assumed that you are familiar with the maintenance of a Windows network domain through Active Directory and the following Microsoft Server software configurations:

- Internet Information Services (IIS)
- Microsoft SQL Server

## Installation at a Glance

The following diagram shows a high level diagram of Installation of AIM.



The easiest way to install, configure and deploy is to run the *Deployment Manager* using the *Basic Configuration*, see [Install the Demo \(Basic Configuration\)](#).

Depending on your requirements, you can also:

- Use *Deployment Manager* to load saved configuration files for your specific needs, see [Install your own Configurations](#).
- Install, configure and deploy using individual tools and scripts, see [Installation using Tools and Scripts](#).

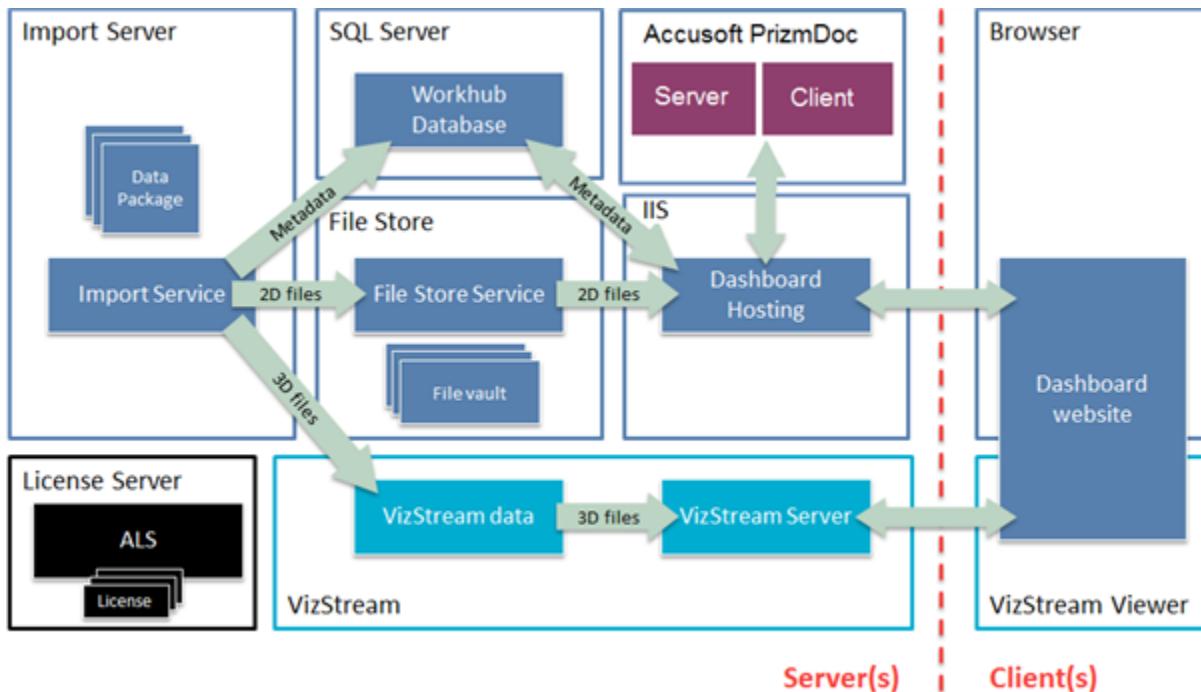
## Overview of Components

To get up and running you need to:

- Create and populate an *AIM Workhub* database.
- Set up an *AIM Dashboard* hosting environment.
- Configure an *AIM Dashboard* web application, accessed using a browser.
- Set up a File Store, used to securely store imported documents.

- Set up the Import Server, used to import data, documents and models.
- Set up a Job Server that enables the File Export job queuing and processing.
- Set up AVEVA VizStream server and viewer, for viewing 3D models.
- Set up Accusoft PrizmDoc, for viewing 2D documents.

The interactions between these components and AVEVA Licensing are summarized in the following diagram:



## Tools used to install, configure and/or deploy

- *Deployment Manager* - used to install, configure and deploy AIM. This tool creates an XML file that contains all the information required by the other tools. *Deployment Manager* then uses this information to run these tools in the required sequence to complete the installation.
- AIM Installation Package - used to install the tools.
- *Database Manager* - used to initialize the AIM Workhub database.
- *Import Controller* - used to configure the Import Server, and to load data and documents into the AIM Workhub database.
- *DMS Checker* - used to check compatibility with Document Management Systems (DMS).
- *Replicate Tool* - used to replicate the AIM Workhub database.
- *AIM Enterprise Integration Adapter (EIA)* - used for connecting third-party enterprise systems to AIM via a Service-Oriented Architecture (SOA).
- *Admin Tool* - used to administer an AIM Workhub database, inspect and edit class libraries, objects and associations, create and edit user settings, security, and access rights.

## Sample Data

- Sample Data - IPE and SRP

- Reporting Sample

## Quick-Start Installation

### Required Software

- Windows Server 2019 or Windows Server 2022
- Microsoft .NET Framework 4.8
- Microsoft Visual C++ 2012 Redistributable Package (x64)
- Microsoft Visual C++ 2013 Redistributable Package (x64)
- Microsoft Web Deploy 3.5 – complete install, including Web Deployment Agent
- SQL Server 2019 or SQL Server 2022
  - Mixed-mode authentication enabled
  - Express Edition does not support SSRS Reports.
- Microsoft® Windows PowerShell Extensions for Microsoft®
- AVEVA Licensing 4.1 (Client to set server list, server if you have your own license)
- AVEVA VizStream Server 6.1.10 (if not using AIM-hybrid)
  - Requires Microsoft .NET Framework 4.6.2 or later.
- Accusoft PrizmDoc Server 13.27 and PrizmDoc Client 13.27

**Note:** For more information, see [System Requirements](#).

### Configure IIS and Install Web Deploy

1. If **IIS** is not installed, use **Add Features** to install it, including:
  - Security - Windows Authentication
  - Application Development - ASP.NET 4.5
2. Open **IIS Manager**, select **Server**, and then double-click **Feature Delegation**.
3. Set **Anonymous Authentication** and **Windows Authentication** to **Read/Write**.
4. You must install **Web Deploy** using either the Web Deploy installer or the Web Platform Installer.

**Note:** For more information, see '*Configure IIS and Web Deploy*' section in the [Install and Set up the Requirements](#) topic.

### Install VizStream

- Proceed with the Defaults.
- Require Microsoft .NET Framework 4.6.2 or later.

If VizStream is already installed, stop **VizStream** service, start **Web Deployment Agent** service, start **VizStream** again.

**Note:** For more information, see '*Install Vizstream Server*' section in the [Install and Set up the Requirements](#) topic.

## Install Accusoft PrizmDoc Server and Client

For details about the installation, see '*Install Accusoft PrizmDoc Server and Client*' section in the [Install and Set up the Requirements](#) topic.

### Create Database

1. Open SQL Server Management Studio.
2. Create new database (for example, Workhub).
3. Create new user (for example, Workhub).
4. Select SQL server authentication.
5. Clear the Enforce password policy check box (or use a strong password).
6. For Default database, select Workhub.
7. For User mapping, select Workhub, and then set the role db\_owner.

---

**Note:** For more information, see '*Creating a SQL Server Database*' section in the [Install and Set up the Requirements](#) topic.

---

### Set Licensing Server

1. Run **ALS Licensing Client Configuration Tool**. (If UAC is on, right-click and select **Run as Administrator**.)
2. Enter the port number (default is 4545) followed by the name of your license server.
3. Restart **IIS**.

---

**Note:** For more information, see '*Set Licensing Server*' section in the [Install and Set up the Requirements](#) topic.

---

### Create Deployment Configuration

1. Run **Deployment Manager**.
2. Select **Next**, and then select **Basic Configuration**.
3. Enter **SQL** server details.
4. If **VizStream** is installed, the values auto-populate. If not, enter data directory and hostname.
5. Select to load **SRP** sample data.

---

**Note:** IPE takes longer time to load. Both will be configured in Import Server.

---

6. Select **OK**, and save the configuration file.
7. Select **Deploy**.

---

**Note:** For more information, see [Install the Demo \(Basic Configuration\)](#).

---

### Open Dashboard

Dashboard must be deployed to: <http://localhost:16000/>

## Fix Pack Installation

Periodically AVEVA releases fix packs and recommends installing those after the main release.

Visit the AVEVA Support Site at <https://softwaresupport.aveva.com/> to find and download the latest fix.

To install a fix release:

1. Install the full release as per the instructions in this guide.
2. Read the *release letter* for information about the fix release and its contents.
3. Create backup copies of:
  - a. Any customized `.config` files, located in the application root directory (for example, `C:\inetpub\Dashboard`).
  - b. Any customized Bootstrap files, see [Change the Out-of-the-box Installation](#).
4. Install the Update using either Deployment Manager (see [Step 2: Global Parameters](#)), or via the command line:
  - a. Locate `AVEVA.NET.Workhub.and.Dashboard.[ProductVersion].msp` on the release media.
  - b. Select **Start**, **Run**, and then type `cmd` to open a command prompt window.
  - c. At the prompt, run the following command:

```
%windir%\system32\msiexec /update [path to  
AVEVA.NET.Workhub.and.Dashboard.[ProductVersion].msp] reinstall=all reinstallmode=vamus  
/l*v c:\patchinstall.log
```
  - d. Follow the on-screen instructions to install the release. You may be prompted for the path to the original `msi` file for the full release.
  - e. Upgrade any affected components, such as the database or the website deployment, refer to the *release letter* mentioned in step 2.
  - f. To redeploy the Dashboard site using Web Deploy:
    - i. On the AIM Workhub Web Server, open IIS.
    - ii. Expand the server instance node.
    - iii. Expand the **Sites node**.
    - iv. Right-click the AIM Dashboard site.
    - v. Select **Deploy**, and then select **Import Application**.
    - vi. Go to <Install Directory>/Dashboard, select the `AVEVA.NET.Dashboard.zip` file, and then select **Next**.
    - vii. Select the contents of the package, and then select **Next**.
    - viii. Enter the Application Package information, and then select **Next**.
    - ix. When the package finishes installing, select **Finish**.
5. Refer to the files that you backed up in step 3:
  - a. Re-apply any customizations to any newly installed `.config` files
  - b. Replace any new default Bootstrap files with any (backed up) customized versions.

---

**Notes:**

- A fix release can be uninstalled separately from the full release.
- Only the latest fix release needs to be installed as it includes all fixes since the previous full release.
- It is not necessary to uninstall an earlier fix release before installing the latest one.

## Upgrade AVEVA AIM

This section describes the procedures for upgrading from *AVEVA NET Portal* to *AIM* and also from existing versions of *AIM* to newer versions.

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**Important:**

- Before upgrading to the latest version of *AIM*, ensure that both Microsoft Visual C++ 2012 Redistributable Package (x64) and Microsoft Visual C++ 2013 Redistributable Package (x64) are installed on the *AIM* web server.
- If you already have *AIM* installed, and you want to redeploy, then you must specify the installation directory that was used originally. To change the installation directory, you must first uninstall the application.

To create a new database or upgrade an existing database, the SQL Server user requires **db\_owner** privilege. This can be removed after the creation or upgrade activity is completed. For security reasons, it is recommended to configure the SQL Server user to run with a lesser level of privilege during normal operations.

Operation	Required Role
New database creation	db_owner
Upgrade existing database	db_owner
Normal operations	db_datareader, db_datawriter

Upgrading from 5.1.11, or latest patch, to 5.1.12 is supported.

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**Note:** Database migration from other versions is possible. For details, refer to the latest Release Notes, which provide up-to-date information on additional upgrade paths that are supported.

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## Upgrade from AVEVA NET Workhub and Dashboard 5.x.x

You have two options for upgrading an existing installation of *AIM* to the latest version:

- **Using Deployment Manager** - Use this if you have a deployment configuration file that you used to deploy your previous 5.x version of *AIM*, and this configuration still matches your current configuration or is edited to match. You can also create a new configuration file to match your current configuration using *Deployment Manager*.
- **Using individual tools** - Use this to perform the upgrade using individual tools, such as the Installer (*AVEVA.NET.Workhub.and.Dashboard.5.1.12.msi*), *Database Manager* and *Web Deploy*.

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**Important:**

- While upgrading from a version 5 installation, any new files you have added are deleted, and all files delivered with the application are overwritten. These files include:
  - The *web.config* settings, such as additional Portal IDs
  - The *AVEVA.NET.Import.Server.exe.Config* settings, such as database related details

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**Note:** From 5.1.5 onwards, all the Import Controller related configurations are available in the file *AVEVA.NET.Import.Server.exe.Config* under the `<aveva.net.import.server />` section. The default location for this file is *C:\Program Files\AVEVA\AVEVA NET\Import\Server*.

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- When upgrading to 5.1 or later using an earlier Deployment Configuration file, if Windows authentication was used, then you must select the Use windows authentication option.
- Any custom extensions that have been deployed to the AIM Dashboard website as a web deployment package must be redeployed after upgrade. If Web Deploy was not used, then all custom files must be backed up and reapplied after the upgrade.
- **DO NOT** copy previous versions of configuration files back into place, as these files contain both user configuration and system configuration entries which may have changed between versions.

### To upgrade using *Deployment Manager*:

1. If you have made any customizations to Windows Service configuration files (that are not configurable within Deployment Manager) or made any changes to the AIM configuration files (for example, `web.config`), create backups so that you can re-apply these customizations after the upgrade.
2. Load your deployment configuration file into *Deployment Manager*:
  - a. From your installation media, double-click the **AVEVA.NET.Deployment.Manager** file.
  - b. Select **Next**.
  - c. On the **Load Configuration** page, select **Load from file ...** and browse to your deployment configuration file.
  - d. Select **Open**.

*Deployment Manager* upgrades the configuration to the 5.1.12 format.

  - e. Check each page of the configuration to make sure it is correct, and then select **Next >** to move to the next page. If necessary, add, remove or configure new features introduced in the latest AIM version.

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**Note:** If VizStream is not required (for example, if 3D models are to be viewed using AIM-hybrid), ensure that the **VizStream Client** option is not selected.

  - f. On the **Save Configuration** page, save your new configuration – do not overwrite the old file as you might need it again. Select **Next >**.
  - g. Run the upgrade: On the **Deploy** page, select **Deploy**.
3. Re-apply the specific changes you made to the Windows Service configuration files.
4. Re-apply any customizations, such as `web.config` settings. This includes any additional Portal IDs, which have been overwritten as part of the upgrade.

### To upgrade using individual tools:

1. If you have made any customizations to Windows Service configuration files (that are not configurable within Deployment Manager) or made any changes to the AIM configuration files (for example, `web.config`), create backups so that you can re-apply these customizations after the upgrade.
2. Run the installer:
  - a. From your installation media, double-click **AVEVA.NET.Workhub.and.Dashboard.5.1.12.msi**.
  - b. On the **Welcome**, screen, select **Next**.  
Your previous **Destination Folder** and set of features are maintained.
  - c. Check each page of the wizard to make sure it is correct, and then select **Next >** to move to the next page. If necessary, add and configure new features introduced in AIM 5.1.12.
  - d. Run the upgrade: On the **Ready to install ...** page, select **Install**.
3. Re-apply the specific changes you made to the Windows Service configuration files.

4. Run *Database Manager* and connect to your AIM *Workhub* database or databases. Accept the prompt to upgrade the database to 5.1.12.
  5. Using the **Dashboard.zip** Web Deploy package (in the installation directory), re-deploy the *AIM Dashboard* web application.
  6. Re-apply any customizations, such as `web.config` settings. This includes any additional Portal IDs, which have been overwritten as part of the upgrade.
  7. If you are using the Accusoft PrizmDoc Viewer, re-deploy the viewer package.
- 
- Note:** Ensure that you have upgraded to the correct version of the Accusoft PrizmDoc; if not, you must re-deploy the site. For information about how to upgrade Accusoft PrizmDoc, see [Upgrade Accusoft PrizmDoc](#).
8. Configure any new features introduced in AIM 5.1.12.

## Installation and Deployment

This section describes about the installation and deployment of AIM.

### System Requirements

This section provides information about the hardware and software requirements for the *AIM Workhub* and *Dashboard* installation.

#### Installation on a Network

AIM is designed to be distributed over several computers on a network, the reasons for this include:

- Performance
- Scalability
- Security

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**Note:** You can install an instance of AIM on a single standalone computer for demonstration and training purposes. However, AVEVA does not recommend to do so.

AIM works with any virtualization software that is supported by Microsoft, refer to <http://support.microsoft.com/kb/957006>.

Users can log on to the *AIM Dashboard*, computers on the network must be part of a domain managed by a Windows Domain Controller; this is usually a separate computer set up specifically for this task.

### Example Server Topologies

There are several different combinations of servers that can be used, depending on a number of factors including, the installation overhead, the load on the Web Server, the load on the Database Server and the access control model being used.

The following examples may help in determining your own topology:

#### Example 1 - Multiple Web Servers and One Database Server

- Multiple Web Servers ensure better performance of web requests.

**Example 2 - Pairs of One Web Server to One Database Server**

- Increased performance of web requests and database requests.
- Increased installation complexity.

**Example 3 - One Web Server and Multiple Database Servers**

- Multiple Database Servers (for example, to split the data into different Assets or Disciplines) ensure better database performance.

**Note:** Example 3 is known as using 'multiple instances', see [Configure Multiple Instances](#).

## Hardware and Software Requirements

This section details the minimum and recommended hardware and software requirements for running AIM.

**Note:** Windows and Linux Reverse Proxy server configurations are supported. Citrix XenApp 6.5 needs to be present if you want to host the client browser in a Citrix environment.

## AIM Tools and EIA

### Hardware

Component	Minimum
Processor	8 core, 3 GHz, 16 MB cache
Memory	16 GB
Hard Drive	1 TB

### Software

Component	Requirement	Notes
Operating System	Windows Server 2019 or Windows Server 2022	
	Microsoft Web Deploy 3.5	Client installation only. Required by the Deployment Manager to deploy the AIM Dashboard website
Third-Party Software	Microsoft .NET Framework 4.8	

**Note:** For a list of AIM Tools, see [Overview of Components](#).

**AIM Web Server****Hardware**

<b>Component</b>	<b>Minimum</b>
Processor	8 core, 3 GHz, 16 MB cache
Memory	16 GB
Hard Drive	1 TB

**Software**

<b>Component</b>	<b>Requirement</b>	<b>Notes</b>
Operating System and components	Windows Server 2019 or Windows Server 2022	
	Microsoft Internet Information Services Manager (IIS) 10	
	Microsoft Web Deploy 3.5	On the web server the complete installation is required, including Web Deployment Agent. Required by the Deployment Manager to deploy the AIM Dashboard website
Third-Party Software	Microsoft .NET Framework 4.8	
	Microsoft ASP.NET 4.5	
	Microsoft Visual C++ 2012 Redistributable Package (x64) Microsoft Visual C++ 2013 Redistributable Package (x64) Microsoft Visual C++ 2015 Redistributable Package (x64)	
	Accusoft PrizmDoc Server 13.27 and PrizmDoc Client 13.27	PrizmDoc Viewer only, PrizmDoc Server must not be installed on the web server.
	AVEVA Licensing System 4.1	"Licensing client" to set the licensing server list environment variable. A licensing server must be accessible on the network with the

Component	Requirement	Notes
		appropriate licences available

## Microsoft SQL Server Database Server

### Hardware

Component	Minimum
Processor	8 core, 3 GHz, 16 MB cache
Memory	32 GB
Hard Drive	2 TB

### Software

Component	Requirement	Notes
Operating System and components	Windows Server 2019 or Windows Server 2022	
Third-Party Software	SQL Server 2019 or SQL Server 2022	See the <i>Creating a SQL Server Database</i> section in the <a href="#">Install and Set up the Requirements</a> for details.

## File Store Server

### Hardware

Component	Minimum
Processor	8 core, 3 GHz, 16 MB cache
Memory	16 GB
Hard Drive	1 TB

### Software

Component	Requirement	Notes
Operating System and components	Windows Server 2019 or Windows Server 2022	
Third-Party Software	Microsoft .NET Framework 4.8	

**Note:** The File Store is commonly installed on the same machine as the Web Server.

**AVEVA Asset Information Management Import Server****Hardware**

<b>Component</b>	<b>Minimum</b>
Processor	8 core, 3 GHz, 16 MB cache
Memory	16 GB
Hard Drive	1 TB

**Software**

<b>Component</b>	<b>Requirement</b>	<b>Notes</b>
Operating System and components	<ul style="list-style-type: none"> <li>Windows Server 2019 or Windows Server 2022</li> <li>Microsoft .NET Framework 4.8</li> <li>Microsoft Visual C++ 2013 Redistributable Package (x64)</li> </ul>	
AVEVA Software	AVEVA Licensing System 4.1	"Licensing client" to set the licensing server list environment variable. A licensing server must be accessible on the network with the appropriate licences available

**AVEVA VizStream Server****Hardware**

<b>Component</b>	<b>Minimum</b>
Processor	8 core, 3 GHz, 16 MB cache
Memory	32 GB
Hard Drive	<p>Two physical hard drives:</p> <ul style="list-style-type: none"> <li>1 TB (10,000+ rpm or fast SSD) – VizStream Temp folder</li> <li>1 TB – Data and cache (depends on project size)</li> </ul> <p><b>Note:</b> While publishing models, VizStream also uses space in the <i>Temp</i> folder, which is usually in the <i>C:\</i> drive. This may be the same drive that the VizStream Server is installed on. The <i>Temp</i> space</p>

Component	Minimum
	required is approximately 30 times the maximum RVM model size. This space is released after the publishing is finished.

**Software**

Component	Requirement	Notes
Operating System and components	Windows Server 2019 or Windows Server 2022	
Third-Party Software	Microsoft .NET Framework 4.6.2 or later	
	Microsoft Visual C++ 2013 Redistributable Package (x64)	
AVEVA Software	AVEVA VizStream Server 6.1.10	Used for 3D Model visualization.
	AVEVA Licensing System 4.1	"Licensing client" to set the licensing server list environment variable. A licensing server must be accessible on the network with the appropriate licences available

**Note:** For VizStream, ensure that 20% of total Hard Drive capacity is available (even after model files have been imported). It is recommended that VizStream is installed on a physical machine, rather than a Virtual Machine, for optimal performance.

**Accusoft PrizmDoc Server and PrizmDoc Client (Prizm Application Service)****Hardware**

Component	Minimum
Processor	8 core, 3 GHz, 16 MB cache
Memory	64 GB

Component	Minimum
Hard Drive	1 TB (10,000+ rpm or fast SSD) additional storage for cached content

**Software**

Component	Requirement	Notes
Operating System and components	Windows Server 2019 or Windows Server 2022	
	Microsoft Internet Information Services Manager (IIS) 10	
Third-Party Software	Microsoft .NET Framework 4.6.2 or later Application Request Routing (ARR) 3.0 including dependent components	For more information about ARR, refer to: <a href="https://www.iis.net/downloads/microsoft/applicationrequest-routing">https://www.iis.net/downloads/microsoft/applicationrequest-routing</a> .

**Note:** As with VizStream, Accusoft PrizmDoc benefits from being installed on a physical machine with plenty of RAM and fast disk access. For more information about server sizing considerations for Accusoft PrizmDoc, refer to Accusoft's own online help documentation (<https://help.accusoft.com/PrizmDoc/v13.27/HTML/prizmdoc-server-sizing-servers.html>).

## AIM Dashboard Client Computer(s)

### Hardware

Component	Minimum
Processor	8 core, 3 GHz, 16 MB cache
Memory	16 GB

### Software

Component	Requirement	Notes
Operating System	<ul style="list-style-type: none"> <li>Windows 10, Windows 11</li> <li>iPadOS 13</li> </ul>	Any supported server operating system can also be used.
Third-Party Software	<ul style="list-style-type: none"> <li>Microsoft Edge (Windows)</li> <li>Google Chrome (Windows, iPadOS)</li> <li>Safari (iPadOS)</li> </ul> <p><b>Note:</b> For viewing 3D Models using VizStream with Edge in IE Mode, please install the <b>Microsoft Visual C++ 2013 Redistributable Package (x64)</b> on the client machine.</p>	
AVEVA Software	AVEVA VizStream ActiveX Viewer (Edge in IE Mode only)	For details about the different scenarios of VizStream ActiveX control download, see <a href="#">Install and Set up the Requirements</a> .

### Support for Microsoft Edge

Microsoft has ended support for Internet Explorer (see <https://docs.microsoft.com/en-us/lifecycle/faq/internet-explorer-microsoft-edge>), consequently AIM no longer supports Internet Explorer. So you must use Microsoft Edge in "**Internet Explorer Mode**" to run the VizStream ActiveX control.

You must complete the following steps:

1. Upgrade Microsoft Edge to the latest version.
2. Go to **Settings, Default browser**.
3. Under **Internet Explorer compatibility**, navigate to **Allow sites to be reloaded in Internet Explorer mode**, and select **Allow**.
4. Under **Internet Explorer mode pages**, add the Dashboard URL and restart the browser.

5. Visit the Dashboard URL in Microsoft Edge.

**Note:** If the setting "Allow sites to be reloaded in Internet Explorer mode" is not available, then your company group policy settings will need to be updated in order to allow users to enable this setting.

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## Software Incompatibilities

The following software must **not** be installed on the same computer as the AIM web server:

- CITRIX Metaframe (any version)
- Microsoft Exchange (any version)
- Microsoft Site Server (any version)
- Microsoft Office Server Extensions
- VizStream Collaboration 4.1.4

The following software applications must **not** be installed on the SQL Server Database Server or on any machine that remotely administers the SQL Server database:

- Lavasoft Ad-Aware Web Companion
- Lavasoft Ad-Aware Free Antivirus+
- Lavasoft Ad-Aware Personal Security
- Lavasoft Ad-Aware Pro Security
- Lavasoft Ad-Aware Total Security
- Any other Lavasoft Ad-Aware component
- Lavasoft AdBlocker

The following software must **not** be installed on the same computer as the Accusoft PrizmDoc Server:

- Versions of Cisco AMP prior to 7.4.5

## Install and Set up the Requirements

This section provides further details about installing and setting up some specific mandatory system requirements.

**Note:** If you have decided to load your 3D documents into the 3D cloud-hosted service, then please ignore the steps in this document concerning VizStream and WebGL.

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## User Privileges

AIM authenticates with your Microsoft Windows logon details.

You must have administrator privileges and must be logged on as an administrator, to carry out the installation, deployment and configuration.

## Configure IIS and Web Deploy

For details on installing IIS, refer to IIS 10 installation on Windows Server 2019 or Windows Server 2022.

When installing IIS, ensure that the following options are included:

- **Security - Windows Authentication**
- **Application Development - ASP.NET 4.5**

You must install *Web Deploy* using either the Web Deploy installer or the Web Platform Installer. After installing *Web Deploy*, if *VizStream* is already installed, stop the *VizStream* service, start **Web Deployment Agent Service** and then, start *VizStream* again.

### User Authentication in IIS

*AIM Dashboard* uses Windows Authentication to verify the identity of users. This means that, in IIS, **Anonymous Authentication** must be disabled and **Windows Authentication** must be enabled. *AIM Dashboard* tries to change these settings automatically at the server level using a section in the `web.config` file (found in the application root directory).

However, by default, web applications are not permitted to alter their authentication mode, and so, accessing *the AIM Dashboard* in a browser may result in the following error:

**This configuration section cannot be used at this path. This happens when the site administrator has locked access to this section using <location allowOverride="false"> from an inherited configuration file.**

To prevent this error, perform either of the following two actions:

Change the settings at the server level and allow *the AIM Dashboard* to alter its authentication mode:

1. Open **IIS Manager**.
2. Select the server, and then in the Management section, double-click **Feature Delegation**.
3. Set **Anonymous Authentication** and **Windows Authentication** to **Read/Write**.

Change the settings at the site level:

1. Open IIS Manager.
2. Select the *AIM Dashboard* application, then in the IIS section, double-click **Authentication**.
3. Set **Anonymous Authentication** to **Disabled**.
4. Set **Windows Authentication** to **Enabled**.
5. Open the `web.config` file and remove the following section:

```
<authentication>
<anonymousAuthentication enabled="false" />
<windowsAuthentication enabled="true" />
</authentication>
```

## Install VizStream Server

To install the VizStream server:

1. Using an account that has administrative privileges, log on to the computer where you want to install the VizStream server.

2. Run the VizStream Server Installation program and follow the instructions – choose carefully where you install the server, because this will contain all of the 3D data that the server will deal with.

After the server has been installed, there should be a service available on the computer named "VizStream Server". If you are using Task Manager, you should see five processes named "VSServer.exe". Four of these processes are used for data encoding, running the VizStream extensions, managing files and handling client connections. The fifth process is used for monitoring the other four processes and restarting them if necessary.

To support the visualization of 3D models in the AIM Dashboard, the VizStream Server requires access to AVEVA Licensing. This can be achieved by installing and configuring the AVEVA Licensing Client Configuration Tool on the computer where the VizStream Server is installed.

### VizStream Server Recommendations

VizStream publishing and client connections make heavy use of the disk access. Thus, anything which restricts disk performance, such as anti-virus and continuous backup systems, can affect both publishing performance and connection performance.

To optimize performance, AVEVA recommends the following hardware and configuration:

- Deploy on a physical multi-core machine, not a Virtual Machine (VM). Although use of a VM is not recommended if one is used then it should be configured for high-performance disk access.
- Machine should be used for VizStream server purposes only and not used for anything else such as IIS.
- X64 with plenty of RAM (~16GB).
- Use separate physical disks for OS, data/cache folder and TEMP.
- Exclude data/cache folder and TEMP path from anti-virus on-access scanning.
- Ensure that there is plenty of free space on TEMP (~50-100GB in the case of large models processing in parallel) folder.
- Avoid network proxy server where possible, as this can interfere with direct TCP connection and/or force HTTP instead.

### Troubleshooting VizStream stability issues

If you experience stability issues when viewing 3D model files in the VizStream viewer, you must verify the following:

1. Client computers should have quality graphics cards with up to date graphics drivers. Having an out-of-date graphics driver is by far the most common cause of OpenGL crashes.
2. User accounts on a client machine using the ActiveX viewer require access to the "Microsoft Performance Counters" system. This is the default for admin users; other users may require a change to the group policy. If VizStream is unable to access these performance counters, it is likely to encounter out-of-memory issues, which can cause the browser to crash. The solution is to add all users to the "Performance Monitor Users" group.

### AVEVA Vizstream ActiveX Viewer (Cab file installation)

The VizStream ActiveX Control now has two executable files - a 32-bit and a 64-bit. The 64-bit VizStream Viewer Control is deployed along with 32-bit cab files. The first time when you open a 3D model, a pop-up appears at the bottom of the browser and after you select **Install**, it asks for confirmation and then installs the cab files in the client machine on the respective locations, such as:

- For X86 - [C:\Program Files \(x86\)\AVEVA Solutions Limited\Private\VizStream version](C:\Program Files (x86)\AVEVA Solutions Limited\Private\VizStream version)

- For X64 - <C:\Program Files\AVEVA Solutions Limited\Private\VizStream version>

Whenever the 32-bit or 64-bit cab files are deleted from the client machine, the browser asks for reinstallation of the cab files. Alternatively, the cab files can be installed by their respective executable files, which are available at the following default location:

<C:\Program Files\AVEVA\AVEVA.NET\Utilities\VizstreamViewer>.

The 32-bit and 64-bit executable files create an external process and use a 32-bit or 64-bit VizStream Viewer based on the executable file installed. The 32-bit viewer uses up to 1 GB and the 64-bit viewer uses up to 2 GB of the memory by default. For now, it is mandatory to have both 32-bit and 64-bit executable files installed on the client. The 64-bit control improves the performance with large 3D models in ActiveX. The models get fully loaded and do not stop streaming at between 90-99%. Also, the models open quicker and can be manipulated faster.

## Install Accusoft PrizmDoc Server and Client

The PrizmDoc Server is a collection of services that helps in conversion of documents from source file to SVG or raster, depending on the source document content, for display in the Viewing Client. The conversion of documents into a common format is the key to viewing many different file types in a single viewer. **Content Conversion Services RESTful API** enables conversion of content from all supported formats into PDF or TIFF output. Content Conversion Services also enable you to combine documents (or pages within documents) from disparate formats into a new document.

PrizmDoc Application Service (PrizmDoc Client) provides to the viewer application-level logic, such as, enabling document viewing through the PrizmDoc Server, saving and loading of markup, handling opening of documents and creating viewing sessions. This service works as a gateway between the Viewing Client and the PrizmDoc Server.

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### Notes:

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- It is recommended that *Microsoft Office Professional Plus 2019* is installed on the Accusoft PrizmDoc Server along with an MSO licence. This results in a more native rendering of Office documents by PrizmDoc and avoids certain formatting issues. To apply the MSO licence, run as administrator the command <AVEVA.NET.Accusoft.Licence.exe MSO> at a command prompt. The file <AVEVA.NET.Accusoft.Licence.exe> can be found in the zip file for the release in the folder: <.\\AVEVA.NET Workhub and Dashboard 5.1.12\\Accusoft PrizmDoc 13.27>
- If the MSO license has been applied but Office is not going to be installed, then Office documents will not display, so please revert the license back to using the LibreOffice renderer. To apply the LibreOffice licence, run as administrator the command <AVEVA.NET.Accusoft.Licence.exe> at a command prompt. The file <AVEVA.NET.Accusoft.Licence.exe> can be found in the zip file for the release in the folder: <.\\AVEVA.NET Workhub and Dashboard 5.1.12\\Accusoft PrizmDoc 13.27>
- The [Prizm](#) and [PrizmDoc Application Watchdog Windows Services](#) are registered during the installation. Both of them are installed with a default configuration and require further steps to ensure that the server is secured.

To install Accusoft PrizmDoc Server and Client:

1. Run the **Server** installer, provide a logon for the service.
2. Close the licensing tool when it opens.
3. Run the [AVEVA Licensing tool](#), and then start the **Prizm Service**.

4. Run the **Client** installer, and provide a logon for the service.

**Notes:** Re-register is not required. For more information about PrizmDoc Server and PrizmDoc Client, see <https://help.accusoft.com/PrizmDoc/v13.27/HTML/prizmdoc-server-sizing-servers.html>.

## Configuring Windows Authentication

IIS must be configured as a reverse proxy to enforce Windows authentication for the communication channel between the *AIM Dashboard* web server and the *Accusoft PrizmDoc Server* and *Client*. Configuring Windows authentication for Accusoft PrizmDoc is not required if one of the following is true:

- Accusoft PrizmDoc is installed on a separate server, and a firewall has been configured to prevent external access to server and ports.
- Accusoft PrizmDoc is installed on the same server as *AIM*, and external access to any other ports has been blocked.

Contact your IT administrator regarding the necessary steps required to configure a firewall to secure the PrizmDoc Server and Client. For more information about security, see <https://help.accusoft.com/PrizmDoc/v13.27/HTML/prizmdoc-server-sizing-servers.html>.

**Note:** Usually, the PrizmDoc Services should not be exposed publicly, and the web tier (Dashboard) alone should communicate directly with PrizmDoc.

**Important:** If the Accusoft client viewer is not deployed, the parameter **PrizmApplicationServicesPort** can be configured during deployment of the *AIM Dashboard*. For details, see [Installing your own Configurations](#).

To enable Windows authentication:

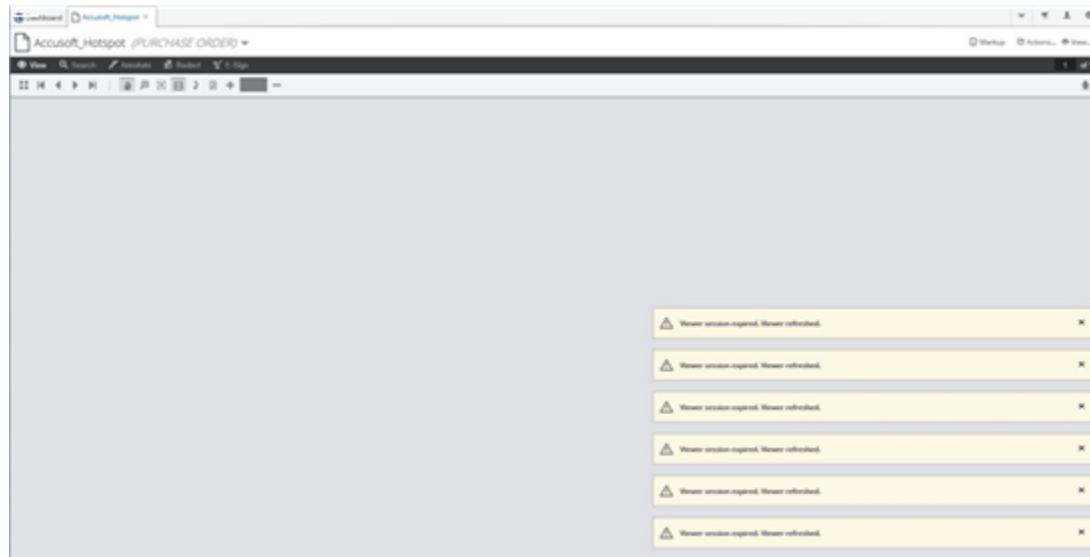
1. From the **Start** menu, click **Administrative Tools**, and then select **Internet Information Services (IIS) Manager**.
2. In the **Connections** pane, expand the server node, right-select **Sites**, and then select **AddWebsite**.
3. In the Site **name** field, type **PrizmDoc Proxy**.
4. For **Physical path**, type **C:\inetpub\wwwroot\PrizmDocProxy**.
5. For **Port**, type **23000**, and then select **OK**.
6. Select the newly created website (that is, **PrizmDoc Proxy**) and double-click the **URL Rewrite** icon under the **IIS** section.
7. From the **Actions** panel, select **Add Rule(s)....**
8. Under **Inbound and Outbound Rules**, double-click **Reverse Proxy**.

**Note:** If prompted to enable proxy functionality in ARR, click **OK**.

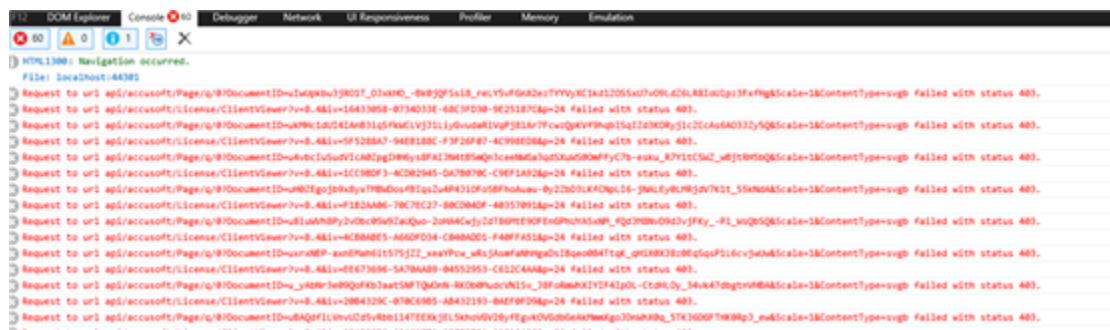
9. For **Inbound Rules**, type **localhost:3000** [this is the server entry point (SEP)], and then select **OK**.
10. In the right pane, under the **IIS** section, double-click **Authentication**.
11. In the **Authentication** pane:
  - a. Right-click **Anonymous Authentication**, and then select **Disable**.
  - b. Right-click **Windows Authentication**, and then select **Enable**.
12. Navigate to the *AIM Dashboard* website directory.  
For example: **C:\inetpub\Dashboard**
13. In the pcc.config file, look for the XML element, **<PrizmApplicationServicesPort>**.
14. Replace the port number **3000** with the new port number **23000**.

15. To reset IIS, select **Start**, and then run **IISRESET**.

**Note:** If you see the following screen after opening a document in AIM, that indicates the above settings are not supported. You must disable **Windows Authentication** and enable **Anonymous Authentication** to make it work with PrizmDocProxy site.



The Browser Console may display errors like the following:



## Prizm and PrizmDoc Application Watchdog Service (Optional)

The Prizm and PrizmDoc Application Watchdog service is a [Node.js](#) application that manages and monitors the Prizm Platform services. The platform services consist of a variety of services, including document conversion, viewing, redactions and text.

Power	Manages power policy and power policy notification delivery;	Running
Print Spooler	This service spools print jobs and handles interaction with the printer. If you turn off this service, you won't be able to print or see your print...	Running
Printer Extensions and Notifications	This service opens custom printer dialog boxes and handles notifications from a remote print server or a printer. If you turn off this service, ...	
Prizm	Runs the PrizmDoc services.	Running
Prizm Application Services	Runs the PrizmDoc Application Services Watchdog, a Node.js Application that will manage and monitor the PrizmDoc Application Services ...	Running
PrizmDemo	Runs the PrizmDoc Demo, a Node.js application that will run Content Conversion Service sample	Running
Problem Reports and Solutions Control Panel Support	This service provides support for viewing, sending and deletion of system-level problem reports for the Problem Reports and Solutions con...	

During installation of Accusoft PrizmDoc, one of the steps is to provide an account that is used to run the PrizmDoc Application Watchdog Service. By default, **Account Name** is populated with name of the user running the installation. A user account must be specified from the local system or domain under which the service should run and the account must be given the "log on as a service" permission.

To configure the user account after installation:

1. In Windows, select **Start, Administrative Tools, Services**.
2. In the **Services** window, highlight the **Prizm Service** and the **Prizm Application Services**.
3. Right-click and select **Properties**.
4. Select the **Log On** tab.
5. Enter the credentials of the user account.
6. Select **Apply**.  
The user is prompted to restart the service for the changes to take effect.
7. Select **OK** to close the prompt.
8. Select **OK** to close the **Prizm Service** and the **Prizm Application Services Properties** window.
9. With the service still highlighted in the **Services** window, right-click and select **Restart**.

## Viewing Session Timeout

The viewing session times out after 20 minutes (default).

To keep the session alive, your browser must request the server for information, such as, page navigation, thumbnails and download functionality. If the session times out while you are viewing a file, you must close the tab and reopen the file.

To adjust the viewing session timeout, refer to the Configuring Accusoft PrizmDoc Timeout Settings (Optional) section in [Configure Accusoft Rasterization](#).

## Configuring Accusoft Predefined Search

A predefined search enables you to define a set of predefined search terms. These predefined search terms appear in the search UI as search patterns. For example, you can configure email as a search term, enabling the user to search for any email address in the document. To configure predefined search, you must modify the Accusoft JavaScript source files. For more information, refer to <https://help.accusoft.com/PrizmDoc/v13.27/HTML/prizmdoc-server-sizing-servers.html>.

---

**Important:** Configuration of predefined search requires modification of certain Accusoft Client source files. Therefore, Accusoft Client viewer must be deployed.

---

To configure Accusoft predefined search:

1. Go to the default location for Accusoft Client JavaScript files:  
C:\inetpub\Dashboard\App\custom\Accusoft\src
2. Open the AccusoftConfig.js file.
3. Modify the "\_config" variable, by adding the predefinedSearchTerm section:

```
var _config = {
    "autoApplyDefaultReason": true,
    "enableRedactionReasonSelection": true,
    searchTerms:
    {
        "terms": [
            {
                "searchTermIsRegex": true,
                "searchTerm": "E-mail",
                "description": "E-mail",
                "userDefinedRegex": "\\\\w+([\\\"-\\.])\\\\w+@[\\\\w+([\\\"-\\.])\\\\w+]*\\\\.\\\\w+([\\\"-\\.])\\\\w+)*",
                "highlightColor": "#ff0000",
                "selected": false,
                "options": {
                    "matchCase": false,
                    "endsWith": false,
                    "beginsWith": false,
                    "matchWholeWord": false
                }
            }
        ]
    }
};
```

In this example, `E-mail` is added as a search term, using a custom regular expression. When the search pattern is selected in the user interface, it will highlight all instances matching the regular expression, for example, `firstname@companyname.com`.

4. Save the file.
5. Open the `AccusoftViewer.js` file.
6. Add the predefined search option as a property to the `"pluginOptions"` for the viewer:

```
predefinedSearch: AccusoftViewerConfig.searchTerms,
uiElements: {
    fullScreenOnInit: false,
```

In this example, the predefined search option is added above the `"uiElements"` property.

7. Save the changes.

### Accusoft Configuration for Long file names

After deploying Accusoft, you must perform the following steps:

1. Stop the two services: **Prizm** and **Prizm Application Services**.
2. Go to the Prizm Installation path, which is `C:\Prizm\PCCIS\ServiceHost\`.
3. Open the `host.config` file.
4. Update `"maxLength"` to `1024` and save the file.
5. Restart the two services: **Prizm** and **Prizm Application Services**.

## Installing SQL Server

To install SQL Server, use the information given in the following link:

[https://learn.microsoft.com/en-us/sql/database-engine/install-windows/install-sql-server?redirectedfrom=MSDN&view=sql-server-ver16](https://learn.microsoft.com/en-us/sql/database-engine/install-windows/install-sql-server?redirectedfrom=MSDN&view(sql-server-ver16)

---

### Notes:

- The versions of the Workhub SQL database and the Reporting SQL database must be the same.
- During installation, the **Full-Text Search** feature must be selected in the **Feature Selection** window.

## Collations

Collations in SQL Server provide sorting rules, case and accent sensitivity properties for your data. Collations that are used with character data types, such as **char** and **varchar**, dictate the code page and corresponding characters that can be represented for that data type.

Whether you're installing a new instance of SQL Server, restoring a database backup, or connecting server to client databases, it's important to understand the locale requirements, sorting order, and case and accent sensitivity of the data that you're working with.

SQL Server supports the following collation sets:

### Windows collations

- Windows collations define rules for storing character data that's based on an associated Windows system locale.

### SQL Server collations

- SQL Server collations (**SQL\_\***) provide sort order compatibility with earlier versions of SQL Server.
- During SQL Server setup, the default installation collation setting is determined by the operating system (OS) locale. You can change the server-level collation either during setup or by changing the OS locale before installation. For backward compatibility reasons, the default collation is set to the oldest available version that's associated with each specific locale.
- For example, for the OS locale "English (United States)", the default collation during setup is **SQL\_Latin1\_General\_CI\_AS**, and it can be changed to its closest Windows collation counterpart, **Latin1\_General\_CI\_AS\_SC**.
- When you upgrade an English language instance of SQL Server, you can specify SQL Server collations (**SQL\_\***) for compatibility with existing instances of SQL Server. Because the default collation for an instance of SQL Server is defined during setup, make sure that you specify the collation settings carefully.
- While installing a new instance of SQL Server, restoring a database backup, or connecting server to client databases make sure you don't accidentally change the collation, or if you are changing the collation you know which collation you are using.
- The goal is to keep SQL Server instance collation and database collation the same.

---

**Note:** You may see a SQL Server collation error when upgrading the database using the Database Manager, this may happen when the SQL Server collation and the database collation are different. So when populating the new context table it fails due to a mismatch in the temporary database. If this occurs, perform the following steps:

1. Navigate to **Programmability\Stored Procedures** in the database and modify **trigger\_context\_tree**.
2. Include collation in full\_name column of the temp table (#temp\_vnet\_context\_full\_names) as follows (where COLLATE SQL\_Latin1\_General\_CI\_AS is the collation of the database):

```
CREATE TABLE #temp_vnet_context_full_names (
    full_name nvarchar(450) COLLATE SQL_Latin1_General_CI_AS primary key
);
```

3. Execute the stored procedure **trigger\_context\_tree**.

## Creating a SQL Server Database

Before installing AIM, you must have an empty SQL Server Database and a suitable user. If you require SQL

Authentication, then you must enable "mixed-mode authentication".

**Note:** Before starting the following instructions, log on to your Database Server machine and open SQL Server Management Studio.

To create a new SQL Server database:

1. In **Object Explorer**, expand an instance of the SQL Server Database Engine.
2. Right-click **Databases**, and then select **New Database...**
3. In the **New Database** window, type **WORKHUB01** or another suitable **Database Name**.
4. Select an **Owner** if you do not want to use the default.
5. For the primary data file **WORKHUB01**, increase the **Initial Size (MB)** value to **10**.
6. Under the **Options** page, ensure the **Recovery Model** is set to **Full**. Other models are not supported.
7. Select **OK**.

**Note:** Make sure to note down the database name, as you need to use the same name later.

The new database is created.

## Creating a New User Using SQL Authentication

**Note:** To create a new database or upgrade an existing database, the SQL Server user requires db\_owner privilege. This can be removed after the creation or upgrade activity is completed. For security reasons, it is recommended to configure the SQL Server user to run with a lesser level of privilege during normal operations.

Operation	Required Role
New database creation	db_owner
Upgrade existing database	db_owner
Normal operations	db_datareader, db_datawriter

To create a new user using SQL Authentication:

1. In **Object Explorer**, expand the **Security** folder.
2. Right-click Logins, then select **New Login...**
3. On the **General** page of the **Login - New** window, type **WORKHUB01\_User** or another suitable **User Name**.
4. Select **SQL Server authentication**.
5. Type a password in the **Password** and **Confirm Password** boxes.
6. Clear the **Enforce password policy** check box (or use a strong password).
7. For **Default database**, select **WORKHUB01** (or the name you entered while creating this database).
8. On the **User Mapping** page, for **Users mapped to this login**, select **WORKHUB01**.
9. For **Database role membership for WORKHUB01**, select **db\_owner**.
10. Select **OK**.

The authorized user is created.

## Creating a New User Using Windows Authentication

To create a new user using Windows Authentication:

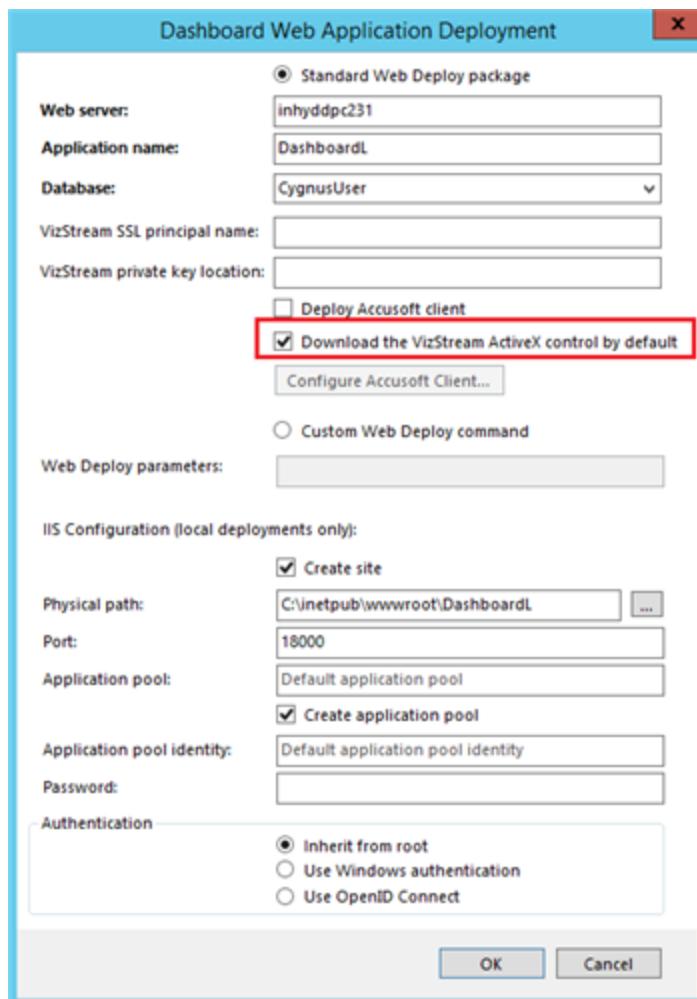
1. In **Object Explorer**, expand the **Security** folder.
2. Right-click **Logins**, and then select **New Login**.
3. In the **General** page of the **Login – New** window, enter the name of the Windows account or user search.
4. Select the **Windows Authentication** check box.
5. For the Default Database, select **WORKHUB01** (or the name you entered while creating this database).
6. In the **User Mapping** page, for users mapped to this login, select **WORKHUB01**.
7. For **Database role membership** for **WORKHUB01**, select **db\_owner**.
8. Select **OK**.

## Set Licensing Server

1. Run the *AVEVA Licensing* (ALS Licensing) Client Configuration Tool.
2. To run the Configuration Tool when the UAC is on, you must right-click and select **Run as Administrator**.
3. You may need to restart IIS Manager to pick up the updated environment variable.

## Downloading the VizStream ActiveX Control

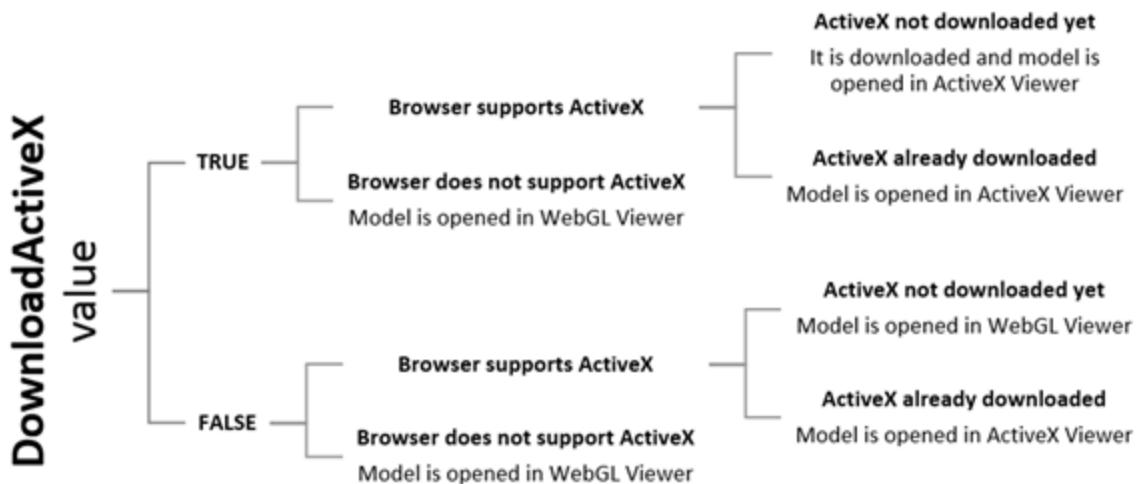
When deploying the *AIM Dashboard* web application, the **Download the VizStream ActiveX control by default** checkbox on the **AIM Dashboard Web Application Deployment** window is selected by default, as shown in the screenshot below:



The checkbox is selected because the `DownloadActiveX` value in the *AIM Dashboard web.config* file is set as `True` by default. If you clear the checkbox on the deployment window, this value changes to `False` in the *web.config* file. When a browser that supports ActiveX opens a 3D model for viewing, the `DownloadActiveX` value in the *web.config* file determines whether download of the VizStream ActiveX control is required.

```
<VizStream>
<HTTPS>
  <!-- To force all VizStream viewers to operate in SSL mode, SSLCertificatePrincipalName must be set to the Principal Name ('Issued to' value)
      of the SSL certificate being used to secure the VizStream Server. If the value is empty then viewers will try to operate in non-secure mode.-->
  <SSLCertificatePrincipalName Value="" />
  <!-- If set, all VizStream viewers will use delegated security to communicate with the VizStream server.
      If set to ".," (no quotes required) then the required .pri key file must have been located in the Dashboard web site root folder.
      If set to a folder pathname or UNC then folder must contain the required .pri key file. This folder would typically be the VizStream Server installation folder.-->
  <DelegatedSecurityLocation Value=".," />
</HTTPS>
  <!-- Allows default downloading of VizStream's ActiveX control for browsers supporting ActiveX, if the setting value is True. -->
  <DownloadActiveX Value="True" />
</VizStream>
```

The following diagram illustrates all the scenarios for the `DownloadActiveX` value and the associated actions:



## Install the Demo (Basic Configuration)

This section explains how to install the *Basic Configuration* of AIM Workhub and Dashboard using *Deployment Manager*.

When you have completed this section, you will be able to:

- See the out-of-the-box product, complete with sample data.
- Use *AIM Dashboard* and familiarize yourself with its functionality.
- Use the *Admin Tool* to change some of the default settings and observe the outcomes.
- Examine the sample Class Library.

---

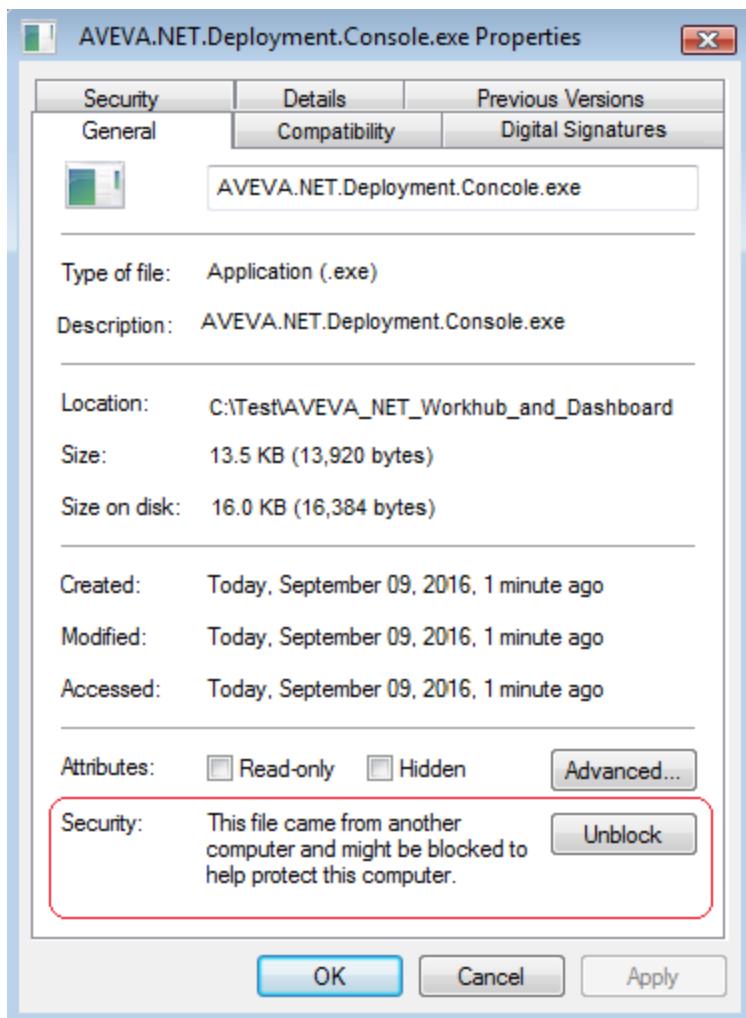
### Notes:

- Using an account that has administrative privileges, log on to a computer that can act as a web server. This configuration installs and runs the *AIM Workhub and Dashboard* components and tools on the same computer.
- Before running *Deployment Manager*, ensure that all the required software have been installed. These WILL NOT be installed by this tool. For details, see [System Requirements](#).

## Unblocking the Executables

When the installer is downloaded from the internet, the *Deployment Manager* may have some of the application-related executables blocked by Windows. To allow smooth execution of the *Deployment Manager*, follow the steps below to check and unblock all executables for AIM:

1. Open the **DeploymentManager** folder from the installation package.
  2. Right-click the **AVEVA.NET.Deployment.Console.exe** file and select **Properties**.
  3. Under **General**, verify if the **Security** section is displayed.
  - Note:** You will not see the **Security** section if nothing is blocked.
  4. If displayed, select **Unblock**.
-



5. Select **Apply** and then select **OK**.

To install the **Basic Configuration** using *Deployment Manager*:

1. From your installation media, double-click **AVEVA.NET.Deployment.Manager.exe**.
2. Select **Next**.

On the **Load Configuration** page:

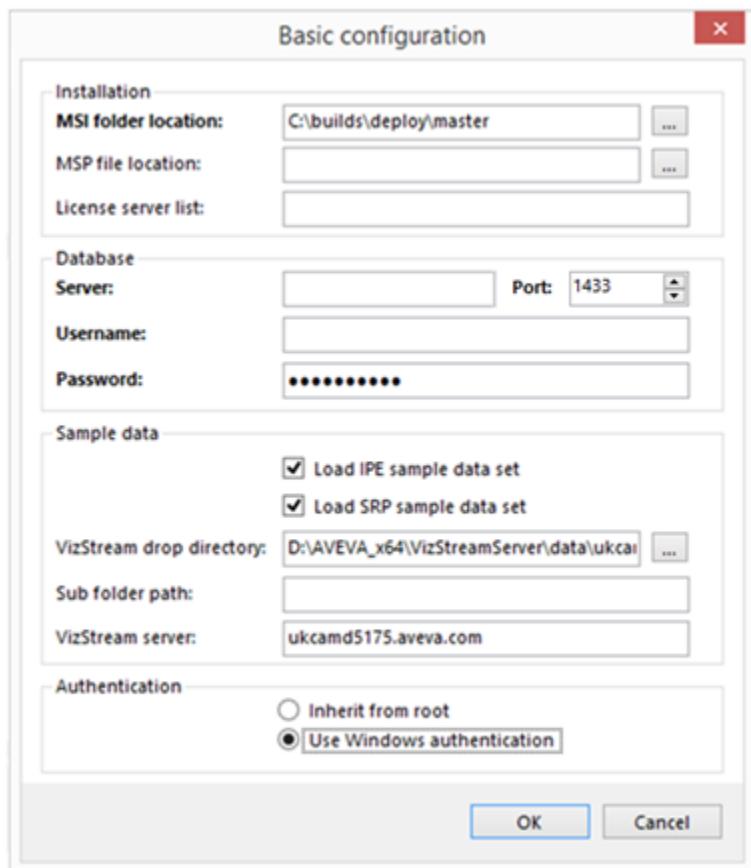
1. Select **Basic configuration**.
2. In the **Basic Configuration** window:
  - a. Browse to the **MSI location** - the details are automatically filled in, if the MSI location is the same as the *Deployment Manager*. If a patch is available for the full version you are installing (For example, a patch 5.X.X for the full version 5.X.X), enter the MSP file location.  
For example: d:\patches\AVEVA.NET.Workhub.and.Dashboard.5.0.1.0.msp  
The installation will be executed at the level of the provided patch. See also, Understanding Patch Considerations
  - b. Enter the **License server** list - the details are automatically filled in, if you have previously configured an AVEVA licensed product, such as *VizStream*.

- c. Enter the **SQL Server instance**, **Username**, and **Password** of the database you created earlier.
- d. To load the IPE and/or SRP sample data, select the appropriate option(s), browse to select the **VizStream drop directory**, and enter the **VizStream server** name.
- e. In the Sub folder path box, enter the path name (optional).

**Note:** The VizStream drop folder name must end with a backward slash, as follows:

E:\AVEVA\_x64\VizStreamServer\data\

- f. To enable Windows authentication, select the **Use Windows Authentication** option.



- g. Select **OK** to close the **Basic configuration** window.

On the **Save Configuration** page:

1. Do one of the following:
  - To save to the default location, select **Save**.
  - To save to a different location, select **Save as**.
2. Select **Next**.
3. On the **Deploy** page, select **Deploy**. You see a progress window and the status of the deployment.  
**Congratulations! You have now installed AIM.**

To view your *AIM Dashboard*:

1. Open your browser.

2. In the address box, type <http://localhost:16000/>.

## Configure LaaS

**Licensing as a Service (LaaS)** is a licensing solution by AVEVA that provides hassle-free license management to customers. LaaS eliminates the need for you to manage an on-prem license server and instead moves license management to the cloud using CONNECT platform. See <https://docs.aveva.com/bundle/connect/page/775045.html> for more information on LaaS.

LaaS also enables you to capture usage logs for AIM (using CONNECT authentication) and for AIM-hybrid (using AIMHybrid3DVS authentication).

See the following steps to enable LaaS.

### 1. Configure the Credential Manager

The Credential Manager (**Aveva.Connect.Sdk.CredentialManager.exe**) is a utility used to generate a refresh access token to check-out a Workhub license. It allows an end user to log in with a username and password and save the refresh token to **%programdata%\aveva**. A non-interactive process can then read the refresh token and use it to obtain an access token silently.

- Ensure **Microsoft Edge WebView2** is installed.

To install, see <https://developer.microsoft.com/microsoft-edge/webview2#download-section>, and select the **Evergreen Bootstrapper**.

- Install the latest version of AIM on-prem.
- Navigate to **C:\Program Files\AVEVA\AVEVA NET\Utilities\Credential Manager**.
- Edit **Credentials.json** and fill in the following values.
  - RedirectUri:** The value is any of the callback URLs configured for the auth0 client in CONNECT or the value of the avevanet:applicationRootUri key in the Dashboard application appsettings in the web.config file.
  - Authority:** The value of the avevanet:authorityUri key in the Dashboard application appsettings in the web.config file.
  - ClientId:** (The auth0 client ID). The value of the avevanet:dashboardClientId key in the Dashboard application appsettings in the web.config file.
  - Scopes:** Values: **openid** and **offline\_access**. Do not change the scopes, as these are fixed.

An example for AIM-hybrid:



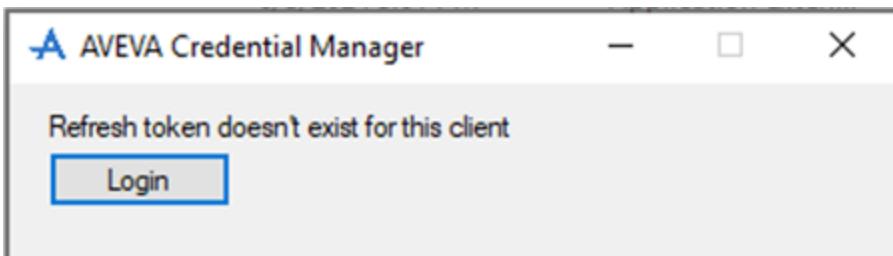
```
<add key="avevanet:callbackUrl" value="https://inhyd121230.aveva.com:16002/" />
<add key="avevanet:errorPolicy" value="Always"/>
<add key="avevanet:authenticationProvider" value="AIMHybrid3DVS"/>
<add key="avevanet:applicationRootUri" value="https://inhyd121230.aveva.com:16002/"/>
<add key="avevanet:authorityUri" value="https://signin.dev-connect.aveva.com" />
<add key="avevanet:dashboardClientId" value="JXXXXXXXXXXXXXX" />
<add key="avevanet:usingLaaS" value="true" />
<!-- add key="avevanet:authorityUri" value="https://identity.candev-connect.aveva.com/identity" -->
```

Right-clicked on the "ClientId" field in the JSON, showing the corresponding configuration in the web.config file.

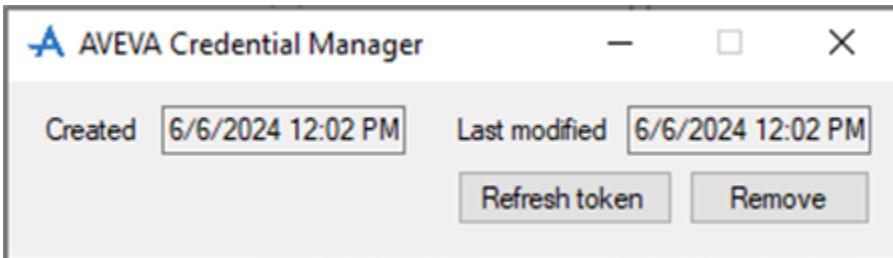
```
    "RedirectUri": "https://inhyd121230.aveva.com:16002/",
    "Authority": "https://signin.dev-connect.aveva.com",
    "ClientId": "GXXXXXXXXXXXXXX",
    "Scopes": [
        "openid",
        "offline_access"
    ]
```

### 2. Run the Credential Manager:

- After setting up the values in Credentials.json, run **Aveva.Connect.Sdk.CredentialManager.exe**.



- b. Click **Login**. It will open a CONNECT login page. Login using your CONNECT username and password.
- c. After a successful login, it will create a credentials file in **C:\ProgramData\aveva**.



- d. **Setting the LaaS Url:** Open a PowerShell with administrator privileges and run the **SetLaaSUrl.ps1** script that resides in **C:\Program Files\AVEVA\AVEVA NET\Utilities\Credential Manager**. It will set the given LaaS URL in the environment variable **AVEVA\_LICENSE\_SERVER\_LIST**. You can verify the setting in the system properties. To log the LaaS usage in the LaaS administration, only a LaaS URL should be present in the environment variable.
- e. Run the Command: **.\SetLaaSUrl.ps1 -LicenseServerList "https://commontest-laaS.dev-license.capdev-connect.aveva.com"**

```
PS C:\Windows\system32> cd "C:\Program Files\AVEVA\AVEVA NET\Utilities\Credential Manager"
PS C:\Program Files\AVEVA\AVEVA NET\Utilities\Credential Manager> .\SetLaaSUrl.ps1 -LicenseServerList "http://dev-license.capdev-connect.aveva.com/"
Environment variable AVEVA_LICENSE_SERVER_LIST set to:
http://dev-license.capdev-connect.aveva.com/
PS C:\Program Files\AVEVA\AVEVA NET\Utilities\Credential Manager>
```

**Note:** Running **Aveva.Connect.Sdk.CredentialManager.exe** with empty values in **Credentials.json**, will fail.

3. **Change the Dashboard appsettings:**
  - a. Ensure that the authentication provider in the appsettings is **Connect** for AIM or **AIMHybrid3DVS** for AIM-hybrid.
  - b. Ensure that you are using your auth0 client ID for the key **[avevanet:dashboardClientId]** value.
  - c. Enable LaaS by adding the key **<add key="avevanet:usingLaaS" value="true"/>** into the appsettings section of the Dashboard application's **web.config** file.
4. **To view usage logs for users go to the LaaS Administration page.**

## Usage Logs Troubleshooting

Here are some remedies to resolve Workhub licence issues when logging in to the Dashboard.

When accessing the Dashboard, if you see the **Error getting Workhub license** message, then check the detailed error in the Event Viewer. See the **Windows Logs -> Application** page, and view entries with a **Source of AVEVA NET Workhub**.

- If the detailed error message is **No token in the cache** or **Cached token invalid** then.
  1. Verify the dashboardclientid in the web.config file is similar to the clientid in the credentials.json file of the Credential Manager.
  2. Verify if the credential file is available for the clientId in the **%program data%\aveva%** folder.
  3. Rerun the Credential Manager.
- If the detailed error message is **Refresh token has expired**.
  1. Rerun the Credential Manager.
  2. Verify that the credential file is in the **%program data%\aveva%** folder.

## Configure AIM-hybrid using 3DVis

This section shows how to setup and configure AIM on-prem using the AVEVA 3D Visualization Service (3DVis) for 3D model visualization (AIM-hybrid).

This requires AIM 5.1.12 or above to be used on-prem.

### For Existing AIM-h Customers

#### Migrating 3D models from 3DVS to 3DVis

1. Ensure that you have upgraded to AIM 5.1.12 or later.
2. Raise a ticket with AVEVA that includes the AIM stage name that needs migrating.
3. AVEVA will then:
  - a. Enable the **3DVis Cloud Streaming Service** for your account.
  - b. Migrate your 3D models to the new 3DVis service.
4. Copy the **AIM3DViewer** folder from the installed location to your Dashboard site location. See section **Deployment of AIM3DViewer** below.
5. Update your web.config file:
  - a. Remove parameter: **avevanet:videoServerHost**.
  - b. Remove parameter: **avevanet:bucketPath**.
  - c. Add parameter: **avevanet:visApiUrl**. Use the value <https://services.connect.aveva.com/3dviscloud/v1>. See section **Update the web.config file** below.
6. For each existing 3D model that is to be migrated from 3DVS to 3DVis, update the **InfoLocator** and **InfoType** meta-data for the file. See section **Uploading EIWM Data** below.

### For New AIM-h Customers

For customers that are new to AIM-h, follow the remaining sections on this page.

### CONNECT Configuration

1. Log into your AVEVA CONNECT account.
2. Go to **Folder Management**.

3. Open the folder where your AIM-h service is enabled, to further enable the 3DVis Cloud Streaming Service in the same folder.

## AVEVA™ Connect

The screenshot shows the AVEVA Connect interface. On the left is a vertical navigation menu with the following items:

- Home
- Folder management (selected)
- User management >
- Integrations >
- Flex credits >
- Reports >
- Audit
- Services catalog
- Settings >

The main content area is titled "Folder management". It displays two folder entries:

- AIMA Petrochemical (with a thumbnail icon)
- AIMA Petrochemical2 (with a thumbnail icon)

4. After selecting the Folder, identify the **3DVis Cloud Streaming Service** and open the sub-menu using the vertical 3 dots.

The screenshot shows the "3DVis Cloud Streaming Service" settings. It includes the following elements:

- A blue square icon containing a gear and circuit board symbol.
- The title "3DVis Cloud Streaming Service".
- A description: "Adds the capability to convert and render 3D models."
- A "Region:" label followed by "EU-West".
- A toggle switch labeled "On".
- A vertical ellipsis button (three dots) for more options.

5. Select Manage integrations.  
All the 3DVis integration points for the CONNECT account will be listed.
6. Enable the correct integration for the Folder/environment.

## Manage Integrations for 3DVis Cloud Streaming Service



Current folder: AIMTest

1 Select integration    2 Select context    3 Configuration    4 Summary

Integration name:	AIM to 3DVis Cloud
Description:	Integrates 3DVis Cloud with Asset Information Management
Service:	Asset Information Management
Folder:	APCMIIntegration

Integration name:	AIM to 3DVis Cloud
Description:	Integrates 3DVis Cloud with Asset Information Management
Service:	Asset Information Management
Folder:	DRScen

- After selecting the Folder, identify the **3DVis Cloud Streaming Service** and open the sub-menu using the vertical 3 dots.
- To apply roles, open the sub-menu using the vertical 3 dots on **3DVis Cloud Streaming Service** and select **Manage roles**.

**3DVis Cloud Streaming Service**  
Adds the capability to convert and render 3D models.

**Region:**  
EU-West

**On**

**Asset Information Management**  
Tailored to owners and operators looking to improve governance for asset life cycle information and lower cost of asset ownership

⋮

- Manage roles
- Manage integrations
- View audit log

- After selecting **Manage roles**, the **Roles** screen will open. Use **Assign role** to create any new role assignments

as follows:

Type= **Service role**

Service = **3DVis Cloud Streaming Service**

Folder = <The folder associated to the AIM instance>

Role = **Render User**

Models The access tags = **Any**

Groups = <Your CONNECT group you may wish to apply, for example, Power User>

Users = <specific usernames outside of groups>

10. Select **Save**.

## On-Prem Configuration

The customer administrator must perform the following steps to get the on-prem AVEVA AIM system ready to communicate with the cloud 3D Visualization service.

### Deployment of AIM3DViewer

To deploy the AIM3DViewer with AIM:

1. Navigate to the AIM3DViewer folder that can be found under the installation folder.  
For example: **C:\Program Files\AVEVA\AVEVA NET\Dashboard\AIM3DViewer**
2. Create a folder **AIM3DViewer** under <site-path>/App/custom and copy the contents of the package to it.

This PC > Local Disk (C:) > inetpub > Dashboard1 > App > custom		
Name	Date modified	Type
Aim3DViewer	11-10-2024 11:14	File folder
ArfViewer	28-08-2024 11:21	File folder
itemviewsamples	16-03-2023 10:55	File folder
samples	16-03-2023 10:55	File folder

### Configure Firewall

Ensure your firewall is configured to allow the following setting:

**inbound port 443 for source gnrl-3dvis-wps-ems2stllztel6.webpubsub.azure.com**

### Update the web.config file

After the deployment is done and the configuration settings have been received from AVEVA (as per the service request), some configurations need to be made to allow the on-prem AIM installation to connect with the cloud 3D Visualization service.

1. Open the **AIM web.config** file.
2. In the **configSections** section, insert the specified lines as indicated below:

```
<section name="system.identityModel"
  type="System.IdentityModel.Configuration.SystemIdentityModelSection,
  System.IdentityModel, Version=4.0.0.0,
  Culture=neutral, PublicKeyToken=B77A5C561934E089" />
<section name="system.identityModel.services"
```

```
type="System.IdentityModel.Services.Configuration.SystemIdentityModelServicesSection,
System.IdentityModel.Services, Version=4.0.0.0,Culture=neutral,
PublicKeyToken=B77A5C561934E089" />
```

3. Proceed to the appSettings section and include the provided configurations:

Key	Needs Modification?	Value	Additional Description
avevanet:authenticationProvider	No	AIMHybrid3DVS	Fixed value, no changes required. The value will be AIMHybrid3DVS.
avevanet:applicationRootUri	Yes	The HTTPS URL configured for the on-prem setup.	Owned by the customer.
avevanet:authorityUri	Yes	https://signin.connect.aveva.com	CONNECT authority URI path.
avevanet:dashboardClientId	Yes	As received from AVEVA.	Fixed value, no changes required (in prod-connect).
avevanet:capabilityDefinitionName	Yes	Asset Information Management - hybrid	CONNECT capability definition name.
avevanet:accountId	Yes	As received from AVEVA.	CONNECT account ID for the deployment.
avevanet:workhubClientId	No	xyz	For an AIM-hybrid configuration, this value should be non-empty, but can have any string, for example, xyz.
avevanet:auth0Authority	Yes	https://signin.connect.aveva.com	For Auth0 authentication.
avevanet:idSrvAuthority	Yes	https://identity.connect.aveva.com/identity	
avevanet:serviceUAMUrl	Yes	https://services.connect.aveva.com/uam/v2/	For Auth0 authentication.

<b>Key</b>	<b>Needs Modification?</b>	<b>Value</b>	<b>Additional Description</b>
avevanet:serviceSCMUrl	Yes	https://api.connect.aveva.com/scm/	For Auth0 authentication.
avevanet:serviceAMUrl	Yes	https://api.connect.aveva.com/am/	For Auth0 authentication.
avevanet:serviceAssetsUrl	Yes	https://api.connect.aveva.com/assets/v1/	For Auth0 authentication.
avevanet:serviceAudience	Yes	https://services.connect.aveva.com	For Auth0 authentication.
avevanet:resourceAudience	Yes	https://api.aimh.av.connect.aveva.com	For Auth0 authentication.
avevanet:accessTokenCacheDuration	No	10	For Auth0 authentication.
avevanet:serviceScopes	No	uam:read am:read scm:read ac_assets	For Auth0 authentication.
avevanet:visApiUrl	Yes	https://services.connect.aveva.com/3dviscloud/v1	

```

<appSettings>
    <add key="webpages:Version" value="3.0.0.0" />
    <add key="webpages:Enabled" value="false" />
    <add key="PreserveLoginUrl" value="true" />
    <add key="ClientValidationEnabled" value="true" />
    <add key="UnobtrusiveJavaScriptEnabled" value="true" />
    <add key="enableSimpleMembership" value="false" />
    <add key="LicenseServerList" value="" />
    <add key="avevanet:authenticationProvider" value="AIMHybrid3DVS" />
    <add key="avevanet:applicationRootUri" value="" />
    <add key="avevanet:authorityUri" value="https://signin.connect.aveva.com" />
    <add key="avevanet:dashboardClientId" value="" />
    <add key="avevanet:capabilityDefinitionName" value="" />
    <add key="avevanet:accountId" value="" />
    <add key="avevanet:workhubClientId" value="" />
    <add key="avevanet:auth0Authority" value="https://signin.connect.aveva.com" />
    <add key="avevanet:idSrvAuthority" value="https://identity.connect.aveva.com/identity" />
    <add key="avevanet:serviceUAMUrl" value="https://services.connect.aveva.com/uam/v2/" />
    <add key="avevanet:serviceSCMUrl" value="https://api.connect.aveva.com/scm/" />
    <add key="avevanet:serviceAMUrl" value="https://api.connect.aveva.com/am/" />
    <add key="avevanet:serviceAssetsUrl" value="https://api.connect.aveva.com/assets/v1/" />
    <add key="avevanet:serviceAudience" value="https://services.connect.aveva.com" />
    <add key="avevanet:resourceAudience" value="https://api.aimh.av.connect.aveva.com" />
    <add key="avevanet:accessTokenCacheDuration" value="10" />
    <add key="avevanet:serviceScopes" value="uam:read am:read scm:read ac_assets" />
    <add key="avevanet:visApiUrl" value="https://services.connect.aveva.com/3dviscloud/v1" />

```

- Configure the authentication under <system.webServer> to use **anonymousAuthentication** exclusively. Remove any references to **Windows Authentication**. Ensure that the locally hosted AIM site authentication is also set to anonymous.

```

<authentication>
    <anonymousAuthentication enable="true" />
</authentication>

```

#### Web.config

```

106      </nwebsec>
107      <system.webServer>
108          <security>
109          +      <authentication>
110          +          <anonymousAuthentication enable="true" />
111          +      </authentication>

```

- In the web.config file, locate each **PortalID** section where the 3D Visualization service is required and specify an **Account Value** and a **FolderID**. For example:

```

<portals>
    <portal id="Default">
        <Account Value="123XXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX" />
        <FolderID Value="456XXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX" />

```

- Append the following section towards the end of the **web.config** file.

```

<system.identityModel>
    <identityConfiguration>
        <claimsAuthenticationManager
            type="AVEVA.NET.Dashboard.Infrastructure.DashboardClaimsAuthenticationManager,
            AVEVA.NET.Dashboard" />
    </identityConfiguration>

```



```
</system.identityModel>

Web.config
526     </dependentAssembly>
527     </assemblyBinding>
528   </runtime>
529   + <system.identityModel>
530   +   <identityConfiguration>
531   +     <claimsAuthenticationManager type="AVEVA.NET.Dashboard.Infrastructure.DashboardClaimsAuthenticationManager, AVEVA.NET.Dashboard" />
532   +   </identityConfiguration>
533   + </system.identityModel>
534 </configuration>
```

When this configuration is completed, the on-prem AIM setup will be able to connect to AIM-hybrid.

## Managing Users

For general user management in CONNECT, please refer to <https://docs.aveva.com/bundle/aveva-connect/page/885352.html>.

## For a User Visualizing 3D models in the AIM Dashboard

Detailed users' access and rights are still managed and configured through the AIM on-prem installation via the web.config file. However, for the AIM-hybrid solution, users also need to be declared in CONNECT to allow them to access the 3D Visualization Service.

When a user logs in to the AIM Dashboard, the system will check if the user can access the cloud service using the CONNECT users' permission, and then check the permission and data access rights that have been setup on-prem for the given user.

Users created in CONNECT for AIM-hybrid will need to have the **default user** role available under the Asset Information Management hybrid service role for the given folder.

## For a User Loading into the AVEVA Data Pipeline

The user responsible for loading 3D models can use the Load Reporting component to be able to monitor the upload and import status in the 3D visualization service. To do so, the user needs to have the **Data Pipeline user** and **Load reporting user** roles. For more information, see:

- <https://docs.aveva.com/bundle/asset-information-management/page/1093967.html>

## Upload and Process 3D Models

The cloud 3D Visualization service is only processing the 3D model files, the EIWM information remains on-prem. To view 3D models in AIM that are streamed from AIM-hybrid perform these steps:

1. Process the associated EIWM files on-prem using the AVEVA Import Controller.
2. Upload the 3D Model files to the AVEVA Data Pipeline using the Ingestion API. This can be done using a tool such as Postman or the AVEVA Gateway Data Publisher (GDP).

## Uploading 3D Models into the Cloud

To be able to upload data into the cloud you will need to have a CONNECT token defined. For more information, see: <https://docs.aveva.com/bundle/asset-information-management/page/1252243.html>

Before configuring the 3D model upload, ensure you have the following information:

- **Account Name** (assetId) – if your AIM-hybrid solution is enabled at an account level.
- **Folder Name** - if your AIM-hybrid solution is enabled at a folder level.

The uploading of 3D model files to the AVEVA Data Pipeline can now be defined using the Ingestion API. To do this, use a tool such as PostMan or the AVEVA GDP.

- For more information on Loading Data using the Ingestion API, see: <https://docs.aveva.com/bundle/asset-information-management/page/1174972.html>
- For details on the Ingestion API Request Parameters, see: <https://docs.aveva.com/bundle/asset-information-management/page/1174973.html>
- For details on monitoring loads of 3D models to the cloud, see: <https://docs.aveva.com/bundle/asset-information-management/page/1047888.html>
- If you want to use the GDP, see: <https://docs.aveva.com/bundle/asset-information-management/page/1252243.html>

#### Example of 3D GDP Configuration File

```
{  
  "Version": "1.2.0",  
  "Logger": {  
    "OutputPath": "C:\\temp\\staging area\\logs",  
    "LogLevel": "Trace"  
  },  
  "Processor": {  
    "Tables": [],  
    "Rules": [  
      {  
        "FilterId": "3D",  
        "Actions": [  
          "SetValue('Target', 'Model')",  
          "SetValue('Source', '3DModel')",  
          "SetValue('Context', '')"  
        ]  
      }  
    ]  
  },  
  "Publisher": {  
    "TokenName": "<Name of the Token identifier used when saving Service Token (saved as)>",  
    "BatchFilesUploadLimit": 100,  
    "DelayBetweenRetries": "0:00:00:01.00",  
    "ConnectionRetries": 6,  
    "DefaultEndPointUrl": "<api endpoint as provided>",  
    "DefaultAssetId": "<name of the CONNECT folder>"  
  }  
}
```

#### Example of GDP Initialization File

```
{  
  "Version": "1.2.0",  
  "InitCommands": [  
    {  
      "Name": "A Folder Name",  
      "Args": [  
        {  
          "Name": "A Folder Name",  
          "Value": "A Folder Name Value"  
        }  
      ]  
    }  
  ]  
}
```

```
"Name": "instance-name",
"Value": "A Folder Name"
},
{
"Name": "logs-location-path",
"Value": "C:\\temp\\staging area\\logs"
},
{
"Name": "config-file-path",
"Value": "C:\\temp\\staging area\\config\\<3D configuration filename.json>"
},
{
"Name": "watched-directory",
"Value": "C:\\temp\\staging area\\models"
}
],
"Options": [
{
"Name": "show-console"
}
]
}
]
```

#### Example of GDP Filter File

```
{
"Filters": [
{
"Type": "FileNameFilterCfg",
"Id": "3D",
"PassFiles": [
".rvm",
".zgl"
]
}
]
}
```

#### Additional Considerations:

- Source 3D file names MUST be unique within a folder.
- **DefaultAssetId** – is determined by AVEVA, as this is a Cloud storage location under the primary account.
- Under the Access Control List (ACL) section, users can be added to restrict access to required portals only, see: <https://docs.aveva.com/bundle/asset-information-management/page/999848.html>
- AIM-hybrid will only use a single user email address or email Distribution Lists (DL) and NOT Active Directory User Groups (AD).

Once the 3D model is uploaded you can monitor the progress of the conversion and import via the load reporting component. For information about load reporting, see: <https://docs.aveva.com/bundle/asset-information-management/page/1047888.html>

## Deleting 3D Models

For details on deleting 3D models that have been uploaded to the cloud, see: <https://docs.aveva.com/bundle/asset-information-management/page/1393831.html>

## Uploading EIWM Data

This is done on-prem using the Import Controller, with the following value definitions:

- **InfoLocator:** <Value>{Model name}.rvm</Value>
- **InfoType:** <Value>application/rfc2</Value>

A sample EIWM object:

```
<vl:VNETList xmlns="http://www.aveva.com/VNET/eiwm" xmlns:vl="http://www.aveva.com/VNET/List">
<Template>
<ID>SampleModel::Template</ID>
<Object>
<ID>SampleModel</ID>
<Context>
<ID>SampleModelSub-Context </ID>
<Context>
<ID>SampleModelContext</ID>
</Context>
</Context>
<Name>SampleModel 3D Cloud</Name>
<ClassID>3D MODEL</ClassID>
<Association type="is fulfilled by">
<Object>
<ID>SampleModel.rfc</ID>
<Context>
<ID>SampleModelContext</ID>
</Context>
<ClassID>FILE</ClassID>
<Characteristic>
<Name>InfoLocator</Name>
<Value>SampleModel.rvm</Value>
</Characteristic>
<Characteristic>
<Name>InfoType</Name>
<Value>application/rfc2</Value>
</Characteristic>
</Object>
</Association>
</Object>
</Template>
</vl:VNETList>
```

## Increase Security

There are a number of steps you can take to increase the security levels of *the AIM Dashboard*. These include:

- SSL and HTTPS
  - SSL Certificates in Internet Information Services
  - Client's Access to a Secure AIM Dashboard
  - Warning Messages
  - Secure VizStream
- VizStream Security Authentication
- Preventing Client Caching
- Account Lockout Policy
- Change Error Policy Setting
- Restrict Allowed HTTP Verbs
- Remove Version Number from IIS

See your AVEVA Representative for more details.

---

**Note:**

- Access to any computers in the AIM system, such as web servers, import servers, database servers, file store servers, 3D servers, Accusoft servers, computers hosting any AIM tools or EIA, should only be given to authorized personnel trusted to administer the AIM systems.
- The **x-xsrf-tokendefault** cookie does not contain any sensitive information, such as user authentication details. This cookie is only used to prevent Cross-Site Request Forgery attacks.

## SSL and HTTPS

When a user visits the AIM Dashboard, information is transmitted over the internet between the web server and the web browser. Data travelling over the internet is vulnerable to interception. Due to this vulnerability, the AIM Dashboard must be configured to use SSL (Secure Sockets Layer). SSL works by encrypting the data before it is transmitted and then decrypting it at the other end. This means that if the data is intercepted along the way it will be meaningless to the interceptor.

The following steps must be followed to secure the AIM Dashboard.

## SSL Certificates in IIS

To enable encryption of the data transmission in IIS, between the web server and the browser, you must install an SSL certificate on the web server.

This section explains how to create and configure two types of SSL certificates:

- A purchased SSL certificate
- A self-signed SSL certificate

---

**Note:** A self-signed SSL certificate is free, but cannot be used to secure VizStream. Also, It needs additional efforts in configuration. This type of certificate is recommended for familiarization and testing HTTPS, rather than production use.

## Using a Purchased Certificate

A purchased SSL certificate requires a much simplified configuration, compared to a self-signed certificate. The

certificate providers supply their own software, to assist the users with the purchase and certificate installation.

---

**Note:** For help with purchasing and installing an SSL certificate, refer to a certificate provider website, for example <https://www.verisign.com/>.

---

### Installing a Self-Signed Certificate (Windows Server 2019-IIS10)

To create and configure a self-signed test SSL certificate:

1. Open IIS.
2. In the **Connections** pane, select the server, and then double-click **Server Certificates**.
3. In the **Actions** pane, select **Create Self-Signed Certificate**.
4. Type a **Friendly Name** (for example, [Temp Certificate](#)) for the test certificate and select **OK**.
5. In the **Connections** pane, select the *AIM Dashboard* site.
6. In the **Actions** pane, select **Bindings**.
7. For **Type**, select **https**.
8. For **IP address**, select **All unassigned**.
9. For **Port**, type [443](#) (or any other available port number).
10. For SSL certificate, select the certificate you created in step 4.
11. Select **OK**.

The certificate is now configured for use with *the AIM Dashboard*.

### Adding the Certificate to the Trusted Root Certification Authorities

If the client browser does not trust the web server certificate, a warning message will appear, while visiting the website. To make the browser trust the web server certificate, you must add the certificate to the Trusted Root Certification Authorities certificate store of the client machine.

To add the certificate to the Trusted Root Certification Authorities:

1. Open IIS.
  2. In the **Connections** pane, select the server, and then double-click **Server Certificates**.
  3. In the **Actions** pane, select **Export**.
  4. For **Export to**, browse [...] to the location you want to use for the exported certificate, type a filename, and then select **Open**.
  5. Type and confirm a **Password** for the certificate.
  6. Log on to the client machine.
  7. Open the Certificate Manager console by pressing **Windows+R**, and then type [mmc.exe certmgr.msc](#).
  8. Under **Certificates - Current User**, expand **Trusted Root Certification Authorities**.
  9. Right-click **Certificates**.
  10. Select **All Tasks, Import**.
  11. Select **Next**.
  12. **Browse** to the certificate you exported in step 4, and then select **Open**.
- 
- Note:** Select **Personal Information Exchange (\*.pfx, \*.p12)** in the file extension box to see the pfx.
- 
13. Select **OK, Next, Finish**.
  14. Type the **Password** you created in step 5, and then select **Next**.

15. Select **Browse**, select **Show Physical Stores**, expand **Trusted Root Certification Authorities**, and then select **Local Computer**.
16. Select **Finish**.

You have added the Certificate to Trusted Root Certificate Authorities for the Current User.

## Client Access to a Secure AVEVA Asset Information Management Dashboard Web

After the preceding instructions have been followed and you have secured *the AIM Dashboard*, users should access the secured site.

An example URL might read like the following: <https://{}myserver}:443>

---

**Note:** If you are accessing an HTTPS site that is NOT on the default port, you must specify the SSL port number.

## Warning Messages

When using the *AIM Dashboard*, you may see a number of warning messages.

Some of these are described below:

- **Security Alert - You are about to view pages over a secure connection.** This indicates that you are entering a secure connection, select **OK**.
- **Security Information - This page contains both secure and non-secure items.** You can select either **Yes** or **No** - the choice does not affect the operation of *the AIM Dashboard*.
- **Security Alert - Information you exchange with this site cannot be viewed or changed by others. However, there is a problem with the site's security certificate.** If this appears, the SSL certificate installed at the web server is not trusted by the client browser. If you are sure you are visiting the correct site then select **Yes** to ignore the warning.

However, if this warning comes up several times for each visit, another option is to configure the browser to trust the certificate issued by the website and therefore not display the warning any more.

To do this, select **View Certificate**, then view the details of the certificate. If you are satisfied, then select **Install Certificate** and follow the instructions.

After this is completed the prompt may still come up. Opening a new browser and trying again usually fixes it. However, sometimes it may be necessary to install the certificate again to successfully remove the warning.

## Configuring SSL for Accusoft PrizmDoc

---

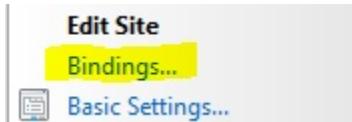
**Note:** The preferred method to enable SSL for the PrizmDoc Service website is to use a certificate from a certificate authority. You can utilize a self-signed certificate, but you have to add the certificate into the client's Root Certification Authorities.

### Enabling SSL for the 'PrizmDoc Service' website

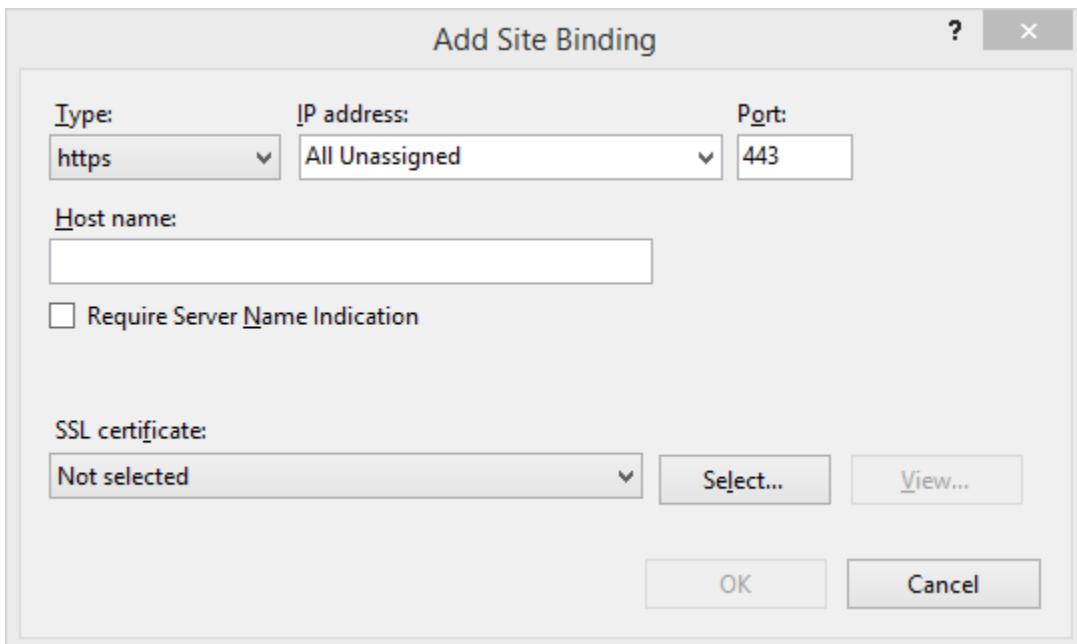
If you have configured Windows authentication on the PrizmDoc server following the procedure given under the 'Configuring Windows Authentication' section (in the *Install Accusoft PrizmDoc Server and Client* section in the [Install and Set up the Requirements](#) topic), then you must perform the following steps for the proxy website, for example, PrizmDoc Proxy. Alternatively, you must create a proxy website [following the steps (except Step 10 and Step 11) given in the 'Configuring Windows Authentication' section] to configure SSL.

To enable SSL for the *PrizmDoc Proxy* website:

1. Have your SSL certificate available in IIS (you can use the same certificate you have assigned to another IIS website, if you desire).
2. Highlight the *PrizmDoc Proxy* website and select on **Bindings**.



3. Select **Add** and select *https* from the **Type** menu. Select your certificate from the **SSL certificate** menu, and choose the port over which you want to communicate (you can use 443 as long as another site is not already on that port, otherwise choose a non-utilized port).



4. Validate that the PrizmDoc service is responding by pointing a web browser to the address:
  - a. <https://servername:23000/servicesConnection>  
where the port refers to what you have defined in Step 3.
    - a. You should receive the response as **OK**.
5. Open the `pcc.config` file located in the *AIM Dashboard* website. This file is typically located here: `C:\inetpub\Dashboard`
  - a. Modify the property `<PrizmApplicationServicesScheme>` and set the value to `https`.
  - b. Modify the property `<PrizmApplicationServicesPort>` and set the value to the previously set port (see Step 3).
6. To reset IIS, select Start, and then run `IISRESET`.

### Importing a Self-signed Certificate

**Note:** The following steps are needed ONLY if you are using a self-signed certificate.

To import the certificate into the client machine Root Certificate Authority:

1. Press windows key + R.
2. Type *mmc* and press ENTER.  
**Note:** To view certificates in the local machine store, you must be in the Administrator role.
3. On the **File** menu, select **Add/Remove Snap In**.
4. Select **Add**.
5. In the **Add Standalone Snap-in** dialog box, select *Certificates*.
6. Select **Add**.
7. In the **Certificates snap-in** dialog box, select **Computer account** and select **Next**. Optionally, you can select **My User account** or **Service account**. If you are not an administrator of the computer, you can manage certificates only for your user account.
8. In the **Select Computer** dialog box, select **Finish**.
9. In the **Add Standalone Snap-in** dialog box, select **Close**.
10. On the **Add/Remove Snap-in** dialog box, select **OK**.
11. In the **Console Root** window, select **Certificates (Local Computer)** to view the certificate stores for the computer.
12. Expand **Trusted Root Certification Authorities**.
13. Right click **Certificates, All tasks**, select **Import**.
14. Follow the instructions and use the file that you exported in the first part.

## VizStream

If VizStream is being used to view 3D models, then the steps in [Secure VizStream](#) must be followed.

### Secure VizStream

VizStream may be used in the AIM Dashboard to display and manipulate 3D models. VizStream uses client-server technology with the VizStream Client installed on the end user's computer and the VizStream Server being installed (usually) on a remote server computer. 3D data travels from the server to the client for display. This stream of data must be encrypted.

The mechanism for securing VizStream has some similarities to the way *the AIM Dashboard* sites are secured, in that an SSL certificate is required.

### Secure the VizStream Server

---

**Note:** If the *AIM Dashboard* website is secured, then when viewing 3D Models in the WebGL viewer, you must also secure the VizStream Server. For the ActiveX viewer, the VizStream Server does not need to be secured, but we recommend that you secure it.

---

The SSL certificate for use with VizStream can be acquired from a number of sources, for example Verisign. It is the same sort of certificate as required by *the AIM Dashboard*.

However there is one restriction, the VizStream server SSL certificate must be authorized by a trusted authority, meaning that a certificate created by Microsoft's SSL Diagnostics software will not work, nor will a 'self-signed' certificate produced by IIS. A certificate from, for example Verisign, is required - either a purchased SSL certificate or a trial SSL certificate (for testing purposes) can be used. Standard and wildcard SSL certificates are supported

by VizStream.

If you already have this type of certificate for securing *the AIM Dashboard* and your client machines are using the ActiveX viewer, then this certificate can also be used for securing VizStream, even when the VizStream Server is on a separate machine.

If your client machines are using the WebGL viewer, then you cannot re-use the IIS certificate for the VizStream Server. You must have a second certificate whose Common Name matches with the domain name of the VizStream Server. For this certificate, you can still use the process mentioned below, creating a certificate request in IIS, but this time you should set the Common Name in the request to match with your VizStream Server domain name.

The process of acquiring an SSL certificate will involve the use of a web server and a website on that server to generate the certificate request.

When you have acquired a certificate it must be installed on the VizStream Server machine. VizStream Server requires this certificate to be installed in the Personal certificate store of the VizStream server service logon user.

The VizStream Server logon user cannot be the default of 'Local System account,' as this account does not have a personal certificate store accessible by VizStream Server. This restriction also applies to the Network Service and Local Service users. You must create a standard user account for this purpose.

To populate the personal certificate store:

1. Export a SSL Certificate, see *Adding the Certificate to the Trusted Root Certification Authorities* section in this topic - steps 1-5.

---

**Note:** If you already have a certificate, then you can ignore this step.

---

2. Make sure that you are logged on as the VizStream Server service logon user.
3. Press **Windows+R** to open the **Certificate Manager** console.
4. Type `mmc.exe certmgr.msc`
5. Under **Certificates - Current User**, expand the **Personal** node.
6. Right-click **Certificates**.
7. Select **All Tasks**, select **Import**, and then select **Next**.
8. Browse to the **pfx** file, and then select **Open**.

---

**Note:** To see the **pfx**, select **Personal Information Exchange (\*.pfx, \*.p12)** in the file extension box.

---

9. Select **OK**, select **Next**, and then select **Finish**.
10. Make a note of the **Issued To** setting for the new certificate. The value is also known as the certificate Principal Name. You will need it later.
11. Change the Friendly Name to **VizStream Server**.
  - a. Double-click the new certificate.
  - b. Select the **Details** tab.
  - c. Scroll down to **Friendly Name**, select and select **Edit Properties** to open the **Edit** window. Change the name to **VizStream Server** and select **OK**, select **OK** again to return to the previous window.

The correct Friendly Name will now be displayed.

You can check that the certificate is trusted by double-clicking the new certificate and choosing the **Certification Path** tab.

The authorization path with the new certificate at the bottom is displayed. If you have nothing above the new certificate this means it is not authorized by a trusted authority and will not work for securing

VizStream.

12. Select **OK** to close all the dialog boxes. The new certificate is now installed.

---

**Note:** It is good security practice to not use SSLv3. If you are disabling the support for SSLv3 on the server, which runs the VizStream Server, you MUST add an additional registry key to enable Transport Layer Security (TLS).

---

To add an additional registry key to enable TLS:

1. Ensure that the VizStream Server is installed. For procedure to install it, see Install VizStream Server section in the [Install and Set up the Requirements](#) topic.
2. Type regedit in the **Run** prompt and select **OK** (or press **Enter**).
3. Navigate to Computer\HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\VizStream Server\Parameters.
4. Create a new **DWORD (32-bit) Value** named ShouldUseTLSecurity and set its value to 1.
5. Restart the VizStream Server service using either the VizStream Server Admin Tool or the Windows Services management utility.

## Instruct VizStream Server to Switch to Secure Mode

After the certificate is installed, the VizStream Server can be instructed to switch to secure mode and start using the certificate to encrypt the data it sends.

To instruct VizStream server to switch to secure mode:

1. Open the VizStream Server Admin Tool.

---

**Note:** This is provided as part of the VizStream Server installation.

---

2. In the VizStream Server panel at the top-left, if the status is shown as Running, select the **Stop Service** button.
3. Select the **Configuration** tab, and then select the **Security** tab.
4. In the SSL panel, select the **Enabled** check box.
5. In the Security DLL box, type the VSSecurityWindows.dll file's path in the VizStream Server installation folder.
6. Select **Apply**.
7. To restart the VizStream Server service, go to the VizStream Server panel at the top-left, and then select the **Start Service** button.

The status changes to Running, after the service is started.

8. To see the SSL enabled Test Result, select the **Test Service** button.  
VizStream Server is now running in the secure mode.
9. Close the VizStream Server Admin Tool.

## Switch the VizStream Client into Secure Mode

Now that the Server is in secure mode, the client must also switch to secure mode, or else an error message will appear in the VizStream Viewer, when a user tries to view a 3D model.

The switch to secure mode for the client is done through the [web.config](#) file situated at the root of the AIM

Dashboard website.

Within the [Portal](#) section of the [web.config](#) file is the [VizStream](#) section, see following:

```
<VizStream>
  <HTTPS>
    <!-- To force all VizStream viewers to operate in SSL mode, SSLCertificatePrincipalName must be set to the Principal Name ('Issued to' value)
        of the SSL certificate being used to secure the VizStream Server. If the value is empty then viewers will try to operate in non-secure mode.-->
    <SSLCertificatePrincipalName Value="server5055.aveva.com" />
    <!-- If set, all VizStream viewers will use delegated security to communicate with the VizStream server.
        If set to ".," (no quotes required) then the required .pri key file must have been located in the Dashboard web site root folder,
        If set to a folder pathname or UNC then folder must contain the required .pri key file. This folder would typically be the VizStream Server installation folder.-->
    <DelegatedSecurityLocation Value="d:\aveva_x64\vizstreamserver" />
  </HTTPS>
  <!-- Allows default download of VizStream's ActiveX control for browsers supporting ActiveX, if the setting value is True. -->
  <DownloadActiveX Value="True" />
</VizStream>
```

The value of the Principal Name of the new certificate must be inserted as the value of [SSLCertificatePrincipalName](#). Replace server5055.aveva.com in the illustration above (the Principal Name of a certificate is the same as the 'Issued to' value).

When this value is non empty, all *AIM Dashboard* users' VizStream clients will try to communicate with ALL VizStream servers using secure mode.

---

**Note:** This applies to ALL VizStream servers. So if the *AIM Workhub* database has references to more than one VizStream Server then they must all be switched to secure mode - the servers not in secure mode will not be accessible by a client in secure mode.

---

You can tell if the client is operating in secure mode by:

1. Opening the *AIM Dashboard* and displaying a 3D model.
2. In the viewer menu bar at the bottom select **More, Network Status**.
3. The /SSL in the Context column indicates the connection to the server is in secure mode.

## Authentication

The configuration of the VizStream Server to secure mode (see the *SSL* section in this topic) also switches on VizStream secure authentication. This feature ensures that a VizStream Server will serve a model only if it receives a correctly encrypted request from a VizStream client.

## Configuring Dashboard for VizStream Secure Authentication

For successful secure authentication both VizStream Server and the *AIM Dashboard* must share the same matched pair of encryption key files.

### Simple solution

This solution can be used if the web server can be given read/write access to files in the VizStream Server installation folder. (The keys are shared by the *AIM Dashboard* accessing the keys directly within the VizStream root folder.)

1. Use IIS to determine the **Process Identity** of the *AIM Dashboard* website's Application Pool - typically 'Network Service'.
2. Ensure the **Process Identity** has read/write access to the VizStream Server root folder.
3. Open the [web.config](#) file in the *AIM Dashboard* website root folder.
4. Modify the value of the `VizStreamDelegatedSecurityLocation` application setting to be the location of the VizStream Server root folder. Use either a file path (for example, `d:\aveva_x64\vizstreamserver`) or a UNC.

## Advanced solution

This solution can be used if, for example, the VizStream Server root folder files are not accessible over the network from the AIM Dashboard web server. In this case the AIM Dashboard must be set up to have its own copy of the VizStream Server matched key files.

Cause VizStream Server to generate key files:

1. Temporarily change the Logon account that the VizStream Server service is running under to 'Local System'. Remember the original logon details.
2. Start the VizStream Server.
3. Check that the following files have been created in the VizStream Server root folder:
  - a. [VSSecurityWindowsKey.pub](#)
  - b. [VSSecurityWindowsKey.pri](#)
4. Restore the VizStream Server service to using the original Logon account.

Copy key and configure Dashboard:

1. Copy the [VSSecurityWindowsKey.pri](#) file created above to the *AIM Dashboard* website root folder.
2. Open the [web.config](#) file in the *AIM Dashboard* website root folder.
3. Change the value of the VizStreamDelegatedSecurityLocation application setting to .\

*The AIM Dashboard* now uses the AIM Dashboard website root folder as the required security key location.

---

**Note:** If an installation refers to models from more than one VizStream Server then for the authentication to work all the VizStream Servers must use the same .pub and .pri key files.

This can be achieved by copying the key files from one of the VizStream Servers to all the others.

## Account Lockout Policy

As a general security measure, most systems will use a variety of measures to limit the ability of an attacker to use automated and/or fraudulent methods to gain unauthorised access. Examples of these mechanisms include:

- Rate limiting login attempts.
- Limiting the number of failed attempts that can be made on a single login before the account is disabled, either temporarily, or until manually re-enabled.
- Geo-bounding logins.
- CAPTCHAs.

This section is intended to cover the recommended configuration of Windows account lockout policy. It is intended for a user familiar with Windows domain configuration.

---

**Note:** The policy GPO (Group Policy Object) to be modified is dependent on the domain configuration and the policies in place for administration of the domain. Some domains may require the Default Domain GPO to be modified, some configuration dependent policies. In particular, if the settings are to apply to a subset of the domain users, these settings will need to be made on an appropriate additional GPO. The settings to be modified are the same in both cases. If multiple GPOs are in use, make sure the precedence is set such that the account policies described are in effect.

The administrator must give careful consideration to appropriate values for the environment being managed. For

example, on a system in which any user may make access attempts, setting the lockout duration to 0 (and hence requiring manual intervention to unlock a user) opens that system to denial of service attacks. The documentation referenced below provides a fuller discussion of these issues.

For a full discussion of account policies, refer to <http://technet.microsoft.com/en-us/library/hh125920%28v=ws.10%29.aspx>.

Through the UI:

1. From the **Administrative Tools**, open the **Group Policy Management** console.
2. Expand the domain being managed.
3. Expand **Group Policy Objects**.
4. Select the GPO to edit, or create a new GPO as appropriate.
5. Right-click on the GPO and select **Edit**. The GPO will open in the **Group Policy Management Editor**.
6. Expand **Computer Configuration**, **Policies**, **Windows Settings**, **Security Settings**, **Account Policies**, and select **Account Lockout Policy**.
7. Set the **Account lockout duration**, **Account lockout threshold** and **Reset account lockout counter after** settings to values appropriate for your organization.
8. Exit the **Group Policy Management Editor**.
9. If a GPO other than the default has been edited, make sure that it is linked, applies to the appropriate users and groups (security filtering), and is in the correct link location.
10. The policy modifications will take effect immediately, see below:

A new policy has been created, applying only to the PortalUsers security group. It has been linked to the domain and (not shown) placed above the Default Domain Policy in the link order. Accounts for these users will lockout after 5 failed attempts for 30 minutes, resetting the lockout counter after 30 minutes.

Through the Command Line:

PowerShell automation of group policy is limited. Editing GPO objects currently requires additional software, such as <https://sdmsoftware.com/group-policy-management-products/group-policy-automation-engine/>.

## Prevent Access to Administrator Role for Most Users

The default Administrator Role has ALL built-in *Rights* assigned to it and gives the ability to log on to the *Admin Tool*.

Therefore, you may want to consider assigning the Administrator Role only to *Users* that really need it.

See [Roles](#) for more details.

## Change Error Policy Setting

By default, AIM outputs all error messages to the user's browser regardless of their origin. Disclosing such information can potentially lead to a security breach. However, you can configure IIS to show detailed error messages only when the client is on the web server computer, and to show simple error messages only to the remote users. Applying this IIS configuration is recommended for all websites associated with the AIM Dashboard.

Alternatively, you can modify the error policy to prevent exposing sensitive information that can be used to breach system security.

The error policy setting is changed by modifying the following **appsetting** in the AIM **web.config**:

```
<add key="avevanet:errorPolicy" value="Always" />
```

The values for this option can be found with descriptions on the relevant [MSDN page](#).

With the above error policy setting being present in the **web.config** as a pre-requisite, this functionality is available after you complete the [Web Deploy](#) import process. To apply this setting, it is recommended that you follow this procedure.

## Remove Version Number from IIS

The IIS Server sends the following three headers for every request it serves:

- **Server** - Specifies the IIS Server version.
- **X-AspNet-Version** - Specifies the version of ASP.NET framework used.
- **X-AspNetMvc-Version** - Specifies the version of ASP.NET MVC framework used.

It is common practice to remove such headers from software, such as application servers and web servers, to limit the amount of information easily obtained by a potentially hostile party. Applications running under IIS, based on ASP.NET, present places where you can remove the headers. These options are **ON** by default and you can turn them off by using the steps given below. It is recommended that the values for the headers be removed from the response, which the IIS server generates for both non-secure (HTTP) and secure (HTTPS) installations.

To rewrite the values for the above-mentioned headers from all responses:

1. Install the compatible version of the **URL Rewrite** extension for **IIS**.

**Note:** You can install it from: <https://www.iis.net/downloads/microsoft/url-rewrite>

2. Open <AIM Install Path>/Dashboard/bin.
3. Open the **web.config** file in a text editor.
4. Under the **<system.webServer>** node, paste the following code:

```
<rewrite>
<outboundRules>
<rule name="Remove Server header">
<match serverVariable="RESPONSE_Server" pattern=".+" />
<action type="Rewrite" value="" />
</rule>

<rule name="Remove AspNetMvc-Version">
<match serverVariable="RESPONSE_X_AspNetMvc_Version" pattern=".+" />
<action type="Rewrite" value="" />
</rule>

<rule name="Remove X-AspNet-Version header">
<match serverVariable="RESPONSE_X_AspNet_Version" pattern=".+" />
<action type="Rewrite" value="" />
</rule>
</outboundRules>
</rewrite>
```

5. Reset **IIS**.

If it is imperative that the headers be removed completely, the *UrlScan* tool is recommended for this purpose.

To remove the headers completely:

1. Install *UrlScan*, version 3.1, from the path: <https://learn.microsoft.com/en-us/iis/extensions/working-with-urlscan/urlscan-overview>.
2. Configure the tool, and then set the **RemoveServerHeader** option to **1** in the **UrlScan.ini** file.
3. If the header does not need to be removed entirely, let your IIS Administrator choose either **UrlScan** or **URL Rewrite**, depending on the server setup, and if any of the features from either of these will prove useful.
4. If the *Application Pool* is running in the Integrated mode, you can add a module to the processing pipeline to remove the header completely.

**Note:** See the [CustomHeaderModule.zip](#) file for sample code. This method is recommended only if the other methods prove unsuitable.

## Secure External Links

Any external links that need to be viewed in the Dashboard should be registered in the web.config file, including links to reports.

In the **web.config** file there is a section defined as **<frame-src self="true">**. Each external link should be registered within this section using an **<add>** element, for example:

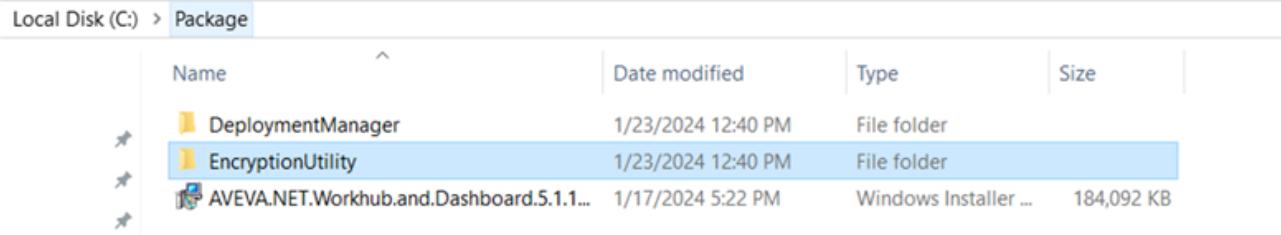
```
<frame-src self="true">
<add source="https://{{server}}/ReportServer/Pages/
ReportViewer.aspx?%2fAVEVA+NET+Reports%2fSystem+Summary&rs:Command=Render"/>
<add source="https://*.{{mysite}}.com"/>
</frame-src>
```

## Secure Encryption Utility

The AVEVA.NET.Encryption.exe utility allows users to create their own encryption key. This enhances security and safeguards critical information such as databases, services and application pool passwords. The key created should be securely stored at a location accessible across multiple machines while installing the applications.

### Encryption Utility

1. Copy the encryption utility from the package.



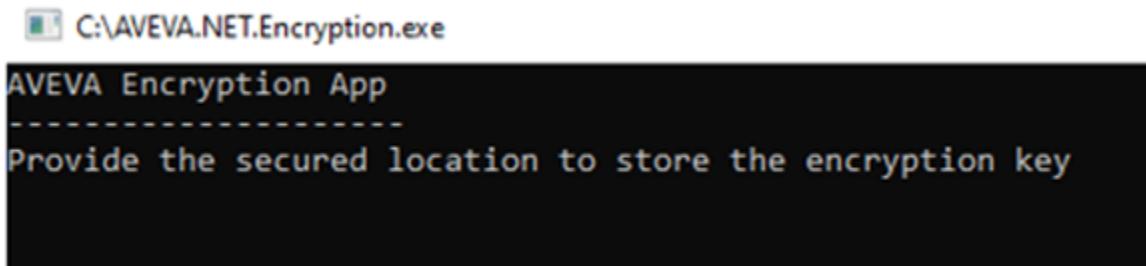
Local Disk (C:) > Package			
Name	Date modified	Type	Size
DeploymentManager	1/23/2024 12:40 PM	File folder	
EncryptionUtility	1/23/2024 12:40 PM	File folder	
AVEVA.NET.Workhub.and.Dashboard.5.1.1...	1/17/2024 5:22 PM	Windows Installer ...	184,092 KB

2. Run it as an administrator.

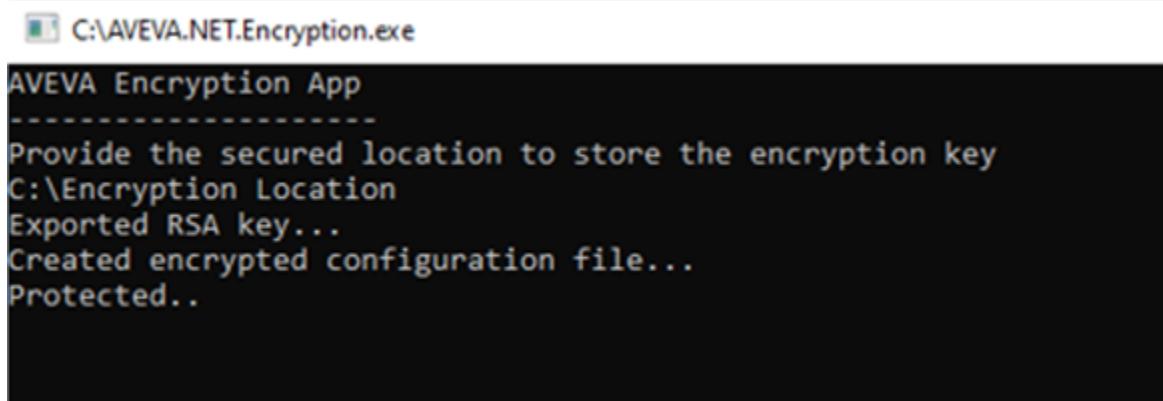
Local Disk (C:) > Package > EncryptionUtility

Name	Date modified	Type	Size
AVEVA.NET.Encryption.exe	12/1/2023 3:07 PM	Application	11 KB
AVEVA.NET.Encryption.exe.config		ou...	1 KB
AVEVA.NET.Encryption.pdb		D...	16 KB

3. Choose where to save the encryption key. Ensure the location is only accessible to trusted persons and highly secured.



4. Once the key is successfully created, you'll see a confirmation message.



5. Check to find the newly created files.

Local Disk (C:) > Encryption Location			
Name	Date modified	Type	Size
AVEVA.NET.Utility.dll.config	1/18/2024 3:27 PM	Configuration Source File	3 KB
AVEVA_RSAKEY.xml	1/18/2024 3:27 PM	Microsoft Edge HTML D...	4 KB

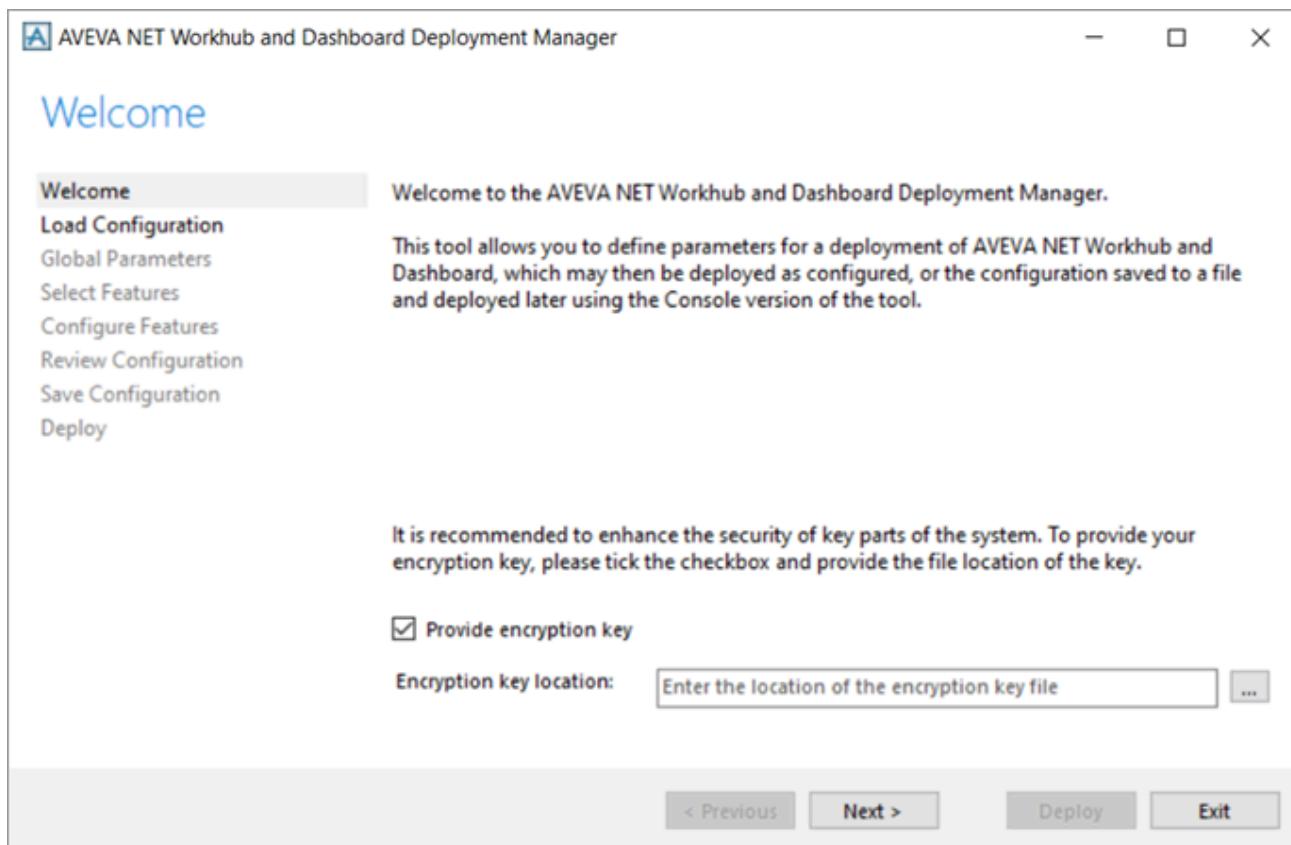
**Note:** Granting permission to access the location of the encryption key during installation, allows users to choose the location path seamlessly.

## Deployment Manager

The Deployment Manager requests the location of the encryption key from a shared location. This shared location serves as a centralized point for managing encryption keys.

The Deployment Manager uses this shared encryption key for both encrypting and decrypting sensitive data, ensuring a consistent and controlled approach for database, service and application pool password protection.

1. Run the Deployment Manager as an administrator.
2. Check: **Provide encryption key**.
3. Provide the shared location in the text box below.

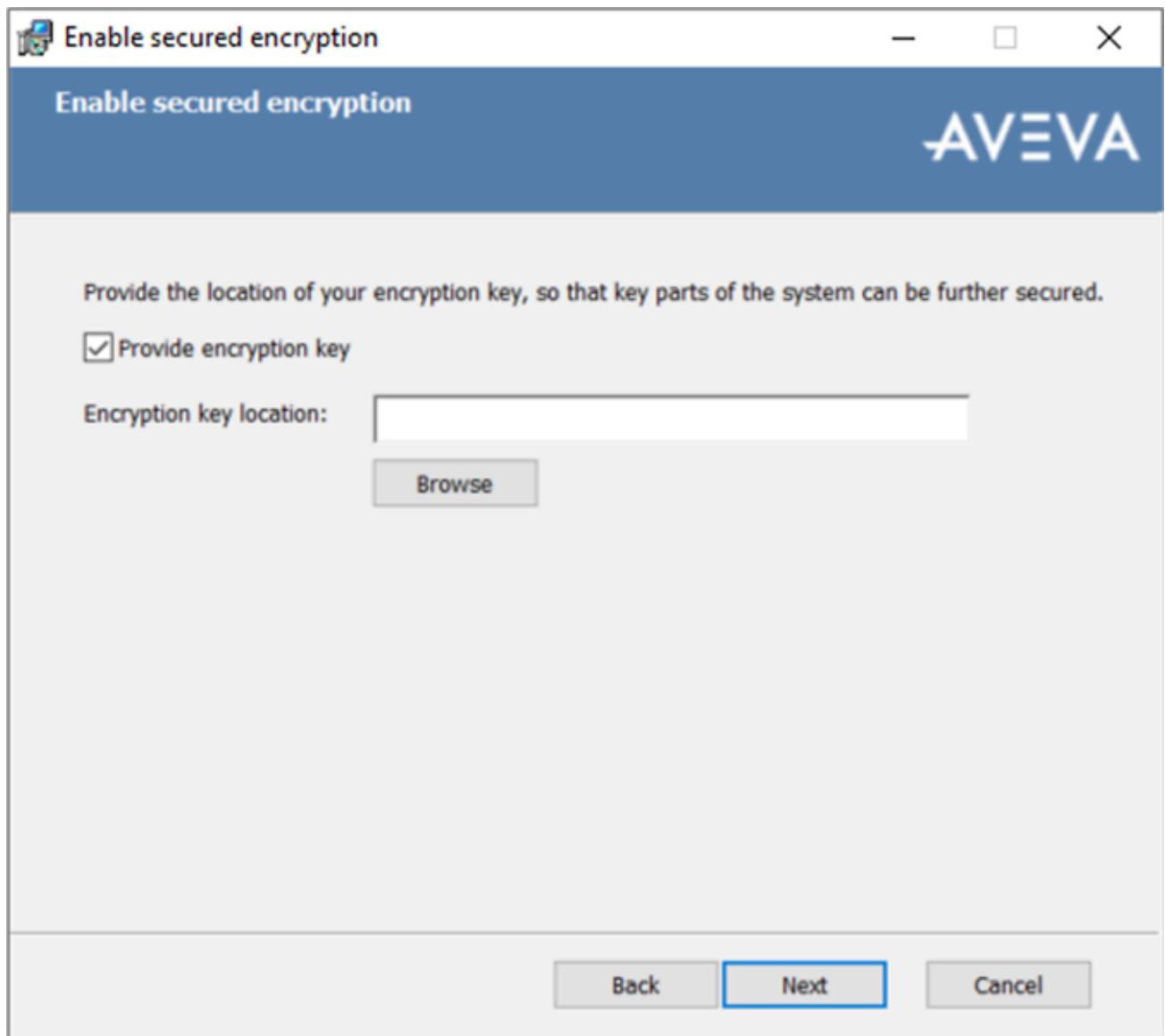


**Note:** When the option is selected to load the configuration from a file (for using pre-configured installations), ensure you update the database, service, and application pool passwords to align with the chosen encryption strategy.

## Installer

During the installation process, users are prompted to specify the encryption location. Once configured, the installer integrates with the encryption key stored at the shared location. This ensures a streamlined approach, using the same encryption key consistently for both the encryption and decryption functionalities, enhancing overall security measures.

1. Check: **Provide encryption key**.
2. Enter the shared location in the text box below.



## Configure the Gateways

For information about configuring of the AVEVA Gateways, refer to <https://docs.aveva.com/bundle/gateways/page/1167998.html>.

## Load Data and Other Configurations

This section describes about loading of data and other configurations.

## Install your own Configurations

This section explains how to install customized configurations of AIM using the *Deployment Manager* tool.

**Notes:**

- Ensure that you have administrator privileges on the computer(s), before starting the installation.
- Before running *Deployment Manager*, ensure that all the required software have been installed. These WILL NOT be installed by this tool. For details, see [System Requirements](#).

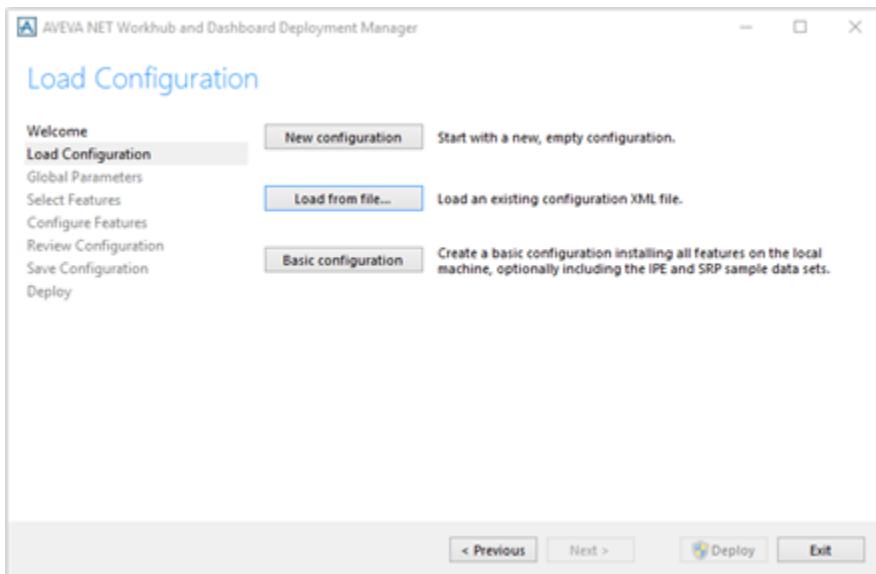
To install the customized configurations using *Deployment Manager*:

1. From your installation media, double-click the [AVEVA.NET.Deployment.Manager](#) file.
2. Select **Next**.

### Step 1: Load Configuration

On the **Load Configuration** page, specify the type of configuration you require:

- **New configuration** - all options need to be completed manually.
- **Load from file...** - loads options from a file that you have saved previously.
- **Basic configuration** - Where possible, all options are completed with a set of default values.



#### New configuration

To start a new configuration:

1. Select **New Configuration**.
2. Select **Next**.
3. See [Step 2: Global Parameters](#).

#### Load from file...

To load an existing configuration:

1. Select **Load from file...**

2. Browse to your saved configuration file.
3. Select **Open**.
4. See [Step 2: Global Parameters](#).

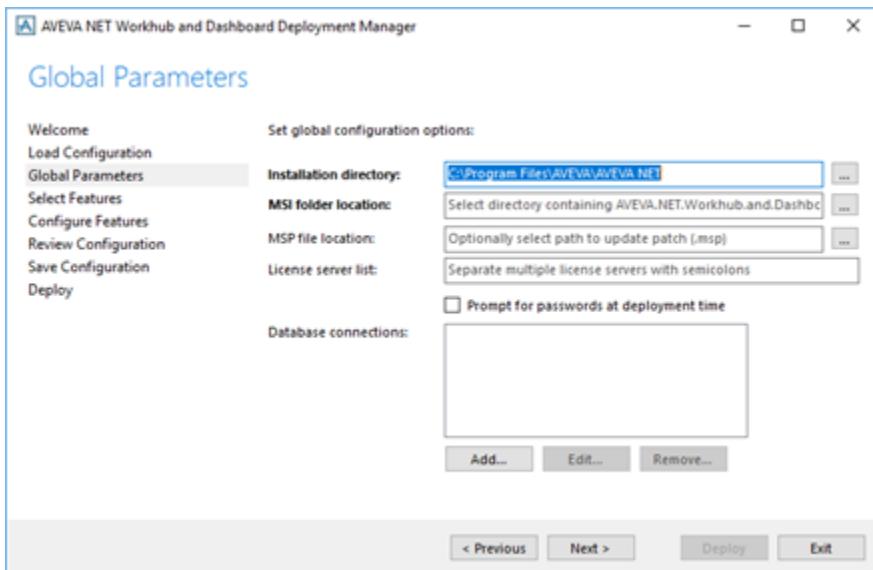
### Basic configuration

See [Installing the Basic Configuration](#).

## Step 2: Global Parameters

On the **Global Parameters** page, specify the following information:

- **Installation directory** - The directory in which you want to install the selected features (see [Step 3: Select Features](#)).
- **MSI folder location** - The location of the MSI installation file.
- **MSI file location** - The location of the MSP patch file. If a patch is available for the full version that you are installing (for example, a patch 5.0.2.1 for the full version 5.0.2), enter the MSP file location.



For example:

<D:\patches\AVEVA.NET.Workhub.and.Dashboard.5.0.2.0.msp>

The installation will be executed at the level of the provided patch.

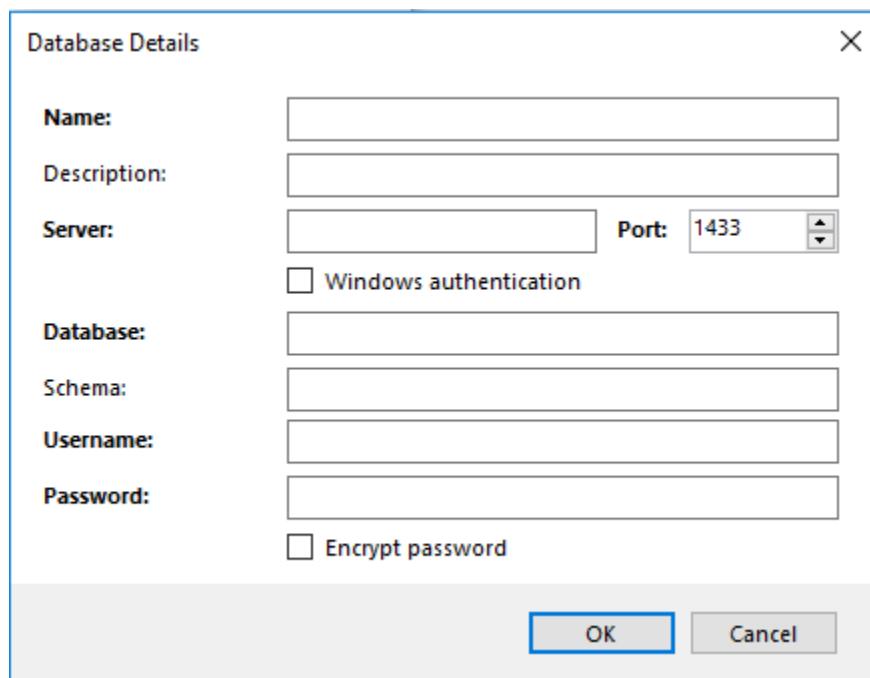
- **License server list** - Names of the license servers, separated by semi-colons.
- **Prompt for passwords at deployment time** - Enables the prompt for passwords, while executing deployment.

**Note:** All passwords must be entered at the deployment stage. Passwords (encrypted or decrypted) are not stored in the configuration file.

- **Database connections** - The databases that are used during the deployment are configured here. You must add at least one database.
- You have three options:

To add a database, select **Add...**, enter the parameters on the **Database Details** window (refer to the

parameter table below), and then select **OK**.



To edit the properties of an existing database, select the database, select **Edit...**, modify the information (refer to the parameter table below), then select **OK**.

To remove a database, select the database, select **Remove...**, and then select **OK**.

#### Add/Edit Database connections Parameters

Parameter	Description
<b>Name</b>	The name of the database.
<b>Description</b>	The description of the database.
<b>Server</b>	The name of the database server.
<b>Port</b>	The default value is 1433. But you can change this if you are using a different port number.
<b>Windows Authentication</b>	Use Windows authentication to connect to the database.
<b>Database</b>	The name of the database created in the Create a SQL Database section of the <a href="#">Install and Set up the Requirements</a> topic.
<b>Schema</b>	The name of the schema in the database to use.
<b>Username</b>	The username for the database.
<b>Password</b>	The password for the database.
<b>Encrypt Password</b>	Selected by default. Clear this option if you do not

Parameter	Description
	want the password to be encrypted.

**Note:** If you have loaded an existing or basic configuration, then these values will already be filled in. If any of the values are incorrect, you can change them.

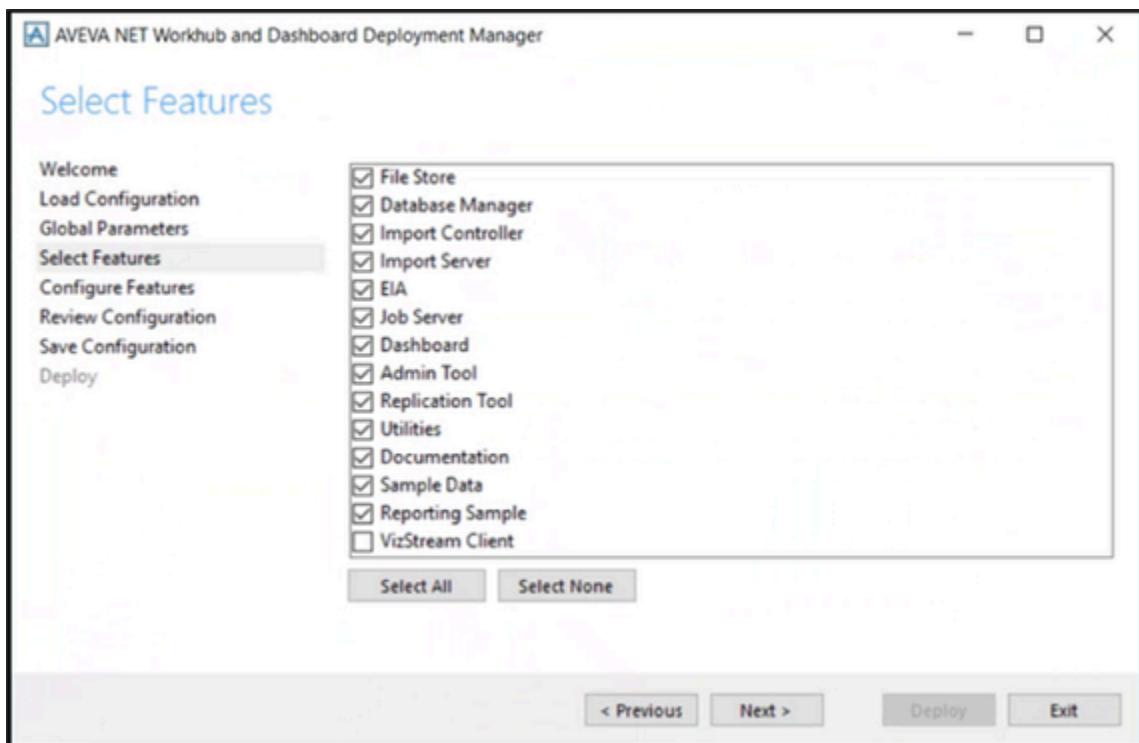
#### To Set global configuration options:

1. Browse to the appropriate locations for each option.
2. Select **Next**.

#### Step 3: Select Features

On the **Select Features** page, you can specify the features that you want to install/deploy. You can select any number of features, this is particularly useful if you want to put different features on different servers.

**Note:** The XML configuration file only contains the information for the features you select, therefore, you will probably require a different configuration file for each server you are using.



To select the features to install/deploy:

1. Select the features you require.
2. Select **Next**.

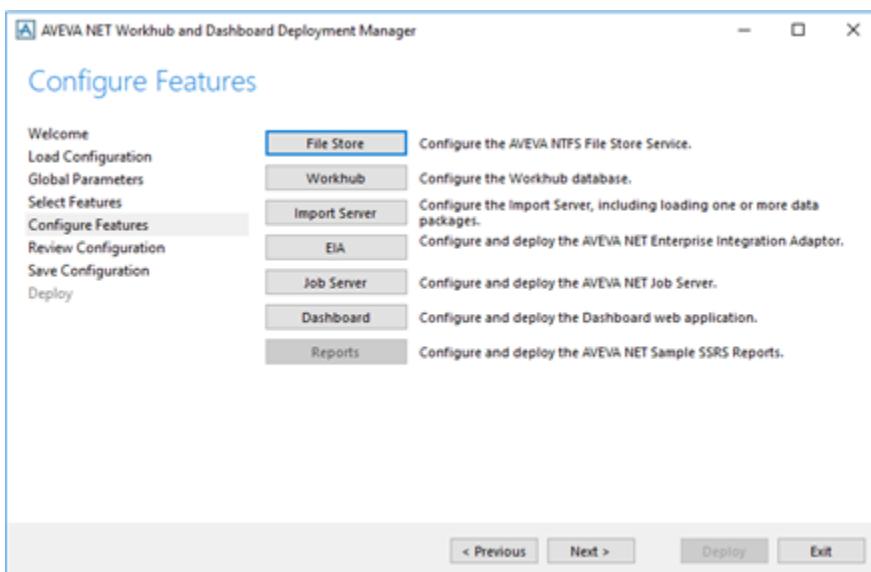
#### Step 4: Configure Features

On the **Configure Features** page you can access configuration details for the features you selected in [Step 3](#):

[Select Features](#). This section explains all the various parameters.

The features that can be configured are:

- File Store
- Workhub
- Import Server (This includes Import Controller – for details on loading your own data see [Managing Data](#))
- EIA
- Job Server – for details on how the Job Server feature enables the File Export job queuing and processing see [Configuring File Export](#).
- Dashboard – for details on changing the layout of aspects of the Dashboard screens see [Configuring Dashboard](#).
- Reports – for details on adding and configuring reports see [Adding SSRS Reports](#).



To configure the features:

- Select the feature you want to configure (for details, see the following sections).

When you have finished configuring:

- Select **Next**.

## File Store

To configure the **AVEVA NTFS File Store** service:

1. Select **File Store**.
2. Ensure that the required parameters are correct, and then select **OK**.

**File Store Parameters**

Parameter	Description
Vault directory	The location where you want the File Store created, by default, <a href="C:\ProgramData\AVEVA\AVEVA Asset Information Management\FileStore">C:\ProgramData\AVEVA\AVEVA Asset Information Management\FileStore</a> .
Hostname	By default, this is the hostname of the machine. If your server interacts with multiple networks, and you want the File Store service to interact only with a specific network, specify a hostname.
HTTP port	By default, HTTP uses port 7100.
TCP port	By default, TCP uses port 7101.
Service identity	By default, the File Store service runs as the local system account. Specify an account with the "Log on as a service" privilege to run the service under another account.
Service password	Required only if you specify a service account. If <b>Service identity</b> is left blank, and then <b>Service password</b> must also be blank.

**Workhub**

To configure the **Workhub** database:

1. Select **Workhub**.
2. You have three options:
  - a. To *add* a database, select **Add...**, enter the database information (see the following table), select **OK**, and then select **OK** again.
  - b. To *edit* the properties of an existing database, select the database, select **Edit...**, modify the information (see the following table), then select **OK**.
  - c. To *remove* a database, select the database, select **Remove...** then select **OK**.

**Add/Edit Workhub Database Parameters**

Parameter	Description
Database	Select the database that you want to use from the drop-down list.
File Store endpoint	The File Store endpoint.
Use Local File Store	Select if you want to use the file store set up in this installation.

## Import Server

To configure the port for the **Import Server**:

1. Select **Import Server**.
2. Change the default value of the port (for example, [8228](#)), and then select **OK**.

## Import Controller

To configure the Import Server that is used for the **Import Controller**, you can perform the following actions:

1. To add a database, select **Add...**, enter the database information (see the following tables), select **OK**, and then select **OK** again.  
**Note:** When adding or editing a database you can also add, edit and remove **Import Packages**.
2. To edit the properties of an existing database, select the database, select **Edit...**, modify the information (see the following tables), and then select **OK**.
3. To remove a database, select the database, select **Remove...** then click **OK**.

### Add/Edit Import Database Parameters

Parameter	Description
Import Engine Host	Name of the computer where the Import Server is located. If left blank, the local Import Server is used.
Import Engine Port	Port number that the Import Server uses, default is 8228.
Database	Select the database that you want to use from the drop-down list.
Bootstrap folder	Default value is the default bootstrap location, change this if you have modified the bootstrap files and have saved to a different location.
Replication enabled	Allows replication packages to be loaded for this database. <b>Note:</b> For more information about the Replication Tool, see <a href="#">Using the Replication Tool</a>
Replication folder	Enabled if <b>Replication enabled</b> is selected. The pathname of the folder containing the replication packages to be loaded into this database. Remember, this is the pathname as seen by the Import Server, not the Import Controller.
Replication document drop folder	Enabled if <b>Replication enabled</b> is selected.

Parameter	Description
Replication VizStream address	Enabled if <b>Replication enabled</b> is selected. If any replication package contains VizStream models, type the IP address or Hostname of the VizStream Server.  <b>Note:</b> If VizStream Client support has not been installed, then this field will be grayed out.
Replication VizStream drop folder	Enabled if <b>Replication enabled</b> is selected. If any replication package contains VizStream models, they need to be published to this folder.  <b>Note:</b> If VizStream Client support has not been installed, then this field will be grayed out.
Packages	A package defines the specific data that you want to load. See the following table for package parameters.

**Add/Edit Import Package Parameters**

Parameter	Description
Package	The name of the Package. This ID is stored in the database, so it is important to choose a unique ID that does not clash with any other identifiers in the database.
Update settings of existing package	Selected by default. Clear to stop settings in an existing package being updated.
Process package data	Selected by default. Clear to stop package data being processed during import.
Root object ID	The ID of the Root Object for the <i>AIM Dashboard</i> Browse panel, under which all the information imported by this Package is located. During processing the <i>Import Server</i> also uses this ID as the <i>Context ID</i> for the information in this Package. It is possible to have several Import Packages contributing information to one Root Object, so this ID could appear in more than one Package.
Root object class	The class of the Root Object, typically something like PLANT or PROJECT. This must be a class in the <i>AIM Workhub Class Library</i> .
Root object name	Defines the tool-tip that is displayed for this Root Object in the Browse panel.
Staging area	The pathname of the folder containing the information to be imported by this Package. If the

Parameter	Description
	Staging Area is not on the computer where the Import Server is running, you will need to use a UNC or a mapped drive. Before files can be uploaded you must arrange the files in the Staging Area into a specific hierarchical order, see The Staging Area section in the <a href="#">Import Data</a> .
Temporary area	You need to use a separate Temporary Area for each Package to avoid the risk of clashing filenames. You need to create this folder before running an update. If the Temporary Area is not on the computer where the Import Server is running, you must use a UNC or a mapped drive.
VizStream drop folder	<p>You need to create the Drop Folder before running an update, use a separate Drop Folder for each Package to avoid the risk of clashing filenames. The Drop Folder must be created under the data folder in the location where VizStream was installed for example <a href="#">E:\AVEVA_x64\VizStreamServer\data\SRP</a>.</p> <p>If the VizStream server is not on the computer where the Import Server is running, you will need to use a UNC or a mapped drive.</p> <p>This pathname must be explicitly visible to the Import Server. So, for example, the user cannot create a share to the VizStream data folder and then use the share name as part of the pathname the user specifies. For example, <a href="#">\\computer1\VizDataShare\SRP</a> is <b>NOT</b> suitable because it uses a share name.</p> <p><b>Note:</b> if VizStream Client support has not been installed, then this field will be grayed out.</p>
SubFolder path	<p>A location where you can drop the Vizstream processed files.</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>• The VizStream drop folder name must end with a backward slash, as follows: <a href="#">E:\AVEVA_x64\VizStreamServer\data\</a></li> <li>• If VizStream Client support has not been installed, then this field will be grayed out.</li> </ul>
VizStream address	The IP address or Hostname of the VizStream server. If VizStream is installed on the Server machine, this will normally be the second of the two IP addresses

Parameter	Description
	<p>allocated when the AIM Workhub was installed.</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>The Hostname can only be used if the VizStream server is NOT installed on the same machine as the Import Server.</li> <li>If VizStream Client support has not been installed, then this field will be grayed out.</li> </ul>
Callout path	<p>The pathname of a folder that the Import Server will search for user-defined plug-ins to be invoked during import processing. If you do not have any callout code, leave blank.</p>
Discard previous template	<p>Applies when the Import Server encounters an Import Template with the same name as one already imported.</p> <ul style="list-style-type: none"> <li>Select to delete the existing Template.</li> <li>Clear to retain the existing Template as a predecessor to the new Template.</li> </ul>
Check classification	<p>Select to check whether the classes used when an object has multiple classifications are in the same Class Library.</p>
Allow Merging Objects	<p><b>Checked</b> (default): If two objects have the same alias, then those two objects will be merged.</p> <p><b>Unchecked</b>: If two objects have the same alias, only one of the objects will be identified by the alias. The Import Controller shows the following warning message:</p> <p><b>"{Object 2} could not be identified by {Alias} - identifier already exists for another object. Enable 'Allow Merging Object' option in order to add this alias by merging those two objects".</b></p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>When the Import Controller shows the above message, it means that the same alias has been used for two objects either in one template or in two different templates.</li> <li>When this option is unchecked, removing an alias</li> </ul>

Parameter	Description
	<p>from an object (Object 1) and adding it to another object (Object 2) in the same template, removes the alias (Alias 1) from Object 1, but does not add it to Object 2 and the above message is shown. To add the alias to Object 2, there are two options:</p> <ul style="list-style-type: none"> <li>• Re-process the template, or follow the steps below:           <ol style="list-style-type: none"> <li>1. Remove the alias from "Object 1".</li> <li>2. Process the template.</li> <li>3. Add the alias to "Object 2".</li> <li>4. Process the template.</li> </ol> </li> </ul>
VizStream Z up	<p>Select to display the Z axis vertically. Clear to display the Y axis vertically and the Z access coming out of the page.</p>
Create content folders	<p>Clear to prevent content folders being created.</p>
Allow change parent	<p>Select to allow existing classes to be moved in the Class Library.</p>
Force change parent	<p>Select to force the change of parent to happen even if the class has existing instances.</p>
Include VizStream geometry lines	<p>Select to display Geometry lines on the drawing.</p>
Error level	<p>Select the least serious type of error that you want to cause an import to abort.</p>
Max errors	<p>Enter the number of errors that are allowed before the import is aborted.</p>
Allow unknown	<p>Select to allow unknown errors to be reported.</p>

**Note:** While importing packages, the **Attach** mode enables the display of progress information being output by the Import Server. If the Import Server is importing multiple packages, you can use the **Attach** or **Detach** feature to switch between progress displays of the different packages. If the Import Server is importing a package, for example initiated via trigger files, you can run the Import Controller and attach to the output of the package that is already processing.

### Enterprise Integration Adapter (EIA)

To configure EIA:

1. Select **EIA** and enter the required security credentials.
2. You have three options:

- a. To *add* a database entry for EIA, select **Add...**, enter the database information (see the following tables), select **OK**, and then select **OK** again.
- b. To *edit* the properties of an existing database entry for EIA, select the database, select **Edit...**, modify the information (see the following tables), and then select **OK**.
- c. To *remove* an existing database entry for EIA, select the database, select **Remove...**, and then select **OK**.

#### Add/Edit EIA Database Parameters

Parameter	Description
Database	Select the database that you want to use from the drop-down list.

## Job Server

To configure the **Job Server**:

1. Select **Job Server** and select a **Polling Interval**.
2. You have three options:
  - a. To *add* a database entry for the Job Server, select **Add...**, enter the database information (see the following table), select **OK**, and then select **OK** again.
  - b. To *edit* the properties of an existing database entry for the Job Server, select the database, select **Edit...**, modify the information (see the following table), and then select **OK**.
  - c. To *remove* an existing database entry for the Job Server, select the database, select **Remove...** then select **OK**.

#### Add/Edit Job Server Database Parameters

Parameter	Description
Database	Select the database that you want to use from the drop-down list.

## Dashboard

To configure the deployment of **Dashboard**:

1. Select **Dashboard**.
2. You have three options:
  - a. To add a deployment, select **Add...**, enter the information (see the following table), select **OK**, and then select **OK** again.
  - b. To edit the properties of an existing deployment, select the deployment, select **Edit...**, edit the information (see the following table), then select **OK**.
  - c. To remove a deployment configuration, select the deployment, select **Remove...**, and then select **OK**.

**Dashboard Web Application Deployment Parameters**

Parameter	Description
Database	Select the database that you want to use from the drop-down list.
Authentication	Inherit from root: If selected, the Windows authentication setting is inherited from the IIS root node. Use Windows authentication: If selected, Windows authentication is enabled.

**Accusoft Client Settings Parameters**

Parameter	Description
Enable Raster Types	Renders the provided file types in the Raster image format (JPEG); DWG is the default type.  <b>Note:</b> It improves performance. However, it has an impact on the visual quality of the image in the viewer, and the text-based interactions may not be available depending on the contents of the document. For example: Search, Select Text.
Prizm application services scheme	Prizm Application Service REST API scheme.
Prizm application services host	Prizm Application Service REST API hostname.
Prizm application services port	Prizm Application Service Proxy REST API port number.
Web service scheme	Prizm Service REST API web service scheme.
Web service host	Prizm Service REST API web service hostname.
Web service port	Prizm Service Proxy REST API web service port number.
Web service path	Prizm Service Proxy REST API web service path.

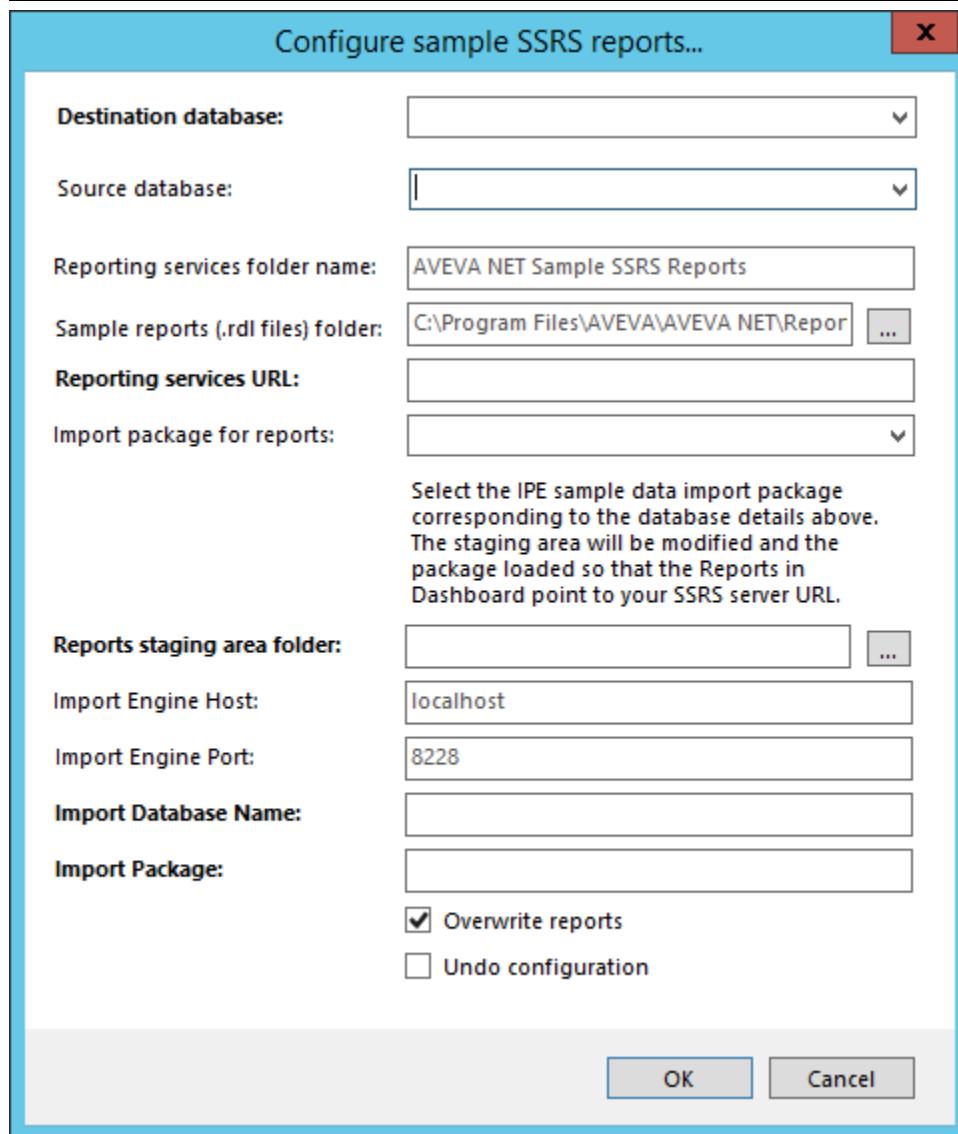
**Reports**

To configure the sample SSRS reports:

**Note:** If you are connecting to the Workhub database using Windows authentication and on a schema other than dbo, then unselect Reports in the Deployment Manager and configure reports manually by going to [Deploy SSIS](#), then to the *Executing SSIS Packages* section and follow **step 13**.

1. Select **Reports**.
2. Modify the information In the Configure sample SSRS reports window.

**Note:** All mandatory fields are shown in bold.



3. Select **OK**.

After deployment, perform these steps:

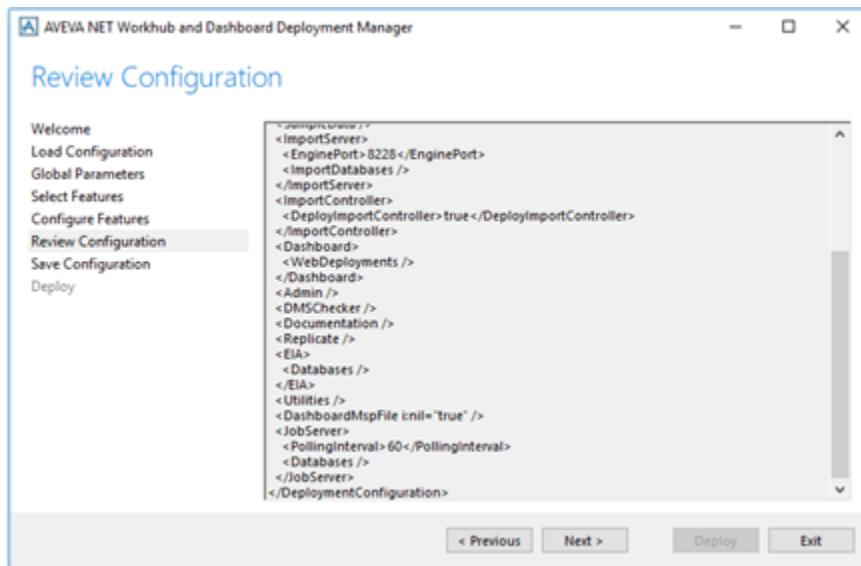
1. Open the **Report Manager URL**.

**Note:** You can get the **Report Manager URL** from the **Reporting Service Configuration Manager**. For more information, see *Configure Report Manager URL* in the [Report Services Report Server](#) topic.

2. Select the **Datasource**, and then a **Report**.
3. Verify the following:
  - a. De-normalized tables are created successfully, under the reporting DB tables.
  - b. SSIS package is uploaded to the package store.
  - c. VNETIPE datasource is created in the reporting folder.
  - d. Reporting views are created.

## Step 5: Review Configuration

On the **Review Configuration** page, the configuration information is shown in read-only XML format.

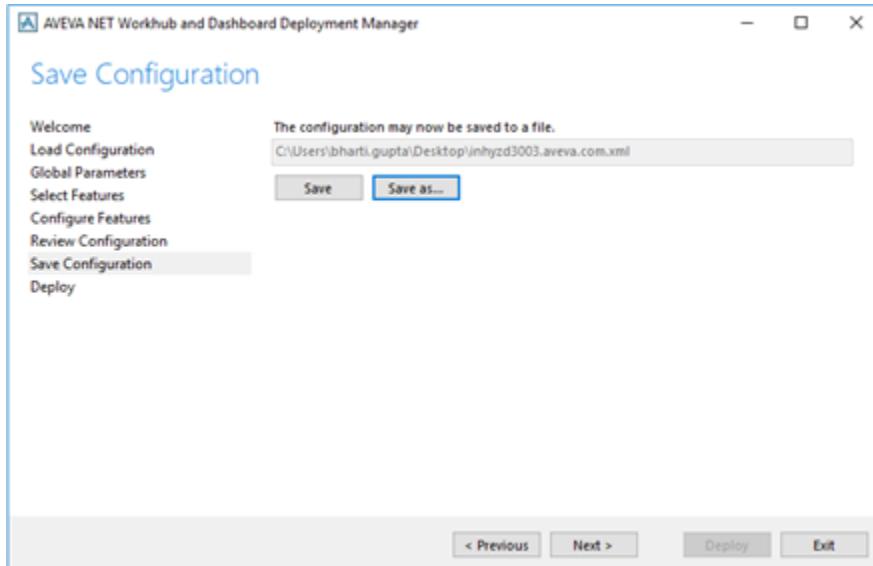


When you have finished reviewing:

- Select **Next**.

## Step 6: Save Configuration

On the **Save Configuration** page you can save all the configuration information in XML format.



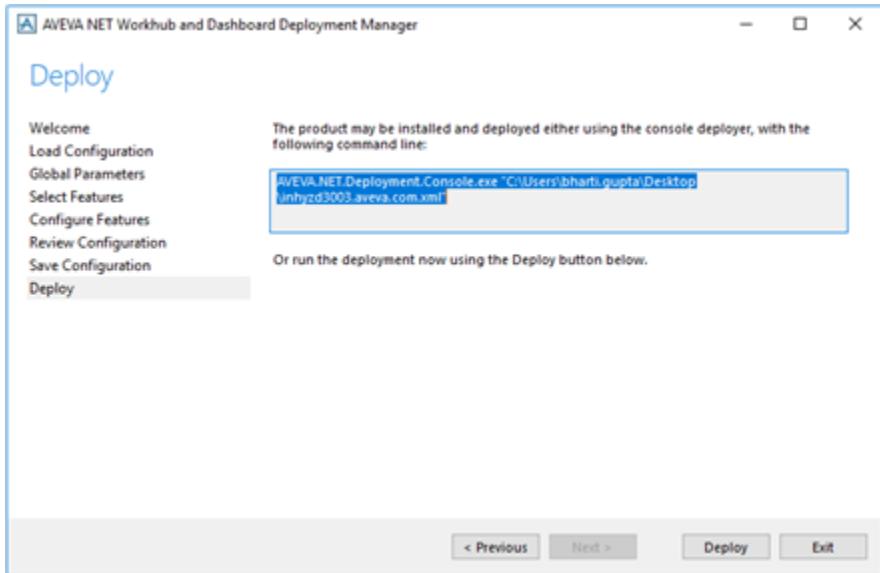
To save your configuration:

1. Do one of the following:
  - To save to the default location, select **Save**.
  - To save to a different location, select **Save as**.

2. Select **Next**.

## Step 7: Deploy

On the **Deploy** screen you can start deployment.



To deploy using the configuration information you have just entered:

- Select **Deploy**.

You are shown a progress window and the status of the deployment.

---

**Note:** If you want to use the command line to deploy, copy the text in the box and run the *Deployment Console* - see [Deployment Console](#).

---

Congratulations - you have now installed AIM.

To view your AIM Dashboard:

1. Open your browser.
2. Enter the web address that you configured in the Dashboard section of the [Step 4: Configure Features](#) topic.

## Deployment Console

After configuring all the deployment settings through *Deployment Manager*, you can choose to deploy through the *Deployment Console* ([AVEVA.NET.Deployment.Console.exe](#)).

To deploy through the *Deployment Console*:

1. Run through the *Deployment Manager* see [Installing the Basic Configuration](#) or [Installing your own Configurations](#).
2. At **Step 7: Deploy**, copy the command line from the box.
3. From your installation media, double-click [AVEVA.NET.Deployment.Console.exe](#).
4. Paste the command line, edit the script if required, and then press **Enter**.

```

> Is

 Directory: \\ukcamd4570\\AVEVA.NET Dashboard 5.0 Install Pack\\Installers\\AVEVA\\Deployment

Mode                LastWriteTime     Length Name
----              ----- 
d---- 01/05/2014    17:17          Scripts
-a---- 01/05/2014    17:10        10896 AVEVA.NET.Deployment.Console.exe
-a---- 01/05/2014    17:10        61440 AVEVA.NET.Deployment.dll
-a---- 01/05/2014    17:10        166032 AVEVA.NET.Deployment.Manager.exe
-a---- 01/05/2014    17:10         187 AVEVA.NET.Deployment.Manager.exe.config
-a---- 01/05/2014    17:10        149816 AVEVA.NET.Utility.dll

> .\AVEVA.NET.Deployment.Console.exe ...\\..\ukcamsanet45-a.aveva.com.xml
2014-05-07T09:28:11Z Script  New   FileStore\Install.ps1
2014-05-07T09:28:11Z Script  New   DatabaseManager\Install.ps1
2014-05-07T09:28:11Z Script  New   SampleData\Install.ps1
2014-05-07T09:28:11Z Script  New   Import\Server\Install.ps1
2014-05-07T09:28:11Z Script  New   Import\Client\Install.ps1
2014-05-07T09:28:11Z Script  New   Import\Client\Add-ImportDatabase.ps1
2014-05-07T09:28:11Z Script  New   Import\Client\Update-ImportPackage.ps1
2014-05-07T09:28:11Z Script  New   Dashboard\Install.ps1
2014-05-07T09:28:11Z Script  New   Dashboard\Deploy.ps1
2014-05-07T09:28:11Z Script  New   Dashboard\Deploy-#ccusoftClient.ps1
2014-05-07T09:28:11Z Script  New   Admin\Install.ps1
2014-05-07T09:28:11Z Script  New   DMSChecker\Install.ps1
2014-05-07T09:28:11Z Script  New   Documentation\Install.ps1
2014-05-07T09:28:11Z Script  New   Replicate\Install.ps1
2014-05-07T09:28:11Z Script  New   ReportSample\Install.ps1
2014-05-07T09:28:11Z Script  New   EIO\Install.ps1

2014-05-07T09:28:11Z Deployment Started
2014-05-07T09:28:11Z Script  Started  FileStore\Install.ps1 -InstallDir "C:\Program Files\AVEVA\AVEVA.NET" -DashboardMsiPath "\\ukcamd4570\AVEVA.NET Dashboard 5.0 Install Pack\Installers\AVEVA"

```

## Change the Out-of-the-box Installation

This section provides an overview of the areas where modifications can be performed to the out-of-the-box installation of AIM.

Specific details and examples of changes are provided in subsequent sections.

## Configure Multiple Instances

A single AIM installation can define various settings, such as:

- The database connection.
- The Access Control List (ACL), see [Deny Access to AVEVA AIM Dashboard](#).
- The location of a connected Document Management System (DMS), see [Interface with DMS](#) .
- Whether VizStream uses an SSL certificate, see [SSL and HTTPS](#).
- AVEVA Asset Information Management Player configuration, see [Configure the AVEVA AIM Player](#).

However, when a single Web Server is used with multiple Database Servers (multiple instances), this requires further changes to the <portals> section. Each database has its own <portal> section, therefore giving each Instance separate control of the settings mentioned previously.

---

**Note:** There is a maximum of 32 Portal IDs (<portal> elements) that can be added to the web.config file.

Advantages of this are that each Instance can have:

- Its own ACL, providing a simpler, higher-level granularity of access control than available when using Security

Access Groups (SAGs, see [Security Access Groups](#)). This can give access control configured at a database level.

- A database which has DMS files (for example, Documentum) in a different location.
- VizStream files in separate VizStream servers and you can define whether an SSL certificate should be used with that VizStream server or not.

**Note:** At least one <portal> must be defined.

You can configure multiple instances using procedures in either of the following two methods:

- Using the web.config file
- Using the Configuration Database

### Using the web.config file

To configure multiple Instances using the [web.config](#) file:

1. Install and deploy A/M with details of your *Default* database.
2. Run the *Database Manager* (see [Database Manager Tool](#)) to initialize, populate and (optionally) register the File Store for each additional Instance.
3. Open the **web.config** file found in the application root.
4. In the <**portals**> section, add a new <**portal**> section for each Instance and provide the connection string details. For example:

```
<ConnectionString  
connectionString="DBUsername=ipe;DBPassword=ipe;PasswordEncrypted=false;  
DBDataSource=WIN-1N61CGSFN1V\SQL2008R2, DatabasePort;ClassLibrary=Standard"  
name="Default" providerName="System.Data.ProviderName"/>
```

**Note:** **DatabasePort** is the port number on which the Database Server is running. The default port number is 1433.

5. To configure SQL Authentication, add the following connection string:

```
<ConnectionString  
connectionString="DBUsername=test;DBPassword=test;PasswordEncrypted=false;  
DBDatasource=localhost, DatabasePort;ClassLibrary=Standard" name="Default"  
providerName="System.Data.ProviderName"/>
```

6. To configure Windows Authentication with account taken from the process thread, add the following connection string:

```
<ConnectionString connectionString="Integrated=true;Database=test;Schema=testschema;  
PasswordEncrypted=false;DBDatasource=localhost, DatabasePort;ClassLibrary=Standard"  
name="Integrated" providerName="System.Data.ProviderName"/>
```

7. To configure Windows Authentication with a specific Windows account, add the following connection string:

```
<ConnectionString connectionString="Integrated=true;Database=test;Schema=testschema;  
DBUsername=AVEVA \MyUserName;DBPassword=MyPassword;PasswordEncrypted=false;  
DBDatasource=localhost, DatabasePort;ClassLibrary=Standard"  
name="IntegratedSpecific" providerName="System.Data.ProviderName"/>
```

8. Verify if the complete <**portals**> section looks like the following:

```
<portals>  
<portal id="Default">  
<ConnectionString connectionstring="..." />  
<AccessControlList>
```

```
<Allow ...>
<Deny ...>
</AccessControlList>
<VizStream>
<HTTPS ....>
</VizStream>
<ContentManagementInteroperabilityServices>
<!-- po ... -->
</ContentManagementInteroperabilityServices>
<AVEVANETPlayer>
...
</AVEVANETPlayer>
</portal>
<portal id="SRP">
<ConnectionString connectionstring="..." />
<AccessControlList>
<Allow ...>
<Deny ...>
</AccessControlList>
<VizStream>
<HTTPS ....>
</VizStream>
<ContentManagementInteroperabilityServices>
<!-- po ... -->
</ContentManagementInteroperabilityServices>
<AVEVANETPlayer>
...
</AVEVANETPlayer>
</portal>
</portals>
```

9. Save the `web.config` file.

## Using the Configuration Database

To configure multiple Instances using the Configuration Database:

1. Install and deploy AIM with details of your *Default* database.
2. Run the *Database Manager* (see [Database Manager Tool](#)) to initialize, populate and (optionally) register the File Store for each additional instance. You can use either the same database that has your engineering data or a separate database that only holds the configuration data.
3. Make the required changes in the `BootstrapAssetInstance.xml` file, which can be found at `C:\Program Files\AVEVA\AVEVA .NET\Import\Server\Bootstrap` if you are using the default location.
4. In the `<portals>` section, add a new `<portal>` section for each Instance and provide the connection string details. For example:

```
<ConnectionString
connectionString="DBUsername=ipe;DBPassword=ipe;PasswordEncrypted=false;
DBDataSource=WIN-1N61CGSFN1V\SQL2008R2, DatabasePort;ClassLibrary=Standard"
name="Default" providerName="System.Data.ProviderName"/>
```

**Note:** `DatabasePort` is the port number on which the Database Server is running. The default port number is 1433.

5. To configure SQL Authentication, add the following connection string:

```
<ConnectionString
```

```
connectionString="DBUsername=test;DBPassword=test;PasswordEncrypted=false;  
DBDatasource=localhost, DatabasePort;ClassLibrary=Standard" name="Default"  
providerName="System.Data.ProviderName"/>
```

6. To configure Windows Authentication with account taken from the process thread, add the following connection string:

```
<ConnectionString connectionString="Integrated=true;Database=test;Schema=testschema;  
PasswordEncrypted=false;DBDatasource=localhost, DatabasePort;ClassLibrary=Standard"  
name="Integrated" providerName="System.Data.ProviderName"/>
```

7. To configure Windows Authentication with a specific Windows account, add the following connection string:

```
<ConnectionString connectionString="Integrated=true;Database=test;Schema=testschema;  
DBUsername=AVEVA \MyUserName;DBPassword=MyPassword;PasswordEncrypted=false;  
DBDatasource=localhost, DatabasePort;ClassLibrary=Standard"  
name="IntegratedSpecific" providerName="System.Data.ProviderName"/>
```

8. Verify if the complete `<portals>` section looks like the following in the `BootstrapAssetInstance.xml` file under the characteristic, `BODY`:

```
<portals>  
  <portal id="Default">  
    <ConnectionString connectionstring="..." />  
    <AccessControlList>  
      <Allow ...  
      <Deny ...  
    </AccessControlList>  
    <VizStream>  
      <HTTPS ....>  
    </VizStream>  
    <ContentManagementInteroperabilityServices>  
      <!-- po ... -->  
    </ContentManagementInteroperabilityServices>  
    <AVEVANETPlayer>  
      ...  
    </AVEVANETPlayer>  
  </portal>  
  <portal id="SRP">  
    <ConnectionString connectionstring="..." />  
    <AccessControlList>  
      <Allow ...  
      <Deny ...  
    </AccessControlList>  
    <VizStream>  
      <HTTPS ....>  
    </VizStream>  
    <ContentManagementInteroperabilityServices>  
      <!-- po ... -->  
    </ContentManagementInteroperabilityServices>  
    <AVEVANETPlayer>  
      ...  
    </AVEVANETPlayer>  
  </portal>  
</portals>
```

9. Process the `BootstrapAssetInstance.xml` file through the *Import Controller*.
10. Open the `web.config` file found in the Application root.
11. Replace the **Default Configuration** as shown in the following screenshot:

```

<portals>
  <portal id="Default">
    <!-- This is the account ID of an account added in AVEVA Connect -->
    <!-- Account Value="b3e0b400-e1f3-41fa-a011-7aef1a4a0d8" /> -->

    <!-- ConnectionString connectionString="DBusername=CygnusUser;DBpassword=CygnusUser;PasswordEncrypted=False;DBdataSource=localhost;ClassLibrary=Standard" providerName="System.Data.ProviderName" />
    <!-- ConnectionString connectionString="DBusername=CygnusUser;DBpassword=CygnusUser;PasswordEncrypted=False;DBdataSource=localhost;ClassLibrary=Standard" providerName="System.Data.ProviderName" />
    <!-- Configuration for Content Management Interoperability Services -->
    <!-- ContentManagementInteroperabilityServices, ContentManagementInteroperabilityServices -->
    <!-- ContentManagementInteroperabilityLayer, ContentManagementInteroperabilityLayer -->
    <!-- Portals, Portals -->
  </portal>
</portals>

```

with the **OPEProvider Configuration** (to use configuration database) as shown in the following screenshot:

```

<connectionStrings>
  <add connectionString="DBusername=ConfigurationDatabaseUser;DBpassword=ConfigurationDatabaseUser;PasswordEncrypted=False;DBdataSource=localhost;ClassLibrary=Standard" name="Default" providerName="System.Data.ProviderName" />
</connectionStrings>
<configProtectedData defaultProvider="OPEProvider">
  <providers>
    <add name="OPEProvider" type="AVEVA.NET.Dashboard.Configuration.OPE_Provider, AVEVA.NET.Dashboard.Configuration_OPE" connectionName="Default" instanceName="WebPortalConfig" />
  </providers>
</configProtectedData>
<portals configProtectedDataProvider="OPEProvider">
  <!-- EncryptedData -->
</portals>

```

**Note:** The OPEProvider configuration can be found in the web.config file, which is commented out by default. To use the OPEProvider configuration, you must uncomment the configuration and provide the connection string of the initialized

12. To open the new instance in a browser, add the ID to your *AIM Dashboard* URL, for example:

<http://localhost:16000/?portalId=SRP>

**Note:** The Portal ID must be inserted before the # character in the URL. For example:

<http://{site}:{port}/?portalId=IPE#/item=J-9002A>. The "Default" Portal ID defines the settings to be used when there is no **portalId** parameter specified in the URL.

## Alter the Bootstrap Files

The default bootstrap files are:

- **BootstrapAssetInstance.xml** - Creates multiple portal Instances using a database.

**Note:** This is an optional file. It is required when the portal configuration needs to be picked from the database instead of the [web.config](#) file.

- **BootstrapClasses.xml** - Creates the mandatory Class Library for the *AIM Dashboard* (below the system classes).

**Note:** This file contains the Classes, such as [QueryFormDefinition](#), [ExportDefinition](#) and [Set](#), which are mandatory for AIM to run with all the CRUD operations. It also contains AIM Player Classes, which if not required can be removed by deleting the classes from the comment `<!--AVEVA NET Player Classes-->` till `<!--END AVEVA NET Player Classes-->`.

- **BootstrapSampleClasses.xml** (optional) - Creates the sample classes.

**Note:** This is an optional file. If it is not imported, AIM can still run with all the CRUD operations.

- **BootstrapSampleDataGroups.xml** - Defines the *Data Groups* used and the classes they are linked to. See the *Data Groups* section in [Configure Workhub API Data Structure](#).

- **BootstrapSampleInstances.xml** - Defines default values for the **Settings** panel.

- **BootstrapSampleSearchCategories.xml** - Defines the top level categories used in the *Search* panel. See the *Search Categories* section in [Searching](#).

- **BootstrapSampleViews.xml** - Defines which HTML files for *Summary Views* and *Content Cards* are used, and for which class of object they apply.

To use your own bootstrap files:

1. Create a new folder where you will store your modified files.
2. If you want to use the existing bootstrap files as a starting point, copy the files from [installation folder]\Import\Server\Bootstrap to the new folder.
3. Update the bootstrap location using *Import Controller*:
  - a. Open *Import Controller*.
  - b. Expand **Import Servers**.
  - c. Expand the server where the database is located - see *Registering the Import Server* section if the server has not already been added.
  - d. Right-click on the database - see *Registering the AVEVA Asset Information Management Workhub Database* section if the database has not already been registered.
  - e. Select **Properties**.
  - f. In the **Bootstrap Folder** box, enter the location of your new bootstrap folder.
  - g. Select **OK**.

To update the bootstrap files after a change:

1. Open *Import Controller*.
2. Expand **Import Servers**.
3. Expand the server where the database is located - see *Registering the Import Server* section if the server has not already been added.
4. Expand the database.
5. Right-click on **BootStrap**.
6. Select **Force Update**.

Bootstrapping is complete when the **Status** of the XML files changes to **Existing**.

---

**Note:** You must perform an IIS reset on the Application Server to see the changes in the web application.

## Copy Sample Configurations

The default configuration files are:

- IPEBootstrapSampleDataGroups.xml - Defines IPE specific Data Group definitions.
- SearchConfigurationExamples\_null.xml - Defines some examples search filters. See the *Search Filters* section in the [Searching](#) topic.

To use your own configuration files you need to:

1. Create a new folder where you will store your modified files. For example, Project01Configuration.

---

**Note:** this needs to be in a Staging Area (see The Staging Area section in the [Import Data](#) section):

- If you are experimenting with the sample data, create the folder in the IPE Staging Area.
  - If you are using your own data, create the folder in the staging area used by your Import Package.
2. If you want to use the existing configuration files as a starting point, copy the files from [installation folder]\SampleData\IPE Staging Area\SampleConfiguration to the new folder.

To update the configuration files after a change:

1. Open *Import Controller*.
2. Expand **Import Servers**.
3. Expand the server where the database is located - see *Registering the Import Server* section if the server has not already been added.
4. Expand the database - see *Registering the AVEVA Asset Information Management Workhub Database* section if the database has not already been registered.
5. Expand the package - see *Create an Import Package* section if the package has not already been created.
6. Select the folder you created in step 1.
7. Either:
  - a. Right-click on the folder, and then select **Update Folder**, or
  - b. Right-click on the modified file(s), and then select **Update File(s)**.

Configuration is complete when the **Status** of the XML files changes to **Existing**.

## Load Data into Workhub

This section explains how to import your own data and documents into AIM.

### Create Your Own Bootstrap File

AIM uses Class Libraries for organizing data.

The default Library structure is created as part of the installation process.

When customizing a Class Library there are some restrictions. A number of system classes are defined as subclasses of the SYSTEM class and they cannot be deleted. The upper levels of the class hierarchy are system defined and the functionality of AIM depends on this basic framework known as the Upper Ontology. Any new Class must directly or indirectly be a subclass of one of these built-in classes. The Upper Ontology are shown in bold in the *Admin Tool*.

To use your own Class Library, you need to change the [BootstrapClasses.xml](#) file referenced by both the *Deployment Manager* and/or the *Import Controller*. This file is located in [\[installation folder\]\Import\Server\Bootstrap](#). See [Alter the Bootstrap Files](#).

To create your own bootstrap file you can either:

- Modify the XML directly, or (more easily)
- Use the *Admin Tool* to modify the default structure, and then export this structure as an XML file:
  1. Log on to the *Admin Tool*.
  2. In the **Manager** pane expand **Export**.
  3. Select **Export**.
  4. Select **XML for Bootstrap Classes**.
  5. Enter a location to save the file.

## Import Data

Configuring AIM to import data and creating an *Import Package* can be done in two ways, using either:

- The *Deployment Manager - Step 4: Configure Features*, or
- The *Database Manager* tool, see [Database Manager Tool](#), and the *Import Controller* tool, see [Import Controller Tool](#).

Both methods use the same mechanism and both can be used to start an update, but they differ slightly in the way they collect the necessary information.

After the *AIM Workhub* database has been created and structured, the information in an *Import Package* (or just *Package*) is used by the *Import Server* to:

1. Scan the *Staging Area* for new or changed files. See the section *The Staging Area*.
2. Convert files (if necessary) to formats appropriate for AIM.
3. Create descriptive XML files for each document.
4. Store the converted/created files in the Temporary Area.
5. Copy 3D Models to the VizStream Drop Folder.
6. Copy other documents to the File Store.
7. Parse the XML files to create *Objects* and *Associations* in the *AIM Workhub* database.

---

**Note:** As an *Import Package* is XML data stored in the tool in which it was created. It can only be seen in that tool.

---

## The Staging Area

A *Staging Area* is a folder where documents and sub-folders are organized for importing into the *AIM Workhub*. It can be located anywhere as long as it is visible on the network to the *Import Server*. A database can contain any number of *Import Packages* but there should always be a one-to-one correspondence between an *Import Package* and a *Staging Area*.

Files in the *Staging Area* are usually of two different types:

- **Data or Document files**, for example:
  - a PDMS plot file
  - an MS Excel datasheet
  - a PDF document
- **Metadata files**
  - [\[file\].vnet](#) – that contains the metadata for an individual file.
  - [\[folder\].vnet](#) – that contains the metadata for all the files in a folder.

For more detail on the correct format for files in the *Staging Area*, refer to the appropriate AVEVA Gateway or third-party documentation.

### Default Permissions

The **Import Service** virtual account has by default Modify, Read & Execute, List Folder Contents, Read permissions while installing. The **Import Service** virtual account is by default added to the <Installed

**Location>\Import** and the **<Installed Location>\SampleData** folders. Add the Import Service virtual account to the Staging Area folder, if it is configured in different location.

## File Store and WCF Configuration

The File Store uses Windows Communication Foundation (WCF) streaming to transfer files. The default settings are suitable for many installations but can be configured if required. Typically this is done to change the maximum size of a file that can be used or to change the time out on a slow network.

The file store uses the standard WCF configuration which is publicly documented.

A summary of the most useful configuration parameters is given here:

- **maxReceivedMessageSize** - the maximum size in bytes for the message. This should be set large enough for the largest file.
- **maxBufferSize** - this is the maximum size in bytes for buffering the file. Reducing this will reduce the total memory required by the File Store. Increasing it may increase the performance.
- **receiveTimeout** - with a slow network or very large file the timeout value may need to be increased so that the file transfer completes.

These parameters should be set in both of the following configuration files:

- **AVEVA.NET.FileStore.DomainHost.exe.config** (for the File Store itself).
- **Web.config** (for the Workhub website).

If you experience issues using the File Store, enable logging by uncommenting the **system.diagnostics** and **service.model** sections of the **AVEVA.NET.FileStore.DomainHost.exe.config** file.

## Linking the File Store to SQL Server

By linking the File Store to SQL Server, all the files are backed up when the SQL database is backed up.

To configure the **SQL Server File Store**:

1. Enable **FileStream** at the instance level:

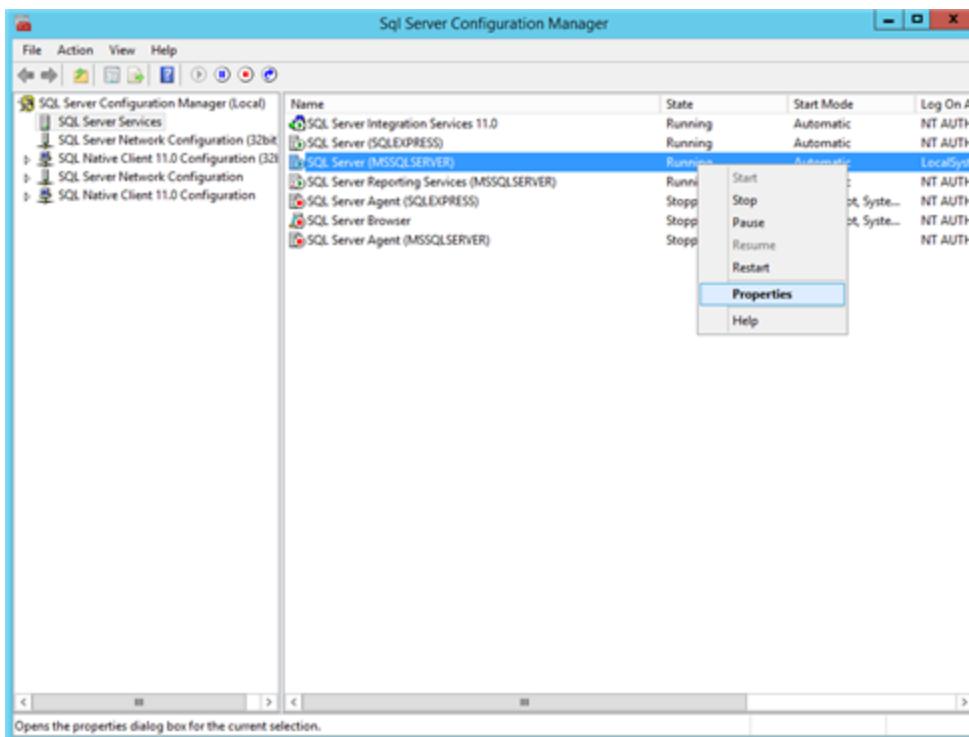
- a. Open **SQL Server Configuration Manager** from the path: C:\ProgramData\Microsoft\Windows\Start Menu\Programs\Microsoft SQL Server<VersionNumber>\Configuration Tools

Alternatively, you can search for **SQLServerManager<VersionNumber>.msc** in the **Windows Start** menu.

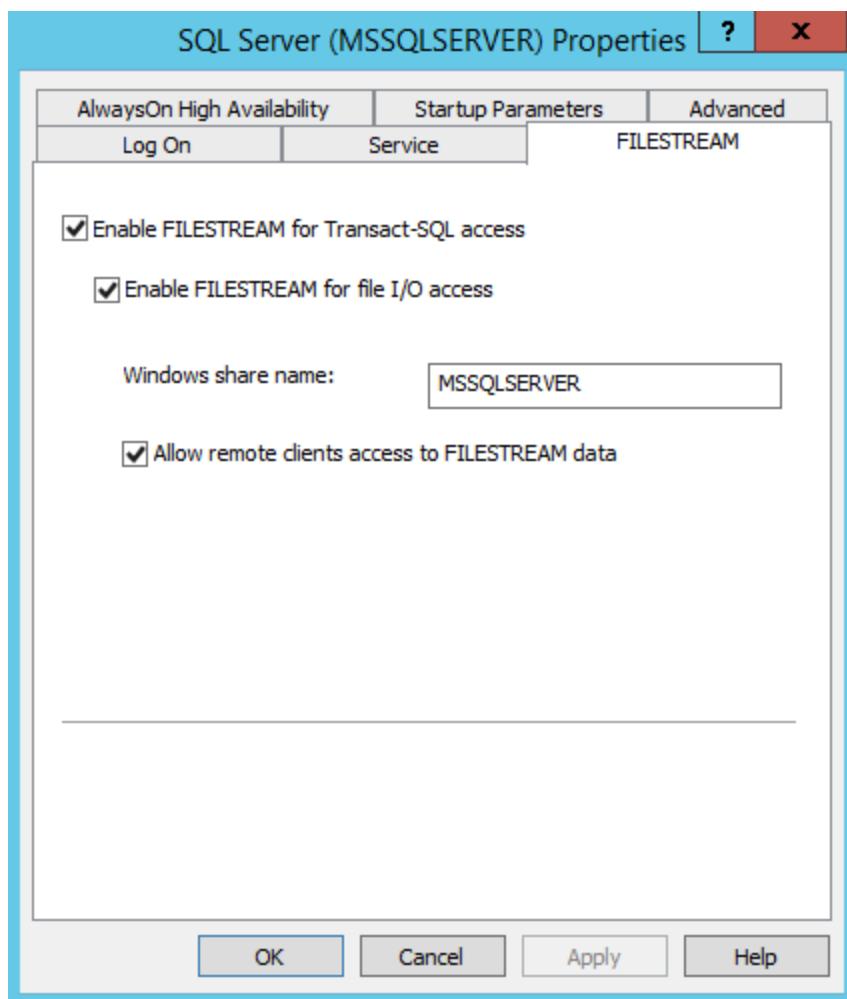
---

**Note:** Ensure that you are using the **Configuration Manager**.

---



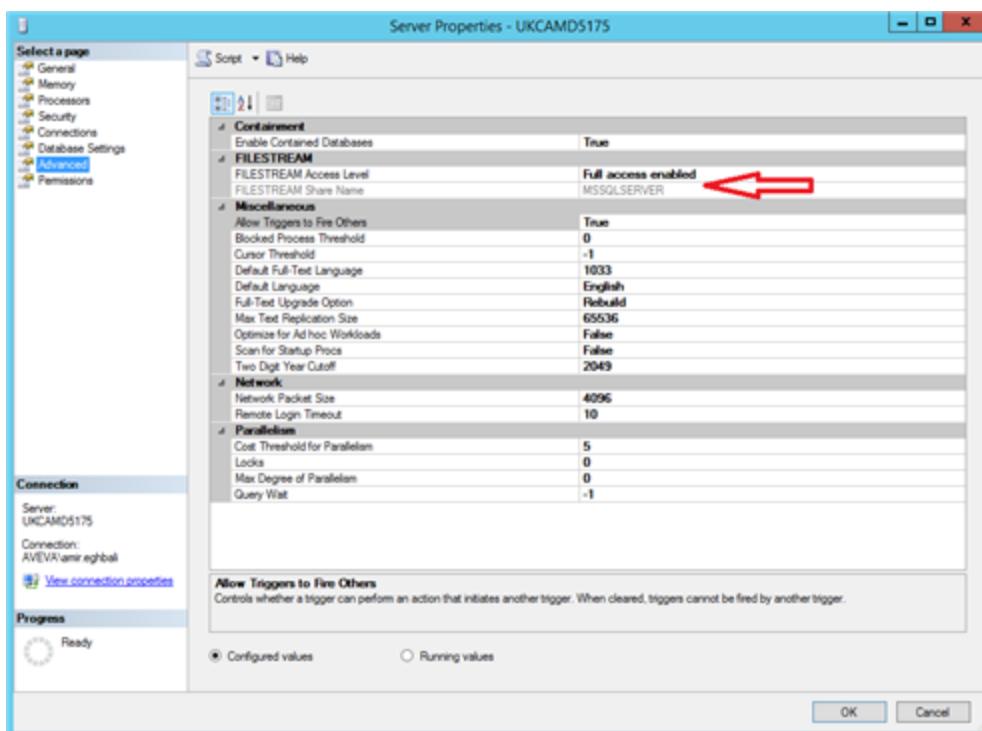
- a. Select the instance of SQL Server on which you want to enable **FileStream**. Right-click and select **Properties**.



- b. In the **SQL Server Properties** window, select the **FILESTREAM** tab, and then select **Enable FILESTREAM for Transact-SQL access**.
- c. Select **Enable FILESTREAM for file I/O access**, and then, type the **Windows share name**.
- d. Select **Allow remote clients access to FILESTREAM data**.
- e. Select **Apply**, and then select **OK**.
2. Open the **SQL Server Management Studio** and enable the **FileStream** feature by using one of the following methods:
  - a. Select **New Query** to display the Query Editor.
  - b. In the Query Editor, enter the following Transact-SQL code:

```
EXEC sp_configure filestream_access_level, 2
RECONFIGURE
```

OR
  - c. Right-click on the instance of the Server and select **Properties**.
  - d. On the Advanced tab, select **FileStream Access Level** and set it to **Full access enabled**.
  - e. Select **FileStream Share Name** and enter the name of the Windows share (here **MSSQLSERVER**).
  - f. Select **OK**.



3. Create the following path if it does not exist: <C:\ProgramData\AVEVA\AVEVA Asset Information Management\SQLFileStore>
4. Create the FileStream enabled Database, restart the SQL Server service, and then execute the following query:

**Note:** While creating a new database (for example, CygnusSQLFileStore), it is recommended NOT to use the main Cygnus database for storing files.

```
CREATE DATABASE CygnusSQLFileStore
ON PRIMARY (NAME = N'ANetSQLFS', FILENAME = N'C:\ProgramData\AVEVA\AVEVA NET\SQLFileStore\ANetSQLFS.mdf'),
FILEGROUP FileStoreFG CONTAINS FILESTREAM (NAME = ANetFS, FILENAME= 'C:\ProgramData\AVEVA\AVEVA NET\SQLFileStore\SQLFileStore\SQLFileStore')
LOG ON (NAME = N'ANetSQLFSlog', FILENAME = N'C:\ProgramData\AVEVA\AVEVA NET\SQLFileStore\ANetSQLFSlog.ldf')
WITH FILESTREAM (NON_TRANSACTED_ACCESS = FULL, DIRECTORY_NAME = N'FileStore')
```

5. Create **FileTables**.

```
USE CygnusSQLFileStore
CREATE TABLE Sample_Project AS FileTable
WITH (
    FileTable_Directory = 'SampleProject',
    FileTable_Collate_Filename = database_default
);
GO
```

**Note:** The path to the created FileTable is: <\\{{SERVERNAME}}\mssqlserver\FileStore\SampleProject>

6. Ensure that the SQL Server File Table has been configured correctly by adding or deleting files, as explained in the following steps:
  - a. In **Object Explorer**, navigate to **Databases > CygnusSQLFileStore > Tables > FileTables**.
  - b. Select **dbo. Sample\_Project** table, right-click and then select **Select Top 1000 rows**.

- c. Ensure that the **Sample\_Project** table is empty.
- d. Select **dbo. Sample\_Project** table, right-click and then select **Explore FileTable Directory**, that is,  
`\{{SERVERNAME}}\mssqlserver\FileStore\SampleProject`
- e. Create a new **.txt** file (for example, test.txt).
- f. In **SQL Server Management Studio > Select Top 1000 rows of Sample\_project**, ensure that there is a row (or file).

**Note:** Files can be added or deleted by SQL Query or Explore Window.

7. Open the **AVEVA.NET.FileStore.DomainHost.exe.config** file located in `\{{AVEVA Asset Information Management Installation Directory }} \AVEVA Asset Information Management\FileStore`.

**Note:** The AIM Installation Directory path is usually `C:/Program Files/AVEVA`.

8. Replace the root element for SQL fileVault in **fileVaults** section:

```
<fileVaults>
<fileVault vaultType="NTFS" name="FileSystem" assembly="" root="C:\ProgramData\AVEVA\AVEVA NET\FileStore" locator="" />
<fileVault vaultType="SQL" name="SQLFileSystem" assembly=""
root="\{{SERVERNAME}}\mssqlserver\FileStore\SampleProject" locator="" />
</fileVaults>
vaultType: It must be either NTFS or SQL.
name: It can be any string.
root: The path to the NTFS or SQL file store depends on the vaultType chosen.
Locator & assembly: Leave these fields blank.
```

## Loading Users into Workhub

To load a set of users into Workhub:

1. Open the Bootstrap folder. The default location of Bootstrap files is: [installation folder]\Import\Server\Bootstrap
2. Create the following XML file:  
`BootstrapSampleUsers.xml`
3. To create the `BootstrapSampleUsers.xml` file:
  - a. Add the `<Object>` tag to each user.
  - b. Add one `<ID>` tag that defines the username to each `<Object>` tag

**Note:** You can assign multiple roles to each user adding the `<Association>` tag for each role. For example, roles such as the Default User, Administrator.

- c. Copy the following script in the EIWM format:

```
<?xml version="1.0" encoding="UTF-8" ?>
<?vnet xslt="NULL" ?>
<vl:VNETList xmlns:vl="http://www.aveva.com/VNET>List"
xmlns="http://www.aveva.com/VNET/eiwm">
<Template>
<ID>BootStrapSampleUsers.xml::template</ID>
<Object>
<ID>[domain]\[username]</ID>
<Association type="fulfills">
<Object>
<ID>[Role1]</ID>
```

```
<ClassID>ROLE</ClassID>
</Object>
</Association>
<Association type="fulfills">
<Object>
<ID>[Role2]</ID>
<ClassID>ROLE</ClassID>
</Object>
</Association>
</Object>
<!--more users can be added using the <Object> tag as shown above-->
</Template>
</v1:VNETList>
```

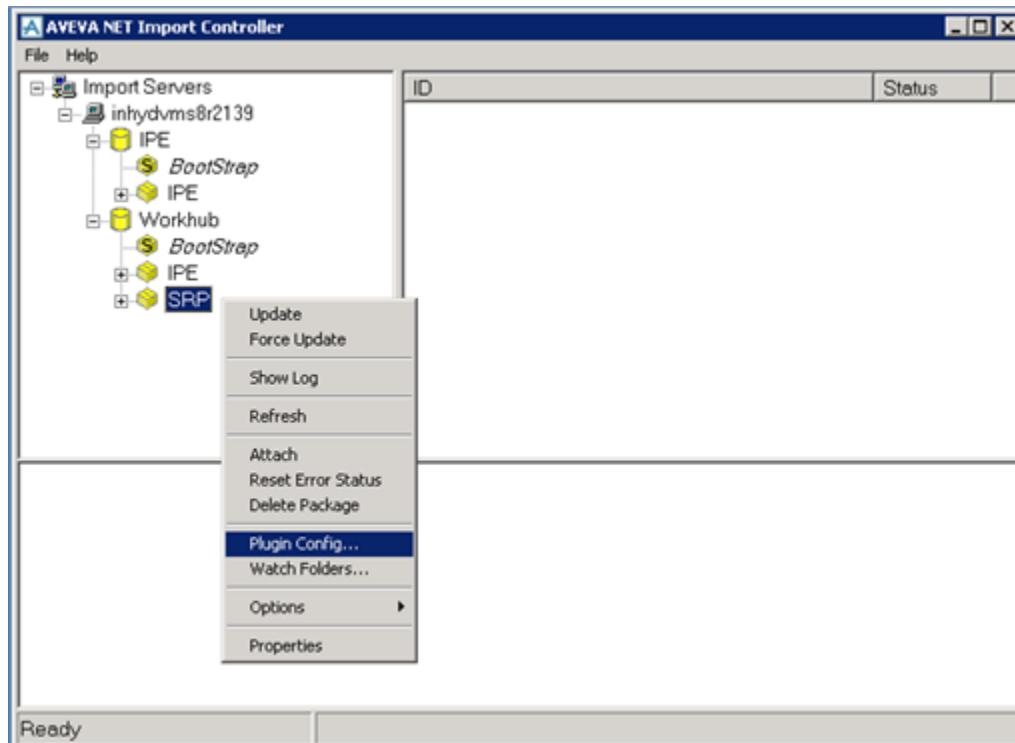
## Configuring Import Plugins

You must configure the plugin for:

- Importing grids with the VizStream models
- Configuring selectable item types in VizStream and item creation in the *AIM Workhub*

To configure import plugins:

1. Open **Import Controller**.
2. In the left pane, expand the following nodes:
  - a. *Import Servers*
  - b. *Database server*
  - c. *Workhub*

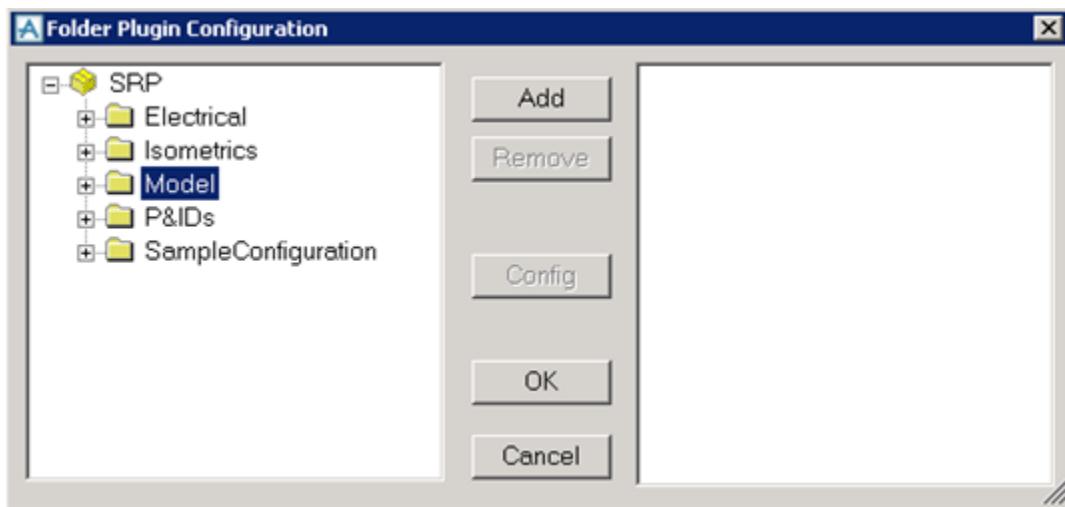


3. Right-click the **SRP** node, and then select **Plugin Config**.

The Folder Plugin Configuration window opens.

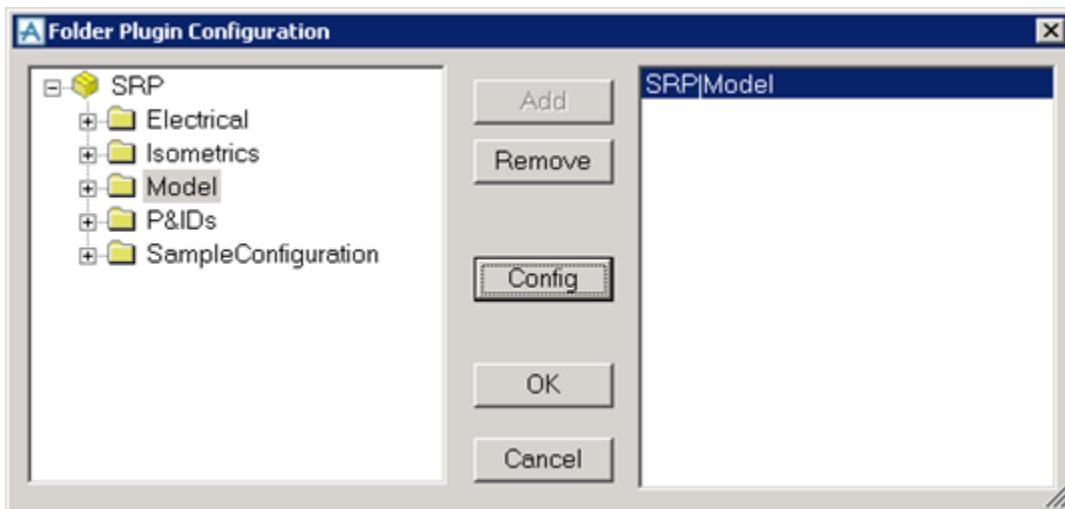
4. In the left pane, expand the **SRP** node.

5. Select the **Model** folder, and then select **Add**.



The **SRP Model** folder appears in the right pane.

6. In the right pane, select the **SRP Model**, and then select **Config**.



The Plugin Configuration window opens, displaying the following configuration settings:

- *PLTConfig*
- *RVMConfig*
- *SVGConfig*

## Configuring RVMConfig Settings

The following points describe the AVEVA.Portal.Import.Review.exe configuration file:

- No default configuration is used for this translator to ensure backward compatibility with previous versions.

- Instead, a new command line argument `-p` must be used to specify the configuration file to use.
- The file `rvmtozgl.selection.xml` can be used from the Server, optionally.
- The default file are located in the Vizstream Server install directory under:
  - Extensions\rvmtozgl (`C:\AVEVA_x64\VizStreamServer\Extensions\rvmtozgl` in the default install)
- The file `rvmtozgl.selection.xml`:
  - Is used to identify selectable elements within the 3D view.
  - Is used to create those selectable elements in the *AIM Workhub* database and relate them to the owning 3D model.
  - Functions as a converter.
  - Is an XML file containing a list of PDMS database elements type to:
    - 'INCLUDE,' upon a **select** action in the view.
    - 'EXCLUDE'
  - More detailed information about the format of the configuration file is provided in the two example files (`rvmtozgl.selection-IncludeByDefaultFalse.xml` and `rvmtozgl.selection-IncludeByDefaultTrue.xml`) in the Import Server installation folder default path: `[installation folder]\Import\Server\Sample XML`

To configure `AVEVA.Portal.Import.Review.exe` file:

1. In the **Plugin Configuration** window, double-click the blank space on the right of the `AVEVA.Import.Review.exe` configuration file.  
The configuration file location opens.
2. Open the `rvmtozgl.selection.xml` file.
3. Set the value as required.

The following points describe the `AVEVA.Portal.Import.Review.exe` translation configuration file:

- Is a translator that enables conversion from RVM to ZGL.
- Provides an argument `-d <file>` that specifies an external data source to use, while translating the model.
- The flag can be used multiple times and contains wildcards.

To configure `AVEVA.Portal.Import.Review.exe` translation file:

1. Any external data file specified using the argument `-d <file>` must be in a .csv (comma separated value) format.
2. While parsing the model, the translator matches the object names with the names stored in the .csv file(s).
3. If a match is found, the translator adds all relevant external data to the resultant ZGL related to that particular object.

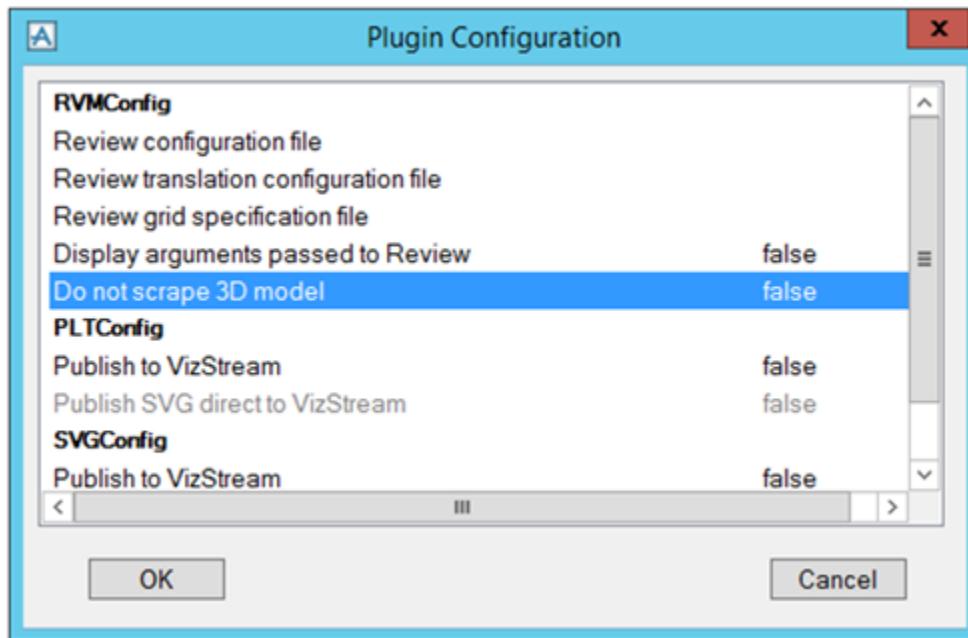
The following points describe the `AVEVA.Portal.Import.Review.exe` grid specification file:

- Used to specify an AVEVA Marine gentab.dat file that contains the reference grid definition, to be associated with each 3D model imported.
- Enables the grid coordinates displayed along with the X, Y, Z coordinates in a 3D model.

To configure `AVEVA.Portal.Import.Review.exe` grid specification file:

1. In the **Plugin Configuration** window, double-click false at the right of **Display arguments passed to AVEVA.Portal.Import.Review.exe**.  
The value is set to true.
2. Double-click the blank space to the right of the `AVEVA.Portal.Import.Review.exe` grid specification file.  
The **Select Grid** to be used for RVM files window opens.
3. In the **File** name box, select `gentab.dat` file, and then select **Open**.
4. In the **Plug Configuration** window, select **OK**.
5. In the **Folder Plugin Configuration** window, select **OK**.
6. Go back to the **Import Controller** window.
7. Right-click the folder configured to pick up the grid information, and then select **Force Update**.

The **RVMConfig** setting has the **Do not scrape 3D model** option. By default, this option is set to false. This means, when processing a 3D model (RVM file), objects referenced in the 3D model are extracted and added to the database. If the option is set to false, the **Import Controller** does not create objects (or their associations) based on those defined in the 3D model.



#### Configuring SVGConfig Settings

The following table describes the SVGConfig settings:

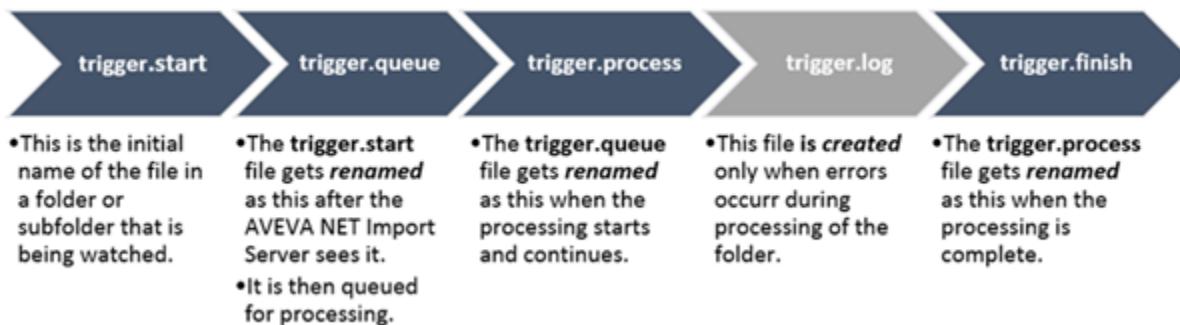
Parameter	Description	Value
Publish to VizStream	The SVG is published on VizStream.	By default, the value is set as true.
Publish SVG direct to VizStream	To publish the SVG directly to VizStream.	Set the value to true.
Disable time stamping of Models	Time stamping applies to the SVGs and ZGLs, by default.	By default, time stamping setting is false.

Parameter	Description	Value
	To remove the time stamping on the SVGs and ZGLs.	Set the value to true.

## Watch Folders

Watch Folders enable the *AIM Import Server* to watch particular physical folders for the arrival of a trigger to start an unattended Import Run from that folder.

When the *AIM Import Server* sees a [trigger.start](#) file arrive in a folder or subfolder that is being watched, its name changes along with its process flow, as explained in the diagram below:



The arrival of a [trigger.start](#) file causes the folder to be processed as if an **Update** command had been issued. If you want to perform the equivalent of a **Force Update** command, then use a file called [trigger\\_force.start](#) instead of a [trigger.start](#) file.

**Note:** If the creation of a [trigger.start](#) or [trigger\\_force.start](#) file does not automatically start an import, then the system will check every five minutes to see whether one of these files has been created. If one has been created, then the appropriate import will start.

## Grouping Review Files into One VizStream Model

The Import Server provides a mechanism for grouping 3D model files into a larger model. The review files output from PDMS uses the same mechanism. This enables the AIM Dashboard to display the overall model. The following are the points to note on grouping:

- The groupings can be done either from a combination of files and folders outside the Staging Area or from within the Staging Area, but not both.
- If these files and/or folders are located outside the Staging Area, they must still be accessible to the Staging Area.
- An AIM <PORTAL OR W&D> Pointer file with a [.vptr](#) suffix can be placed in any convenient folder in the Staging Area.

The format of the [.vptr](#) file is as follows:

```

<Object>
<Type>rvm document group</Type>
<Location>./3DModel</Location>
<File>./Area 15.rvm</File>

```

&lt;/Object&gt;

Element	Description
<Location>	<p>A directory with either an absolute path, or a path relative to the .vptr file.</p> <p>This can be either inside or outside the staging area.</p> <p>The contents matching the type of the .vptr file (rvm) are grouped.</p>
<File>	<p>A file with either an absolute path or a path relative to the .vptr file.</p> <p>This can be either inside or outside the staging area.</p> <p>A file can be another .vptr file, so making nested composite models.</p>

**Note:** There can be multiple Location and/or File elements.

A metadata file with a .vnet suffix is also required to supply the Class and the name of this document. This can be a specific file or a Folder.vnet file applicable to all the files in this folder.

```
<Object>
<ID>Complete SRP Plant </ID>
<ClassID>3D MODEL</ClassID>
<Context>
<ID>VPD</ID>
</Context>
</Object>
```

**Notes:**

- When the Import Server encounters an AIM Workhub Pointer File, it creates a special VizStream file containing 'includes' for each of the individual model files.
- The Import Server also merges the XML files, accompanying the 3D model files into one composite .vnet file, modifying the associations within it, so that it contains links to the composite 3D Model rather than the individual models.

**Important:**

- A Review Status File with an .rvs suffix that is to be applied to the composite 3D model file must be placed in the Staging Area where the pointer file exists, not in the directory with the individual .rvm files.
- A Folder in the Staging Area can contain more than one AIM Workhub Pointer File.
- The mechanism described overcomes a limit on the size of 3D model that could be translated to VizStream format.
- You can create extremely large models using this mechanism, although VizStream can take a long time to reformat them (and this is a process that can continue long after other update activity has completed).

## Managing Item Revision Order

By default, OPE creates an item's new revision at the end of the revision (rev) stack, when a latest revision is loaded.

For example, If we have an existing revision stack 01->02->03->04->05, and a new revision 03 is loaded, it will be

placed in the revision stack as 01->02->03->04->05->03.

And if you want to load the revision 03 as per the numerical ordering (between 02 and 03), then you must remove all traces of 02 and 04 from the system, and then load 03 before loading 04 and 05.

You can control this default behaviour of OPE, using the succession association between two items' revision. For this, you must use either of the following associations with a type of:

- Is succeeded by
- Is a successor of

For example, if you want to load a new revision 03 before 04 in an existing revision stack 01->02->04->05, you can use either of the following XML:

Example.1

```
<Object>
  <ID>IS01001</ID>
  <Revision>02</Revision>
  <Association type="is succeeded by">
    <Object>
      <ID>IS01001</ID>
      <Revision>03</Revision>
    </Object>
  </Association>
</Object>
```

Example.2

```
<Object>
  <ID>IS01001</ID>
  <Revision>04</Revision>
  <Association type="is a successor to">
    <Object>
      <ID>IS01001</ID>
      <Revision>03</Revision>
    </Object>
  </Association>
</Object>
```

**Note:** The object that is moved in the stack is highlighted in Yellow.

## 3D Materials Name Translation

When a review model file ([.rvm](#) file) is created, all the 3D objects within it have various materials assigned to them, depending on how the model file is created. The names of these materials are of the form [Materialnn](#) (for example, [Material01](#)). In most cases, such names are not meaningful to the users.

### Modifying the Materials Names in the Materials Dialog

You can provide meaningful alternative names for the materials, which display in the Materials dialog area. The definitions for the name translation to be done must be located in an XML configuration file. The following is an example of the content of such an XML file:

```
<?xml version="1.0" encoding="UTF-8"?>
<Materials>
  <NameTranslation>
    <MaterialName original="Material01" new="Structures"/>
    <MaterialName original="Material02" new="Steelwork"/>
```

```
<MaterialName original="Material03" new="Equipment"/>
</NameTranslation>
</Materials>
```

The file specifies that **Material01** (in the original **.rvm** file) will be displayed as Structures in the Materials dialog table (and it is similar for the other material names mentioned). If a material occurs in the 3D model that is not specified to be translated by the XML file, then the original **Materialnn** name is displayed.

After you have an XML file in the above format with the required name translation defined, you must then import the file.

Place an entry in the relevant **.vnet** files in a Staging Area. If you want to apply the XML file (located at, for example, **C:\MaterialsMapping.xml**) to a single Review model file (like **srp.rvm**), then you should alter the corresponding **srp.vnet** file and insert the following piece of code:

```
<MaterialMappingFile>C:\MaterialsMapping.xml</MaterialMappingFile>
```

Following the usual rules for use of **.vnet** files, if you want the same XML file to be used for all **.rvm** files in a particular folder, you can put the above piece of code into the **folder.vnet** file for that folder (instead of adding the piece of code in the **srp.vnet** file).

## Advanced Usage

You have the following advanced options for the material names displayed in the Materials dialog area. These are also specified in the XML file.

If you want to limit the names in the Materials dialog in the Dashboard to only those defined in the XML file, then set the **outputMappedNamesOnly** attribute of the **NameTranslation** element in the file to true:

```
<NameTranslation outputMappedNamesOnly="true">
```

When the above option is enabled, you can specify that any material names omitted due to the above option being in force are displayed using the specified default name:

```
<NameTranslation outputMappedNamesOnly="true" defaultName="Unmapped Material">
```

## Disable Writing to the Archive Tables

You can disable writing to the Archive tables during the import. This improves the system performance by reducing both the size of the database and the write operations to the database.

**Note:** Disabling writing to the Archive tables disables the auditing during the import.

To enable or disable archiving while importing, modify the value of the parameter, **avevanet:import:disablearchiving**, using the following details:

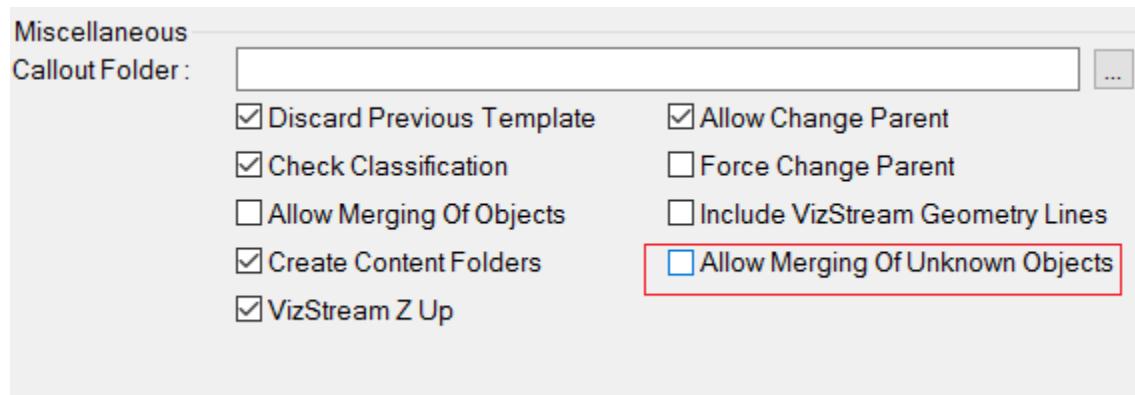
- File name (default location): **C:\Program Files\AVEVA\AVEVA Asset Information Management\Import\Server\AVEVA.NET.Import.Server.exe.Config**
- Parameter values:
  - **True** – Disables archiving when importing
  - **False** – Enables archiving when importing (default value)

**Note:** You cannot set this through the Deployment Manager.

## Merging of Unclassified Objects

During the Import, you can refine the merging of unknown objects using the **Allow Merging Of Unknown Objects** option.

This option enables you to merge tags and its aliases even when they are unknown.



When this option is selected: If two unknown objects have the same alias, then they will be merged. Both the objects will be identified by the alias. The Import Controller shows the following warning message if the objects are classified:

"{Object 2} could not be identified by {Alias} - identifier already exists for another object."

When this option is not selected (default): If two unknown objects have the same alias, it shows the following warning message:

"{Object 2} could not be identified by {Alias} - identifier already exists for another object."

Enable 'Allow Merging Of Objects' or 'Allow Merging Of Unknown Objects' option accordingly in order to add this alias by merging those two objects."

**Note:** The EIWM template containing actual objects must be processed first before its aliases.

## Import Controller Logs

By default, import logs will be available in the folder: <installed location>\Import\Server.

To change the location of the import logs folder, give permission to the folder for the **NT Service\AVEVANETImportServer** service.

## Integrate APCM with AIM

To integrate AVEVA Point Cloud Manager (APCM) with AIM, follow the steps below:

### Prerequisites

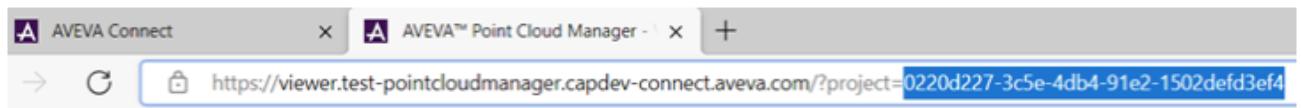
Ensure that the following deployments have been successfully completed and tested independently:

- AIM deployed in an on-prem environment using HTTPS.

- APCM deployed in CONNECT.
- An AIM-hybrid service enablement must be requested via your AVEVA account manager. This is for authentication and user management in CONNECT. As part of this activity, the account manager will need to provide the AIM on-prem URL so that it can be whitelisted for the cloud environment. AVEVA enables the requested environment in CONNECT and shares with the customer the required settings for configuring the on-prem part.
- The AIM user should be a user in a CONNECT account where APCM and AIM-h services are enabled. In addition, the user should have appropriate roles in the APCM service to access the project data, see [CONNECT Roles](#).

## Integration Steps

1. Obtain the **Project ID** by opening your APCM project in CONNECT. The Project ID can be seen in the URL, for example:



2. The **Project ID** value should be added directly to the bottom of the **NetViewProject\_null.xml** file created during the AIM Project Publishing event. For example:

```
<ClassID>FILE</ClassID>
<Characteristic>
  <Name>InfoLocator</Name>
  <Value>@0220d227-3c5e-4db4-91e2-1502defd3ef4</Value>
</Characteristic>
<Characteristic>
  <Name>InfoType</Name>
  <Value>application/x-lfm</Value>
</Characteristic>
</Object>
```

3. Import the class files, and the **NetViewProject\_null.xml** file from the APCM Server, using the Import Controller.

4. Update the web.config file:

After the deployment is done and the configuration settings have been received from AVEVA (as per the service request), some configurations need to be made to allow the on-prem AIM installation to connect to the AIM-h service.

- a. Open the **AIM web.config** file.

- b. In the **configSections** section, insert the specified lines as indicated below:

```
<section name="system.identityModel"
  type="System.IdentityModel.Configuration.SystemIdentityModelSection,
  System.IdentityModel, Version=4.0.0.0,
  Culture=neutral, PublicKeyToken=B77A5C561934E089" />
<section name="system.identityModel.services"
  type="System.IdentityModel.Services.Configuration.SystemIdentityModelServicesSection,
  System.IdentityModel.Services, Version=4.0.0.0,Culture=neutral,
  PublicKeyToken=B77A5C561934E089" />
```

- c. Proceed to the appSettings section and include the provided configurations:

<b>Key</b>	<b>Needs Modification?</b>	<b>Value</b>	<b>Additional Description</b>
avevanet:authenticationProvider	No	AIMHybrid3DVS	Fixed value, no changes required. The value will be AIMHybrid3DVS.
avevanet:applicationRootUri	Yes	The HTTPS URL configured for the on-prem setup.	Owned by the customer.
avevanet:authorityUri	Yes	https://signin.connect.aveva.com	CONNECT authority URI path.
avevanet:dashboardClientId	Yes	As received from AVEVA.	Fixed value, no changes required (in prod-connect).
avevanet:capabilityDefinitionName	Yes	Asset Information Management - hybrid	CONNECT capability definition name.
avevanet:accountId	Yes	As received from AVEVA.	CONNECT account ID for the deployment.
avevanet:workhubClientId	No	xyz	For an AIM-hybrid configuration, this value should be non-empty, but can have any string, for example, xyz.
avevanet:auth0Authority	Yes	https://signin.connect.aveva.com	For Auth0 authentication.
avevanet:idSrvAuthority	Yes	https://identity.connect.aveva.com/identity	
avevanet:serviceUAMUrl	Yes	https://services.connect.aveva.com/uam/v2/	For Auth0 authentication.
avevanet:serviceSCMUrl	Yes	https://api.connect.aveva.com/scm/	For Auth0 authentication.
avevanet:serviceAMUrl	Yes	https://api.connect.aveva.com/am/	For Auth0 authentication.

Key	Needs Modification?	Value	Additional Description
avevanet:serviceAssetsUrl	Yes	https://api.connect.aveva.com/assets/v1/	For Auth0 authentication.
avevanet:serviceAudience	Yes	https://services.connect.aveva.com	For Auth0 authentication.
avevanet:resourceAudience	Yes	https://api.aimh.av.connect.aveva.com	For Auth0 authentication.
avevanet:accessTokenCacheDuration	No	10	For Auth0 authentication.
avevanet:serviceScopes	No	uam:read am:read scm:read ac_assets	For Auth0 authentication.

**Web.config**

```

16      </sectionGroup>
17  </configSections>
18  <appSettings>
19      <add key="webpages:Version" value="3.0.0.0" />
20      <add key="webpages:Enabled" value="false" />
21      <add key="PreserveLoginUrl" value="true" />
22      <add key="ClientValidationEnabled" value="true" />
23      <add key="UnobtrusiveJavaScriptEnabled" value="true" />
24      <add key="enableSimpleMembership" value="false" />
25      <add key="LicenseServerList" value="" />
26      <add key="avevanet:authenticationProvider" value="AIMHybrid3DVS" />
27      <add key="avevanet:applicationRootUri" value="" />
28      <add key="avevanet:authorityUri" value="https://signin.connect.aveva.com" />
29      <add key="avevanet:dashboardClientId" value="" />
30      <add key="avevanet:capabilityDefinitionName" value="" />
31      <add key="avevanet:accountId" value="" />
32      <add key="avevanet:workhubClientId" value="" />
33      <add key="avevanet:auth0Authority" value="https://signin.connect.aveva.com" />
34      <add key="avevanet:idSrvAuthority" value="https://identity.connect.aveva.com/identity" />
35      <add key="avevanet:serviceUAMUrl" value="https://services.connect.aveva.com/uam/v2/" />
36      <add key="avevanet:serviceSCMUrl" value="https://api.connect.aveva.com/scm/" />
37      <add key="avevanet:serviceAMUrl" value="https://api.connect.aveva.com/am/" />
38      <add key="avevanet:serviceAssetsUrl" value="https://api.connect.aveva.com/assets/v1/" />
39      <add key="avevanet:serviceAudience" value="https://services.connect.aveva.com" />
40      <add key="avevanet:resourceAudience" value="https://api.aimh.av.connect.aveva.com" />
41      <add key="avevanet:accessTokenCacheDuration" value="10" />
42      <add key="avevanet:serviceScopes" value="uam:read am:read scm:read ac_assets" />
```

- d. Configure the authentication under <system.webServer> to use **anonymousAuthentication** exclusively. Remove any references to **Windows Authentication**. Ensure that the locally hosted AIM site authentication is also set to anonymous.

```

<authentication>
  <anonymousAuthentication enable="true" />
</authentication>
```

**Web.config**

```

106      </nwebsec>
107      <system.webServer>
108          <security>
109          +      <authentication>
110          +          <anonymousAuthentication enable="true" />
111          +      </authentication>

```

- e. Locate each PortalID section where the AIM-h CONNECT account is required within the **web.config**.

**Web.config**

```

286      <portals>
287          <portal id="Default">
288              <!-- This is the account id of an account added in AVEVA Connect -->
289          +      <Account Value="" />

```

- f. Append the following section towards the end of the **web.config** file.

**Web.config**

```

<system.identityModel>
    <identityConfiguration>
        <claimsAuthenticationManager
            type="AVEVA.NET.Dashboard.Infrastructure.DashboardClaimsAuthenticationManager,
            AVEVA.NET.Dashboard" />
    </identityConfiguration>
</system.identityModel>

```

**Web.config**

```

526      </dependentAssembly>
527      </assemblyBinding>
528      </runtime>
529      +      <system.identityModel>
530      +          <identityConfiguration>
531      +              <claimsAuthenticationManager type="AVEVA.NET.Dashboard.Infrastructure.DashboardClaimsAuthenticationManager, AVEVA.NET.Dashboard" />
532      +          </identityConfiguration>
533      +      </system.identityModel>
534      </configuration>

```

When this configuration is completed, the on-prem AIM setup will be able to connect to AIM-hybrid.

5. Deploy the JavaScript files onto the AIM machine.

As part of the integration, it's necessary to add some JavaScript files to the machine that is hosting AIM. These JavaScript files can be downloaded from the following location (once APCM is updated):

<https://viewer.pointcloudmanager.connect.aveva.com/AVEVANET/LFM.AVEVANET.NetViewDirective.zip>

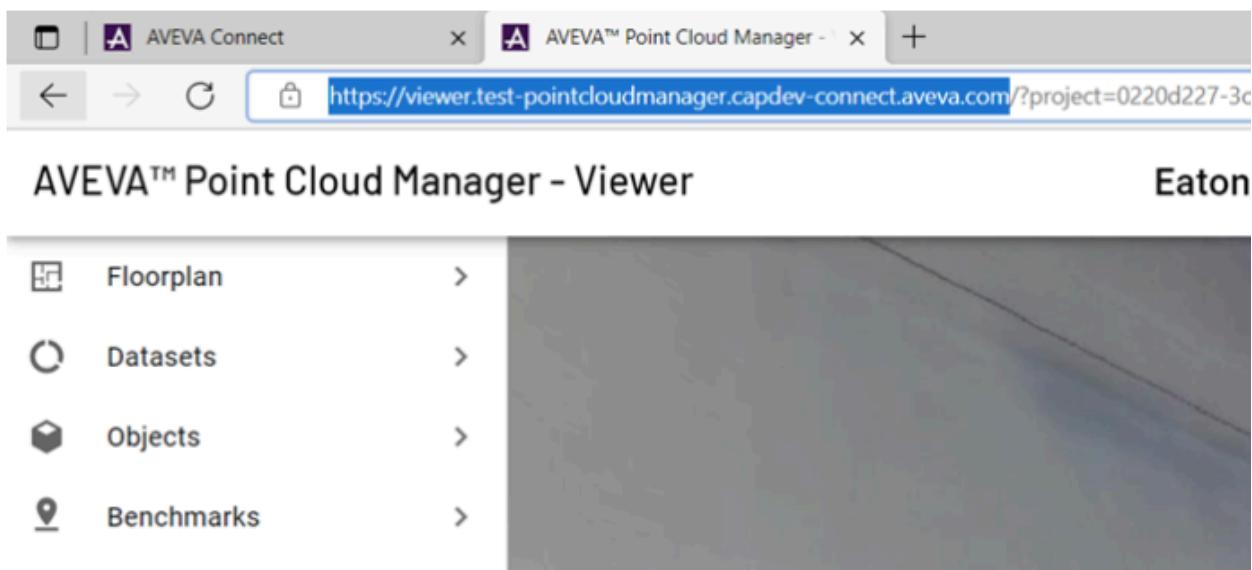
**Note:** If you are unable to access these files, please create a case in AVEVA's Global Customer Support (GCS) centre, using Product: Point Cloud Manager.

- Download a copy of the **LFM.AVEVANET.NetViewDirective.zip** file and store it in a location that is accessible from the machine that is hosting AIM.
- Log onto the machine that is hosting AIM.
- Unzip the file.
- Navigate to **LFM.AVEVANET.NetViewDirective.zip\Content\Dashboard\App\Custom**.
- Copy the **LFM NetView** folder and place it in **<Dashboard Name>\App\custom**. Where **<Dashboard Name>** is the Dashboard site directory.

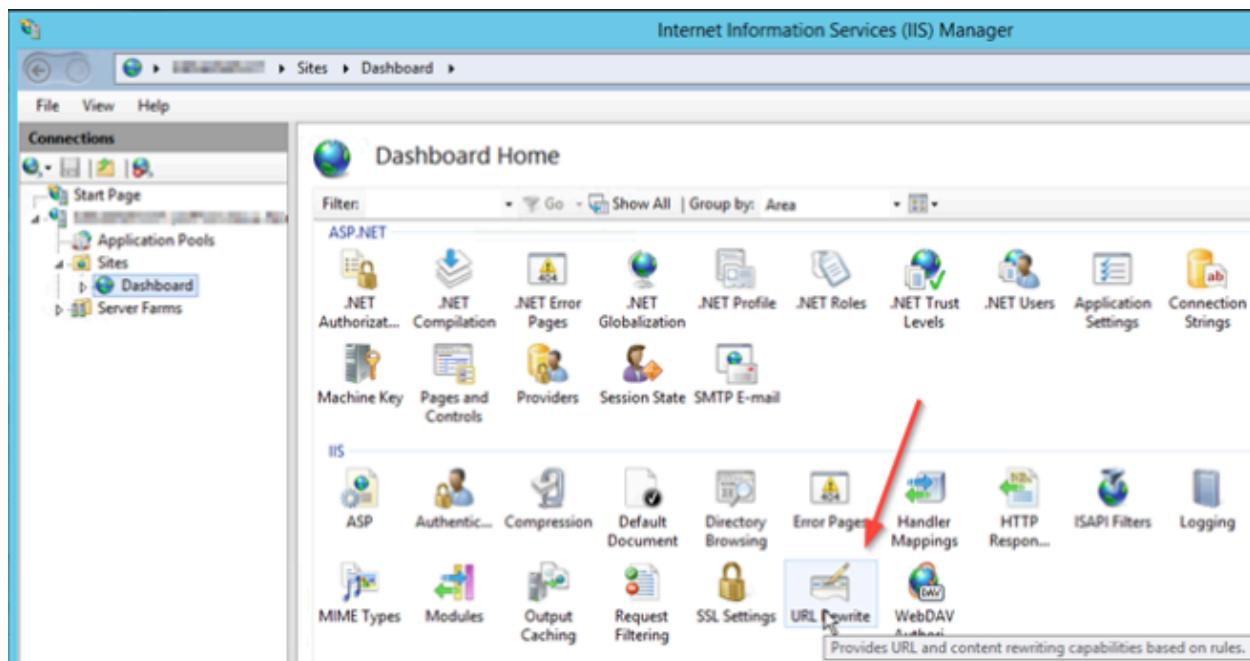
6. Create a new URL Rewrite rule.

Add a **URL Rewrite** rule in IIS on the on-prem machine hosting the AIM project.

- Access the existing APCM project in CONNECT and capture the URL component shown below.



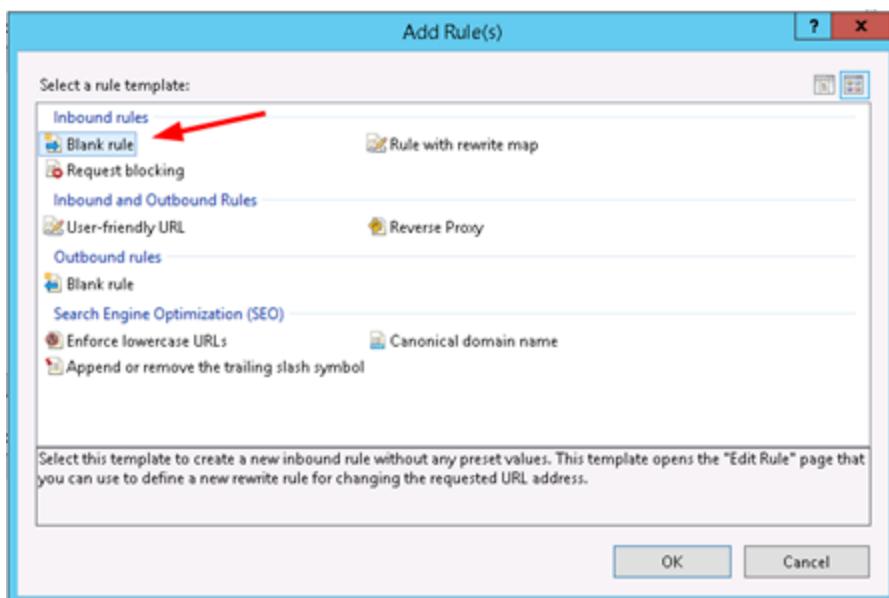
- Run the IIS Manager and navigate to the Dashboard site and select **URL Rewrite**. If URL Rewrite is not present, download it from the Web and install it.



- From the **Actions** section select **Add Rule(s)**.



- Select **Blank rule**.

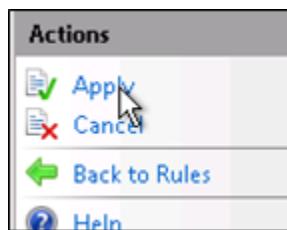


- e. Fill in each of the entries as shown below, with the captured **URL component** being added to the **Redirect URL** field.

The screenshot shows the 'Edit Inbound Rule' configuration window in IIS Manager. On the left, the 'Connections' tree shows 'Start Page', 'INHYDVM8R2132 (AVEVA ISM)', 'Application Pools', and 'Sites'. Under 'Sites', 'Dashboard' is selected. The main pane displays the 'Edit Inbound Rule' settings:

- Name:** LFMNetViewer
- Match URL**:
  - Requested URL:** Matches the Pattern
  - Using:** Regular Expressions
  - Pattern:** ^LFM Netview/(.\*)
  - Ignore case
- Conditions**: (empty)
- Server Variables**: (empty)
- Action**:
  - Action type:** Redirect
  - Action Properties**:
    - Redirect URL:** https://viewer.test-pointcloudmanager.capdev-connect.aveva.com/{R:1}
    - Append query string
    - Redirect type:** Permanent (301)

- f. Select **Apply** and restart the Website in IIS. It is not required to add any **Conditions** or **Server Variables**.



- g. When you select the APCM project in AIM, you should be redirected to the APCM project.

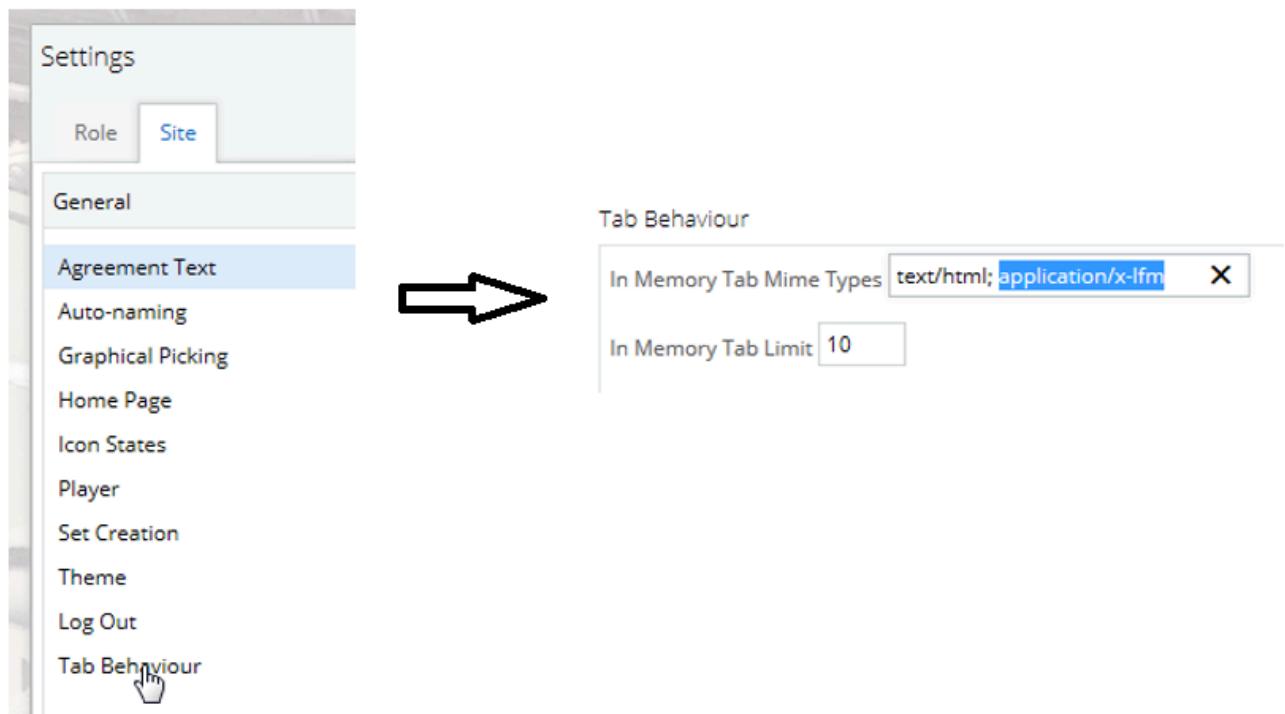
## Prevent Browser Tabs Unloading

This setting will make for a better user experience when working with AIM and APCM, and will prevent tabs unloading their cached data when switching tabs.

1. Log in to AIM with the **Administrator** role
2. Select the **Settings** icon and then select the **Settings** link.



3. Switch to the **Site** tab, expand **General** and select **Tab Behaviour**. Add the MIME type and save the settings.



## Configure Dashboard

There are a number of areas in the *AIM Dashboard* that can be configured based on your requirements, for example:

- The content of the Dashboard tab.
- The *Categories* and *Filters* that are used for Searching.
- The grouping of data and how it is displayed on *Summary Views* and *Content Cards*.
- Changing the colour-scheme.
- Changing the authentication used to identify users to the application.

### Dashboard Settings

Using the **Settings** panel you can change some of the ways the *AIM Dashboard* looks and behaves. You must be logged on with the *ManageSettings Right* to see the **Settings** menu.

**Note:** Changes to **Site** settings are seen by all users; but changes to **Role** settings are seen only by users who are assigned to a specific role. For more information, see [Roles](#).

To change settings for a **Role**:

1. Open the *AIM Dashboard*, select **Settings** (👤), **Settings**.
2. On the **Roles** tab, select the *Role* that you want to change the settings for.
3. Change the settings (see the following table).

4. Select **Save**.

The screen refreshes, and the new settings take affect.

Following are the fields and the corresponding descriptions for a Role:

**Role Settings - Browse**

Parameter	Description
<b>Breakdown Nodes</b>	
Delete	Manage the top-level categories in the Browse panel.
Apply	
Edit	
Create	
<b>Breakdown Node Configuration</b>	
Node ID	The ID of the Breakdown Node.
Label	The label displayed in the Browse panel.
Tooltip	The tooltip displayed in the Browse panel.
Expansion Type	The type of expansion used for child nodes.
Show Items of Type	The Class of object to show in the breakdown node.
Associations from Root	How the child classes must be associated to the root object.
<b>Item Node Expansion</b>	
Default	Used to over-ride the default expansion defined in Settings, Browse, Default Breakdown, for this breakdown node.
Type Based	Used to over-ride the default expansion defined above, for this breakdown node, for a specific type of association.
<b>Default Breakdown</b>	
Default Associations	The default expansion defined for all breakdown nodes.
<b>General</b>	
Show expansion by type hierarchy if the list length is greater than	Select to display browse results in groups if the total number of items is more than the number entered in

Parameter	Description
	<p>the box.</p> <p>Note: This settings will take effect, only when an item (not a type) is being expanded. If the number of 'children' to be displayed is greater than the number specified, then the 'children' are organized by their type hierarchy and this is displayed.</p>
Max list items per page	The size of the group for browse results.

**Node Label**

Type node label	Supported tokens: @ID and @NAME. For example: @ID-@NAME
-----------------	--

**Root Items**

Root item type	The type of object to show at the root of the Browse panel.
Show all the items of this type	Show the type selected above.
Show item ... as the root	Limit the root nodes to those matching the string entered in this box. % can be used to match multiple characters.

**Type-Based Associations**

Items of Type	Select the type of object.
Association Types	Select the Association type.

**Role Settings - General**

Parameter	Description
<b>Data Visibility</b>	
Show only the latest revision of documents	Select to show the relevant types of data, in the Search and Browse panels, for example.
Make all types visible in Browse	
Show Hidden types	
Show Hidden attributes	
Show items of Unknown type	
Context Access Control	Defines which items can be seen based on its contexts and the user's role.

Parameter	Description
<b>Default Views</b>	
Type	The type of an item that is selected.
View	The style of view that should be shown for selected items of the type.
<b>Export</b>	
Warning export size	The threshold for the number of objects in an export that triggers a warning message.
Maximum export size	The maximum number of objects that can be exported.  If this value is changed be careful to not exceed the combined performance of the system, the hardware and the network latency.
<b>Global Navigation</b>	
Show the Browse link	Select to show the relevant buttons on the Global Navigation Bar.
Show the Search link	
Show the Sets link	
Show the Query Forms link	
Show the Export link	
Show the Reports link	
Start-up	Select the Global Navigation Panel to be opened and docked on the application start-up
<b>Messages</b>	
Output licence expiry messages to the default event log	Whether licence expiry messages should be written to the default event log.
<b>Query Forms</b>	
Form View	Select the default results view for Query Forms.
Table View	
<b>Search</b>	
Max list items per page	The maximum number of search results that will be displayed per page.

Parameter	Description
<b>Tooltips</b>	
ISO15926	Select to use ISO15926 compliant tooltips.

**Role Settings - Labels**

Parameter	Description
<b>Attributes</b>	
Attribute Label	Supported tokens: @ID, @NAME. For example: @ID-@NAME
<b>Items</b>	
Item Label	Supported tokens: @ID, @NAME, @DESCRIPTION, @TYPEID, @TYPENAME, @SCHEME and @REVISION. To add characters that are only shown if the token is not blank, precede the token and the characters with a caret (^) character. For example: @ID^ - @NAME^{@REVISION}
Sets Panel Label	Supported tokens: @ID, @NAME, @DESCRIPTION, @TYPEID, @TYPENAME, @SCHEME and @REVISION. To add characters that are only shown if the token is not blank, precede the token and the characters with a caret (^) character. For example: @ID^ - @NAME^{@REVISION}  This setting is only used for Sets. If the value is blank, then the value for Item Label will be used.
Type Scheme	Select the labelling scheme.
<b>Types</b>	
Type Label	Supported tokens: @ID and @NAME. For example: @ID-@NAME

**Note:** The value for the @NAME token is taken from the Descriptive Name of the object. The value for the @DESCRIPTION token is taken from the [Desc](#) attribute present in the object's attribute.

To change **Site** settings:

1. Open the AIM Dashboard, select **Settings** () , **Settings**.
2. Select the **Site** tab.
3. Change the settings (see the following table).
4. Select **Save**.
5. The screen refreshes, and the new settings take affect.

Following are the fields and the corresponding descriptions for a Site:

#### Site Settings - Document Viewers

Parameter	Description
<b>Colours</b>	
SVG highlight colour	The default SVG highlight colour.
SVG selection colour	The default SVG selection colour.
VizStream highlight colour	The default VizStream highlight colour.
VizStream selection colour	The default VizStream Selection colour.
<b>Graphical Picking</b>	
Regular Expression	A regular expression to specify which item is selected when an object is selected in the <i>Document View</i> .  The default regular expression for Graphical Picking is "[^ ]+\$", which uses the string of characters to the right of the right-most space for matching with an ID in the database.
<b>Selection</b>	
Document Type	The type of Document for which this applies. The type of document the user is looking at when they want this behaviour to happen. For example, SSRS REPORT.
Selected Item Type	The type of item that has been selected within the Document Viewer. For example, FUNCTIONAL ARTIFACT.  <b>Note:</b> Document Type and Selected Item Type apply to all sub-classes. For example, FUNCTIONAL ARTIFACT would include EQUIPMENT and PUMP.
Action	The action to perform either Open or Select: Open – Opens a tab for the selected item. Select – Opens a content card for the selected item in the current tab.

#### Site Settings - General

Parameter	Description
<b>Agreement Text</b>	
Enable Agreement Text	Select if you want users to have to "Agree" to a message before being able to access the AIM

Parameter	Description
	Dashboard.
Agreement Title	The title of the agreement message.
Agreement Text	The text of the agreement message.
<b>Associations</b>	
Name	Name of the Association type.
Source to Target	The alias for Source to Target Association.
Target to Source	<p>The alias for Target to Source Association.</p> <p><b>Note:</b> The newly added aliases in the Settings are displayed in place of associations throughout the application. The following are the places where the Associations are shown in the AIM Dashboard:</p> <p><b>Settings:</b>  <b>Default Associations</b>  <b>Type-Based Associations</b>  <b>Advanced Search &gt; Related items</b> dropdown.  <b>Query Forms &gt; Related items</b> dropdown.  <b>Export definition &gt; Related items</b> dropdown.  Related items that are present in Summary view, Tag content card and Document content card</p>
<b>Auto-naming</b>	
Prefixes for Set IDs	The prefix applied to a Set ID when a new Set is created and <b>Auto-generate ID</b> is selected.
Size of Number Padding	The number of digits used in a Set ID when a new Set is created and <b>Auto-generate ID</b> is selected. For example, the default value of "5" would start numbering with "00001".
<b>Data Visibility</b>	
Limit attributes shown on a Dataset to the Meta Data Template	Applies to attribute lists in the Query Form Designer and the Export Definition Designer. A value of false will show all attributes regardless of the Dataset chosen.
<b>Export</b>	
Server Export Folder	A UNC folder for example, \\myServer\Export

Parameter	Description
	<p><b>Location.</b></p> <p><b>Note:</b> The location entered must be a valid UNC path. The account used as the identity of the Job Server (typically Local System) will need write access to the output location.</p>
<b>Home Page</b>	
Home Page Tab Header	The label for the tab in the browser.
Home Page	The path and filename of an HTML page to use on the Dashboard tab.
<b>Icon States</b>	
State	The name of the state of the icon. This must be a subtype of "STATE / STATUS / DOMAIN" and will be used to incidentally classify an object
Icon Style	The icon style to be used. The name of the icon file is generated from the type of the object and the icon style of the object's status. The format of the icon file is <code>&lt;classname&gt;_&lt;icon style&gt;.gif</code> . For example, an object of type <b>PUMP</b> with an icon style of <b>Approved</b> looks for an icon file with the name <code>pump_approved.gif</code> . The default folder for these icons is: <code>&lt;installation_path&gt;/App/src/img/ClassDriven</code> .
Tooltip	An additional line of text to be added to the existing tooltip for an object.
Rank	An object can potentially be incidentally classified with more than one type, but an object can only be represented by one icon. So the icon chosen is based on the highest ranked applicable icon state. This rank can be increased by dragging the icon state to a higher position in the list.
<b>Log out</b>	
Enable Logout Button	Whether a logout link is shown in the Settings pulldown.
Enable user Timeout	Whether a period of inactivity will log users out. The timeout is based on the IIS session timeout period.
<b>Performance</b>	

Parameter	Description
Disable Alternate Essential Classification	Searches will not check for alternate essential classifications.
Disable Class Counts	Browse hierarchies will not give counts for the number of items below a class node.
Disable Incidental Classification	Searches will not check for incidental classifications.
Disable LIKE for search	Searches will use the 'CONTAINS' operator.
Enable Improved Player Performance	In the Player, tools may disappear after an activity. In Standard mode, the status colour may not change. Some items may be culled when interacting with the slider.
<b>Player</b>	
Max list items for Player	The maximum number of tags allowed for activity associations.  If this value is changed be careful to not exceed the combined performance of the system, the hardware and the network latency.
Player Enabled	Select to enable AIM Player.
<b>Search</b>	
Automatically append wildcards to search text	If you have not entered any wildcards manually, then select to automatically append a wildcard to the end of the search text.  If you have started to enter wildcards manually, then no wildcards are automatically appended.
Default Scope	The default scope of a search can be set to:  ID – search ID values only  Name – search Name values only  ID and Name – search both ID and Name values
Allow aliases to affect search results	When this setting is enabled, search results include IDs with aliases that match the search string.  When this setting is disabled, only the default ID of objects are searched and not their aliases.
<b>Set Creation</b>	
Default Context	The context that new Sets will be created in.

Parameter	Description
<b>Tab Behaviour</b>	
In Memory Tab Types	When saving the open tabs, the MIME types that will be included.
In Memory Tab Limit	<p>The maximum number of tabs that will be cached in memory. The tabs that may be cached are limited by the MIME types listed in the <b>In Memory Tab Types</b> setting.</p> <p>After the number of cached tabs reaches this limit, if you open any new tabs that can be cached, the oldest cached tab is no longer cached.</p> <p>For example, if In Memory Tab Limit is set to 2 and you open a third tab, then the first tab is removed from the cache and only the two most recent tabs (that is, second and third) are saved to the cache. When you select the first tab, it will need to be reloaded from the web server.</p>
<b>Theme</b>	
Name of CSS file	The path and filename of an CSS file to over-ride the default CSS and provide, for example, a different colour on the <i>Global Navigation Bar</i> .
<b>Visual Reports</b>	
Max list items for Visual Report	<p>If the search criteria used in a saved search finds more results than this limit then a warning message appears.</p> <p>If this happens, consider changing this setting; but be careful to not exceed the combined performance of the system, the hardware and the network latency.</p>

**Site Settings - Print**

Parameter	Description
<b>Banner Text</b>	
Top - Left	Location of banner text when printing
Top - Centre	<b>Note:</b> Banner Text and Watermark will NOT be applied to documents under the following print operations:
Top - Right	<ol style="list-style-type: none"> <li>1. Printing from the Accusoft PrizmDoc Viewer</li> <li>2. Printing a 3D model</li> <li>3. Printing from the Report Viewer</li> </ol>
Bottom - Left	

Parameter	Description
Bottom - Center	4. A query form printer-friendly view
Bottom - Right	
<b>Colours</b>	
SVG Colours	<p><b>Natural</b> is the default value. This enables printing to take place with the original unchanged foreground and background colours from the SVG file.</p> <p><b>Black on White</b> forces the printouts to use a black foreground on a white background.</p> <p><b>Colour on Black</b> does not change foreground colours, but forces the printouts to use a black background.</p> <p><b>Colour on White</b> does not change foreground colours, but forces the printouts to use a white background.</p>
<b>Limits</b>	
Max allowed printable pages	Maximum number of pages that can be printed at one time.
<b>Watermark</b>	
Default Watermark	<p>Text for the watermark when printing. This value is overridden by the attribute-base watermark where applicable.</p> <p><b>Note:</b></p> <p>Due to limitations in Accusoft's PrizmDoc Viewer: Any watermarks that are set will appear not only on the output of the print but also in the Document Viewer when viewing documents in PrizmDoc. Watermarks do not appear on <a href="#">DGN</a> or <a href="#">DWG</a> files.</p>
Attribute-based Watermark	When an attribute is selected, the value of this attribute on the Document to be printed will be used instead of the Default Watermark.

## Dashboard Tab

To replace the content of the **Dashboard** tab:

1. Create your own HTML page containing the content you want to display, refer the Customizing Sample HTML and CSS section in the [Configure Views](#) topic.
2. Open *the AIM Dashboard*.

3. Select **Settings** (  ), **Settings**.
4. Select the **Site** tab.
5. Under **General**, select **Home Page**.
6. Type the path and name of your HTML file from [application root]\App\custom (without the .html extension). For example, [project01\defaultHome](#).
7. Select **Save**.

The screen refreshes, and the new settings take affect.

## Searching

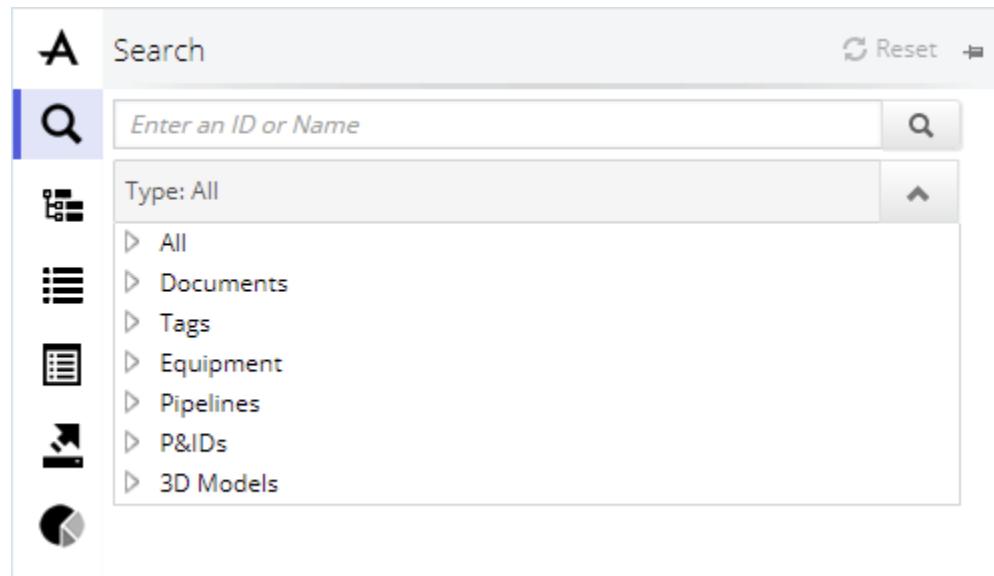
You can configure the search by defining *categories*, *filters* and/or columns in the results table.

**Note:** It is recommended to configure a small number of high-level classes such as document, equipment, and so on in the drop-down list.

## Search Categories

Search categories are the classes in the **Type** list.

Example Search Categories:



The following rules apply when configuring search categories:

- Top-level categories are defined in the [BootstrapSampleSearchCategories.xml](#) file.
- Top-level category display names are always taken from the *bootstrap* file.
- Top-level categories can refer to a class at any level of the Class Library, including system classes..
- Top-level categories always show in the list, even if they would NOT return results.
- Sub-categories are "child" classes as defined in Class Library by the [BootstrapSampleClasses.xml](#) file, see [Creating Your Own Bootstrap Files](#).
- Sub-category display names are based on the values in the **Settings**, **Labels**, **Types** panel, see [Updating](#)

AVEVA Asset Information Management Dashboard Settings.

- Sub-categories only show if they would return results.

To define your own categories:

1. Create your own version of the `BootstrapSampleSearchCategories.xml` file that can be found in `[installation folder]\Import\Server\Bootstrap`. See [Altering the Bootstrap Files](#).
2. Change your file, using the following syntax/rules:
  - a. For each class you want to appear in the **Type** list, link a `<ClassID>` to a `<SearchCategory>` as shown in the following example:

```
<Class>
<ClassID>LOGICAL (& OTHER PHYSICAL) OBJECT</ClassID>
<SearchCategory>{1}All</SearchCategory>
</Class>
<Class>
<ClassID>DOCUMENT CONTENT</ClassID>
<SearchCategory>{2}Documents</SearchCategory>
</Class>
<Class>
<ClassID>FUNCTIONAL ARTIFACT</ClassID>
<SearchCategory>{3}Tags</SearchCategory>
</Class>
<Class>
<ClassID>EQUIPMENT</ClassID>
<SearchCategory>{4}Equipment</SearchCategory>
</Class>
```

---

**Note:**

- a. The ClassID can be found by using the *Admin Tool*, expand the folders in the **Class Library** pane to see details of the class IDs, names and structure.
  - b. The number in the {} brackets is the sort order.
  - c. Un-ordered categories are shown randomly after the ordered ones.
  - d. The text in the list is exactly as written after the brackets.
- b. If you want to include objects with a class of UNKNOWN in the "ALL" results **and** in their own category:
    - i. Add the following section (use a |(pipe) character to separate multiple categories):

```
<Class>
<ClassID>UNKNOWN</ClassID>
<SearchCategory>{99}Unknown|All</SearchCategory>
</Class>
```
    - ii. In the AIM Dashboard, select **Settings, General, Data visibility**, select **Show items of Unknown type**, and then select **Save**.
  - c. To remove a category from the list:
    - a. Remove the entire `<Class>` section, and
    - b. Empty the `<SearchCategory>` tag. For example, `<SearchCategory></SearchCategory>`.
3. Open *Import Controller* and update the bootstrap file, see [Altering the Bootstrap Files](#).
  4. You may need to restart IIS to see the changes in the *AIM Dashboard*, depending on your refresh intervals.

## Search Filters

Search filters are additional criteria that can be used for searching within a category. They appear when a category is selected in the **Type** list.

Example Search Filters:

The screenshot shows a search interface with the following components:

- Search:** A header with a "Search" button, a "Reset" button, and a dropdown menu icon.
- Type:** A dropdown menu set to "PUMP".
- Search Bar:** A text input field containing "enter an ID or Name" with a magnifying glass search icon.
- Filter Groups:** A vertical stack of filter sections:
  - Area:** An empty text input field.
  - State:** An empty text input field.
  - Manufacturer:** An empty text input field.
  - Installed Power:** A dropdown menu set to "Equals" followed by a dropdown menu icon, an empty text input field, a unit selector "kW", and another dropdown menu icon.

To define your own filters:

1. Create a saved search, (you must have the *CreateAdvancedFind Right*):
  - a. Log on to *the AIM Dashboard* and select **Search**.
  - b. In the **Type** list, select the category you want to create filters for.
  - c. Select **Advanced...**
  - d. Select the type of filter you want to add.
  - e. Select an item from the list.
  - f. Select **Prompt?**
  - g. Repeat steps d-f for each filter you want to add.
  - h. Select **Save Search**.
  - i. Enter an ID (name) for the search, and then select **Save**.

2. Copy the body attribute of the saved search:
    - a. Open the *AIM Admin Tool*.
    - b. In the **Class Library** pane, search for [general find](#).
    - c. In the **Object of Class** pane, select the search created in step 1.
    - d. In the **Manager** pane, expand **Attributes**.
    - e. Select **Edit Object Attributes**.
    - f. Copy the **Value** field of the Body attribute.
  3. Create your own version of the [SearchConfigurationExamples\\_null.xml](#) file that can be found in [\[installation folder\]\SampleData\IPE Staging Area\SampleConfiguration](#). See [Copying Sample Configurations](#).
- 
- Note:** Make sure you include "\_null" at the end of the filename to avoid the application searching for a non-existent XSLT file.
4. Change your file, using the syntax below (as found in the original file):
    - a. For **<ID>** and **<ClassID>** type the Class ID [\[classid\]](#) of the search category. For example **PUMP**.
    - b. For **<Value>**, inside the CDATA brackets, paste the [\[bodyattributevalue\]](#) that you copied in step 2.

```
<?xml version="1.0" encoding="utf-8"?>
<vl:VNETList xmlns:vl="http://www.aveva.com/VNET>List"
  xmlns="http://www.aveva.com/VNET/eiwm">
  <Template>
    <ID>SearchConfigurationExamples_null.xml</ID>
    <Object>
      <ID>[classid]</ID>
      <ClassID>SEARCH CONFIGURATION</ClassID>
      <Characteristic>
        <Name>Body</Name>
        <Value>
          <![CDATA[ [bodyattributevalue] ]]>
        </Value>
      </Characteristic>
      <Association type="is a search configuration for">
        <ClassID>[classid]</ClassID>
      </Association>
    </Object>
  </Template>
</vl:VNETList>
```

5. Open *Import Controller* and update the configuration file, see [Copying Sample Configurations](#).
6. Repeat steps 1, 2 and 4 for each set of filters you want to create.
7. After you have configured the filters, you can delete the saved searches you created in step 2, to avoid cluttering the search list.
8. You may need to restart IIS to see the changes in the *AIM Dashboard*, depending on your refresh intervals.

## Search Columns

Search columns are represented in the search results grid, while you perform a search in the AIM Dashboard.

Example search columns:

## Defining Your Own Search Columns

To define your own search columns:

1. Create a new XML file.

For example: [SearchConfigurationExamples\\_null.xml](#)

---

**Note:** Make sure you include "\_null" at the end of the filename to avoid the application searching for a non-existent XSLT file.

2. Save it to the Staging Area location:

For example:

[\[installation folder\]\SampleData\IPE Staging Area\SampleConfiguration](#). See also [Copy Sample Configurations](#).

3. Create a saved search, (you must have the *CreateAdvancedFind Right*):

- a. Log on to *the AIM Dashboard* and select **Search**.
- b. In the **Type** list, select the category you want to create filters for.
- c. Select **Advanced...**
- d. Select the type of filter you want to add.
- e. Select an item from the list.
- f. Select **Prompt?**
- g. Repeat steps d-f for each filter you want to add.
- h. Select **Save Search**.
- i. Enter an **ID** (name) for the search, and then select **Save**.

4. Copy the body attribute of the saved search:

- a. Open the *AIM Admin Tool*.
- b. In the **Class Library** pane, search for [general find](#).
- c. In the **Object of Class** pane, select the search created in step 3.
- d. In the **Manager** pane, expand **Attributes**.

- e. Select **Edit Object Attributes**.
- f. Copy the **Value** field of the Body attribute.
5. Go to the XML file you created in step 1, and modify it using the syntax below (as found in the original file):
  - a. For **<ID>** and **<ClassID>** type the Class ID **[classid]** of the search category. For example **PUMP**.
  - b. For **<Value>**, inside the CDATA brackets, paste the **[bodyattributevalue]** that you copied in step 4.

```
<?xml version="1.0" encoding="utf-8"?>
<vl:VNETList xmlns:vl="http://www.aveva.com/VNET>List"
  xmlns="http://www.aveva.com/VNET/eiwm">
  <Template>
    <ID>SearchConfigurationExamples_null.xml</ID>
    <Object>
      <ID>[classid]</ID>
      <ClassID>SEARCH CONFIGURATION</ClassID>
      <Characteristic>
        <Name>Body</Name>
        <Value>
          <![CDATA[ [bodyattributevalue] ]]>
        </Value>
      </Characteristic>
      <Association type="is a search configuration for">
        <ClassID>[classid]</ClassID>
      </Association>
    </Object>
  </Template>
</vl:VNETList>
```

6. Create an Export Definition (You must have the CreateExport Right):
  - a. Log on to the AIM Dashboard.
  - b. In the Global Navigation Panel, select Export.

The Export Panel opens, docked in the Dashboard.
  - c. In the drop-down box, select the arrow to select an Export Definitions.
  - d. Go to the left-bottom corner, and select Create.

The Export Definition window opens.
  - e. Select the **Add icon for Export Columns**, and then select the new Export Columns.

The newly added Export Columns appear as a list.
  - f. To edit the name of the Export Columns, select **Modify Label**.
  - g. Enter an ID (name) for the Export Definition.
  - h. To save the Export Definition, select **Save**.
7. Copy the body attribute of the Export Definition:
  - a. Open the AIM Admin Tool.
  - b. In the Class Library pane, search for GENERAL EXPORT DEFINITION.
  - c. In the Object of Class pane, select the Export Definition created in step 6.
  - d. In the Manager pane, expand Attributes.
  - e. Select Edit Object Attributes.
  - f. Copy the Value field of the Body attribute.
8. Go to the XML file you created in step 1.

9. Paste all the Projection tags from copied Body attribute, after Criteria tag inside <Projection></Projection> tag.
10. Save the file, and then process through Import Controller.

---

**Note:** The examples are available by default at the following path:

```
[installation folder]\SampleData\IPE Staging Area\SampleConfiguration\  
SearchConfigurationExamples_null.xml
```

The following is one of the examples for search column configuration:

```
<?xml version="1.0" encoding="utf-8"?>  
<vl:VNETList xmlns:vl="http://www.aveva.com/VNET>List" xmlns="http://www.aveva.com/VNET/  
eiwm">  
<Template>  
<ID>SearchConfigurationExamples_null.xml</ID>  
<Object>  
<ID>PUMP</ID>  
<ClassID>SEARCH_CONFIGURATION</ClassID>  
<Characteristic>  
<Name>Body</Name>  
<Value>  
<![CDATA[<?xml version="1.0" encoding="utf-16"?>  
<Search xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/  
XMLSchemainstance">  
<VersionNumber>5.0</Version>  
<Criteria>  
<PropertyProjection xsi:type="ItemIdentifierCriteria">  
<ItemIdentifierType>Id</ItemIdentifierType>  
<BooleanOperator>AND</BooleanOperator>  
<Handle>0</Handle>  
<Value>%</Value>  
<ValueOperator>Like</ValueOperator>  
</PropertyProjection>  
<PropertyProjection xsi:type="ItemIdentifierCriteria">  
<ItemIdentifierType>ClassId</ItemIdentifierType>  
<BooleanOperator>AND</BooleanOperator>  
<Handle>0</Handle>  
<Value>PUMP</Value>  
<ValueOperator>Equals</ValueOperator>  
</PropertyProjection>  
</Criteria>  
<Projection>  
<PropertyProjection xsi:type="ItemIdentifierProjection">  
<Label>ID</Label>  
<ItemIdentifierType>Id</ItemIdentifierType>  
</PropertyProjection>  
<PropertyProjection xsi:type="ItemIdentifierProjection">  
<Label>Type</Label>  
<ItemIdentifierType>ClassName</ItemIdentifierType>  
</PropertyProjection>  
<PropertyProjection xsi:type="AttributeProjection">  
<Label>Installed Power</Label>  
<AttributeId>Installed Power</AttributeId>  
<AllValues>true</AllValues>  
<Units>kW</Units>  
</PropertyProjection>
```

```
</Projection>
</Search>]]>
</Value>
</Characteristic>
<Association type="is a search configuration for">
<ClassID>PUMP</ClassID>
</Association>
</Object>
</Template>
</v1:VNETList>
```

## Browsing

You can configure the way the folders in the Browse panels are displayed by using the **Settings** panel in the AIM Dashboard, see [Dashboard Settings](#).

## Change the Theme

To replace the content of the **Dashboard** tab:

1. Create your own CSS file containing the styles you want to display, see *Customizing Sample HTML and CSS* section in the [Configure Views](#) topic.
2. Open the *AIM Dashboard*.
3. Select **Settings** () , **Settings**.
4. Select the **Site** tab.
5. Under **General**, select **Theme**.
6. Type the path and name of your CSS file from `[application root]\App\themes` (without the .html extension). For example, `project01\custom`.
7. Select **Save**.

The screen refreshes, and the new settings take affect.

## Configure File Export

The Job Server feature enables the File Export job queuing and processing. Using the Deployment Manager, you can install and configure Job Server.

---

**Note:** It is assumed that you have already configured Job Server before configuring File Export.

---

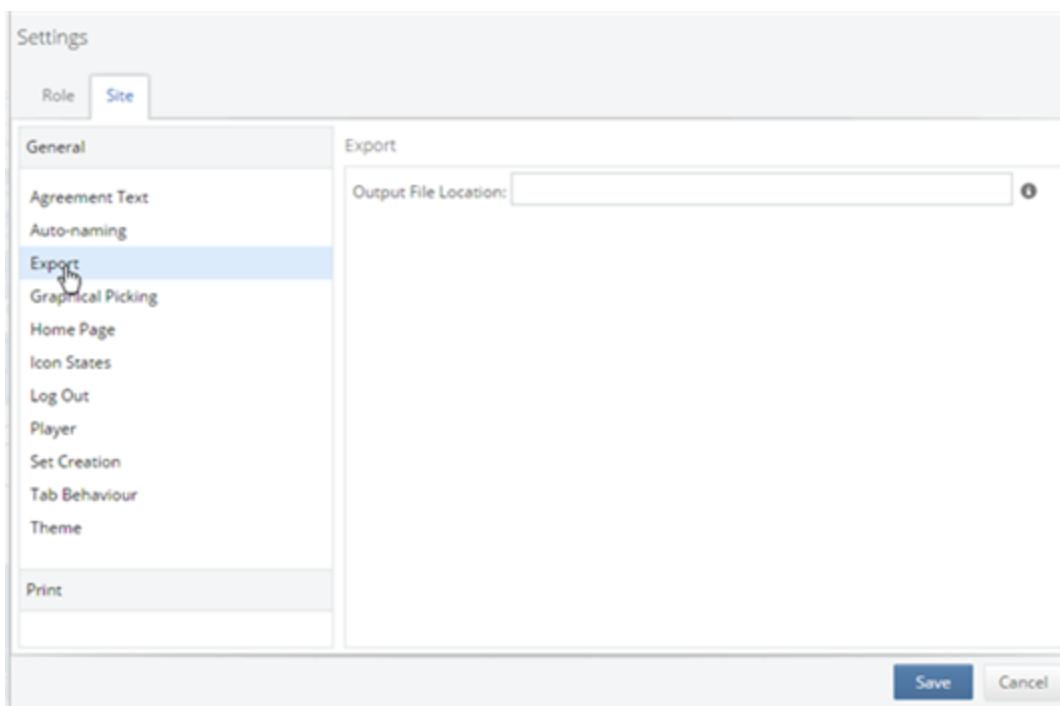
To configure File Export:

1. Open the **Dashboard**, and then select **Settings** at the top-right.

---

**Note:** You must have administrative privileges to access the Settings tab.

---



- In the Settings window, select Export from the left pane.
- In the Output File Location box, enter a valid network path (UNC path).

**Note:** The account used as the identity of the Job Server (typically Local System) must have write access to the output location.

	AVEVA NET Import Server	The AVEVA ...	Running	Automatic	Local System
	AVEVA NET Job Server	The AVEVA ...		Automatic	Local System
	AVEVA NET NTFS File Store ...	The AVEVA ...	Running	Automatic	Local System

This UNC path is where the Job Server writes files to, while generating an export package file. The package file contains the files (in native format as shown below) that the user selects from the Export panel, the Export Manifest. It also contains a .csv file with the exported items' metadata, if the user opts for including a data export.

```
• <?xml version="1.0" encoding="utf-8"?>
<Manifest>
  <User></User>
  <TimeStamp>12/02/2015 16:27:32</TimeStamp>
  <Purpose></Purpose>
  <Files successcount="11" failurecount="0">
    <File>
      <Name>905675.svg</Name>
      <Success>true</Success>
    </File>
    <File>
      <Name>905676.svg</Name>
      <Success>true</Success>
    </File>
    <File>
      <Name>905677.svg</Name>
      <Success>true</Success>
    </File>
    <File>
      <Name>905678.svg</Name>
      <Success>true</Success>
    </File>
    <File>
      <Name>905679.svg</Name>
      <Success>true</Success>
    </File>
    <File>
      <Name>905680.svg</Name>
      <Success>true</Success>
    </File>
    <File>
      <Name>905681.svg</Name>
      <Success>true</Success>
    </File>
    <File>
      <Name>DA-1200-HEADERS-PID.svg</Name>
      <Success>true</Success>
    </File>
    <File>
      <Name>DA-1210-PID.svg</Name>
      <Success>true</Success>
    </File>
    <File>
      <Name>DA-1220-PID.svg</Name>
      <Success>true</Success>
    </File>
    <File>
      <Name>DA-1230-PID.svg</Name>
      <Success>true</Success>
    </File>
  </Files>
</Manifest>
```

## Configure AVEVA AIM Authentication

Besides the Windows authentication, AIM supports an additional authentication mode that can be used to connect the AIM Dashboard with authentication providers not dependent on a domain. The authentication mode is:

- Web Services Federation (WS-Federation), which allows you to use Active Directory Federation Services (ADFS)

To configure this authentication, you must deploy *the AIM Dashboard* without using the deployment tool.

To deploy *the AIM Dashboard* manually:

1. Open **IIS**.
2. Right-click the application on which you wish to deploy *the AIM Dashboard*.
3. Select **Import**.

You can then enter the authentication details as explained below as part of the web deploy process.

## WS-Federation Authentication

The WS-Federation option allows *the AIM Dashboard* to be authenticated by any Identity Provider that supports the WS-Federation specification. For example, ADFS. This option does not support authentication for the following:

- Identity Delegation to the Workhub API or *the AIM Dashboard* Viewer
- Digital Asset Connector (DA Connector)

## Configuring AVEVA Asset Information Management to Use WS Federation Authentication

To configure AIM to use a WS-Federation enabled Identity Provider, you must disable the Windows authentication option and ensure that the AIM runs under the HTTPS protocol.

All the settings are prefixed with **avevanet:** and are added or modified in the **appSettings** section of the *AIM Dashboard* **web.config** file, that is:

```
<add key="avevanet:*" value="*" />
```

**Note:** It is recommended that you configure all the settings via the Web Deploy Package for *AIM Dashboard*.

Parameter	Description
authenticationProvider	Set as WS-Federation
applicationRootUrl	The root URL of the application. For example: <i>https://mydashboardapps.contoso.net/HelloWorld</i>
authorityUrl	The URL of the WS-Federation authority. For example, if you have an ADFS instance and its URL is <i>https://myadfs.contoso.net/</i> , that URL is your <b>authorityUrl</b> .
dashboardClientId	An alternative ID to use for the <i>AIM Dashboard</i> client application when talking to the Identity Provider. The default ID is <b>AVEVA.NET.Dashboard</b> .

## Configuring ADFS

If you are using ADFS as the WS-Federation identity provider, you must configure AIM as a relying party.

For that, you must add a Relying Party Trust with the following settings:

1. Set the Relying Party Identifier for AIM Dashboard as the `applicationRootUrl` plus `/identity`. For example, if the URL to your AIM Dashboard site is `https://mydashboardapps.contoso.net/HelloWorld`, then while adding the relying party identifier, the URL should be `https://mydashboardapps.contoso.net/HelloWorld/identity`.
2. Set the Relying Party Identifier and add a WS-Federation Passive Endpoint for the application URL plus the identity path. For the example above, the site `https://mydashboardapps.contoso.net/HelloWorld` has Relying Party Identifier and WS-Federation passive endpoint as `https://mydashboardapps.contoso.net/HelloWorld/identity`.
3. Add the following claims for the AIM Relying Party:

Name – Used as the name displayed under profile information in the AIM UI.

Name ID – A unique name identifier that is used internally.

Both the claims can have the same value.

---

**Note:** If you have an existing AIM installation, the user name used should be the **Windows account name** (that is, `CONTOSO\username`). The same user is used within the application while switching to the WS-Federation authentication option. The Name and Name ID claims must be set as **Windows account name**.

---

## Create Coversheets for Markup Export

By default the basic templates, `SampleMarkupExportTemplate.docx` with the corresponding EIWM file for the template metadata are available in the `\SampleConfiguration` folder of the IPE and SRP staging areas.

---

**Note:** These basic templates are identical, apart from the header.

---

As a fall-back mechanism in the event of no templates getting imported, you have a built in template identical with those available in the staging area, except for the header. This template is added during the database bootstrap, and always available for use.

The Administrator can create custom coversheets and set its availability, during the installation. If you opt not to have coversheets for markup export, that can also be set during installation. The templates you create will be in a .docx format, with fields that will be replaced with the appropriate values while exporting the markup.

The default single fields in the sample files, and the fields that get replaced during a markup export, are as follows:

Fields	Replaced with this value during export
[EXPORT_DATE]	The date on which you export the markup
[DOCUMENT_ID]	The marked-up document's ID
[DOCUMENT_NAME]	The marked-up document's name
[DOCUMENT_REVISION]	The marked-up document's revision number
[FILE_ID]	The marked-up file's ID

Fields	Replaced with this value during export
[FILE_NAME]	The marked-up file's name
[FILE_REVISION]	The marked-up file's revision number

**Note:** Any of these fields can be omitted, and can be placed anywhere in the document.

As multiple markups can be merged, all the constituent markups' details can be included as rows in a table, one row per included constituent markup.

**Important:** The required format for a coversheet is a table, with the [ITEM] marker in a row. However, you can place the markup table in any location.

The following table depicts an example for a markup coversheet table:

[ITEM]			
--------	--	--	--

The following are the row fields that are optional:

Field	Replaced with this value during export
[ITEM]	The row number
[MARKUP_ID]	The constituent markup's ID
[MARKUP_NAME]	The constituent markup's name
[MARKUP_REVISION]	The constituent markup's revision number
[MARKUP_AUTHOR]	The constituent markup's author
[MARKUP_COMMENTS]	The constituent markup's comments field
[MARKUP_CREATEDDATE]	The constituent markup's creation date
[MARKUP_MODIFIEDDATE]	The constituent markup's last modified date

## Configure Accusoft Rasterization

Rasterization enables faster file rendering. The Prizm Raster Conversion service converts a file to a Raster format, typically JPEG. If rasterization is not used, the files are converted to an SVG format, a default format for most other document types.

**Note:** The rasterization of files is disabled by default, in a new Accusoft installation. Even though this setting is enabled by default for DWG files on the AIM Dashboard web server, you must enable this setting on the Accusoft server, to allow rasterization of the configured file types.

### Enabling Rasterization

To enable rasterization:

1. Access the following default path:

C:\Prizm

2. Open the prizm-services-config.yaml file.

3. Look for the following property:

```
# viewing.sessionConstraints.render.alwaysUseRaster.allowedValues: [false]
```

4. Remove # and the single space:

```
viewing.sessionConstraints.render.alwaysUseRaster.allowedValues: [false, true]
```

5. Restart **Prizm** and **Prizm Application Services**.

Rasterization is now enabled on the Accusoft server, and all the configured file types will be displayed as a rastered image instead of as an SVG format.

**Important:** After enabling rasterization, to control if a file is rastered or not, you must modify the [pccc.config](#) file on the AIM Dashboard web server.

## Configuring Rasterization

To configure rasterization:

1. Go to the following default location: [C:\inetpub\Dashboard](#)

2. Open the [pcc.config](#) file.

3. Add the file types to be rasterized, separated by a comma.

```
<EnableRasterTypes>dwg,pdf</EnableRasterTypes>
```

4. To reset IIS, select **Start**, and then run **IISRESET**.

## Configuring Accusoft PrizmDoc Timeout Settings (Optional)

You may need to increase the default timeout values, to allow more time for PrizmDoc to complete various operations. For more information, refer to the Prizm help file or visit: <https://help.accusoft.com/PrizmDoc/v13.27/HTML/configure-the-prizmdoc-server.html>

To configure timeout values (large files rasterization):

1. Go to the following default location:

```
C:\Prizm\PCCIS\ServiceHost\pcc.config
```

2. Open the pcc.config file of the PCCIS service.

3. For the following properties, increase the respective default values to:

- PageInteractiveTimeout: 120000
- DocumentInteractiveTimeout: 300000
- DocumentAcquisitionTimeout: 120000
- InternalOperationTimeout: 300000

4. Restart **Prizm** and **Prizm Application Services**.

## Configure Views

The following sections explain configuration of views in AIM.

### Configurable Views

You can configure the way data is grouped and displayed on two different *Views*:

- **Summary Views** - An entire page dedicated to the information about an object. Usually opened in the content area by selecting on the ID of an object.
- **Content Cards** - A panel showing information about an object that is displayed over a 2D or 3D document when using *Document View*.
- **Mobile Item Summary View** - A view displayed only when the *AIM Dashboard* is accessed via the mobile site (that is, using a mobile device or tablet).

## Summary View - Structure

A summary view comprises summary columns which contain summary panels. Within each summary panel you can display information about the item using a *UI Component*.

```
<div class="summary-page">
<div class="halfwidth inline-block">
<div class="summary-panel lightborder curvedcorners">
CONTENT/UI COMPONENT GOES HERE
</div>
<div class="summary-panel lightborder curvedcorners">
CONTENT/UI COMPONENT GOES HERE
</div>
</div>
<div class="halfwidth inline-block">
<div class="summary-panel lightborder curvedcorners">
CONTENT/UI COMPONENT GOES HERE
</div>
<div class="summary-panel lightborder curvedcorners">
CONTENT/UI COMPONENT GOES HERE
</div>
</div>
</div>
```

## Content Card - Structure

A content card view comprises at least one content card section. In each content card section you can place a *UI Component* to display information about the item.

```
<div data-aveva-content-card-section="" data-title="{{'Item_Details' | i18n}}" data-icon="App/src/img/icocyg_icb_details.png">
UI COMPONENT GOES HERE
</div>
<div data-aveva-content-card-section="" data-title="{{'Item_Properties' | i18n}}" data-icon="App/src/img/icocyg_icb_attr.png">
UI COMPONENT GOES HERE
</div>
<div data-aveva-content-card-section="" data-title="{{'Item_RelatedItems' | i18n}}" data-icon="App/src/img/icocyg_icb_related.png">
UI COMPONENT GOES HERE
</div>
<div data-aveva-content-card-section="" data-title="{{'Item_RelatedDocuments' | i18n}}" data-icon="App/src/img/icocyg_relateddocs.png">
UI COMPONENT GOES HERE
</div>
```

## Mobile Item Summary View - Structure

The **Mobile Item Summary View** comprises at least one mobile summary section. In each mobile summary section, you can place a *UI Component* to display information about the item.

```
<div data-aveva-mobile-summary-section="" data-title="{{'MobileItemView_2D' | i18n}}"
  data-icon="App/src/img/Mobile/icocyg_pid.svg">
  <div data-aveva-mobile-dg-document-viewer="" data-item="item" data-group="Tag 2D
  Documents" data-title="{{'MobileItemView_2D' | i18n}}"></div>
</div>

<div data-aveva-mobile-summary-section="" data-title="{{'MobileItemView_Documents' |
  i18n}}" data-icon="App/src/img/Mobile/icocyg_related_documents.svg">
  <div data-aveva-dg-list="" data-item="item" data-group="Related Documents" data-
  title="{{ 'MobileItemView_Documents' | i18n }}" data-columns="1"></div>
</div>
```

The highlighted UI Components can be changed to work with any data group that has been configured as part of the AIM site.

For more information about the mobile site, see [Use AIM Dashboard for Mobile Site](#).

There are six *UI Components* that are provided with the default installation, these can be used in a *View* to display your data in a variety of ways.

The UI Components are:

- Generic:
  - **data-aveva-related-items-tree** - shows objects associated with the object in the *View*, in an expandable tree. Can be limited to one Association Type.
- Documents:
  - **data-aveva-revisions** - shows other revisions of a document in the *View*. Can only be used for items of classification DOCUMENT CONTENT or descendants.
  - **data-aveva-renditions** - shows the renditions of a document in the *View*. Can only be used on a Content Card for items of classification DOCUMENT CONTENT or descendants.
- Using Data Groups:
  - **data-aveva-dg-pane** - shows properties/attributes/metadata of the object in the *View* in a label/value pairing. Can only be used with a *DataGroup*.
  - **data-aveva-dg-list** - shows objects associated with the object in the *View* in a columned list. Can only be used with a *DataGroup*.
  - **data-aveva-dg-viewer** - shows a viewer for documents associated with the object in the *View*. Can only be used with a *DataGroup* and on Summary Views.

To define your own views:

1. Create your own copy of the relevant HTML file that can be found in [\[application root\]\App\custom\samples](#). See the *Customizing Sample HTML and CSS* section.
2. Create your own version of the [BootstrapSampleViews.xml](#) and [BootstrapSampleDataGroups.xml](#) files that can be found in [\[installation folder\]\Import\Server\Bootstrap](#). See [Altering the Bootstrap Files](#).
3. Change the [BootstrapSampleViews.xml](#) file, using the following syntax/rules:

- a. For each view, create an association between the view (HTML file you created in step 1) and the class it is to be used by:
  - i. For the object <ID> type the path of your HTML file from [application root]\App\custom. For example `project01/defaultSummary`.
  - ii. For the object <Name> type a descriptive name.
  - iii. For the object <ClassID> type either SUMMARY VIEW or CONTENT CARD VIEW.
  - iv. For the object <Association> type "is a view for".
  - v. For the association <ClassID> type the name of the class that will use the view.

#### Example Summary View for Tags

```
<Object>
<ID>samples/tagSummary</ID>
<Context>
<ID>Views</ID>
<Context>
<ID>VNET System</ID>
</Context>
</Context>
<Name>Tag Summary View</Name>
<ClassID>SUMMARY VIEW</ClassID>
<Association type="is a view for">
<ClassID>FUNCTIONAL ARTIFACT</ClassID>
</Association>
</Object>
```

#### Example Default Content Card

```
<Object>
<ID>samples/defaultContentCard</ID>
<Context>
<ID>Views</ID>
<Context>
<ID>VNET System</ID>
</Context>
</Context>
<Name>Default Content Card View</Name>
<ClassID>CONTENT CARD VIEW</ClassID>
<Association type="is a view for">
<ClassID>THING</ClassID>
</Association>
</Object>
```

4. Change your `BootstrapSampleDataGroups.xml` file, for details on using the syntax and examples, see the *Data Groups* section in the [Configure Workhub API Data Structure](#) topic.
5. Change your HTML file, for details on using the syntax and examples, see *UI Component Structure* section in the topic.
6. Refresh the AIM Dashboard to see the changes.

## UI Component Reference

### Content Card Section

A content card section is a structural UI component used to define a content card.

Property	Description	Required
Title	The title to be displayed in a tooltip for the tab in the content card.	Yes
Icon	The icon to be displayed as the tab in the content card.	Yes

Example:

```
<div data-aveva-content-card-section="" data-title="{{'Item_Details' | i18n}}" data-icon="App/src/img/icocyg_icb_details.png">
CONTENT GOES HERE
</div>
```

## Related Items Tree

A related items tree displays the breakdown of an item using the settings defined for node expansion. It can optionally be start at a first level association type. This component is for use in a content card section or a summary panel.

Property	Description	Required
Title	The title to be displayed in a tooltip for the tab in the content card.	Yes
Icon	The icon to be displayed as the tab in the content card.	Yes
Association Role	Used to select a first level association and display all contents of that association. For example a Document Contents panel may use the association role 'is referenced in' to show all tags referenced in the document.	No
Node Selection Behaviour	<p>The behaviour when a user selects an 'item' node in the tree.  Default: Open.</p> <p>Options:</p> <p>Open – Opens a tab for the item when it is selected.</p> <p>Select – Attempts to select the item in the current viewer and open the selected item content card for that item.</p> <p>Only for use on the Document View as nothing will happen on a</p>	No

Property	Description	Required
	Summary.	
Hide Viewer Actions	<p>Can be used to hide the viewer actions if they are not applicable to the current location of the component. Viewer actions are only applicable on the Document View as they interact with the primary viewer of the page.</p> <p>Default: false.</p> <p>Options:</p> <ul style="list-style-type: none"> <li>true – Hide the viewer actions.</li> <li>false – Show the viewer actions.</li> </ul>	No

Example:

```
<div data-aveva-related-items-tree="" data-item="item" data-association-role="'refers to'" data-node-selection-behaviour="'Select'" data-title="{{'Item_DocumentContents' | i18n}}"></div>
```

## Revisions

A component that displays the revisions for the item. Selecting another revision reloads the tab to display the information of the revision selected. It is not recommended to use this component on the Content Card for a tag.

Property	Description	Required
Item	The item to display the revisions for.	Yes
Title	The title to display in the header.	Yes

Example:

```
<div data-aveva-revisions="" data-item="item" data-title="{{'Item_Revisions' | i18n}}"></div>
```

## Renditions

A component that displays the renditions of the item. Selecting a rendition loads that rendition in the current view if on the Document View. Note, this component only makes sense for items of classification DOCUMENT CONTENT or descendants.

**Note:** The selection behaviour only works when placed on a Content Card.

Property	Description	Required
Files	The files of the item to be displayed.	Yes

Property	Description	Required
	<p><b>Note:</b> This property is <code>item.files</code> to specify the component to display the files of the current item.</p>	
Current File	<p>Changed to be the last file selected by the user.</p> <p><b>Note:</b> This property should be set to <code>item.currentFile</code> so that the current file displayed in the document view is changed when another rendition is selected.</p>	Yes
Title	The title to be displayed in the header.	Yes

Example:

```
<div data-aveva-renditions="" data-files="item.files" data-current-file="item.currentFile"
data-title="{{'Item_Renditions' | i18n}}"></div>
```

## Data Group UI Components

The following are the *Data Group UI Components*. Also, there is an additional *Data Group* initialize directive that can be used on Summaries to initialize several *Data Groups* at once rather than doing them in separate requests. All the components can handle "n" levels of *Data Groups* and this will be done automatically by the components when they interpret the *Data Group*.

### *dgPane*

A component that will render a *Data Group* in a pane of information as label/value pairs.

Property	Description	Required
Item	The item to render the <i>Data Group</i> for. Usually item.	Yes
Group	The ID of the <i>Data Group</i> to render in the pane.	Yes
Title	The title to be displayed in the header above the <i>Data Group</i> .	Yes
Columns	<p>The number of columns to display the data in. The columns are rendered left to right.</p> <p>Default: 1</p> <p>Options:</p> <ul style="list-style-type: none"> <li>1 – Single column display.</li> <li>2 – Two column display.</li> </ul>	No

Property	Description	Required
Show Header	Shows a header displaying Name and Value over each of the relevant label/value pairs.  Default: false Options: true – Show the header. false – Do not show the header.	No
Auto Expand	Expands each of the dataset Summary Views  Default: false Options: true – Expand the dataset Summary Views. false – Do not expand the dataset Summary Views.	No
Order	When the data group components are used within <code>dgInitialize</code> (such as a Summary view), this property specifies the order in which the components should be loaded.	No

Example 1:

```
<div data-aveva-dg-pane="" data-handle="item.handle" data-group="Details" data-title="{{'Item_Details' | i18n}}" data-columns="1" data-show-header="true"></div>
```

Example 2: Changes for the UI component dgPane (Attribute highlighted in green)

```
<div class="summary-panel" data-aveva-expandable-panel="" data-aveva-container-size="" data-cs-min-height="100" data-cs-max-height="400">
<div data-aveva-dg-pane="" data-item="item" data-auto-expand="true" data-group="Tag Attributes" data-title="{{ 'Item_Attributes' | i18n}}" data-columns="1">
</div>
</div>
```

Example 3:

```
<div data-aveva-dg-pane="" data-order="1" data-handle="item.handle" data-group="Details" data-title="{{'Item_Details' | i18n}}" data-columns="1" data-show-header="true"></div>
```

*dgList*

A component that can be used to display grouped collections of associative data in a number of columns. Primary use case is for displaying collections of associated documents.

Property	Description	Required
Item	The item to render the <i>Data Group</i> for. Usually item.	Yes
Group	The ID of the <i>Data Group</i> to render in the pane.	Yes
Title	The title to be displayed in the header above the <i>Data Group</i> .	Yes
Show Header	Show a header displaying Name and Value over each of the relevant label/value pairs.  Default: false Options: true – Show the header. false – Do not show the header.	No
Hide Viewer Actions	Can be used to hide the viewer actions if they are not applicable to the current location of the component. Viewer actions are only applicable on the Document View as they interact with the primary viewer of the page.  Default: false. Options: true – Hide the viewer actions. false – Show the viewer actions.	No
Auto Expand	Expands each of the dataset Summary Views  Default: false Options: true – Expand the dataset Summary Views. false – Do not expand the dataset Summary Views.	No

Example 1:

```
<div data-aveva-dg-list="" data-handle="item.handle" data-group="Tag Related Documents"
data-title="{{ 'Item_RelatedDocuments' | i18n }}></div>
```

Example 2: Changes for the UI component dgList (Attribute highlighted in green)

```
<div class="summary-panel" data-aveva-expandable-panel="" data-aveva-container-size=""
data-cs-min-height="100" data-cs-max-height="400">
<div data-aveva-dg-list="" data-item="item" data-auto-expand="true" data-group="Tag Related
```

```
Documents" data-title="{{ 'Item_RelatedDocuments' | i18n }}" data-columns="1">></div>
</div>
```

### *dgDocumentViewer*

A component that uses a specific format of *Data Group* to display a collection of documents in a viewer on the Summary view.

**Note:** This can only be used on a Summary, and this control requires a specific format of *Data Group*.

Property	Description	Required
Isolate	<p>Isolates the 3D Model for the item of interest.  Default: true  Options:  true: Isolate item of interest  false: Do not isolate</p> <hr/> <p><b>Note:</b> For the summary view on the AIM Dashboard mobile site, the default value is set as false. This default value is true for the summary view on the AIM Dashboard website (for desktop).</p>	No

The required *Data Group* structure is given below. The final object in the projection must contain a Document ID, InfoLocator, and InfoType (InfoDMSType and InfoDMSLocator are optional) and can work only with a tabulated data group with an ID and metadata.

The following example is a compatible data group, which displays the 2D documents associated to a tag:

```
<Projection xmlns="http://www.aveva.com/NET/EIA/Search/Projection">
<Object>
<Association type="is referenced in" excludedclasses="3D MODEL" tabulate="true">
<Object>
<ID />
<Association type="is fulfilled by" associationclass="FILE">
<Object>
<Characteristic>
<Name>InfoLocator</Name>
</Characteristic>
<Characteristic>
<Name>InfoType</Name>
</Characteristic>
<Characteristic>
<Name>InfodMSType</Name>
</Characteristic>
<Characteristic>
<Name>InfoDMSLocator</Name>
</Characteristic>
</Object>
</Association>
</Object>
</Association>
</Object>
```

```
</Projection>
```

Example:

```
<div data-aveva-dg-document-viewer="" data-item="item" data-group="Tag 2D Documents" data-  
title="{{'Item_2DView' | i18n}}"></div>
```

*dgViewer*

A component that uses a specific format of *Data Group* to display a collection of files with a viewer on the Summary.

**Note:** This can only be used on a Summary, and that this control requires a specific format of *Data Group*.

The required *Data Group* structure is as follows. The final object in the projection must contain an ID, InfoLocator, InfoType and InfoDMSType. However, the associated object that this structure comes from is configurable.

This example would show all files from 3D MODEL classes of object that this item is referenced in. The highlighted bit is the required.

```
<?xml version="1.0" encoding="utf-8"?>  
<Projection xmlns="http://www.aveva.com/NET/EIA/Search/Projection">  
<Object>  
<Association type="is referenced in" associationclass="3D MODEL">  
<Object>  
<Association type="is fulfilled by" associationclass="FILE">  
<Object>  
<ID />  
<Characteristic>  
<Name>InfoLocator</Name>  
</Characteristic>  
<Characteristic>  
<Name>InfoType</Name>  
</Characteristic>  
<Characteristic>  
<Name>InfoDMSType</Name>  
</Characteristic>  
</Object>  
</Association>  
</Object>  
</Association>  
</Object>  
</Projection>
```

*dgInitialize*

This allows multiple *Data Groups* to be initialized in one request. For example, on a Summary View, where several components displaying *Data Group* are displayed at once, you can initialize all of them in one go, leading to quicker and more complete page loads. You add this to the highest level tag in the Summary.

The example initializes the *Data Groups* for Details, Tag Attributes, Tag 2D Files, and so on. It is recommended you keep this in sync with the *Data Groups* used in the page to improved loading times and reduce staggered page rendering.

`data-aveva-dg-initialize="" data-groups="Details, Tag Attributes, Tag 2D Files, Tag Key Attributes, Tag Related Documents, Tag 3D Files" data-handle="item.handle"`

*Item*

The item is a json representation of the item that is displayed on the Content Card or Summary View. The object is the same regardless of whether on the Content Card or Summary View. The item, or one of its properties, are

passed into the information including the *Data Groups* components to display information about that item. This item can also be used to build custom components for the Content Card or Summary View, however, only the properties displayed in the reference section can be used.

When defining a Content Card or Summary View there is a single public object that can be used to pass into the out of the box components or can be used to provide the basis for a custom component. This object represents the item that is being rendered in the view. All properties are lower case as the item is a json object.

Property	Description	Example	Type
id	The short/non-unique id of the item.	J-9002A	String
handle	The internal database handle of the item.	1002	String
name	The name of the item.	I am J-9002A	String
revision	The revision of the item if any.	0	String
fullId	The full id of the item without revision.	IPE J-9002A	String
classId	The class id of the item.	PUMP	String
className	The class name of the item.	Pump	String
label	The configured label for the item as driven by the settings.	-	String
icon	The class driven icon name for the item.	pump.png	String
files	The collection of files that fulfill this item. Only applicable to documents.		Array
aliases	The aliases of the item. The other pseudonyms by which the object is identified. Does not include the id of the object.		Array

### Overriding Data Visibility Settings for Data Groups

If required, you can override the "[Show only the latest revision](#)" data visibility settings for Data Groups.

Using [ShowAllRevisions](#) separated by the '| sign in the Data Group name will show all the revisions.

Using `ShowLatestRevision` separated by the '`|`' sign in the Data Group name will show only the latest revision. For example, if "`Show only the latest revision`" is true in the **Settings** panel, but on the **Document Summary View** page, you want to see the previous revision for the **Document Files Data Group**, then you can override the setting by updating the **Summary View** HTML page as shown below:

```
<div class="summary-page" data-aveva-dg-initialize="" data-groups="Details, Properties, Document Files|ShowAllRevisions" data-handle="item.handle">
  <div class="summary-column">
    <div class="summary-panel" data-aveva-container-size="" data-cs-min-height="100" data-cs-max-height="400">
      <div data-aveva-dg-pane="" data-item="item" data-group="Details" data-title="{{ 'Item_Details' | i18n }}" data-columns="1"></div>
    </div>
    <div class="summary-panel" data-aveva-expandable-panel="" data-aveva-container-size="" data-cs-min-height="100" data-cs-max-height="400">
      <div data-aveva-dg-pane="" data-item="item" data-group="Properties" data-title="{{ 'Item_Attributes' | i18n }}" data-show-header="true"></div>
    </div>
    <div class="summary-panel" data-aveva-expandable-panel="" data-aveva-container-size="" data-cs-min-height="100" data-cs-max-height="400">
      <div data-aveva-revisions="" data-item="item" data-title="{{ 'Item_Revisions' | i18n }}></div>
    </div>
  </div>
  <div class="summary-column">
    <div class="summary-panel" data-aveva-expandable-panel="" data-aveva-container-size="" data-cs-height="450" data-cs-max-height="450">
      <div data-aveva-dg-viewer="" data-item="item" data-group="Document Files|ShowAllRevisions" data-title="{{ 'Item_View' | i18n }}></div>
    </div>
    <div class="summary-panel" data-aveva-expandable-panel="" data-aveva-container-size="" data-cs-min-height="100" data-cs-max-height="400">
      <div data-aveva-related-items-tree="" data-item="item" data-title="{{ 'Item_RelatedItems' | i18n }}" data-hide-viewer-actions="true"></div>
    </div>
  </div>
</div>
```

## Using Item Label Preference Settings for Data Groups

If required, you can set an "**Item Label**" preference in the **Settings** panel by using supported tokens.

To use this setting in the **Summary View's** `data-aveva-dg-document-viewer`, you must append `DocumentView` separated by '`|`'. For example, `Tag 3D Documents|DocumentView`.

See the following screenshot of the **Tag Summary** view:

```
<div class="summary-page" data-aveva-dg-initialize="" data-groups="Details, Tag Attributes, Tag 2D Documents|DocumentView, Tag Key Attributes, Tag Related Documents, Tag 3D Documents|DocumentView, Related Qs">
  <div class="summary-column">
    <div class="summary-panel" data-aveva-container-size="" data-cs-min-height="100" data-cs-max-height="400">
      <div data-aveva-dg-pane="" data-item="item" data-group="Details" data-title="{{ 'Item_Details' | i18n }}></div>
    </div>
    <div class="summary-panel" data-aveva-expandable-panel="" data-aveva-container-size="" data-cs-min-height="100" data-cs-max-height="400">
      <div data-aveva-dg-pane="" data-item="item" data-group="Tag Attributes" data-title="{{ 'Item_Attributes' | i18n }}></div>
    </div>
    <div class="summary-panel" data-aveva-expandable-panel="" data-aveva-container-size="" data-cs-height="450" data-cs-max-height="450">
      <div data-aveva-dg-document-viewer="" data-item="item" data-group="Tag 2D Documents|DocumentView" data-title="{{ 'Item_2DView' | i18n }}></div>
    </div>
  </div>
  <div class="summary-column">
    <div class="summary-panel" data-aveva-expandable-panel="" data-aveva-container-size="" data-cs-min-height="100" data-cs-max-height="400">
      <div data-aveva-dg-pane="" data-item="item" data-group="Tag Key Attributes" data-title="{{ 'Item_Key_Attributes' | i18n }}></div>
    </div>
    <div class="summary-panel" data-aveva-expandable-panel="" data-aveva-container-size="" data-cs-min-height="100" data-cs-max-height="400">
      <div data-aveva-related-items-tree="" data-item="item" data-title="{{ 'Item_RelatedItems' | i18n }}></div>
    </div>
    <div class="summary-panel" data-aveva-expandable-panel="" data-aveva-container-size="" data-cs-min-height="100" data-cs-max-height="400">
      <div data-aveva-dg-list="" data-item="item" data-group="Tag Related Documents" data-title="{{ 'Item_RelatedDocuments' | i18n }}></div>
    </div>
    <div class="summary-panel" data-aveva-expandable-panel="" data-aveva-container-size="" data-cs-min-height="100" data-cs-max-height="400">
      <div data-aveva-dg-list="" data-item="item" data-group="Related Query Forms" data-title="{{ 'QueryForm_RelatedQueryForms' | i18n }}></div>
    </div>
    <div class="summary-panel" data-aveva-expandable-panel="" data-aveva-container-size="" data-cs-height="450" data-cs-max-height="450">
      <div data-aveva-dg-document-viewer="" data-item="item" data-group="Tag 3D Documents|DocumentView" data-isolate="true" data-title="{{ 'Item_3DView' | i18n }}></div>
    </div>
  </div>
</div>
```

## Configuring the Panel Component Height

Using the `ContainerSize` directive, you can configure the height of the Item View and Summary View panel components to either of the following:

- Minimum
- Maximum
- A specific height (fixed)

If the content size inside the panel component is more than the maximum height or fixed height specified for the panel, a scroll bar will appear.

The following table describes the attributes and acceptable values:

Attribute	Description	Acceptable Value
data-aveva-container-size	The main directive.	-
data-cs-min-height	An attribute for the minimum height of the targeted panel component.	Pixels (numeric value)  <b>Note:</b> If any non-numbers are used, the intended style will not be applied.
data-cs-max-height	An attribute to set the maximum height for the targeted panel component.	
data-cs-height	An attribute to set a specific fixed height of the panel component.  <b>Note:</b> If set, the minimum and maximum does not apply.	
data-cs-css-target	An attribute to specify a panel component on which, to apply the intended heights.	CSS class/ID (including the dot/hash).  If omitted, this value will default to: .aveva-panel-body

The following example shows a sample usage of the ContainerSize directive:

```
<div class="summary-panel"
data-aveva-container-size="" data-cs-min-height="0" data-cs-max-height="500">
<div>...</div>
</div>
```

### Creating Custom Views of Dashboard in Client Application

The UI components available with the default installation let you to create custom views of AIM in client application.

To create custom views of Dashboard in Client Application:

1. Open the [application root]\App\custom folder, and then create a new HTML file (For example, itemView.html).
2. To view the sample custom views, open the [application root]\App\custom\itemviewsamples folder.
3. Open the two HTML files containing the following sample custom views:

This Sample File	Contains
tagView.html	Panels to display Details, Attributes and Related Documents
documentView.html	File Viewing component

4. Include the required UI components in the new HTML file, referring the sample custom view scripts.

**Note:** For information about the UI components, see the *UI Component Reference* section in this topic .

## Customizing Sample HTML and CSS

The sample HTML files are:

- Home Page (Dashboard Tab):
  - [defaultHome.html](#)
- Summary Views:
  - [defaultsummary.html](#)
  - [documentsummary.html](#)
  - [tagsummary.html](#)
  - [queryformsummary.html](#)
  - [setsummary.html](#)
- Content Cards:
  - [defaultContentCard.html](#)
  - [documentContentCard.html](#)
  - [tagContentCard.html](#)

To use your own HTML files you need to:

1. Create a new folder where you will store your modified files in [\[application root\]\App\custom](#). For example, [project01](#).
2. If you want to use the existing HTML files as a starting point, copy the files from [\[application root\]\App\custom\samples](#) to the new folder.
3. After changing your files, either:
  - a. To update the Home Page, see [Dashboard Tab](#).
  - b. To update Summary Views or Content Cards, see the *Configurable Views* section in this topic.

---

**Note:** Any modifications to the AIM Dashboard must continue to display the original copyright statement, as initially displayed in the "out of the box" home page. It must appear in the same place and in the original HTML style on any new home pages hosted in the AIM Dashboard.

---

The sample CSS file is:

- [custom.css](#)

To use your own CSS file, you need to:

1. Create a new folder where you will store your modified file in [\[application root\]\App\themes](#). For example, [project01](#).
2. If you want to use the existing CSS file as a starting point, copy the file from [\[application root\]\App\themes](#) to the new folder.
3. After changing your file, update the Theme in the **Settings** Panel, see [Changing the Theme](#).

## Configure Workhub API Data Structure

The View configuration of Dashboard relies on the Workhub API data structure configuration.

## Data Groups

Data groups are logical groupings of data records that allow selection of any data in the AIM Workhub data model and turn it into a source agnostic structure. They allow the data to be independent of the modelling.

Data groups can be composed of either projections or other data groups. Then, a number of data groups are allocated to a Class. Examples of data groups can be found in [BootstrapSampleDataGroups.xml](#).

Data Groups can be utilized on the *AIM Dashboard* summary, content card and mobile views.

A *Data Group* can contain one of two things:

- A *projection* of what data to display.
- Other *Data Groups*.

The <ID> of the *Data Group* is used to link the *Data Group* with the classes and *UI Components* with which it will be used .

The examples in this section are taken from the [BootstrapSampleDataGroups.xml](#) file that can be found in [\[installation folder\]\Import\Server\Bootstrap](#). See [Alter the Bootstrap Files](#).

Example: Defining *Data Groups*

```
<DataGroup>
  <ID>Details</ID>
  <!-- Projection or DataGroup -->
</DataGroup>
```

## Projection

**Note:** For details about Associative Object Model and XML Schema, see [Associative Object Model and XML](#).

The projection of a data group defines the structure and content of the results set when the data group is executed for a given Object. The projection XML schema is based on the EIA Projection schema which is documented in the EIA documentation. Data group projections have extensions to this schema to provide sorting and structural capabilities that allow the structure of the data group result to be changed.

The Projection for a data group is defined within a Projection element and the projection itself is wrapped in a CDATA block as below:

```
<DataGroup>
  <ID>Details</ID>
  <Project>
    <![CDATA[ [<?xml version="1.0" encoding="utf-8"?>
    <Projection xmlns="http://www.aveva.com/NET/EIA/Search/Projection">
      <Object>
        <ID />
      </Object>
      <Projection>
        <*>
      </Projection>
    ]]>
  </Project>
</DataGroup>
```

## Properties

The properties of an Object are the core concepts associated with an AIM Object as referred to in the EIWM Manual and are exposed via XML elements.

Property	XML
ID	<ID/>
Context	<Context/>
Revision	<Revision/>
Name	<Name/>
ClassID	<ClassID/>
ClassName	<ClassName/>
Alias	<Alias/>
IncidentalClassId	<IncidentalClassId/>
IncidentalClassName	<IncidentalClassName/>
ClassScheme	<ClassScheme/>

Any of these elements can have the following attributes:

Attribute	Description
label	This is an optional attribute that allows the resulting data record to have a label different from the default. This is useful when you want to Name a property differently from its AIM Name in the UI.

Example:

```

<DataGroup>
  <ID>Details</ID>
  <Project>
    <![CDATA[ [<?xml version="1.0" encoding="utf-8"?>
    <Projection xmlns="http://www.aveva.com/NET/EIA/Search/Projection">
      <Object>
        <ID label="My Id" />
        <Context label="My Context" />
        <Revision label="My Revision" />
        <Name label="My Name" />
        <ClassID label="My Class Id" />
        <ClassName label="My Class Name" />
        <Alias label="My Aliases" />
        <IncidentalClassId label="My Incidental Class Id" />
        <Alias label="My Incidental Class Name" />
        <Alias label="My Class Scheme" />
      </Object>
    <Projection>
  ]]>
  </Project>
</DataGroup>

```

## Characteristics (Attributes)

An object has characteristics which can either belong to itself or a dataset associated to the object through the "has dataset" association. This allows us to display the characteristics of an Object. Characteristics of a tag could be displayed in two different ways:

- Individual characteristics
- All characteristics

Display Method	Description	Attributes	Example
Individual Characteristics	A single characteristic (attribute) of a given Object can be displayed by specifying the Name of the Characteristic.	<p>label</p> <p>This is an optional attribute that allows the resulting data record to have a label different from the default. This is useful when you want to Name a property differently from its AIM Name in the UI.</p> <p>datasetclass</p> <p>The datasetclass is being used to get the primary value of the Characteristic. The primary value is the basis for comparisons for clashing values.</p> <p>allvalues</p> <p>Used when we intend to display all the values of the characteristic from all the datasets that it belongs to.</p>	<pre>&lt;Characteristic label="My Installed Power" allvalues="true" datasetclass="E- Power Dataset" &gt; &lt;Name&gt;Installed Power&lt;/Name&gt; &lt;/Characteristic&gt;</pre>
All Characteristics	All characteristics of a given object by using a wildcard setting. This is done by not declaring a Name element for the characteristic element.	<p>excludeattributes (optional)</p> <p>Used to exclude a set of attributes by name. The value can be separated by a pipe symbol to specify more than one.</p> <p>allvalues</p> <p>This is a common attribute for both individual and all</p>	<pre>&lt;Characteristic allvalues="true" excludeattributes="N PSH Available NPSH Required" /&gt;</pre>

Display Method	Description	Attributes	Example
		characteristics.	

## Associations

An Association is a link between two Objects that can be followed from one Object to another and there is no limit to the number of Associations an Object may have.

The mandatory aspect of an association is that we define a type for the association. The "type" of the association element would be used to get the data from the associated object.

This element can have the following attributes:

Attribute	Description
type (required)	Displays associated type of data with the given Object
Filtering Classes: associationclass (Optional)	Filters on the classes of objects that we could have on top of the "type" of associations. The associationclass allows to display data only from the mentioned Class
excludedclasses (Optional)	excludedclasses displays by excluding data from the mentioned classes
countonly	Returns a count of the number of associations instead of returning data for each object

Example:

```
<Association type="is a part of" associationclass="SET" excludedclasses=
"CONSTRUCTION PACK" countonly="true">
  <Object>
    <ID />
  </Object>
</Association>
```

In the above example, it excludes the associations from the Class "CONSTRUCTION PACK" and includes from the Class "SET" and gets the count of the number of associations

## Association as Instance as Group

When selecting an association as part of a data group projection output modifiers can be specified as XML attributes that transform the data selected in the association to a different structure other than flat. One of these modifiers is instance as group. This formats each instance/object found at the other end of an association to be a group in its own right. A good use case for this is when you want to group attributes by their dataset

This element can have the following attributes:

Attribute	Description
Instanceasgroup	When the value of this attribute is set to "true", it allows us to group each instance/object as per the

Attribute	Description
	association type

Example:

```
<Association type="has dataset" instanceasgroup="true">
  <Object>
    <ID />
    <Characteristic />
  </Object>
</Association>
```

## Association as Tabulation

Association as tabulation allows you to structure the retrieved data in a tabular format.

This element can have the following attributes:

Attribute	Description
tabulate	When the value to this attribute is set to "true", the data retrieved is shown in a single table

Example:

```
<Association type="is a part of" tabulate="true">
  <Object>
    <ID/>
    <ClassID/>
  </Object>
</Association>
```

## Associations as Group

Association as group allows you to group a number of objects under a user defined group name. Instead of a flat output for the association the output is a group containing all the objects following the association. With the objects structured in a tabulated format as with the tabulate behaviour described above. This is a useful function when you want to group documents together in a labelled group. For example all 2D documents go under a 2D group.

This element can have the following attributes:

Attribute	Description
groupname	The value given to this attribute is shown as the name of the grouped items

Example:

```
<Association type="is referenced in" associationclass="3D MODEL" groupname="3D Models">
  <Object>
    <ID/>
    <Name/>
  </Object>
</Association>
```

In the above example, we get all the 3D model documents that are associated to the tag. The data displayed is a group containing all the objects at the end of the association with a label set by the value of group name "3D Models" for an association type – "is referenced in".

## Associations – Classes

Associations - Classes allows you to get the objects/instances associated to the Class of the Object or any Class up or down the hierarchy from the objects class. An association tag is used within the class tag to define the data to retrieve. This helps in listing query forms, where query forms are associated with parent classes of the Object. This element can have the following attributes:

Attribute	Description
hierarchy (optional)	When the value given to this attribute is "reverse", then you can retrieve the objects' Class and any classes higher in the Class hierarchy When the value given to this attribute is "forward", then you can retrieve the objects' Class and any classes lower in the Class hierarchy

Example:

```
<Class hierarchy="reverse">
  <Association type="is associated with" tabulate="true" associationclass
  ="QUERY FORM DEFINITION">
    <Object>
      <ID/>
    </Object>
  </Association>
</Class>
```

## Lifecycle State

LifecycleState allows the retrieval of data with respect to Lifecycle states by using below attributes:

Attribute	Description
label	The attribute "label" enables you to provide a custom name that need to be displayed as part of the lifecycle state
lifecyclegroupId	The attribute "lifecyclegroupId" enables you to filter by a life cycle group ID from a group of life cycle groups

Example:

```
<LifeCycleState label="Work Status" lifecyclegroupid="IPE|WORK STATUS">
  <ID />
</LifeCycleState>
```

## Nested Data Groups

As mentioned before, Data groups can either have a projection defined or they can contain other data groups

Example:

```
<DataGroup>
<ID>My Data Group</ID >
<DataGroup >
  <ID>My Nested Data Group 1</ID>
</DataGroup >
<DataGroup>
  <ID>My Nested Data Group 2</ID>
</DataGroup>
</DataGroup>
```

## Assigning Data Groups to Classes

After defining a data group, you must define the classes for which that data group should be available.

Classes inherit all data groups from the closest parent that has data groups defined against it. Data group inheritance is all or nothing. The data groups defined for a child class are not additive to the data groups of their parent. You have to redefine all the groups that are required for the child class.

The ID of a data group is used to link a data group to a given class.

Example:

```
<Class>
  <ClassID>EQUIPMENT</ClassID >
  <DataGroups>
    <DataGroup>
      <ID>Details</ID >
    </DataGroup>
    <DataGroup>
      <ID>Attributes</ID >
    </DataGroup>
  </DataGroups>
</Class>
```

## Overriding Data Groups for a Given Class

A child class can override a data group defined for its parent. This is useful for specializing the data group used for a given class without changing the identifier that is used. This allows the same summaries to be used as the data group identifier for the class is the same but the data is specialized as the data group has been overridden by a new definition.

Example:

```
<Class>
  <ClassID>EQUIPMENT</ClassID >
  <DataGroups>
    <DataGroup >
      <ID >Details</ID >
    </DataGroup >
    <DataGroup >
      <ID >Attributes</ID >
    </DataGroup>
```

```
</DataGroup >  
</DataGroups>  
</Class>
```

In the above example, we can have a specialized Details section for Equipment rather than using the generic Details group.

The benefit of this is that you do not have to define additional views for the Equipment Class and can instead use the Tag views and just redefine the data displayed for objects of the Equipment Class.

## Embed Components

The following sections explain the endpoints and client handlers to get information from the AIM Dashboard.

## Endpoints

The following are the endpoints:

- Accessing the API for FileViewer
- Referencing ItemView API Path and Parameters

### Accessing the API for FileViewer

To access the API for FileViewer:

1. Go to the following relative path:

**viewer?documentId={Document full Id}&>tagId={Tag full Id}**

---

**Note:** The sample application hosting the FileViewer is located in the following location:

**INSTALLDIR\Dashboard\Samples\DashboardViewerSample.zip**

2. Substitute the parameter elements with the required values.

The following table describes the parameters, and provide example values to substituting the parameters:

Parameter	Is Mandatory?	Description	Value (Example)
documentId	Yes	The complete ID of the document to be rendered.	IPE 905675
tagId	No	The complete ID of the Tag to be highlighted in the document.	IPE E-9002

To view an example, go to the following location:

**<http://{HostName:Port Number}/viewer?documentId=IPE|VPD|Area-15A&tagId=IPE|E-9001>**

### Referencing ItemView API Path and Parameters

To reference the ItemView API path and parameters:

1. Using the following path, access the ItemView API:

itemview?itemId={item full Id}&view={relative path of the view HTML}&>tagId={Id of the tag}

- Substitute the parameter elements with the required values.

The following table describes the parameters, and provide example values to substituting the parameters:

Parameter	Description	Value (Example)
itemId	The complete ID of the item, for which you want the details to be displayed.	IPE 905675
view	An HTML page that displays an object's details view in Dashboard.  If a view is mentioned in a path, it is a relative path in the AIM Dashboard's "App/custom" folder. The views in this path will be defined within the AIM Dashboard.	itemviewsamples/ documentView.html
tagId	The ID of tag that can be used to highlight/isolate the tag, when the document is opened with a view using file viewer display.	IPE E-9002

**Note:** For examples, see:

<http://{HostName:Port Number}/ItemView?itemId=IPE%7C905675&view=itemviewsamples/documentView.html>

<http://{HostName:Port Number}/ItemView?itemId=IPE%7CCIVI-15AFW&view=itemviewsamples/tagView.html>

## Event Handling

The following are the event handlers:

- Handling Selection Events in the Viewer
  - Handling Events in Awesomium Web Control
- Handling Selection Events in the Viewer

The WebBrowser control enables you to navigate through the web pages inside your form. While using the System.Windows.Forms.WebBrowser control, you must follow this procedure to handle selection events in the viewer.

To handle selection events in the viewer:

- To enable the Javascript to call the c# application, hosting the WebBrowser:
  - Set ObjectForScripting to a COM visible object, before the URL is set on the control.
  - The following method is called on the viewer selection:  
OnViewerSelection

The resultant syntax appears as follows:

```
[PermissionSet(SecurityAction.Demand, Name = "FullTrust")]
[System.Runtime.InteropServices.ComVisibleAttribute(true)]
public class ScriptInterface
{
    public void OnViewerSelection(String message)
    {

    }
}
```

**Note:** The element highlighted in yellow indicates the argument passed, identifying the tag that is selected.

The Viewer and ItemView component calls the following methods, when the items are selected. These components are integrated using a .NET Web Control or an Awesomium control that handles the methods distinctively, to enable selection of the items.

Method	Called when
onViewerSelection	An item is selected in the viewer.
onSelection	A link to an item is selected.

The following table describes the arguments in the command syntax:

Argument	Provide the selected item's
itemId	Complete ID
classPath	Class hierarchy information

To handle events in .NET Web Control:

1. Define the OnViewerSelection method:

```
OnViewerSelection (string itemId, string classPath)
{
    // Custom Code goes here
}
```

2. Define the OnSelection method:

```
OnSelection (string itemId, string classPath)
{
    // Custom Code goes here
}
```

## Handling Events in Awesomium Web Control

When the Awesomium Web control loads the OnSelection and OnViewerSelection, events can be attached by doing the following:

```
using (JSObject external = this.webControl1.CreateGlobalJavascriptObject("external"))
{
    external.Bind("onSelection", false, this.OnSelection);
```

```
external.Bind("onViewerSelection", false, this.OnViewerSelection);
}
```

To handle events in Awesomium Web control:

1. Define the OnViewerSelection event:

```
OnViewerSelection (object sender, JavascriptMethodEventArgs event)
{
// Access arguments using event.Arguments property
// Custom Code goes here
}
```

2. Define the OnSelection event:

```
OnSelection (object sender, JavascriptMethodEventArgs event)
{
// Access arguments using event.Arguments property
// Custom Code goes here
}
```

The following arguments can be accessed using the event.Arguments property:

Argument	Description	Can be accessed using	Example
ItemFullId	Full ID of the item selected.	event.Arguments[0]	IPE 905675
ClassPath	Full class hierarchy of the item.	event.Arguments[1]	OBJECT LOGICAL (& OTHER PHYSICAL) OBJECT FACILITY FUNCTIONAL ARTIFACT ELECTRICAL ELECTRIC MOTOR

3. Register events:

- a. When the Awesomium Web Control is ready, bind the onSelection and onViewerSelection methods, defined in the viewer and itemView component with the Events written in Awesomium.

```
Awesomium_Windows_Forms_WebControl_DocumentReady (object sender, UrlEventArgs e)
{
using (JSObject external =
this.webControl1.CreateGlobalJavascriptObject("external"))
{
external.Bind("onSelection", false, this.OnSelection);
external.Bind("onViewerSelection", false, this.OnViewerSelection);
}
}
```

## Configure Custom Viewers

---

**Note:** This section assumes that you are familiar with the JavaScript, AngularJS, and HTML programming languages. You must also be familiar with creating the web deployment package using Visual Studio. It is recommended to create a Web deployment package using Visual Studio, to enable smooth deployment to the Web server.

---

AngularJS is a JavaScript framework that is designed for creating a single page application (SPA). The **Directive**, a core component of AngularJS is used to integrate a custom viewer into **Dashboard**. A directive enables you to attach custom HTML, JavaScript in the application, and allow the AngularJS's compiler to assemble everything together.

For information about AngularJS and Web Deploy, refer to:

- <https://docs.angularjs.org/guide>
- [http://msdn.microsoft.com/en-us/library/dd465323\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/dd465323(v=vs.110).aspx)

## Registering a MIME Type

**Important:** While configuring viewers for a file type, you must proceed in the following hierarchy:

1. The basic installation defaults, hard-coded.
2. The configuration provided in the JavaScript for each viewer plug-in, prioritizing the last installed higher than that installed earlier.

**Note:** This overrides the basic installation defaults.

3. Finally, an override file, configured in XML that overrides the previous two.

The Accusoft Viewer is configured to open various file types. This configuration can be altered by modifying the **AccusoftViewer.js** available in the following default location: <C:\inetpub\Dashboard\App\custom\Accusoft>

**Note:** If any MIME type is added to the file for viewing the document in the Accusoft Viewer, then the same MIME type must also be added to the **GlobalConfig.js** file available in the following default location:

[C:\inetpub\Dashboard\App\global\\_resources\GlobalConfig.js](C:\inetpub\Dashboard\App\global_resources\GlobalConfig.js)

For any customized configurations, including that for the viewers or CSS, you must use the "custom" directory, located at the root of the *AIM Dashboard* website. To overwrite the *AIM Dashboard* configuration to use the default viewers, you can use either of the following methods:

- Registering the file mapping in JavaScript.
- Adding the file mapping into an XML file.

## Using an XML File to Configure Custom Viewer

To use an XML file to configure custom viewer:

1. Create an HTML file, and then save this file to the custom folder located here:

**App\custom\myViewer**

**Note:** Make sure that the folder for the viewer has a unique name.

2. Create an XML file, and name it as:

**Viewer.xml**

3. Save the XML file in this directory:

**App\custom**

4. If you want to render multiple files through the same viewer, use ; to separate the MIME types specified.

5. Type the HTML file path in the template located here:

**\App\custom\Viewer**

For example,

```
<viewers>
<viewer>
<mimeType>application/jpeg;text/plain</mimeType>
<template>App/custom/Viewer/myviewer.html</template>
</viewer>
</viewers>
```

6. Reset IIS.

## Using JavaScript to Configure Custom Viewer

The Register MIME Type function conveys to the application at start up, to use a particular MIME type against a viewer. A module in AngularJS is a container that enables you to organize your application into different parts.

The module "aveva.dashboard.custom" in the Dashboard application, manages customized configurations. Hence, during configuration:

1. The HTML for the directive is defined in the first line.
2. The Module is defined in the second line.
3. The configuration input "FileViewerConfigProvider" to the module is defined in the third line.
4. The following should be mapped for a particular MIME type:
  - a. The function of the configuration provider, "register"
  - b. The two parameters:
    - a. mimetype
    - b. directive
5. The following example shows how to register a mimetype, while mapping a PDF to the custom viewer:

```
var myViewerHtml = '<div data-my-custom-viewer=\"\" data-file=\"file\"></div>';
angular.module('aveva.dashboard.custom')
.config([
'FileViewerConfigProvider', function(FileViewerConfigProvider) {
  FileViewerConfigProvider.register('application/pdf', myViewerHtml);
}]);
]);
```

## Creating an AngularJS Directive

To create an AngularJS Directive:

1. In the custom folder, create a new folder with the name of your viewer.

**Note:** For example, myviewer. All the custom viewer files should be placed in this folder.

2. Organize the custom viewer files in the folder, following this structure:

custom\myviewer\img - images used by the viewer

custom\myviewer\css – style sheets

custom\myviewer\src – AngularJS directive, controllers, etc.

custom\myviewer\js - viewer specific code

3. See the following example of a directive for a custom viewer:

```
(function (angular) {
  'use strict';
  angular.module('aveva.dashboard.custom')
```

```
.directive('myCustomViewer', function () {
  return {
    restrict: 'A',
    scope: {
      file: "=file"
    },
    replace: false,
    template: "<div id='customViewer'><div>",
    link: function (scope, element, attr) {
      var viewerElement = element.find('id')[0];
      var url = scope.file;
      viewerElement.loadCustomViewers.height = "100%";
      viewerElement.loadFile(url);
      scope.$watch('file', function (newValue, oldValue) {
        if (newValue !== oldValue) {
          // file has changed - load new file
          viewerElement.loadFile(url);
        }
      });
    }
  }
});
}(angular));
```

4. As in the example above:

- The module name should be defined in the first line.
- The name of the directive "myCustomViewer" should be defined in the second line.

The following table describes the properties of the directive:

Property	Description
Restrict	Indicates that the directive is an element.
Scope	Creates a new isolate scope object.
File	A property of the scope object that represents the InfoLocator attribute.  It also contains watch function on the scope, to monitor and respond to any changes for an object.  It monitors the file property, and whenever the file changes, the viewer will load the new file.
Replace	If the value is false, it indicates that the directive is appended to the current element.
Template	Inline HTML template as a string.  <b>Note:</b> It is recommended to use a separate HTML file, unless it's quite small.
Link	A function that modifies the DOM elements and sets

Property	Description
	up data binding.

**Important:** The Link function must contain all the code, required to initialize the viewer. It is recommended to use a controller, while revealing an API to the other directives.

The following table describes the three arguments of the link function:

Argument	Meaning
Scope	A scope that is passed into the directive.  <b>Note:</b> By default this is the parent scope, unless a scope object is specified as a property of the directive, to create an isolate scope. In the code example above, an isolate scope is created, to enable the directive to have control over its properties.
Element	JqLite, a subset of jQuery applied to the directive, and used for DOM manipulation.
Attr	An object that represents normalized attributes, attached to the element of the directive.

### Modifying AVEVA Asset Information Management Dashboard web.config for Smooth Upgrade

Changes to how AIM 5.0.2 or later handles MIME type mappings can cause problems when upgrading the application if the implementation uses Virtual Directories or hosts ASP.NET Webforms in the *AIM Dashboard*.

To enable the use of a Virtual Directory that resides below the *AIM Dashboard* in IIS:

1. Remove the following sections from the *AIM Dashboard* **web.config** file (by default located at <C:\inetpub\Dashboard>):

```
* <system.webserver> -> <staticContent>
* <system.webserver> -> <handlers> -> <clear>
* <system.webserver> -> <httpProtocol> -> <customHeaders> -> <add name="X-FRAME-OPTIONS" value="SAMEORIGIN" />
```

**Note:** Removing this entry creates a security vulnerability. It means content from AIM can be hosted in an IFRAME on any website from any domain.

To enable the hosting of ASP.NET Webforms in the *AIM Dashboard*:

1. Remove the following sections from the *AIM Dashboard* **web.config** file (by default located at <C:\inetpub\Dashboard>):
- ```
* <system.webserver> -> <staticContent>
* <system.webserver> -> <handlers> -> <clear>
```

### Refining the File Received from CMIS Based on Its Kind

A rendition from a CMIS system may be categorized by its kind. The CMIS repository assigns kinds to renditions,

including custom kinds.

A single file object of in a CMIS system can be associated with multiple kinds or custom kinds, so the [ObjectID](#) remains the same but its types may be different.

If a file object has a kind associated with it in CMIS, then it can be refined in AIM based on its [InfoType](#) that is specified in the file configuration as shown in the following example:

```
<v1:VNETList xmlns="http://www.aveva.com/VNET/eiwm" xmlns:v1="http://www.aveva.com/VNET>List">
<Template>
<ID>Template_C-9001.pdf</ID>
<Object>
<ID>C-9001_pdf.pdf</ID>
<Context>
<ID>IPE</ID>
</Context>
<ClassID>OTHER DOCUMENT</ClassID>
<Association type="is fulfilled by">
<Object>
<ID>090000658002690e</ID>
<ClassID>FILE</ClassID>
<Characteristic>
<Name>InfoType</Name>
<Value>d4pdf</Value>
</Characteristic>
<Characteristic>
<Name>InfoDMSType</Name>
<Value>DOCUMENTUM</Value>
</Characteristic>
<Characteristic>
<Name>InfoDMSLocator</Name>
<Value>AvevaTest1:090000658002690e</Value>
</Characteristic>
</Object>
</Association>
</Object>
</Template>
</v1:VNETList>
```

In the above example, the custom [InfoType](#) provided is [d4pdf](#), which is specified as a rendition of the file object [090000658002690e](#).

A rendition of a custom kind from a CMIS system can only be viewed in the Accusoft Viewer and the MIME Type must be registered for the Accusoft Viewer..

## Configure the Viewer Interaction Behaviour

You can configure Dashboard to not only highlight/isolate the aliases for the object selected, but also to follow an association and highlight/isolate.

For example, You can isolate all objects of a 2D document within a 3D model, with each of its parts or tags highlighted.

You must configure the SiteSettings element in the DashboardProfile to set the objects' class and the association for isolating/highlighting. For each object of a class highlighted in the configuration, the objects' aliases fulfilling the association is highlighted instead. This configuration applies to all the viewer actions.

## Configuring SiteSettings Element in DashboardProfile

You can configure the viewer interaction behaviour by adding the ViewerActionsAssociations configuration to your DashboardProfile XML. If you are in an active system, you can export the profile update with ViewerActionsAssociations, and then reimport it into the system.

To configure SiteSettings Element in DashboardProfile:

1. Update the DashboardProfile in the XML file:

- a. Go to the SiteSettings Element.
- b. Modify the following XML:

```
<ViewerActionAssociations>
  <ViewerActionAssociation>
    <ClassId>DOCUMENT CONTENT</ClassId>
    <Association>refers to</Association>
  </ViewerActionAssociation>
  <ViewerActionAssociation>
    <ClassId>SET</ClassId>
    <Association>is an assembly including</Association>
  </ViewerActionAssociation>
  <ViewerActionAssociation>
    <ClassId>AREA</ClassId>
    <Association>is an assembly including</Association>
    <IncludeSelf>true</IncludeSelf>
  </ViewerActionAssociation>
  <ViewerActionAssociation>
    <ClassId>SYSTEM</ClassId>
    <Association>is an assembly including</Association>
    <IncludeSelf>true</IncludeSelf>
  </ViewerActionAssociation>
</ViewerActionAssociations>
</SiteSettings>
```

The following table describes the elements in the XML, what they indicate, and whether they are required or optional:

This Element	Indicates	Required/Optional
ViewerActionAssociations	A grouping of Viewer Action Associations	Required
ClassId	A unique identifier for the objects' class:  All associations are inherited to the child classes	Required
Association	A relationship established to fetch all the parts or tags of an object.  For example, a container and its parts.	Required
IncludeSelf	Determines if a particular object itself should be included in the	Optional

This Element	Indicates	Required/Optional
	objects send to the viewer	

The following table describes the default configuration:

Class	Association	IncludeSelf
DOCUMENT CONTENT	refers to	false
SET	is an assembly including	false
AREA	is an assembly including	true
SYSTEM	is an assembly including	true

## Export

If a MIME type is added to the [AccusoftViwer.js](#) file, to see the document in the *PrizmDoc Viewer*, you must add the same MIME type to the [GlobalConfig.js](#) file.

Also, if a file object ID does not have an extension and you want to see its file type in the Export dialog, then you must configure it through the [GlobalConfig.js](#) file, which is found in the following default location:

[C:\inetpub\Dashboard\App\global\\_resources\GlobalConfig.js](C:\inetpub\Dashboard\App\global_resources\GlobalConfig.js)

An example [GlobalConfig.js](#):

```
/*
Copyright 2003 to current year.
AVEVA Solutions Limited and its subsidiaries. All rights reserved.*/
/*-----*/
(function (angular) {
    'use strict';

    angular.module('aveva.dashboard.custom')
        .provider('GlobalConfig',
            function () {
                var config = {
                    mimeTypes: [
                        { mimeType: "text/enriched", extension: "etf" },
                        { mimeType: "application/acad", extension: "dwg" },
                        { mimeType: "application/dgn", extension: "dgn" },
                        { mimeType: "image/vnd.dgn", extension: "dgn" },
                        { mimeType: "image/dgn", extension: "dgn" },
                        { mimeType: "image/jpeg", extension: "jpeg" },
                        { mimeType: "application/pdf", extension: "pdf" },
                        { mimeType: "application/vnd.ms-excel", extension: "xls" },
                        { mimeType: "application/vnd.ms-powerpoint", extension: "ppt" },
                        { mimeType: "application/msword", extension: "doc" },
                        { mimeType: "application/vnd.openxmlformats-officedocument.spreadsheetml.sheet", extension: "xlsx" },
                        { mimeType: "application/vnd.openxmlformats-officedocument.wordprocessingml.document", extension: "docx" },
                        { mimeType: "image/svg+xml", extension: "svg" }
                    ]
                };
                this.$get = function () {
                    return config;
                };
            });
})(angular);
```

The same configuration is used for *Accusoft Rasterization*. (For details, see [Configure Accusoft Rasterization](#).) Files added to [pcc.config](#) for rasterization should also be added to [GlobalConfig.js](#).

## Define Icon States

In the AIM Dashboard, the icon for an object is based on its type and, optionally, its status.

For example, an object could be in any of the following states: Approved, Unapproved, Deleted or Changing. In this case, there could be four variations of the icon for the object type, one for each status.

You can define the **Icon States** in the settings dialog, under **Settings > Site > General > Icon States**.

You can add, delete and modify the icon states. Each icon state specifies an icon and a tooltip.

For details on how to edit icon states, see [Dashboard Settings](#).

## Add SSRS Reports

This section provides you with information and procedures on how to display SSRS Reports using AIM. It includes an overview of SSRS Reports with details about how to interact with sample reports in *the AIM Dashboard*, as well as help on how to troubleshoot identified configuration problems. Using this section you can perform a full stand-alone configuration and deployment of SSRS reports.

### About SSRS Reports

*SQL Server Reporting Services (SSRS)* is a server-based report generation platform that helps to create, deploy and manage reports for AIM. You can configure and deploy a set of sample SSRS Reports using the *Deployment Manager* tool. These reports add valuable analysis to the data in *the AIM Dashboard*. SSRS Reports are designed using the *SQL Server Report Builder* and can be accessed from the *Reporting Service Configuration Manager*.

### Prerequisites for SSRS/SSIS Reporting

You must have access to a pre-configured SQL DB user registered to the Windows domain.

---

**Note:** The versions of the Workhub SQL database and the Reporting SQL database must be the same.

For example, a user with the domain account as follows:

**<Domain>/<SQLServer Machine Name>\$**

---

**Note:** For more information about SQL Server Reporting Services, refer to <http://msdn.microsoft.com/en-us/library/ms159106.aspx>.

If you are using Deployment Manager to install the Reporting Sample feature, Data Transformation Services (DTS) must be installed on the machine on which the Deployment Manager is running. Installing the Integration Services feature of SQL Server provides the required files (see the installation documentation for the relevant version of SQL Server). For more details, see the MSDN documentation for the **dtutil** (<https://msdn.microsoft.com/en-us/library/ms162820%28v=sql.105%29.aspx>) and **dtexec** (<https://msdn.microsoft.com/en-us/library/ms162810%28v=sql.105%29.aspx>) utilities for the version of SQL Server you are using.

If you want to use Deployment Manager to configure SSRS reports on a machine without SQL Server installed, then Microsoft® Windows PowerShell Extensions for Microsoft® must be installed.

For information relating to SQL Server, refer to <https://www.microsoft.com/en-gb/download/details.aspx?id=104781>.

## Install SSRS

You can install all the SSRS components on a single computer, or distribute the components on multiple computers.

**Note:** It is assumed that a supported version of SQL Server and AIM are already installed on your machine.

To install SSRS:

1. On the **Start** menu, select **All Programs**, and then select **Microsoft SQL Server Installation Center**.  
The **SQL Server Installation Center** window opens.
2. From the left pane, select **Installation**.
3. In the right pane, select **New SQL Server stand-alone installation or add features to an existing installation**.
4. In the **Setup Support Rules** window, after the processing completes, select **OK**.
5. In the **Setup Support Files** window, select **Install**.
6. In the **Setup Support Rules** window, select **Next**.
7. In the following **SQL Server Setup** windows that open, select **Next**:
  - a. Installation Type
  - b. Product Key
  - c. License Terms
  - d. Setup Role
8. In the **SQL Server Setup Feature Selection** window, select the following check boxes, and then select **Next**:
  - a. Under **Instance Features**, select the **Reporting Services** check box.
  - b. Under **Shared Features**, select all the check boxes.
9. In the following **SQL Server Setup** windows that open, select **Next**:
  - a. Installation Rules
  - b. Instance Configuration
  - c. Disk Space Requirements
  - d. Server Configuration
  - e. Reporting Services Configuration
  - f. Error Reporting
  - g. Installation Configuration Rules
  - h. Ready to Install
  - i. Installation Progress
10. When the set up is complete, select **OK**.

**Note:** To install Reporting Services for SQL Server, see <https://msdn.microsoft.com/en-us/library/mt592625.aspx>.

## Configuration Overview

SSRS Reports require server-sided configuration. You can configure the *AIM Dashboard* to view SSRS Reports in the **Report** functionality tab, as long as you are a member of the Administrator group on the Report Server.

computer. Before you begin configuring SSRS Reports, review your user rights and server requirements. For additional information, see [System Requirements](#).

## Report Services Report Server

The *SQL Server Reporting Services* and the *AIM Workhub* server are the central components of reporting configuration. The two central components might be installed on a single domain or on multiple domains. If the *AIM Workhub* and SSRS are on a single web domain/server, then an SSRS Report web page in the **Document View/Summary View of the Report** functionality can correctly raise events via JavaScript.

In a different server instance, an SSRS Report web page will face problems communicating with the *AIM Dashboard* event object. If they are on different web domains, the SSRS Report web page will also fail to communicate with the event object. This is caused by the web browsers, for security and privacy reasons, preventing pages in different web domains from affecting each other; that is, **cross-site scripting (XSS)** is disallowed. For more information to resolve this problem, see [Cross-Site Communication Solutions](#).

### Configuring Reporting Service in SQL Server

You must have administrator privileges to configure the Reporting Service.

To configure the Reporting Service in SQL Server:

1. On the **Start** menu, select **All Programs**, and then select **Microsoft SQL Server**.
2. Under the **Configuration Tools**, select **Reporting Services Configuration Manager**.

The Reporting Services Configuration Connection window opens. By default, the local computer host name is populated into the **Server Name** box.

3. If the **Report Server** is installed on another computer, enter that computer's host name in the **Server Name** box, and then select **Find**.

The server name appears in the **Report Server Instance** drop-down box.

4. Select **CONNECT**.

The **Report Server Status** is displayed.

5. If the **Report Service Status** is showing as **Stopped**, select the **Start** button.
6. In the left navigation pane, select **Service Account**.

7. If you select **Use built-in account**, select the drop-down arrow, and then select any of the following:

- Local System
- Network Service
- Local Service

8. If you select **Use another account**, enter the user name and password of any of the following accounts:

- Domain user account
- Local user account

---

**Note:** The Report Server Windows Service will be fully functional, irrespective of the account you select. However, it is recommended that you select the Domain user account or Network Service. This will enable the Report Server Windows Service with network log-on permissions. Hence, you can easily access the network domain controllers, public file shares, and corporate email servers.

---

9. In the left navigation pane, select **Database**.

The default Current Report Server Database details are displayed.

---

**Note:** If you want to change the default report server database, see the following section.

## Changing the Default Report Server Database

To change the default report server database:

1. If you are using an SQL server on another machine, and want to change the default report server database, select **Change Database**.  
The Report Server Database Configuration Wizard window opens.
2. If you select Create a new report server database, select **Next**.
3. In the **Server Name** box, enter the hostname of the computer running SQL server.
4. To select the **Authentication Type**, select the drop-down arrow in the box.  
If you select **Current User - Integrated Security** in the **Authentication Type** box, your Windows domain credentials will be automatically populated.
5. Select **Next**, enter the **Database Name**, select the **Language**, select the **Report Server Mode**, and then select **Next**.  
A Summary view appears displaying the values you entered. If you want to edit the values, select **Previous**.
6. Select the drop-down arrow to select the **Authentication Type**, and then select **Next**.  
A progress status page appears displaying the status of each configuration stage.
8. If the status shows **Success**, select **Finish**.

---

**Note:** If want to change the report server database credentials, see the following section.

## Changing the Report Server Database Credentials

To change the report server database credentials:

1. In the **Authentication Type** box, select the drop-down arrow, and select **Current User - Integrated Security**.
2. Select **Next**.
3. In the **Authentication Type** box, select the drop-down arrow, and select **SQL Server Credentials**.
4. In the **User name** and **Password** boxes, type the new credentials, and then select **Next**.  
The Summary pane displays the new credentials.
5. Verify if the credentials are correct. If not, select **Previous**, and go back to correct it.
6. To apply the changes, select **Next**.  
The **Progress** and status are displayed.
7. If the status shows **Success**, select **Finish**.

## Configuring Web Service URL

To access the reports in Dashboard, you must configure the URL to be entered into your Web browser.

To configure the web service URL:

1. In the left navigation pane of the Report Services Configuration Manager window, select **Web Service URL**.  
The Web Service URL page appears in the right navigation pane.
2. In the **Virtual Directory** box, enter a name.

---

**Note:** By default, the name **ReportServerVirDirectory** is populated in the Virtual Directory box.

3. In the **IP Address** box, select the drop-down arrow, and then select **All Assigned**.

---

**Note:** By default, all IP addresses are bound to the reporting service. If the computer has multiple IP addresses, then reporting can be bound to a single IP address.

4. In the **TCP Port** box, enter a **Port**.

---

**Important:** Ensure that the port is free for use, open to network traffic, and not blocked by a firewall.

5. Configure an SSL Certificate for security reasons:

- a. Select the drop-down arrow in the **SSL Certificate** box, and then select an **SSL Certificate**.

- b. In the **SSL Port** box, enter a **Port**.

---

**Note:** Selecting an SSL Certificate is mandatory. You must purchase a valid SSL Certificate.

6. Select **Apply**.

The URL appears in the **Report Server Web Service URLs** section of the right pane.

7. To verify if the URL is working, select the **URL**.

The URL opens in a browser window.

## Configuring Report Manager URL

To configure the Report Manager URL:

1. In the left navigation pane of the Report Services Configuration Manager window, select **Report Manager URL**.

The Web Service URL page appears in the right navigation pane.

2. In the **Virtual Directory** box, type a name, and then select **Apply**.

The new directory is created, and the URL is activated.

3. Select the URL.

The **Report Manager** home page opens in your web browser.

4. Close the web browser.

You are returned to the **Reporting Services Configuration Manager**.

5. To close the Reporting Services Configuration Manager, select **Exit**.

## Cross-Site Communication Solutions

While prevention of cross-site scripting (XSS) is an important security feature of web browsers, it prevents pages from different domains from communicating - even when those pages are not hostile. The `window.postMessage` method provides a controlled mechanism to safely enable cross-site communication, regardless of the source domain, in a way it is designed to not enable cross-site scripting attacks. For **HTML5** Web Messaging, you can use this API to enable communication between remotely hosted SSRS Report web pages and event objects in the **AIM Dashboard** page.

Syntax: `otherWindow.postMessage(message, targetOrigin, [transfer]);`

Parameter	Description
otherWindow	A reference to another window.
message	Data to be sent to the window.
targetOrigin	Specifies what the origin (URI) of the other window where the message will be sent, enter either as a string '*' (indicates no preference) or as a URL.
transfer	Sequence of optional values that are transferred with the message.

This method must be used on the window where the message is being sent. It restricts the source which called the **windows.postMessage** method and the target to send the message. The **windows.postMessage** API is supported by all modern browsers.

## Browser Configuration for Cross-Site Communication

You should configure the web browser on the client's machine to enable cross-site communication by using the **window.postMessage** method. The type of browser used determines how you view the **Reports** in the AIM Dashboard. To configure the web browser, you may also require permission from the client IT Infrastructure Administration group, based on their IT security policy.

---

**Note:** For more information, see Browser Support for Report Viewer Web Server Controls at <http://msdn.microsoft.com/en-us/library/ms251673.aspx>.

---

## Deploy SSIS

The SQL Server Integration Services (SSIS) enables you to populate the AIM reporting tables. SSIS provides an environment for updating and managing the tables with minimal impact on the database.

### Creating De-Normalized Tables

You must create de-normalized reporting tables before running the SSIS package.

To create de-normalized tables:

1. Go to the following folder:  
**{install path}\Report\SSIS Reporting Example**
2. Open the **DNOMScript.sql** file.

---

**Note:** Creating the tables in a database in a separate instance of the SQL server enhances the SSIS performance.

---

3. Create a new database using the SQL Server Management Studio.
4. Run the **DNOMScript.sql** script.

### Installing and Deploying SSIS Packages

To install and deploy SSIS packages:

1. Go to the following folder:

## {install path}\Report\SSIS Reporting Example

2. Double-click the **AVEVA.Reporting.SSIS.Dataload.SSISDeploymentManifest** file.

The package Installation Wizard opens.

3. Select **Next**.
4. Execute the following based on your infrastructure:

If you want to	Select	And Then
Deploy packages and dependencies in a specified folder in the file system	<b>File system deployment</b>	<ol style="list-style-type: none"> <li>1. Select <b>Next</b>.</li> <li>2. In the Select Installation Folder window, select <b>Browse</b>, and select a <b>Folder</b>.</li> <li>3. In all the succeeding windows populated with the default values or options, select <b>Next</b>.</li> </ol>
Deploy packages and dependencies in an SQL Server instance	<b>SQL Server deployment</b> <p><b>Note:</b> If SQL Server shares packages between servers, use this option. Any package dependencies are installed in the specified folder in the file system.</p>	<ol style="list-style-type: none"> <li>1. Select <b>Next</b>.</li> <li>2. In the <b>Server name</b> drop-down box, select the arrow, and then select the computer hosting the SQL Server database.</li> <li>3. If you want to use your domain credentials, select <b>Use Windows Authentication</b>.</li> <li>4. If you select <b>SQL Server Authentication</b>, you must enter the <b>User name</b> and <b>Password</b> of the <b>SQL Server Database</b>.</li> <li>5. In all the succeeding windows populated with the default values or options, select <b>Next</b>.</li> </ol>
Verify the packages after installation	<b>Validate packages after installation</b>	NA

If you want to skip to the Finish the Package Installation Wizard page, select the **Finish** button.

---

**Note:** Use this option if you have backtracked through the wizard pages to revise your choices and have specified all of the required options.

The Finish the Package Installation Wizard page shows the package installation results summary such as:

- Deployed Integration Services project name
- Installed packages
- Configuration files

- Installation location

---

**Important:** If you encounter any issues while deploying the package, you can import the package from the Microsoft SQL Server Management Studio.

---

**Note:** The package should be imported into SQL Server using the command from the command prompt:

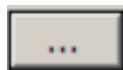
**DTUTIL /FILE C:\Program Files\AVEVA\AVEVA NET\Report\SSIS Reporting Example\Default\REP\_SSRS.dtsx /COPY SQL;REP\_SSRS.**

---

## Importing SSIS Packages

To import SSIS Packages:

1. On the **Start** menu, select **All Programs**.
2. Under the appropriate version of **Microsoft SQL Server**, select **SQL Server Management Studio**.  
The Connect to Server window opens.
3. In the **Server type** drop-down box, select the arrow, and then select **Integration Services**.  
The **Server name** and credentials will be auto-populated.
4. Select **Connect**.  
Microsoft SQL Server Management Studio opens.
5. In the left pane, expand the **Stored Packages** node.
6. Right-click **File System**, and then select **Import Package**.  
The Import Package windows opens.
7. In the Package location drop-down box, select the arrow, and then select **Files System**.



8. In the Package path box, select the button, and browse to the package location.
9. Select OK.

The imported package appears under the File System node in the left pane.

---

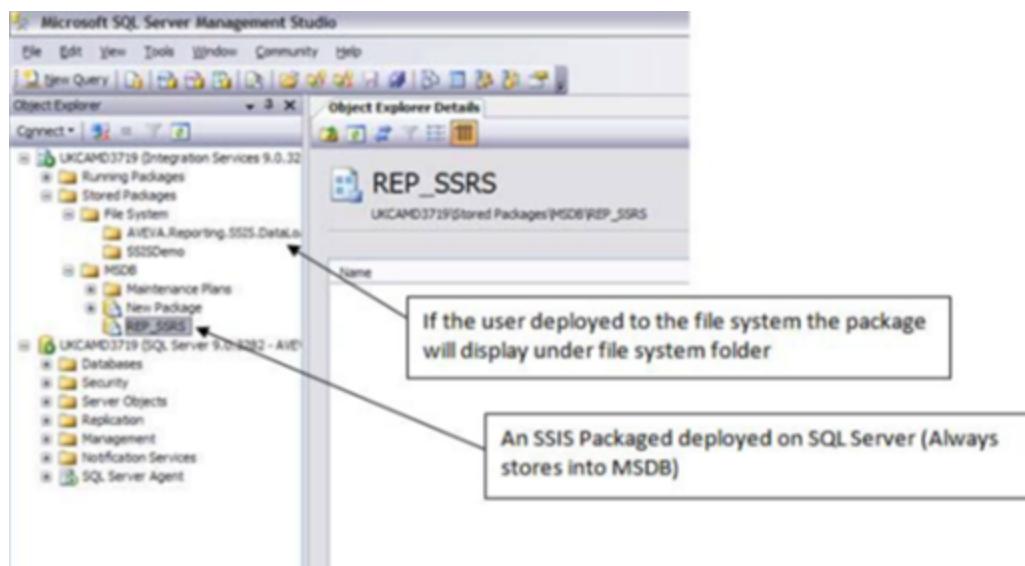
**Note:** The package should be imported into SQL Server using the command from the command prompt:**DTUTIL /FILE C:\Program Files\AVEVA\AVEVA NET\Report\SSIS Reporting Example\Default\REP\_SSRS.dtsx /COPY SQL;REP\_SSRS** - Where C:\Program Files\AVEVA\AVEVA NET\Report\SSIS Reporting Example\Default\REP\_SSRS.dtsx is the path of the package in the installed directory.

---

## Validating SSIS Packages

To validate SSIS packages:

1. On the **Start** menu, select **All Programs**.
2. Under **Microsoft SQL Server**, select **SQL Server Management Studio**.  
The **Connect to Server** window opens.
3. In the **Server type** drop-down box, select the arrow, and then select **Integration Services**.  
The Server name and credentials will be auto-populated.
4. Select **Connect**.
5. In the left pane, expand the **Stored Packages** node.

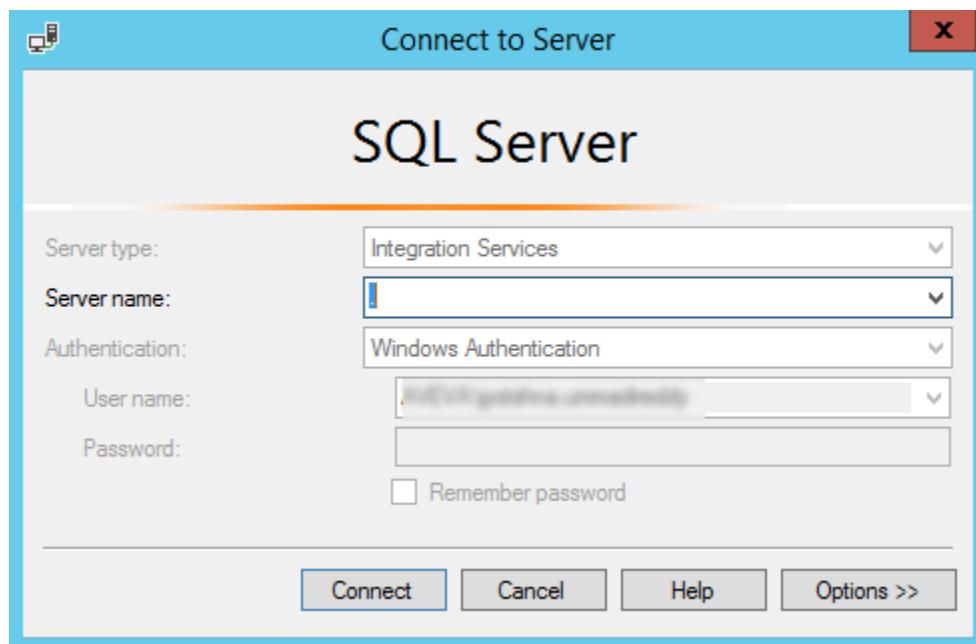


## Executing SSIS Packages

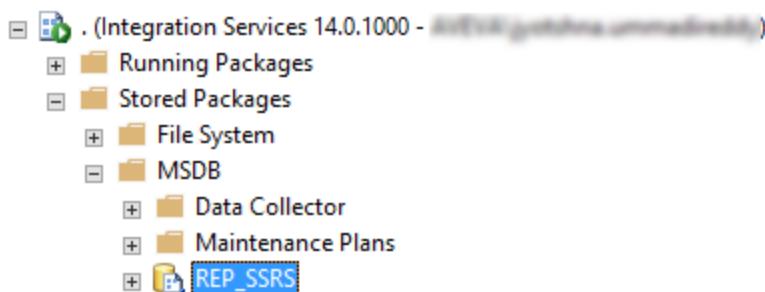
This section explains how to connect to the Workhub database through Windows authentication on a specific database schema, while executing the SSIS package to populate the reporting tables.

To configure and execute the package:

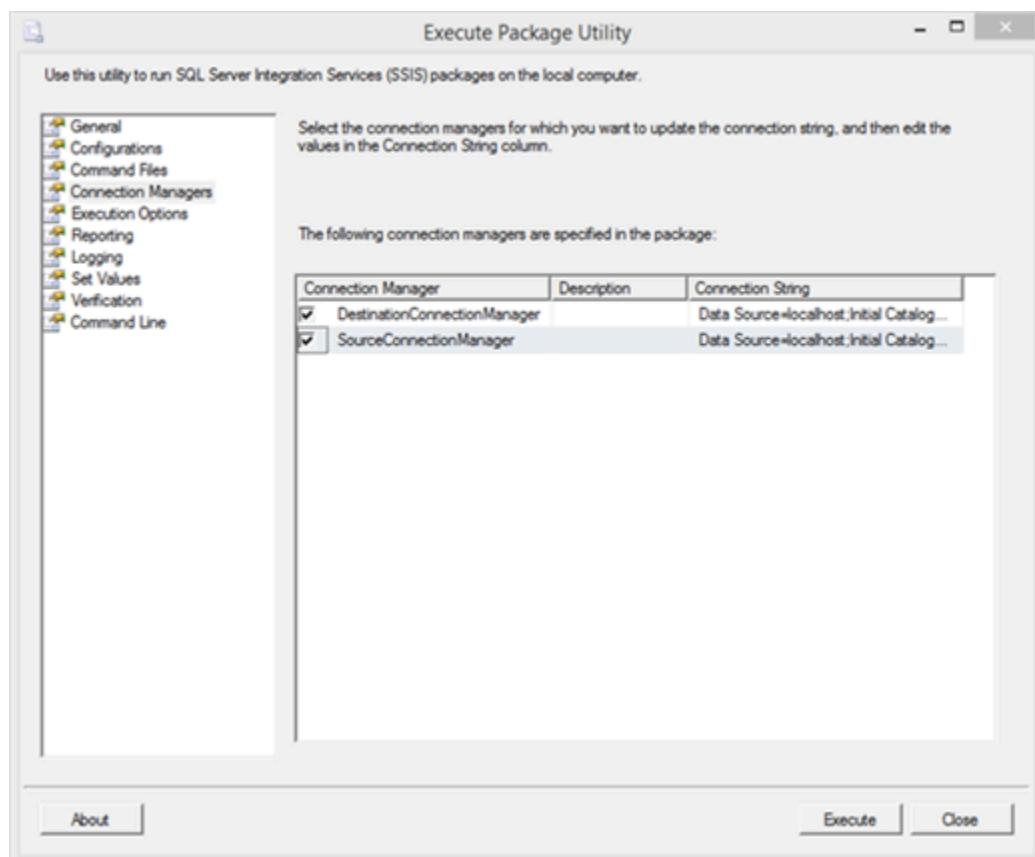
1. Open **SQL Server Management Studio**.



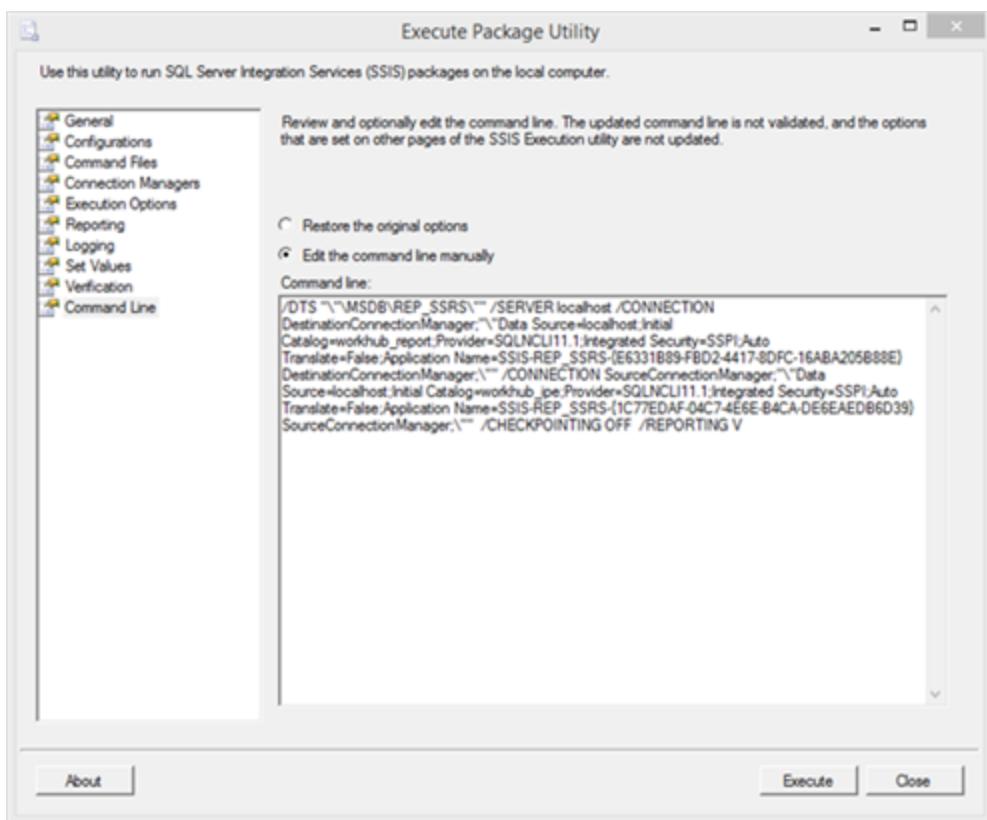
2. In the **Server type** drop-down box, select the arrow, and then select **Integration Services**.  
The server name and credentials will be auto-populated.
3. Select **Connect**.  
Microsoft SQL Server Management Studio opens.
4. In the left pane, expand the **Stored Package** node.
5. Under the **MSDB** node, right-click **REP\_SSRS**, and then select **Run Package**.



6. In the Execute Package Utility window, select the arrow in the **Package Source** box to select the location.
7. In the **Server** drop-down box, click the arrow to select the **Server**.
8. Select the authentication mode to log on to the Server.
9. In the left pane, select **Connection Managers**.



10. In the right pane, select the **DestinationConnection** and **SourceConnectionManager** check boxes.
11. Edit the **DestinationConnectionManager** Connection String, so that it references the SQL server instance that contains the de-normalized reporting tables.
12. Edit the **SourceConnectionManager** Connection String, so that it references the SQL server instance with the AIM Workhub database.
13. If you are connecting to the **Workhub** database, using **Windows** authentication and on a schema other than '**dbo**', execute the following steps:
  - a. In the left pane, select **Command Line**.



- In the right pane, select **Edit the command line manually**.
- In the command line, enter the value for **SchemaName**:

```
/DTS "\MSDB\REP_SSRS\" /SERVER localhost /CONNECTION
DestinationConnectionManager;"\\Data Source=localhost;Initial
Catalog=Workhub_report;Provider=SQLNCLI11.1;Integrated Security=SSPI;Auto
Translate=False;Application Name=SSIS-REP_SSRS-
{E6331B89-FBD2-4417-8DFC-16ABA205B88E}DestinationConnectionManager;\" /CONNECTION
SourceConnectionManager;"\\Data Source=localhost;Initial
Catalog=workhub_ip;Provider=SQLNCLI11.1;Integrated Security=SSPI;Auto
Translate=False;Application Name=SSIS-REP_SSRS-{1C77EDAF-04C7-4E6E-B4CA-
DE6EAEDB6D39}SourceConnectionManager;\\" /SET
"\Package.Variables[User::SchemaName].Properties[Value]";"Test" /CHECKPOINTING OFF
/REPORTING V
```

**Note:** In this example, 'Test' is the non-default schema on the Workhub database. If the user variable 'SchemaName' is not defined in the command line, the package assumes 'dbo' as the schema, to connect to the Workhub database.

- Select **Execute**.

The Package Execution Progress window opens, displaying the progress status and errors, if any.

**Note:** The package can also be executed without importing into SQL Server by using the following command: **dtexec /File "C:\Program Files\AVEVA\AVEVA NET\Report\SSIS Reporting Example\Default\REP\_SSRS.dtsx"**

For this execution, add/change the Destination and source database details by manually opening the package in notepad.

## Updating the De-Normalized Tables

To update the De-Normalized tables:

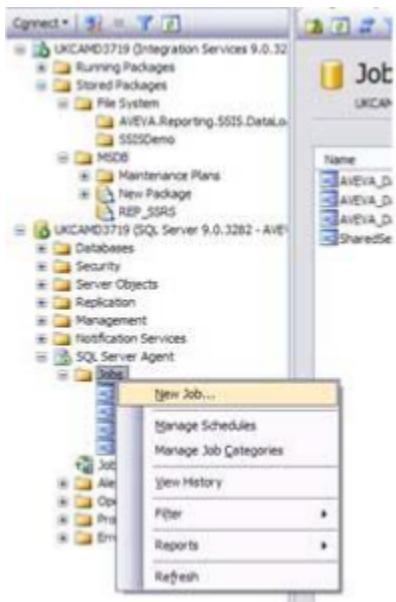
1. Go to the following folder: {install path} \Report\SSIS Reporting Example
2. Open the **ViewsScript.sql** file.
3. Run the **ViewsScript.sql** script under the same database that was created while creating de-normalized tables.

## Scheduling SSIS Deployment

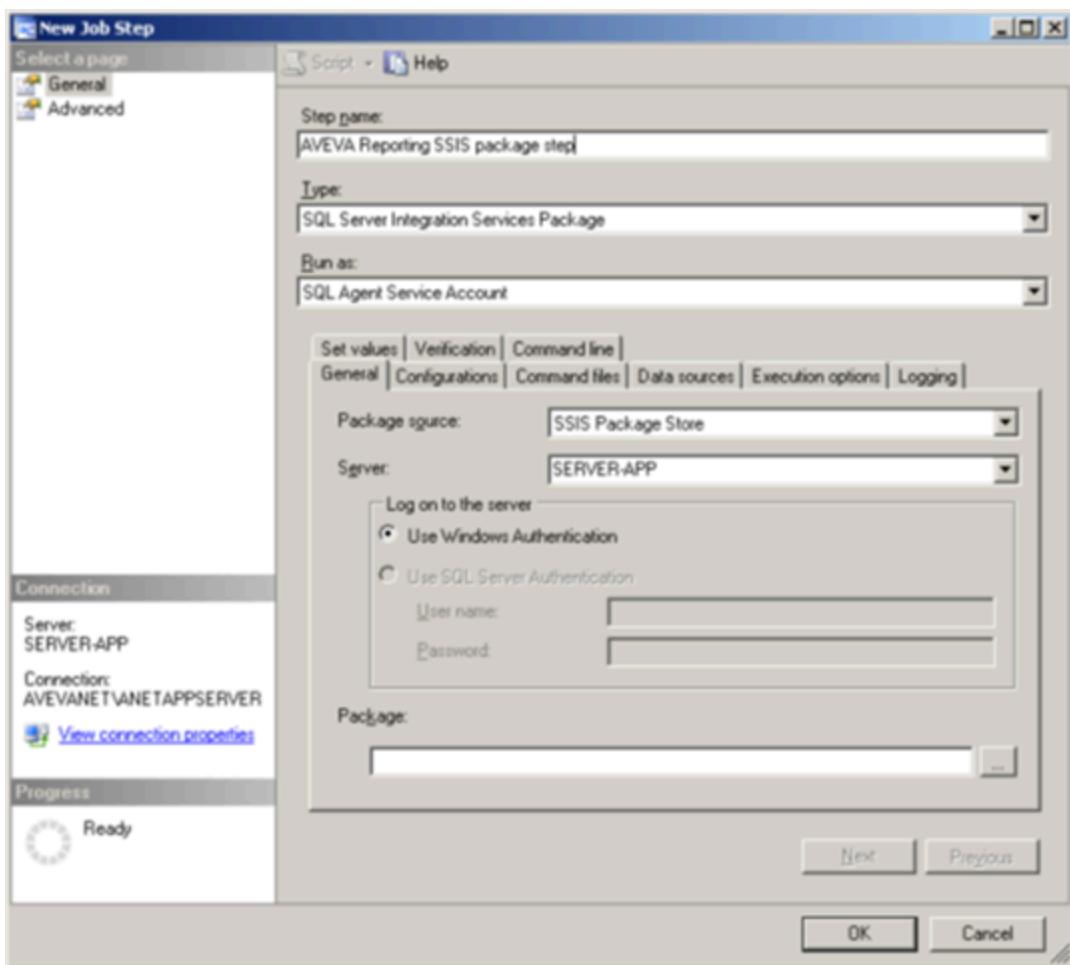
You must schedule jobs using the SQL Server agent, so that the reporting tables are up-to-date.

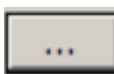
To schedule SSIS deployment:

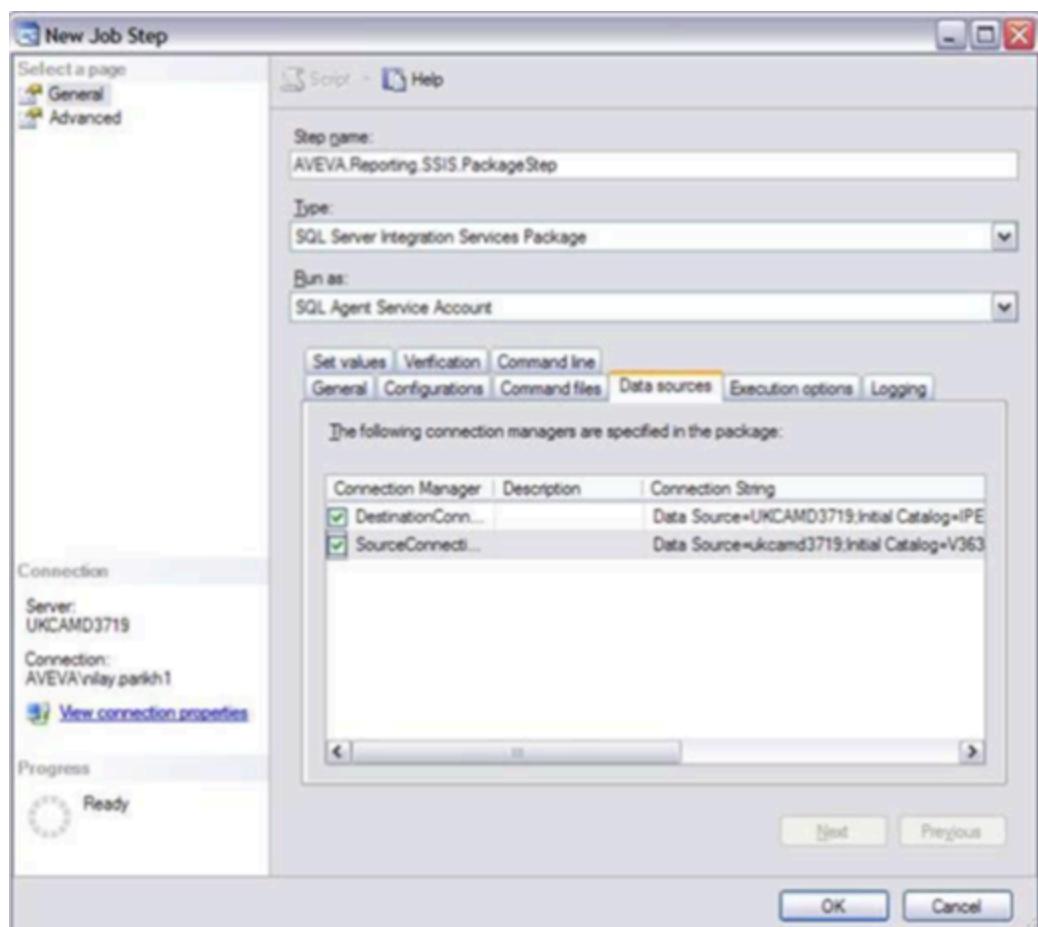
1. On the **Start** menu, select **All Programs**.
2. Under the **Microsoft SQL Server**, select **SQL Server Management Studio**.  
The **Connect to Server** window opens.
3. In the **Server type** drop-down box, select the arrow, and then select **Integration Services**.  
The server name and credentials will be auto-populated.
4. Select **Connect**.  
Microsoft SQL Server Management Studio opens.
5. In the left pane, expand the **SQL Server Agent** node.



6. Right-click **Jobs**, and then select **New Jobs**.  
The New Job window opens.
7. In the right-pane, type a job name in the **Name** box (for example, AVEVA Reporting SSIS Job).
8. Go to the right pane, select **Steps**, and then select **New**.  
The New Job Step window opens.
9. In the **Step Name** box, enter a name (for example, AVEVA Reporting SSIS Package Step).



10. In the **Type** drop-down box, select the arrow, and then select **SQL Server Integration Services Package**.
11. In the **Run as** box, retain the default **SQL Agent Services Account**.
12. In the **Package Source** drop-down box, select the arrow, and then select the same option as selected during the package deployment (**SSIS Package Store** or **File system**).
13. If you are not using the **File System**, select the arrow in the **Server** drop-down box, and select the server.
14. In the **Package** box, do any of the following:
  - Enter the Package name.
  - Select the  button, and browse to the package location.The Select an SSIS Package window opens.
15. Select the **SSIS package** you have deployed.
16. To close the Select an SSIS Package window and return to the **New Job Step** window, select **OK**.
17. In the right-pane, select the **Data Sources** tab.
18. In the **Connection Manager** column, select the **DestinationConnection** and **SourceConnectionManager** check boxes.



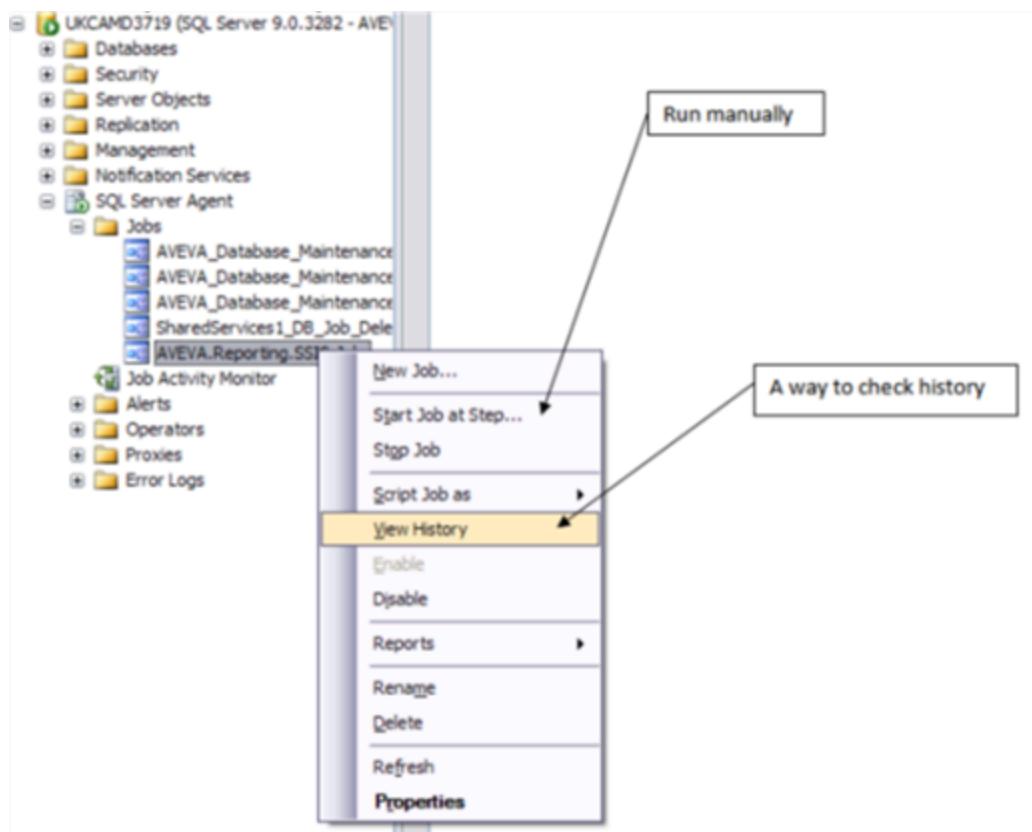
19. Go to the **Connection String** column, and edit both the **Connection Strings** so that it references the correct machine name.

**Note:** The source and destination strings are standard OLEDB connection strings.

20. To close the **New Job Step** window and return to the New Job window, select **OK**.
21. In the left pane, select **Schedule**.
22. To open the New Job Schedule window, select **New**.

**Note:** You can create multiple schedules as required, with setting Alerts, Notifications, or Targets.

23. To test the schedule, right-click the package, and then select **Start Job at Step**.



The schedule status is displayed.

24. To check the history, right-click the package, and then select **View History**.

## Configure Default Report on IPE

This section describes the procedure to configure default reports.

**Note:** You must follow this procedure to configure any other reports for AIM.

### Defining a View for Reports in the Viewsscript.sql File

To define a view for reports, you must run the **Viewsscript.sql** file in the reporting database, after running the SSIS package for the first time.

### Uploading the Default Reports

To make the default reports (rdl files) available in AIM, you must connect to a data source and upload these files into the SSRS directory.

To upload the default reports:

1. Browse to the following path:

**<http://{myserver}:portno/reports>**

**Note:** Replace {myserver} with your computer name.

2. Select **New Data Source**.

The New Data Source window opens.

 SQL Server Reporting Services  
**New Data Source**

Name:

Description:

Hide in tile view  
 Enable this data source

Data source type:

Connection string:

Connect using:

Credentials supplied by the user running the report  
Display the following text to prompt user for a user name and password:  
  
 Use as Windows credentials when connecting to the data source

Credentials stored securely in the report server  
User name:   
Password:   
 Use as Windows credentials when connecting to the data source  
 Impersonate the authenticated user after a connection has been made to the data source

Windows integrated security  
 Credentials are not required

3. In the **Name** box, type **SSRSDB**.
4. In the **Connection String** box, copy the following:

**Data Source=Nameoftheserverinstance;Initial Catalog=Nameofthedatabase**

**Note:** Replace Nameoftheserverinstance with your server name, and Nameofthedatabase with the name of the database you have created.

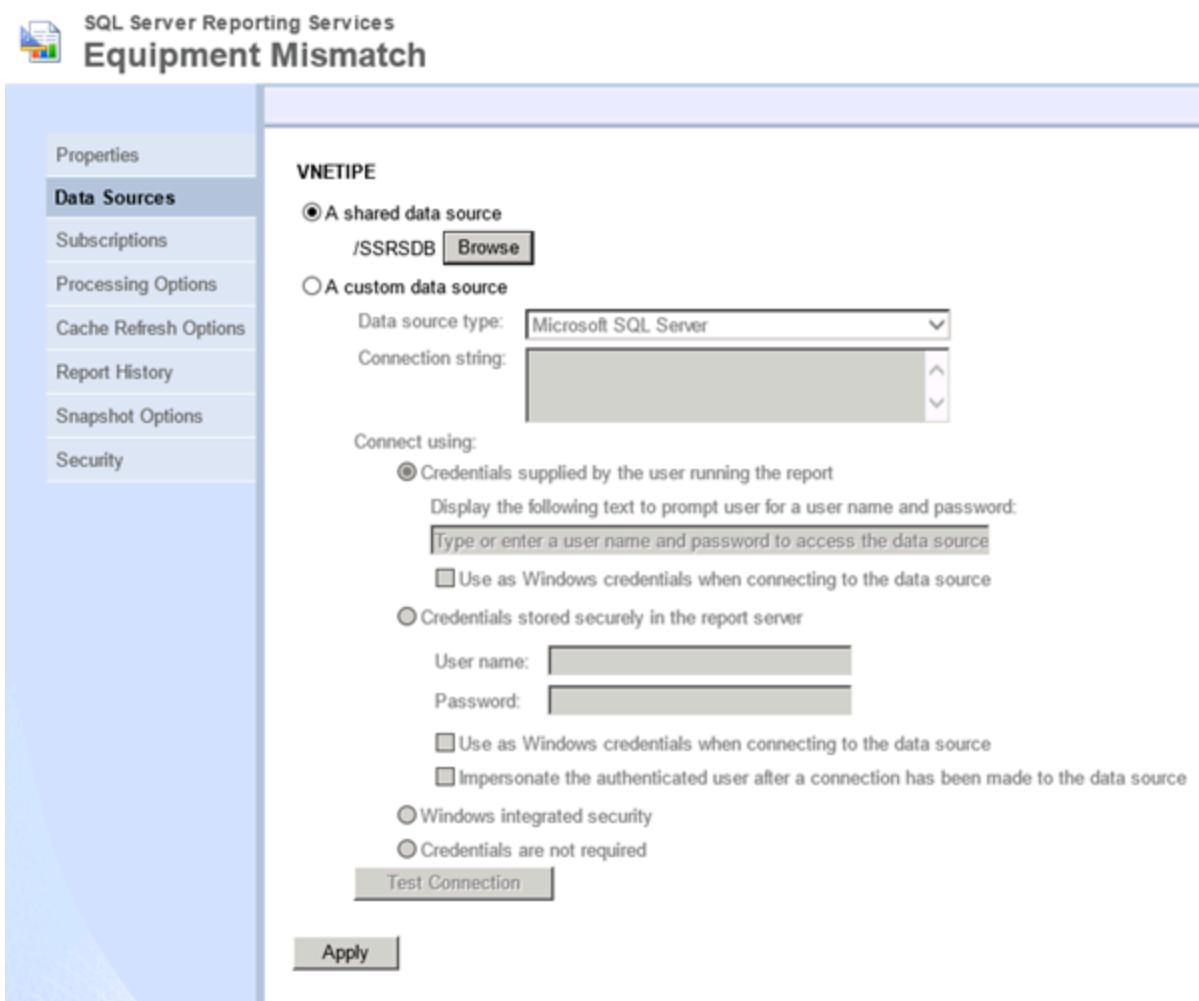
5. For **Connect using**, select **Credentials stored securely in the report server**.
6. Enter the **User name** and **Password**, and then select **OK**.
7. In the Report Manager Home page, select **New Folder** to create a folder for reports.

The screenshot shows the AVEVA SQL Server Reporting Services interface. At the top, there's a navigation bar with 'Home', 'SQL Server Reporting Services', and 'AVEVA NET Sample SSRS Reports'. Below the navigation bar is a toolbar with icons for 'New Folder', 'New Data Source', 'Report Builder', 'Folder Settings', and 'Upload File'. The main area displays a list of reports, with 'Equipment Mismatch' selected and highlighted with a yellow border. To the right of the report list is an 'Installation Status' button.

8. Open the **Folder**, and then select **Upload File**.
9. Select **Browse**, and then select the rdl file provided for IPE located in the following path: {install path}\Report\Report Example\
10. Select **OK**.
11. In the drop-down list of the **Report uploaded**, select **Manage**.

The screenshot shows the AVEVA SQL Server Reporting Services interface. It's similar to the previous one, but a context menu has been opened over the 'Equipment Mismatch' report. The menu items are: Move, Delete, Subscribe..., Create Linked Report..., View Report History, Security, Manage (which is highlighted with a yellow background), Download..., and Edit in Report Builder.

12. In the left pane, select **Data Sources**.



13. In the right pane, select **A shared data source**, and then select **Browse**.
14. Select the data source created in **step 4**.
15. Repeat the **steps 5 and 6** for the remaining rdl reports.
16. To open the default IPE reports, double-click those reports.

### Importing EIWM to Interact with Dashboard

You can view SSRS reports in Dashboard. Each report can be created as an AIM Report or its child classes pointing to the SSRS URL of the specific report.

The following example provides the XML scripts for creating the report:

1. Create a class under the **AIM Report** using the following **EIWM**:

```
<?xml version="1.0" encoding="utf-8" standalone="yes"?>
<?vnet xslt="NULL"?>
<vl:VNETList xmlns:vl="http://www.aveva.com/VNET>List"
  xmlns="http://www.aveva.com/VNET/eiwm">
  <Class>
    <ClassID>SSRS REPORT</ClassID>
    <ParentClassID>AVEVA NET REPORT</ParentClassID>
    <ClassName>SSRS Report</ClassName>
    <PluralName>SSRS Reports</PluralName>
```

```
</Class>
</v1:VNETList>
```

2. Import the **Class for AVEVA NET Report**.
3. Import the **Report** using the **Import Controller**.

### Modifying Default Report XML

To modify default report XML:

1. Open the default report XML file.
2. Edit the following script:

```
<Value>http://{server}/ReportServer/Pages/ReportViewer.aspx?%
2fAVEVA+NET+Sample+SSRS+Reports%
2fEquipment+Mismatch&amp;rs:Command=Render&amp;rc:LinkTarg
et=_self</Value>
```

3. Replace {server} with the actual server name.
4. Replace **ReportServer** with the **Virtual Directory Name**, configured in Web Service URL page of the **Reporting Services Configuration Manager**.
5. Replace **AVEVA+NET+Sample+SSRS+Reports** with the actual folder name.

---

**Note:** If a folder is not created for the reports on the Report Manager, then remove AVEVA+NET+Sample+SSRS+Reports from the URL above.

---

### View and Interact with SSRS Reports

You will usually use the *SQL Server Report Builder* to design a *SSRS Report* and assess it from the *Reporting Services Configuration Manager*. When designing the report, you specify the location to receive the data, which data to get, and how to display the data.

The output of the *Report Builder* is a **.rdl** file which holds the report definition. RDL stands for Report Definition Language and is an XML representation of a *SSRS Report* definition. A report definition contains data retrieval and layout information for a report. To display the report, in the **Document View/Summary View** within the *AIM Dashboard*, the *SSRS* interprets the **.rdl** file, which involves querying the database, before producing the HTML file that is displayed to the end user.

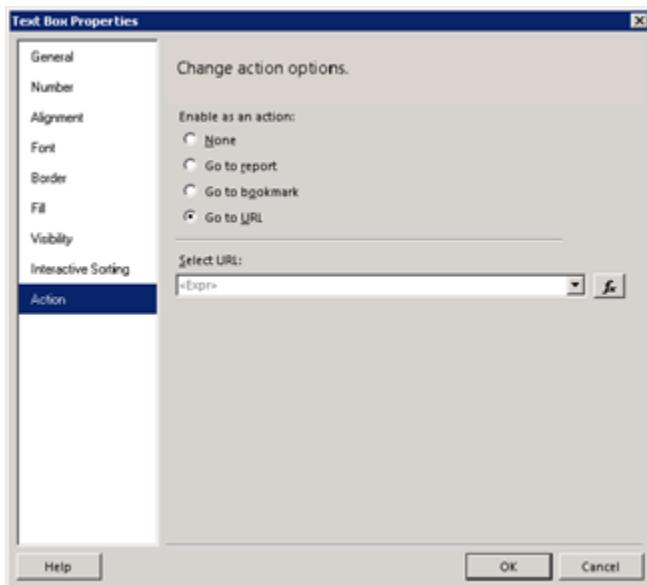
	E-Process Sim Dataset	E-Technical Dataset
SPEC-4005	Design Pressure Maximum	34.5
SPEC-4005A/B	Design Pressure Maximum	34.5
SPEC-4005C/D	Design Temperature Minimum	45
SPEC-4006	Design Pressure Maximum	34.5
SPEC-4007	Design Pressure Maximum	34.5
SPEI-4002	Design Pressure Maximum	34.5
SPEI-4003	Design Pressure Maximum	34.5
SPEI-4004	Design Temperature Minimum	34.7
	Design Pressure Maximum	34.5
	Design Temperature Minimum	34.7

## Interacting with Sample SSRS Reports

The procedure described here for interaction with a sample **Report** applies to the **Equipment Mismatch.rdl** report template. It enables you to display the **content card** of an item within the *the AIM Dashboard* when a **TagName** in the **Report** page is selected. To achieve this, you need to modify the default report template, using the **SQL Server Report Builder**.

To modify the report template in Report Builder:

1. Open the **Equipment Mismatch.rdl** file from *SSRS* using the **Report Builder**.
2. In the report design view, right-click **TagName**, and then select **Text Box Properties**.
3. In the **Text Box Properties** dialog box, click **Action**.



4. Select the hyperlink Expression (**fx**) button to edit the expression.
5. In the hyperlink **Expression** dialog box, enter the following code:

```
="javascript:SelectItem('" & Fields!TagName.Value & "'); function
SelectItem(label){ var message={event:'SetReportSelected', fullId: label};
```

```
parent.window.postMessage(message, '{URL}');
```

**Note:** You must modify [URL](#) to be the URL of the AIM Dashboard site that uses this SSRS report so that it can capture the selections. A value of '\*' can be used, but this is not recommended as it presents security concerns. **TagFullName** indicates the field name for an item's full name value, which you can change according to the actual field name of a specific data set declared in the report template.

The code mentioned above (for the Expression dialog box) assumes that the field value is the Full ID of an object in AIM (that is, including context). If you have only a partial ID (that is, not including context), then the code should be as the following:

```
="javascript:SelectItem('' & Fields!TagName.Value & ''); function SelectItem(label){  
var message={event:'SetSelected', label: label}; parent.window.postMessage(message,  
'{URL}');
```

- Select **Save** to save the changes, including saving the **Report** at the top level.

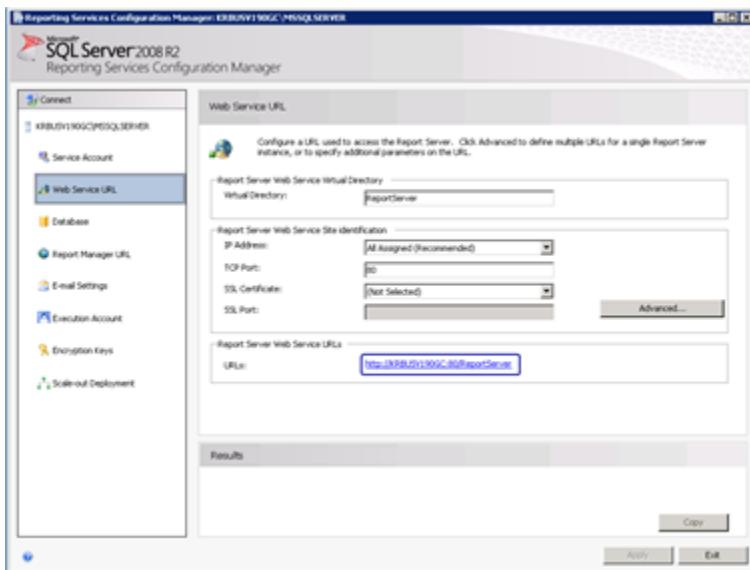
## Configure a URL for displaying SSRS Report

In SSRS, URLs are used to access and display specific reports in a web browser, which can be inserted into an existing web page using an **iframe** element. This is the mechanism used to display a Report in the **Document View/Summary View** within the AIM Dashboard.

To configure a URL based on the AIM Workhub and SSRS domain specifications, you must use the *Reporting Services Configuration Manager*. If the AIM Workhub and SSRS are on different domains, select the specified URL for the **Report Server Web service** (as shown the following image). In a single domain instance, select the specified URL for the **Report Manager**.

To configure a URL for the Report Server Web service:

- Start the *Reporting Services Configuration Manager* and connect to a local report server instance.



- Select **Web Service URL**.

**Note:** Select **Report Manager URL** to select URL for **Report Manager**.

- Select the **Report Server Web Service URLs** link to display the available reports.
- Select the required report from the list.

**Note:** The URL displayed in the web browser address bar is the basic URL you use to display a report within the AIM Dashboard (the FILE's InfoLocator attribute value in EIWM terms). You must add the following string

---

at the end of the URL: &rc:LinkTarget=\_self, for example, [http://{myserver}:2000/TestReportServer/Pages/ReportViewer.aspx?%2fEquipment+List\\_New&rs:Command=Render&rc:LinkTarget=\\_self](http://{myserver}:2000/TestReportServer/Pages/ReportViewer.aspx?%2fEquipment+List_New&rs:Command=Render&rc:LinkTarget=_self). In an AIM implementation instance, the URL may be different depending on the name of the Hostname and Report Server. If the InfoLocator value is in the EIWM, the character & should be replaced with escape character &amp; or, it will cause an error when it is imported via the import controller. If you have implemented these changes to the URL, selecting the hyperlink in the SSRS report web page within the AIM Dashboard opens the content card of the item and the link to open the *Summary View* will be displayed. This function will be same for both single domain and multiple domain instance of the *AIM Workhub* and *SSRS Report*.

---

## Configure the AVEVA AIM Player

This section needs to be referred to only if the AIM Player feature requires configuring.

---

**Important:**

The AIM Player is dependent on the AIM Reporting database. To run the AIM Player, you must:

1. Set up and configure SSRS, and deploy SSIS packages.
2. Run [ViewsScript.sql](#) script available at [{install path}\DatabaseAdmin\SQL\SSIS](#).

For reporting on the same database where [DNOMScript.sql](#) script was run to create denormalized tables, see the *Create De-normalized Tables* section in the [Deploy SSIS](#) topic.

The AIM Player configuration settings can be found in the [web.config](#) file under the [<portals>](#) section. The administrator can make changes to the default installed [web.config](#) by editing it using any text editor such as *Notepad*.

---

**Note:** Before opening the [web.config](#) file, ensure that the file has **Read/Write** permission.

To open the file, navigate to the following default location: [C:\inetpub\Dashboard\](#)

---

**Note:** The [web.config](#) file provides AIM Player related configurations for multiple instances of *AIM*.

---

## Configure AVEVA AIM Database Connection

To configure the AIM Player Database connection:

1. Locate the following block of XML in the [web.config](#) file:

```
<portal id="Default">
  ...
  ...
  <AVEVANETPlayer>
    ...
    ...
    <ConnectionString>
      connectionString="DBUsername=TestPlayer;DBPassword=TestPlayer;DBDatasource=localhost;DBName=TestReportPlayer;PasswordEncrypted=false" providerName="System.Data.ProviderName"/>
```

2. Edit the attributes of the Connection String ([<ConnectionString>](#)) as follows:

- Set the [DBUsername](#) attribute to the user name specified when the SQL Server database to create de-normalized tables was created. See the *Create De-normalized Tables* section in the [Deploy SSIS](#) topic.

- Set the `DBPassword` attribute to the password specified when the SQL Server database to create de-normalized tables was created. See the *Create De-normalized Tables* section in the [Deploy SSIS](#) topic.
- Set the `PasswordEncrypted` attribute to `true` if opting to provide the encrypted text as the password. By default, the attribute is `false`, which implies that the user can provide plain text as a password by default.
- Set the `DBDatasource` attribute to the hostname of the machine on which SQL Server is installed. (Refer to the Installation Matrix.)
- Set the `DBName` attribute to the name of the reporting database. It is the name of the database in which the `DNOMScript.sql` is executed.

**Important:** The connection string part of the XML is used to make a connection from the AIM Player page to the reporting database server. The user must ensure that the credentials entered into the above attributes match with the values that have been input during creation of the de-normalized Tables.

## Configure AVEVA AIM Player Reporting Database Column Names

The AIM Player refers to some particular classes, associations and columns contained within the reporting database (database mentioned in the AIM Player database connection string) during the execution of SQL queries for fetching the AIM Player filter results. Such parameters are configurable in the `web.config` file to ensure successful execution of SQL queries.

An administrator must provide the correct values for the respective XML node matching the data available in the data sets.

**Note:** You must refresh the browser after changing any of the following settings.

Use this element	To
<code>&lt;DatePattern&gt;</code>	Specify the date format that is displayed in the playback section for the start and end date of a sequence.
<code>&lt;DatabaseDateFormat&gt;</code>	Specify the date format of the date attributes in the database, which is used for the AIM Player.  <b>Note:</b> <code>&lt;DatePattern&gt;</code> and <code>&lt;DatabaseDateFormat&gt;</code> should match. If there is a mismatch in the two date formats, then invalid dates may be displayed on the AIM Player UI.
<code>&lt;PlayerActivityClassName&gt;</code>	Specify the name of the activity class, which is used to retrieve activities associated with the selected 3D Model.
<code>&lt;PlayerActualFinishColumnName&gt;</code>	Specify the actual finish date of a particular activity.  <b>Example:</b> If [Actual Finish Date] is the name of the column containing the actual finish date of the activity, then the administrator should provide "[Actual Finish Date]" as the value for the <code>&lt;PlayerActualFinishColumnName&gt;</code> node.

Use this element	To
<PlayerActualStart DateColumnName>	<p>Specify the actual start date of a particular activity.</p> <p><b>Example:</b> If [Actual Start Date] is the name of the column containing the actual start date of the activity, then the administrator should provide "[Actual Start Date]" as the value for the &lt;PlayerActualStartDateColumnName&gt; node.</p>
<PlayerStartDateRef ColumnName>	<p>Specify the calculation from when the tools and tags should be visible in the AIM Player.</p> <p>An administrator can set one of the following dates as the value for this XML node setting:</p> <ul style="list-style-type: none"> <li>• <b>Planned Start Date</b></li> <li>• <b>Actual start Date</b></li> <li>• <b>Planned Finish Date</b></li> <li>• <b>Actual Finish Date</b></li> </ul> <p>For optimal AIM Player performance, it is recommended to provide the name of the column referring to the Actual Start Date or the Planned Start Date.</p>
<PlayerFinishDateRef ColumnName>	<p>Specify the calculation from when the tools and tags should be visible in the AIM Player.</p> <p>Admin can set one of the following dates as the value for this XML node setting:</p> <ul style="list-style-type: none"> <li>• <b>Planned Start Date</b></li> <li>• <b>Actual Start Date</b></li> <li>• <b>Planned Finish Date</b></li> <li>• <b>Actual Finish Date</b></li> </ul> <p>For optimal AIM Player performance, it is recommended to provide the name of the column referring to the Actual Finish Date or the Planned Finish Date.</p>
<PlayerPlannedFinish DateColumnName>	<p>Specify the planned finish date of a particular activity.</p> <p><b>Example:</b> If [Planned Finish Date] is the name of the database column containing the planned finish date of the activity, then the administrator should provide</p>

Use this element	To
	"[Planned Finish Date]" as the value for the <PlayerPlannedFinishDateColumnName> node.
<PlayerPlannedStart DateColumnName>	<p>Specify the planned start date of a particular activity.</p> <p><b>Example:</b> If [Planned Start Date] is the name of the database column containing the planned start date of the activity, then the administrator should provide "[Planned Start Date]" as the value for the &lt;PlayerPlannedStartDateColumnName&gt; node.</p>
<PlayerTag AssociationType>	Specify the association between the Activity and the tag objects – used to identify the object as a tag.
<PlayerTool AssociationType>	Specify the association between the Activity and the Tool object – used to identify the object as a Tool.
<PlayerActivityStatus ColumnName>	Specify the column names containing the activity status in the AIM Player database.
<PlayerStatusAnd Color>	<p>Specify the colour of all statuses used for the activities data sets.</p> <p>The names of all the statuses must be identical with those in the activities data sets.</p> <p>Colour list is based on System.Drawing.Colour from the .NET Framework. The tags and tools are displayed in the colour as defined in these XML elements and based on the status.</p>

**Note:** The AIM Player can support only up to 3000 tags for activity associations.

## Administer AIM Dashboard

This section describes how to administer AIM Dashboard.

### Administer the Workhub Database

The AIM Admin Tool enables you to:

- Create and modify data only in the issued area.
- View and update the Class Library, Objects, and Associations.
- Create users and assign roles and permissions.
- Create and edit lifecycle groups and states.

- Export XML for classes and objects.

**Important:** You must press the Enter key to update any data in the Database. Updates to the Database take effect instantaneously. The Undo action cannot be performed, so if you want to reverse a change, you must re-update the data.

## Understand Class Library Concepts

Understanding the Class Library concepts enables you to manage the database, using the Admin Tool.

### Associative Object

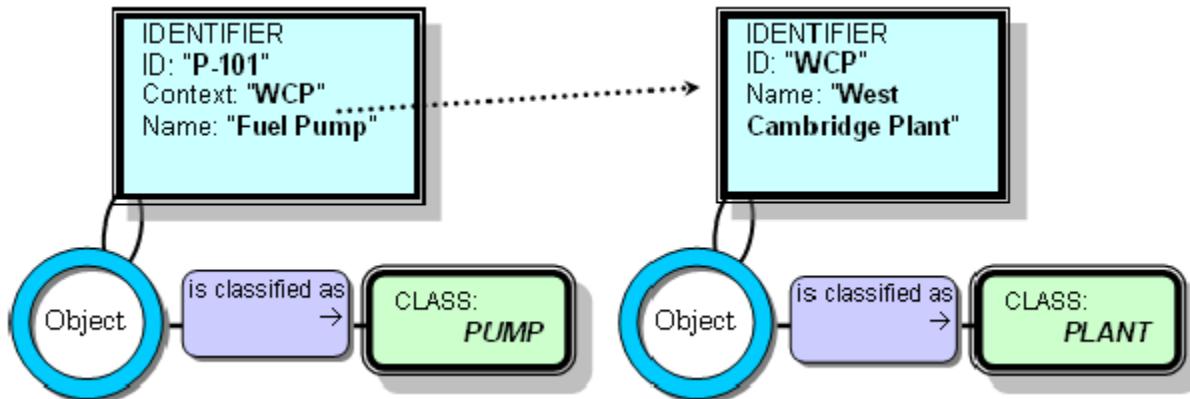
For an Object to exist in the A/M database, it must have:

- A Class ID.
- At least one unique identifier.
  - A long descriptive name.
  - A Context or namespace for the ID.
  - A Revision name or number.

### Object Identifier and Context

An Object Identifier is a unique ID for an Object in the database. By default, the objects assume IDs in the global or null Context. Typically, a Root Object's ID defines a context, while importing packages into the database.

The following figure depicts an Objects ID, with reference to a Context:



If one database contains multiple plants or projects' data, defining object identifier and its context avoids a data clash.

**Note:** The convention for defining an Object Identifier, with reference to a context, is to use a | (vertical bar) between the context and the object identifier.

**For example,** WCP|P-101 (Indicates the ID of the Object FUEL PUMP of a class of PUMP, in the context of a West Cambridge Plant of a class of PLANT).

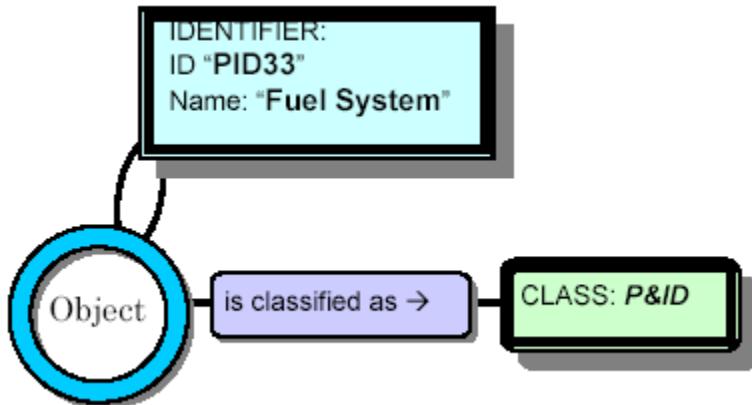
### Classes

A class defines the category or type of object in the class library or the Reference Data Library (RDL). The following are the characteristic features of the classes:

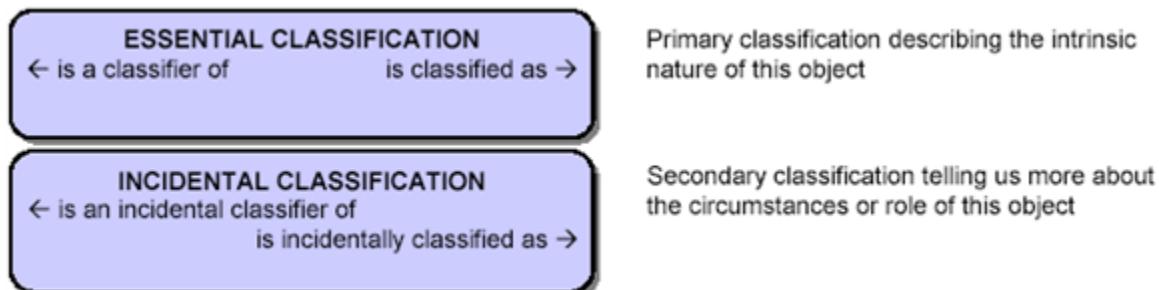
- Classes are pre-defined in the Class Library.
- Objects can belong to multiple classes. For example, an object can be a part of a class, ROTARY PUMP as well

**PRIMARY FEED PUMP.**

- Objects can be categorized to classes, based on their associations.
- Associations between the objects and classes can be bi-directional, but they are always defined with the object as the source.



The following figure shows the two types of associations, based on which the objects are classified:

**Unclassified Objects and UNKNOWN Class**

An Object in the AIM database must have at least one Identifier and one Class. If an Object exists without a Class in the database after a complete data import, then it indicates an error in the data import. The Objects without a Class will be shown as UNKNOWN.

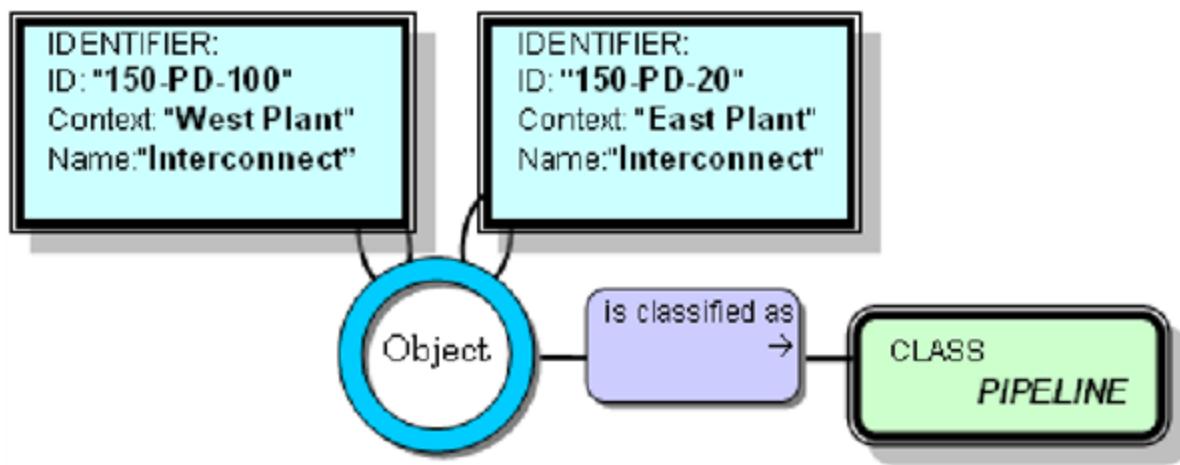
**Alias Identifiers**

If an Object has more than one Identifier, it represents an Alias Identifier. An Object must have at least one Identifier. More than one Identifier can be assigned to an Object, or any of its Identifier can be deleted. However, the last remaining identifier cannot be deleted, without deleting the Object itself.

If an Object has multiple Identifiers, AIM displays the Identifier that you have chosen as the Preferred Identifier in the Admin Tool. You can choose to display another Identifier, by changing the settings in the Admin Tool.

**Objects Common to Multiple Projects**

An Object that is common to two separate plants should be given two identifiers, each with the context of the respective plant. The ID can be same or different in each context. However, the identifier combination (Context+ID) must be unique within the AIM Workhub database.



## Customize Class Library

The following are the points to remember, while customizing the Class Library:

- The System Classes pre-defined as subclasses cannot be deleted.
- The upper levels of the class hierarchy are system pre-defined, and cannot be changed.
  - Any new class you create becomes a subclass of these system pre-defined classes.
- If any class is used as an Essential or Incidental classification of any object, that class cannot be deleted.
  - To delete that class, you must first delete the objects under that class.

## Log on to the Admin Tool

To log in to the AIM Admin Tool:

1. On your **Desktop** or the **Start** menu, double-click **AIM Admin Tool**.  
The Admin Tool login window opens.
2. In the **DB Source** box, type the name of the **SQL Server** computer.
3. If you want to connect to the database using your **Windows** credentials:
  - a. Select the **Windows** check box.  
Your **Windows** credentials will be automatically populated.
  - b. In the **Database** box, enter the **Database name**.
  - c. In the **Schema** box, enter the Schema you want to use, and then select **Connect**.

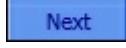
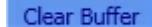
---

**Note:** Only users of Administrator role can log on using their Windows password.
4. If you do not want to connect to the database using your **Windows credentials**:
  - a. Clear the **Windows** check box.
  - b. Type a valid **User** (username) and **Password** for the database you want to connect.
  - c. Select **Connect**.

## View Classes and Associated Objects

You can browse through the Class Library, and view the Classes and the associated Objects in the Database. The Search functionality at the bottom of the Class Library and Objects of Class pane of the Admin Tool enables you to search for a Class or an Object.

The following command buttons always appears on the toolbar at the top of the AIM Admin Tool window:

Command Button	Functionality
Previous 	Returns you to the history of previously selected classes or objects.
Next 	Returns you from the Previous selections to the current selection.  <b>Note:</b> The Next button will be inactive, after you return from previously selected class or object, and selects a new class or object.
Clear Buffer 	Refresh the Database view, to undo any invalid data edits by another user.

To view Classes and associated Objects:

1. In the **Class Library**, select the **Class** node to expand the **Class Hierarchy**.

The sub-classes down the tree hierarchy appears. The Datasource and User login credentials appear in the boxes at the top of the Class Library.

2. To view the **Object** associated to a **Class**, select a **Class**.

All the Objects associated to the selected Class appears in the Objects of Class pane. The Class name and the number of Objects of that Class appears in the boxes at the top of the Objects list.



## Searching for a Class

To search for a Class:

1. Go to the **Class** pane in the **Admin Tool**.
2. In the **Search** box at the bottom of the **Class** pane, type all or part of the **Class ID**.
3. Press **Enter**.

The search results matching your search criteria appears in the Class pane, and the corresponding Objects appears in the Object of Class pane.

4. If you want the search results to exactly match the search criteria, select the **Match** check box, and press **Enter**.

**Note:** The search for Class Identifiers is not case-sensitive, but wildcard search is not supported.

## Searching for an Object

To search for an Object:

1. Go to the Objects of Class pane in the Admin Tool.
2. In the Search box at the bottom of the Objects of Class pane, type all or part of the Object ID.

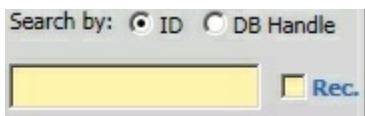
**Note:** The search for Object Identifiers is not case-sensitive, and wildcard search is supported. The elements of the ID (for example, IPE|8000-00-PO-201-01{A02}.doc{Working}) can typically comprise of a Context followed by a vertical bar, then ID, and Revision if any in braces. If you enter a % wildcard in the place of any of these elements of ID (For example, %|p01%), all revisions of all Objects containing that ID are displayed. Wildcard characters are database-dependent, but Microsoft SQL Server and Microsoft Data Engine (MSDE) use the same wildcard conventions.

3. Press **Enter**.

The search results matching your search criteria appears in the Objects of Class pane. If more than one

matching Object is found, the number of instances is displayed at the top of the Objects Of Class pane.

- To toggle the search results, select **ID** or **DB Handle**.



- If you select the **Rec.** check box, and then select a **Class** from the **Class Library**, both the **Objects** of that **Class** and its **parent Classes** are displayed.

## Update Database Using Admin Tool: Sequence

To Do This	See Section
1. Create new Classes as required. <b>Note:</b> The upper levels of the class hierarchy are system pre-defined, and cannot be changed. Any new class you create will be a subclass of these system pre-defined classes.	<i>Creating Classes</i> section in the <a href="#">Manage Classes</a> topic.
2. Define Attributes for the new Classes that will be needed in Class definitions. <b>Note:</b> Until you add an Attribute to a Class that has no pre-defined attributes, it adopts the attributes inherited from its Parent Class.	<i>Adding an Attribute</i> section in the <a href="#">Manage Attributes</a> topic.
3. Define new Permissible Associations, by creating Associations between Classes in the Class Library.	<i>Creating New Association Types</i> and <i>Creating Permissible Association Types</i> sections in the <a href="#">Manage Associations</a> topic.
4. Create Objects as instances of Classes in the Class Library.	<i>Creating Objects</i> section in the <a href="#">Manage Objects</a> topic.
5. Create Permissible Associations between Objects. <b>Note:</b> When an Object is deleted, all the Associations of that Object are automatically deleted. A Class cannot be deleted, unless all existing Objects of that Class (and its subclasses) are deleted.	<i>Creating Permissible Association Types</i> section in the <a href="#">Manage Associations</a> topic.

## Manage Classes

The following sections explain how to manage Classes using the Admin Tool.

### Creating Classes

To create a Class:

- Go to the **Class** pane in the **Admin Tool**.
- Select to select a **Class** in the **Class Library**.

3. In the **Manager** pane, select the icon to expand the **Classes** node, and then select **Create Classes**.



The Create User Class pane opens in a new tab, displaying the selected class's Parent Class ID and New Class Type.

**Note:** The auto-populated Parent Class ID and New Class Type are read-only. It indicates if the selected Class is System pre-defined or user-defined, and if it is a Characteristic, Property, or Ordinary Class.

4. Enter the details in the following boxes:

The value in this box	Enables Display of the following in Dashboard
New Class Name	Object type.
New Plural Name	Object classification in the tree-view.  <b>Note:</b> If not set, the Name is used. It is recommended that a plural name is set for better readability.
New Open Icon	Class in the tree view, upon expanding the Class node.
New Closed Icon	Class in the tree view, before expanding or after collapsing the Class node.
New Object Icon	Object in the tree-view that is an instance of this Class.

5. Select or clear the following check boxes:

Check Box	If selected,	If cleared,
Attribute Template	The attribute template will be inherited from its parent class.	The attribute template will not be inherited from its parent class.
Visible	A Class will be visible in the tree-view.	A class will be hidden, and will not appear in the tree-view.  <b>Note:</b> This settings can be overridden during configuration.  By default: All newly created Classes are set

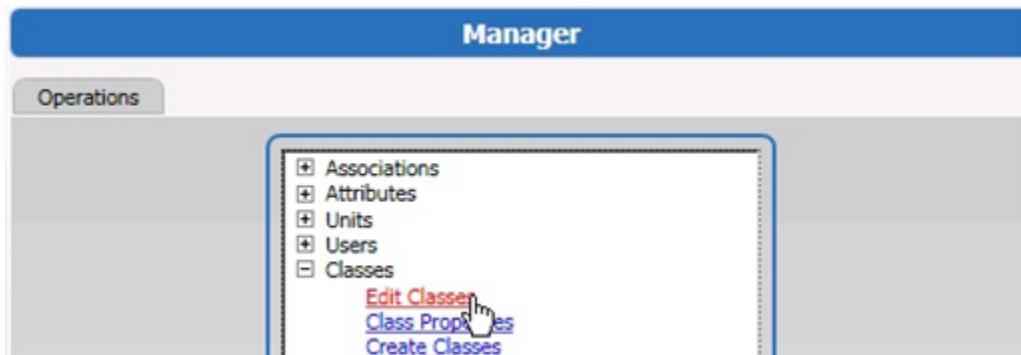
Check Box	If selected,	If cleared,
		to be visible. Pre-configured system classes are set to invisible by default.
Hidden	A Class will not be displayed in the drop-down list for Search/Advanced Search/Query Form designer.	A Class will be displayed in the drop-down list for Search/Advanced Search/Query Form designer.
Non-searchable	The Class will not be searchable.	The Class will be searchable.
Replace attributes	Replaces the selected attribute on any instances of the selected Class.	The selected attribute on any instances of the selected Class cannot be replaced.
Allow invalid data type	Displays invalid data type.	Any invalid data type will not be displayed.

6. Select the **Create New Class** button.

#### Editing Classes

To edit Classes:

1. Go to the Class pane in the Admin Tool.
2. Select to select a Class in the Class Library.
3. In the Manager pane, select the icon to expand the Classes node, and then select Edit Classes.



The Selected Class Settings pane opens in a new tab, displaying the selected class's details.

**Note:** The auto-populated Parent Class ID and Class Type are read-only. It indicates if the selected Class is System pre-defined or user-defined, and if it is a Characteristic, Property, or Ordinary Class.

4. You can edit the values in the following boxes:

The values in this box	Enables Display of the following in Dashboard
Class Name	Object type.
Plural Name	Object classification in the tree-view.
Open Icon	Class in the tree view, upon expanding the Class node.
Closed Icon	Class in the tree view, before expanding or after collapsing the Class node.
Object Icon	Object in the tree-view that is an instance of this Class.

**Note:** A Class derived from Physical Property displays Units information, instead of Attribute Template.

5. To rename a Class, type a new name in the Class Name box, and then select the Update button.

**Important:** You cannot create two Classes with the same name.

1. Select or Clear the following check boxes:

Check Box	If selected,	If cleared,
Attribute Template	The attribute template will be inherited from its parent class.	The attribute template will not be inherited from its parent class.
Visible	A Class will be visible in the tree-view.	<p>A class will be hidden, and will not appear in the tree-view.</p> <p><b>Note:</b> This settings can be overridden during configuration.</p> <p>By default:</p> <p>All newly created Classes are set to be visible.</p> <p>Pre-configured system classes are set to invisible by default.</p>
Hidden	A Class will not be displayed in the drop-down list for Search/Advanced Search/Query Form designer.	A Class will be displayed in the drop-down list for Search/Advanced Search/Query Form designer.
Replace Attributes	Replaces the selected attribute on any instances of the selected Class.	The selected attribute on any instances of the selected Class cannot be replaced.
Subclass Objects	And then the Delete Objects button is selected, all the Objects of the selected Class and all of its	And then the Delete Objects button is selected, only the Objects of a selected Class will be

Check Box	If selected,	If cleared,
	subclasses are deleted.	deleted, but not the subclasses.
Allow Invalid Data Type	Displays invalid data type.	Any invalid data type will not be displayed.
Non-searchable	The Class will not be searchable.	The Class will be searchable.

1. To delete all **Objects** of a selected **Class**, select the **Delete Objects** button.

**Note:** You must delete all Objects in a Class, to be able to delete a Class itself.

2. To update any values entered in the boxes, or selections in the check boxes, select the **Update** button.
3. To view the properties of a selected **Class**, select the **Class Properties** button.

#### Creating Class Property (Class Scheme ID)

Class Scheme ID can be configured to be displayed in AIM in:

- Node labels in the Browse tree
- Search results
- Advanced Search
- Query Forms Designer
- Query Form search results:
  - Form View
  - Table View
- Export
- Content Card Details tab

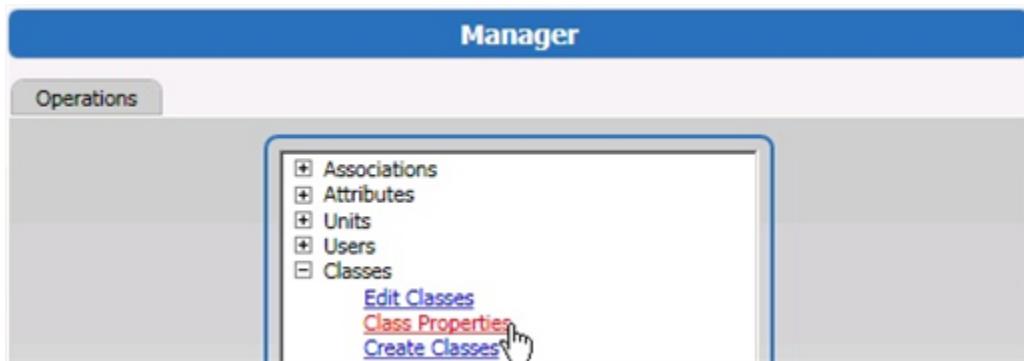
An Item or Object can be classified under different names. For example, a pump can be classified under RDS and EID. The AIM EIA assumes these alternative names as Class Scheme IDs. The following are the characteristic features of the Class Scheme IDs:

- Character limit for a Class Scheme ID is 255.
- Multiple Class Scheme IDs can be assigned to a Class.
- Class Scheme ID assigned to a Class is a required field.
- Class Scheme ID can be assigned to any type of Class (Measure, Characteristic, Property and so on).
- Class Scheme IDs are not directly interrelated. For example, It cannot be inherited.
- Each Class Scheme ID has a SchemeName property.
- The Class ID is a Class's unique ID.
- Based on the configuration, the Class name displayed can be the Class ID, Class name, or Scheme name.

To create Class property:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select to select a **Class** in the **Class Library**.

3. In the **Manager** pane, select the icon to expand the **Classes** node, and then select **Class Properties**.



The Class Properties pane opens in a new tab, displaying the properties of the selected Class.

4. Double-click the boxes, and type the **Scheme ID**.

The Class property is created, and committed to the database.

5. To remove a **Class Property**, select a **Property**, and then select the **Delete Selected Property** button.

## Manage Objects

From the Manager pane of the Admin Tool, you can perform the following operations with the Objects:

- Creating Objects
- Editing Objects
- Editing Object ID
- Editing Object Aliases
- Creating Object Aliases
- Deleting selected Object Tag
- Copying Objects and Associations

### Creating Objects

To create Objects:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.
3. In the **Manager** pane, select the icon to expand the **Objects** node, and then select **Create Object**.  
The Create Object pane opens in a new tab, with the selected Class's Class ID populated in the box.
4. Enter the values in the respective boxes:

In the box for	Enter a value
ID	A unique identifier for the new Object.
Revision	The version of the new Object (Optional)
Descriptive Name	A name that describes the new Object

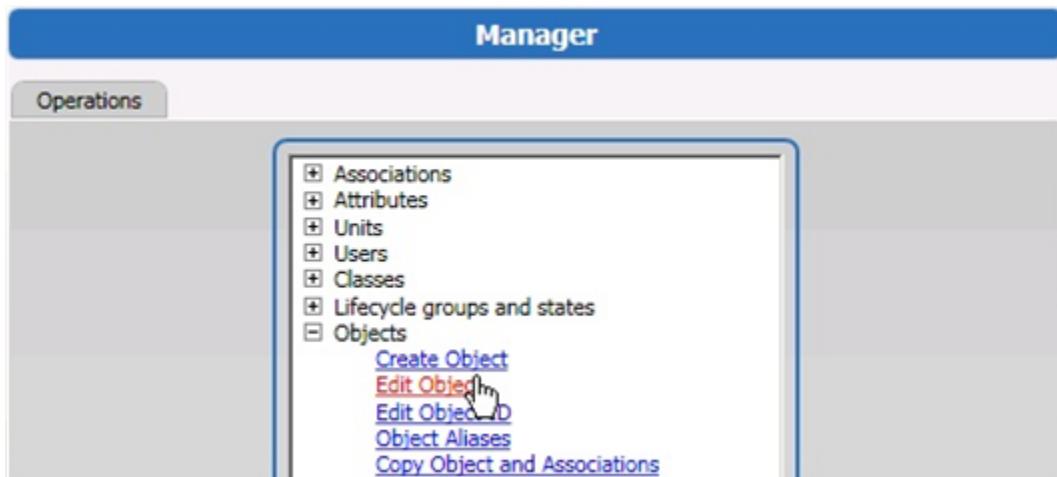
In the box for	Enter a value
Context	Selecting any Object ID in the Object of Class pane, populates the value in the Context box. (For example, IPE)

5. Select the **Create New Object** button.

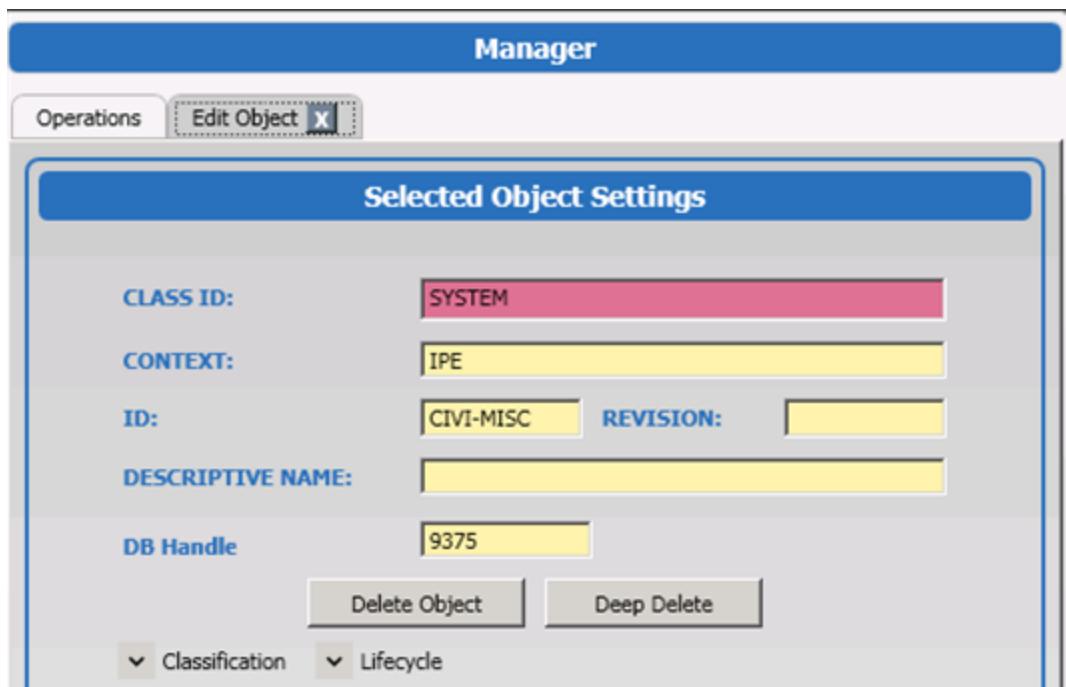
## Editing Objects

To edit Object:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select to select a **Class** in the **Class Library**.  
All the Objects associated to the selected Class appears in the Objects of Class pane.
3. In the **Objects of Class** pane, select an **Object**.
4. In the **Manager** pane, select the icon to expand the **Objects** node, and then select **Edit Object**.



The Selected Object Settings pane opens, with the selected Object's value populated in the respective boxes.

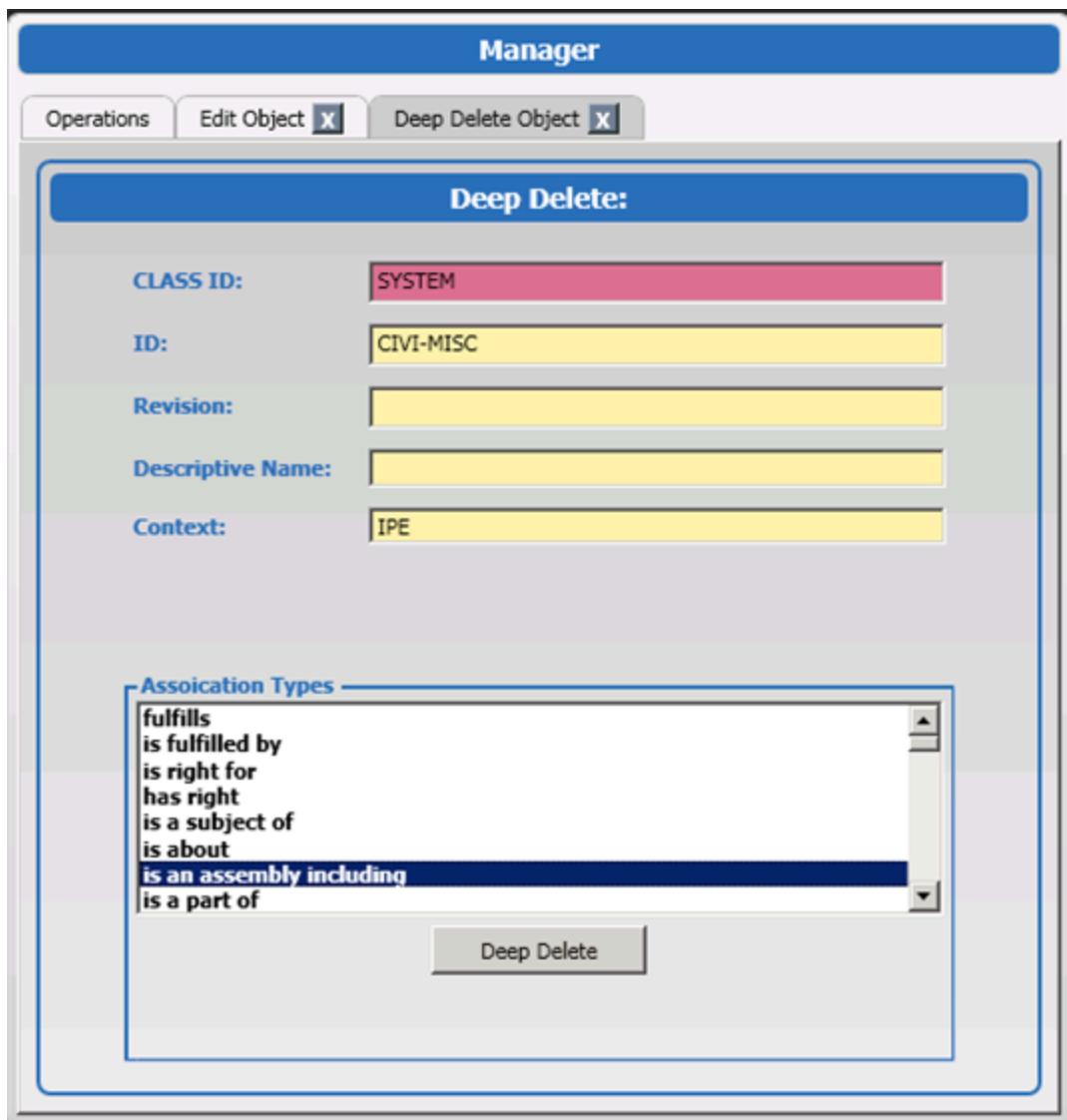


5. To delete the selected **Object**, select the **Delete Object** button.

A confirmation message for deletion appears.

**Note:** Deleting an Object will delete all the Associations of that Object.

6. To delete the selected **Object** and all the Objects, following a specific association type, select the **Deep Delete** button.



7. In the **Deep Delete** pane, go to the **Association Types** panel, and then select an **Association Type**.

8. Select the **Deep Delete** button.

A confirmation message for Deep Delete appears.

If confirmed, the selected Object and all the Objects following the Association Type you have chosen are deleted, and the Edit Object tab closes.

## Reclassifying Objects

To reclassify Objects:

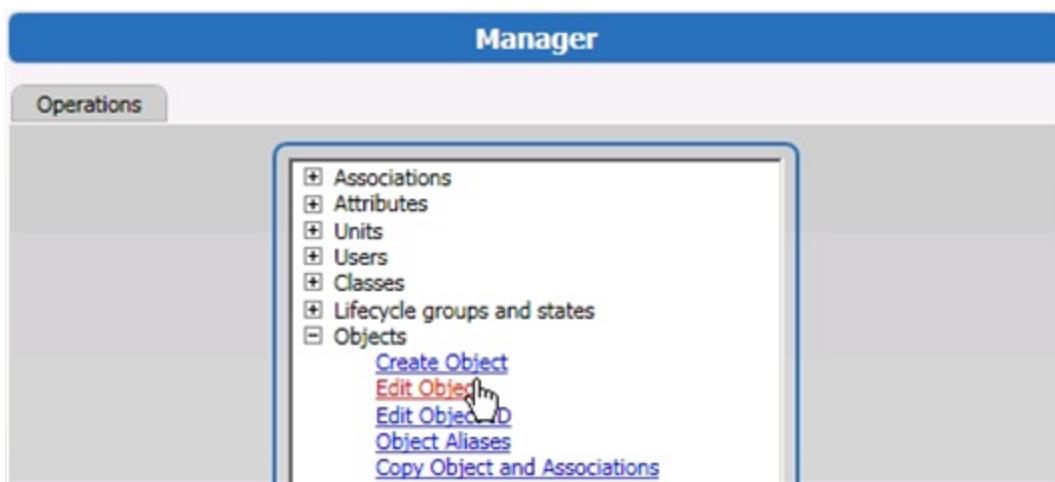
1. Go to the **Class** pane in the **Admin Tool**.

2. Select a **Class** in the **Class Library**.

All the Objects associated to the selected Class appears in the **Objects of Class** pane.

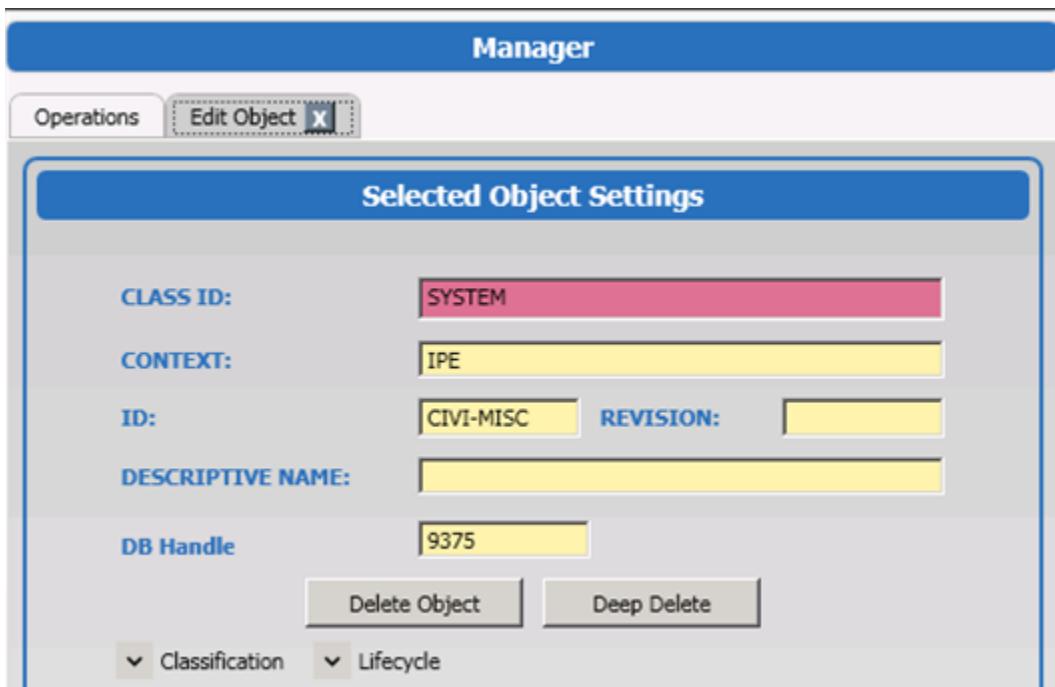
3. In the **Objects of Class** pane, select an **Object**.

4. In the **Manager** pane, select the **+** icon to expand the **Objects** node, and then select **Edit Object**.



The Selected Object Settings pane opens, with the selected Object's value populated in the respective boxes.

- At the left-bottom of the Manager pane, select the **Classification** arrow.



- In the expanded pane, select one of the following:

To	Select	Impact of this classification will be
Add Essential Classification	Essential	<p>The Association list will include the new classification.</p> <p>An instance of the Object will be created under the new Class.</p>
Add Incidental Classification	Incidental	<p>The Association list will include the new classification.</p> <p>An instance of the Object will be</p>

To	Select	Impact of this classification will be
		created under the new class.
Reclassify Object	Recreate using New Class	<p>The Object will be highlighted under the new Class.</p> <p>Removes any essential or incidental classification done for the same Object.</p> <p>The following are copied for the new Class:</p> <ul style="list-style-type: none"> <li>Relevant Attribute values</li> <li>Associations to other Objects as allowed by the New Class's Permissible Associations.</li> </ul>

### Selected Object Settings

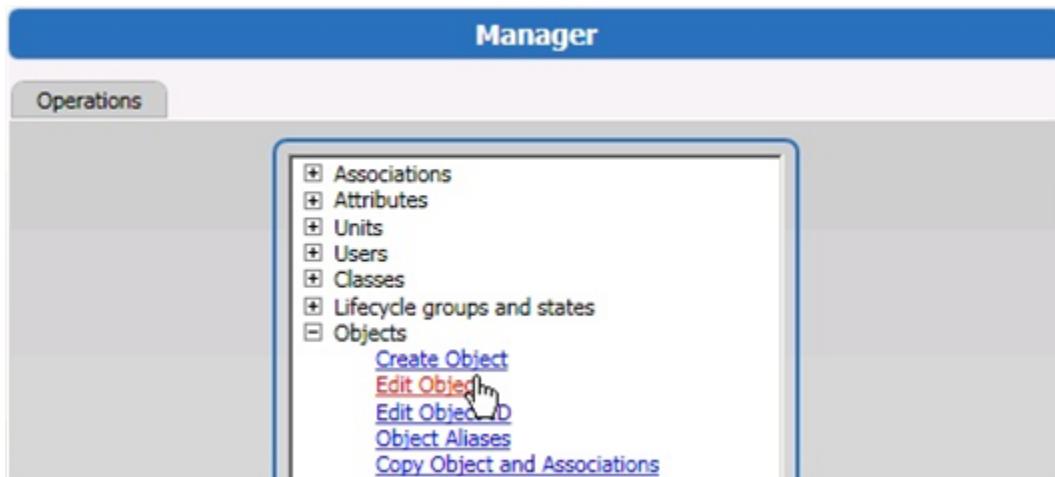
CLASS ID:	SYSTEM	
CONTEXT:	IPE	
ID:	CIVI-MISC	REVISION:
DESCRIPTIVE NAME:		
DB Handle	9375	
<input type="button" value="Delete Object"/> <input type="button" value="Deep Delete"/>		
<span>Classification</span> <span>Lifecycle</span>		
<input checked="" type="radio"/> <b>Incidental</b> <input type="radio"/> <b>Essential</b> <input checked="" type="radio"/> <b>Recreate using New Class</b>		
New Class:	<input type="text"/>	<input type="button" value="Classify"/>
Associations	is classified as SYSTEM	

7. Select in the **New Class** box, go to the **Class Library** pane, and select a new Class.  
The selected Class is populated in the New Class box.
8. Select **Classify**.

## Modifying Object Lifecycle

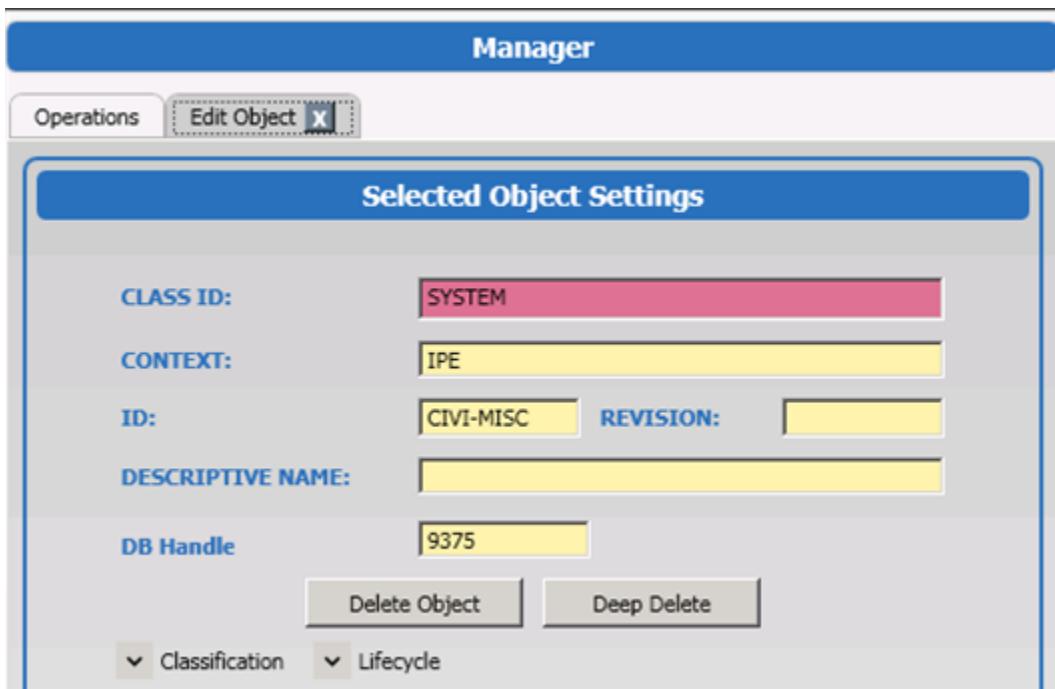
To modify Object lifecycle:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.  
All the Objects associated to the selected Class appears in the Objects of Class pane.
3. In the **Objects of Class** pane, select an **Object**.
4. In the **Manager** pane, click the icon to expand the **Objects** node, and then select **Edit Object**.



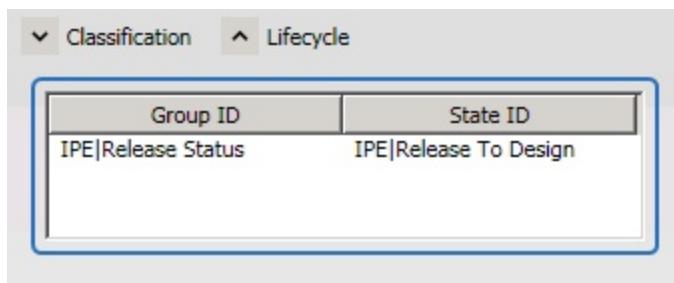
The Selected Object Settings pane opens, with the selected Object's value populated in the respective boxes.

5. At the left-bottom of the **Manager** pane, select the **Lifecycle** arrow.

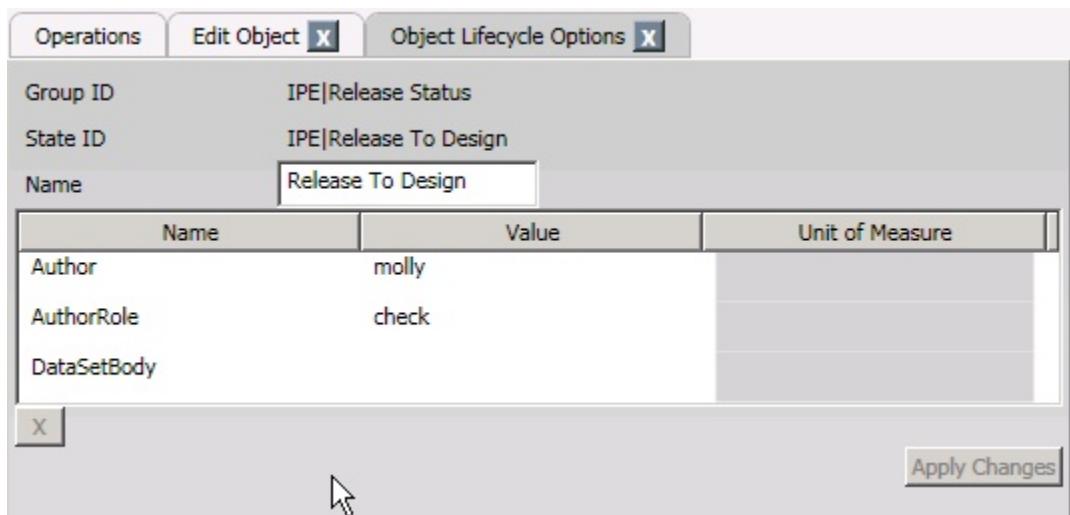


The Lifecycle Groups and their status are listed.

6. To modify the **Lifecycle Group** status, double-click on the status.



7. To change the values, select the fields, and then select **Apply Changes**.



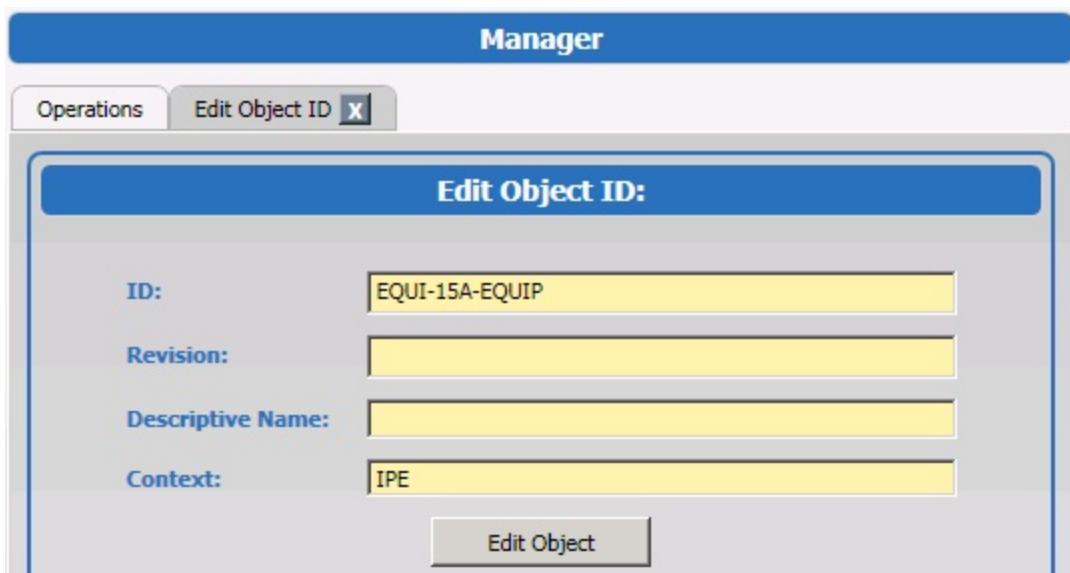
The modified values are saved.

## Editing Object ID

To edit Object ID:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.  
All the Objects associated to the selected Class appears in the Objects of Class pane.
3. In the **Objects of Class** pane, select an **Object**.
4. In the **Manager** pane, select the **+** icon to expand the **Objects** node, and then select **Edit Object ID**.
5. In the **Edit Object ID** pane, edit the value in the **ID** box.

**Note:** The edited Object ID must be unique with respect to the Context displayed. If the Context is blank, the ID must be globally unique.



6. In the **Context** box, edit the value, and then select **Edit Object**.

### Creating Object Aliases

To create Object aliases:

1. In the **Object Aliases** pane, double-click in the last entry in the table.
2. In the **Revision** and **Descriptive Name** boxes, enter the values.
3. If a **Context** is required, go to the **Object of Class** pane, and then select an **Object**.
4. To complete the action, select away from the record.

### Editing Object Aliases

To edit Object aliases:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.  
All the Objects associated to the selected Class appears in the **Objects of Class** pane.
3. In the **Objects of Class** pane, select an **Object**.
4. In the **Manager** pane, select the icon to expand the **Objects** node, and then select **Object Aliases**.  
The Object Aliases pane lists all the identifiers (aliases) of the Object, and the attributes values, if any.
5. To edit the attribute values, select in the respective boxes, and then type the values.
6. To select the main **ID** of the **Object**, select its check box in the main column.

**Note:** You can modify only the Descriptive Name for the existing tags.

7. To modify the **Descriptive Name**, double-click in the box, and then enter the value.
8. To save the changes, press the **Enter** key.

### Deleting Selected Object Tag

To delete selected Object tag:

1. In the **Object Aliases** pane, select the check box for the **ID** you want to delete.
2. Select the **Delete Selected Object Tag** button.

A confirmation message appears.

**Note:** If the identifier selected is currently the main identifier, another identifier will be assigned this role. If the identifier is the last remaining or only ID for this Object, the Object along with all its Associations will be deleted.

## Copying Object and Associations

To copy an Object and Associations:

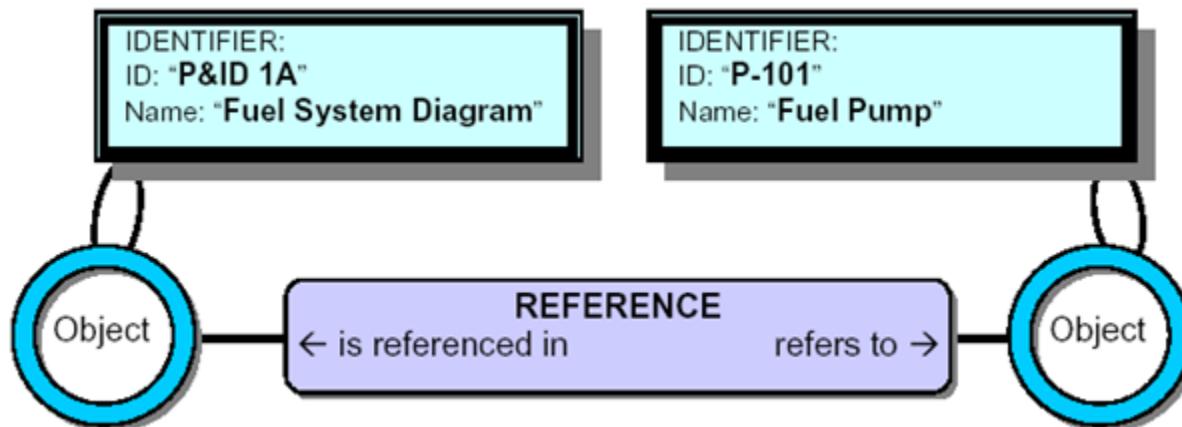
1. Go to the **Class** pane in the **Admin Tool**.
  2. Select a **Class** in the **Class Library**.
  3. In the **Manager** pane, select the **[+]** icon to expand the **Objects** node, and then select **Copy Object and Associations**.
- The **Copy Object** pane opens, displaying the details of the selected Object in the top section.
4. In the **Copy Object** pane, go to the **New Object** section, and enter an **ID** for the new **Object**.
  5. If a **Context** is required, enter a value at the prompt.
  6. To copy the details of the currently selected **Object** to a newly created **Object**, select the **Copy Object** button.

**Important:** Only Objects and Association within the same Class can be copied. For example, If 'CIVI-15D-DK' Object belongs to Class 'Area', after performing a copy of 'CIVI-15D-DK', the new object will be created under class 'Area' only (that is, the newly copied object will be copied to the original Object Class).

## Manage Associations

The Associations are pre-established relationships between the Classes and Objects in the Database. The following are the characteristic features of the Associations:

- An object can have multiple associations.
- All associations are bi-directional, and can be referenced back and forth.
- For an association to exist, both the associated objects should exist in the class library.
- If any of the associated objects are deleted, the association is also deleted.



The following are a few among the default Association types, listed with their typical usage:

<b>REFERENCE</b>	$\leftarrow$ is referenced in	refers to	DOCUMENT refers to $\rightarrow$ EQUIPMENT
<b>ESSENTIAL CLASSIFICATION</b>	$\leftarrow$ is a classifier of	is classified as	OBJECT is classified as $\rightarrow$ CLASS
<b>INCIDENTAL CLASSIFICATION</b>	$\leftarrow$ is an incidental classifier of	is incidentally classified as	OBJECT is incidentally classified as $\rightarrow$ CLASS
<b>ASSEMBLY</b>	$\leftarrow$ is an assembly including	is a part of	EQUIPMENT is a part of $\rightarrow$ UNIT
<b>COLLECTION</b>	$\leftarrow$ is a collection including	is an element of	OBJECT is an element of $\rightarrow$ FOLDER
<b>NOTE REFERENCE</b>	$\leftarrow$ is referenced in note	is a note referring to	A310204 is a note referring to $\rightarrow$ VALVE
<b>FULFILLMENT</b>	$\leftarrow$ fulfils	is fulfilled by	DOCUMENT is fulfilled by $\rightarrow$ FILE
<b>DIRECT CONNECTION</b>	$\leftarrow$ is connected to	is connected to	PUMP is connected to $\rightarrow$ VALVE
<b>SUCCESSION</b>	$\leftarrow$ is a successor to	is succeeded by	DOCUMENT is succeeded by $\rightarrow$ DOCUMENT
<b>GENERIC ASSOCIATION</b>	$\leftarrow$ is associated with	is associated with	OBJECT $\leftarrow$ is associated with $\rightarrow$ OBJECT

From the **Manager** pane of the **Admin Tool**, you can carry out the following operations:

- Create New Association Types
- Create Permissible Associations
- Create Object Associations

- Follow an Association
- Delete an Association

## Creating New Association Types

**Important:** Before creating a new Association Type, you must create a new Permissible Association in the Class Library. You cannot use a new Association Type in an XML import file, until the XML Schema is updated to include the new Association Type.

To create new Association types:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.  
All the Objects associated to the selected Class appears in the Objects of Class pane.
3. In the **Objects of Class** pane, select an **Object**.
4. In the **Manager** pane, select the icon to expand the **Associations** node, and then select **Association Types**.



A table listing all the pre-defined Association Types is displayed.

ID	Name	Source->Target	Target->Source
CTX	Context	in the context of	is a context for
DAT	Dataset	has dataset	is a dataset of
DCO	Direct Connection (Contigu)	is connected to	is connected to
DEF	Defines	defines	is defined in
DES	Describes	describes	is described in
DOC	Documentation	is a document for	has document
GEN	Generic Association	is associated with	is associated with
ICO	Indirect Connection (Logic)	is logically connected to	is logically connected to
IDF	Indirectly Defines	indirectly defines	is indirectly defined in
IDS	Indirectly Describes	indirectly describes	is indirectly described in
IDT	Identification	is identified by	is an identifier for
IRE	Includes Reference	refers to	is referenced in
LCO	Location	is the location of	is located in
LCG	Lifecycle Group	has lifecycle group	is lifecycle group for
LCS	Lifecycle Status	has lifecycle status	is lifecycle status for
LGM	Lifecycle Group Member	has lifecycle states	is lifecycle state for group
NRE	Note Reference	is a note referring to	is referenced in note
PFL	Primary Fulfillment	is primarily fulfilled by	primarily fulfills
PRO	Project	has project	is project for
RSP	Responsibility	is the responsibility of	is responsible for
SCO	Stream Connection	is upstream of	is downstream of
SUC	Succession	is succeeded by	is a successor to
TCO	Template Composition	is a template including	is a component of template
TRE	Template Reference	is a template that refers to	is a reference in template
Double Click to Add		Double Click to Add	Double Click to Add

5. Go to the last row of the table, and double-click the **Double Select to Add** cell.

Double Click to Add			
---------------------	---------------------	---------------------	---------------------

6. Type the **ID**, **Name**, **Source > Target**, and **Target > Source**, and then press **Enter**.

**Note:** Make sure to fill in data that is unique from what is already listed in the table. If not, you cannot create a new Association.

### Creating Permissible Association Types

The Associations are pre-defined in the Class Library, and referred to as Permissible Associations. Permissible Associations are inherited, so an Association is allowed between a particular Objects and all of its sub-Classes. Creating Permissible Association types is as process of creating new relationships between Classes, through the pre-existing Associations in the Class Library.

To create Permissible Association types:

1. Go to the **Class** pane in the **Admin Tool**.

2. Select a **Class** in the **Class Library**.

All the Objects associated to the selected Class appears in the Objects of Class pane.

3. In the **Objects of Class** pane, select an **Object**.

4. In the **Manager** pane, select the icon to expand the **Associations** node, and then select **Permissible Association Types**.



A list of all the Permissible Associations for Objects of the Class selected in the Class Library pane is displayed.

Associations inherited from a Class up in the Class hierarchy appears in bold and read only.

Inherited Permissible Association In Bold and Read Only		
Source ID	Source->Target	Target ID
<b>FACILITY</b>	<b>is a part of</b>	<b>FACILITY</b>
<b>FACILITY</b>	<b>is an element of</b>	<b>FACILITY</b>
<b>FACILITY</b>	<b>has dataset</b>	<b>DATASET</b>
<b>FACILITY</b>	<b>is logically connected to</b>	<b>FACILITY</b>
<b>FACILITY</b>	<b>is referenced in note</b>	<b>NOTE</b>
<b>FACILITY</b>	<b>has document</b>	<b>INFORMATION</b>
<b>FACILITY</b>	<b>is referenced in</b>	<b>INFORMATION</b>
<b>OBJECT</b>	<b>is a part of</b>	<b>SET</b>
<b>OBJECT</b>	<b>is an element of</b>	<b>SET</b>
<b>OBJECT</b>	<b>is an element of</b>	<b>FOLDER</b>
<b>OBJECT</b>	<b>is associated with</b>	<b>OBJECT</b>
<b>OBJECT</b>	<b>is an assembly including</b>	<b>SET</b>
<b>OBJECT</b>	<b>is a collection including</b>	<b>SET</b>
<b>OBJECT</b>	<b>is a collection including</b>	<b>CONTENT FOLDER</b>
<b>OBJECT</b>	<b>is in security access group</b>	<b>SECURITY ACCESS GROUP</b>
<b>OBJECT</b>	<b>is in charge</b>	<b>CHANGE</b>

- To create a new Permissible Association, go to the **Create Permissible Association** area at the bottom of the Manager pane.

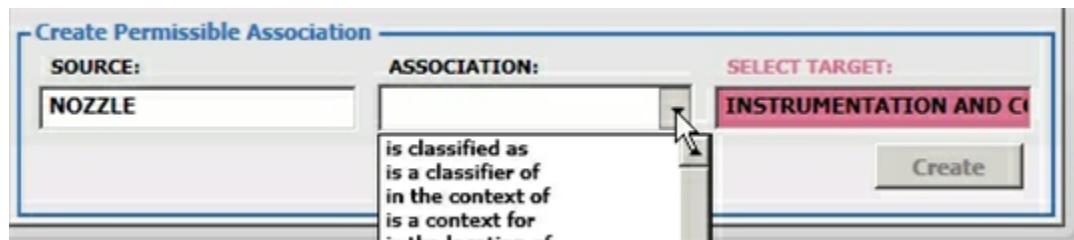
The Class selected in the Class Library pane appears by default, in the SOURCE box.

- Select in the **SELECT TARGET** box, go to the **Class Library** pane, and select a **Class**.

The selected Class is automatically populated into the **SELECT TARGET** box.

- Select the drop-down arrow in the **Association** box, and select an **Association**.

**Note:** The Associations displayed in the drop-down list are permissible Associations pre-defined in the Class Library.



8. Select **Create**.

A permissible Association type is created.

### Hiding Association Types

When too many Associations are listed under **Related Items** (for example, as part of a criterion in **Advance Search, Query form, Export definition**), you can remove them from dropdown lists or tree views (in Summary Views).

- To remove Associations from the dropdown lists in *the AIM Dashboard*, add a **Hidden** attribute in the [EIWM](#) file.
- To remove Associations from all tree views lists in *the AIM Dashboard*, add a **Visible** attribute in the [EIWM](#) file.

**Example:**

```
<AssociationType>
  <ID>FUL</ID>
  <Name>Fulfillment</Name>
  <SourceRole>is fulfilled by</SourceRole>
  <TargetRole>fulfills</TargetRole>
  <Hidden>true</Hidden> // Optional
  <Visible>false</Visible> // Optional
</AssociationType>
```

After the *Import Controller* processes the [EIWM](#) file, you must restart **IIS**.

The **Association Types** tab in the **Admin Tool** displays the status of these two attributes (**Hidden** and **Visible**) as displayed below:

Manager						
Operations		Association Types				
Add new association type to last row		ID	Name	Source->Target	Target->Source	Hidden
FUL	Fulfillment			is fulfilled by	fulfills	True
RIT	Right			has right	is right for	False
ABT	About			is about	is a subject of	False
ASS	Assembly			is a part of	is an assembly including	False
CLE	Essential Classification			is classified as	is a classifier of	False
CLI	Incidental Classification			is incidentally classified as	is an incidental classifier of	False
COL	Collection			is an element of	is a collection including	False

### Creating Object Associations

Creating Object Associations is a process of creating new relationships between the Objects, through the pre-existing Associations in the Class Library.

To create Object Associations:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.  
All the Objects associated to the selected Class appears in the Objects of Class pane.
3. In the **Objects of Class** pane, select an **Object**.
4. In the **Manager** pane, select the icon to expand the **Associations** node, and then select **Associations**.



A table listing all the Associations for the selected Object is displayed.

The screenshot shows the Manager pane with the 'Associations' tab selected. At the top, there are filters: 'Class: NOZZLE', 'Object: 1220-11-1/SUC', 'Number: 8', and a 'Show Context' checkbox. Below the filters is a table titled 'Object Associations' with two columns: 'Relationship' and 'Object ID'. The table lists eight associations:

Relationship	Object ID
has dataset	1220-11-1/SUCTION VPD Data Set
is a part of	1220-11-1
is classified as	NOZZLE
is identified by	1220-11-1/SUCTION
is identified by	/1220-11-1/SUCTION
is logically connected to	TEE 3 of BRANCH /P211/B1
is logically connected to	P211/B1
is referenced in	srp

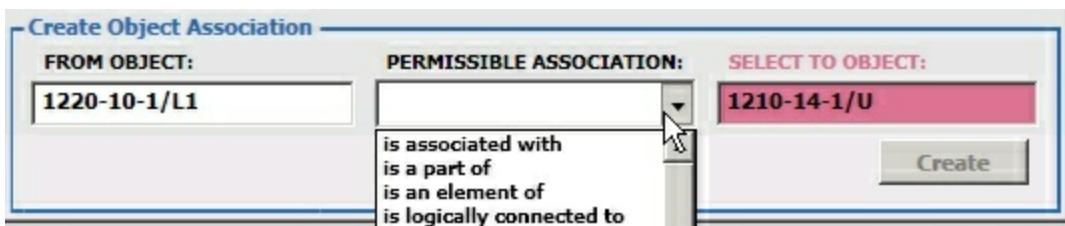
5. To create new **Object Associations**, go to the **Create Object Association** area at the bottom of the **Manager** pane.

The screenshot shows a dialog box titled 'Create Object Association'. It has three main input fields: 'FROM OBJECT:' containing '1220-10-1/L2', 'PERMISSIBLE ASSOCIATION:' (a dropdown menu), and 'SELECT TO OBJECT:' containing '1220-10-1/L1'. At the bottom right is a 'Create' button.

The Object selected in the Object of Class pane appears by default, in the FROM OBJECT box.

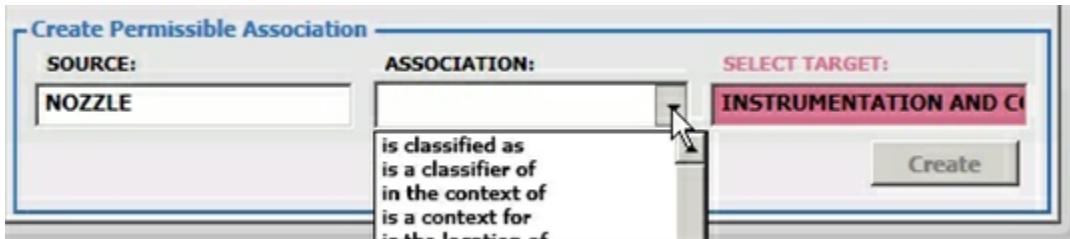
6. Select in the **To Object** box, go to the **Objects of Class** pane, and select an **Object**.

The selected Object is automatically populated into the SELECT TO OBJECT box.



7. Select the drop-down arrow in the **Association** box, and select an **Association**.

**Note:** The Associations displayed in the drop-down list are permissible Associations pre-defined in the Class Library.



8. Select **Create**.

A new Object Association is created.

## Following an Association

To follow an Association:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.  
All the Objects associated to the selected Class appears in the Objects of Class pane.
3. In the **Objects of Class** pane, select an **Object**.
4. In the **Manager** pane, select the **+** icon to expand the **Associations** node, and then select **Associations**.



A table listing all the Associations for the selected Object is displayed.

**Manager**

Operations Associations **X**

**Object Associations**

Class:	NOZZLE	Object:	1220-11-1/SUC	Number:	8	<input type="checkbox"/> Show Context
Relationship	Object ID					
has dataset	1220-11-1/SUCTION VPD Data Set					
is a part of	1220-11-1					
is classified as	NOZZLE					
is identified by	1220-11-1/SUCTION					
is identified by	/1220-11-1/SUCTION					
is logically connected to	TEE 3 of BRANCH /P211/B1					
is logically connected to	P211/B1					
is referenced in	srp					

5. Right-click on an Association, and select **Follow Association**.

Operations Associations **X**

**Object Associations**

Class:	NOZZLE	Object:	1220-11-1/SUC	Number:	8	<input type="checkbox"/> Show Context
Relationship	Object ID					
has dataset	1220-11-1/SUCTION VPD Data Set					
is a part of	1220-11-1					
is classified as	NOZZLE					
is identified by	Delete Association SCTION					
is identified by	Follow Association UCTION					
is logically connected to	TEE 3 of BRANCH /P211/B1					
is logically connected to	P211/B1					
is referenced in	srp					

The Associated Object is displayed.

6. To return to the previous window, go to the toolbar at the top, and select the **Previous** button.  
The Associated Object is displayed.
7. To return to the previous window, go to the toolbar at the top, and select the **Previous** button.

## Deleting an Association

To delete an Association:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.  
All the Objects associated to the selected Class appears in the Objects of Class pane.
3. In the **Objects of Class** pane, select an **Object**.
4. In the **Manager** pane, select the **+** icon to expand the **Associations** node, and then select **Associations**.



A table listing all the Associations for the selected Object is displayed.

5. Right-click on an **Association**, and select **Delete Association**.

A message confirming Do you want to delete the association? appears.

**Note:** You CANNOT delete an inherited Permissible Association.

## Manage Attributes

From the Manager pane of the Admin Tool, you can manage the following aspects of the Attributes:

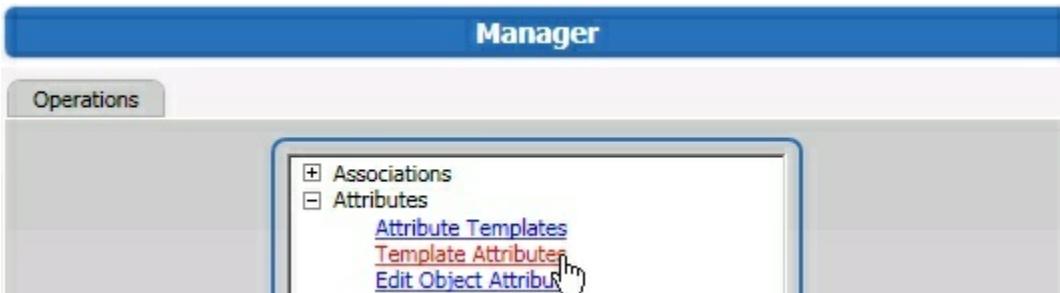
- Attribute Templates
- Template Attributes
- Edit Object Attributes

### Creating Attribute Templates

Using the Create Template button in the Attribute Templates pane, you can create an Attribute Template for a Class. The Create Template button remains disabled, until you select a valid Class for which, you want to create an Attribute Template. The Attribute Template created for a selected Class adopts the same Class name, and replaces the inherited Template.

To create Attribute Templates:

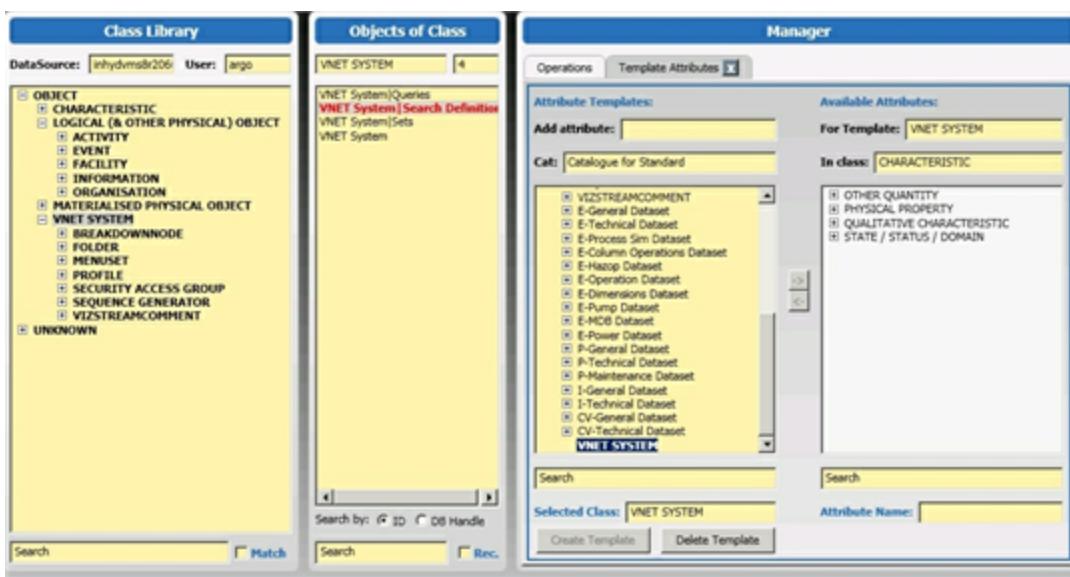
1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.
3. In the **Manager** pane, select the icon to expand the **Attributes** node, and then select **Template Attributes**.



The Template Attributes pane opens in a new tab.

4. Select the **Create Template** button at the left-bottom.

An Attribute Template for the selected Class is created, and displayed in the Attribute Templates pane.



## Adding an Attribute

Until you add an Attribute to a Class that has no pre-defined attributes, it adopts the attributes inherited from its Parent Class.

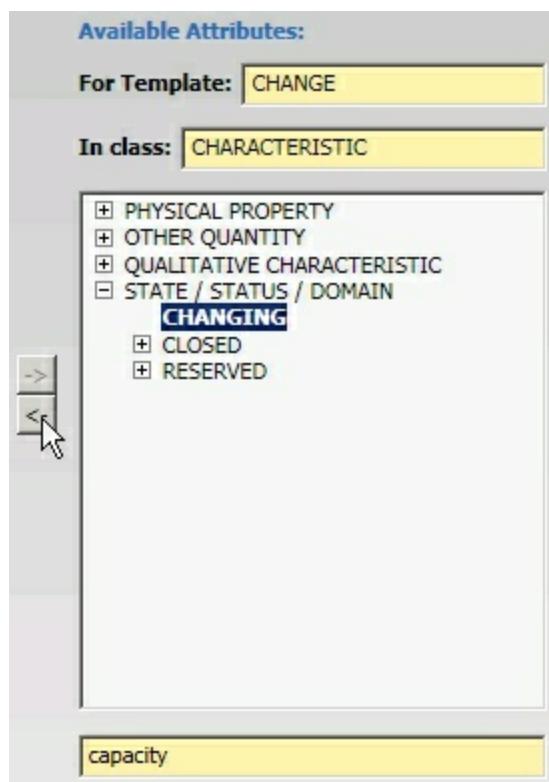
To add an Attribute:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.
3. In the **Manager** pane, select the **+ icon** to expand the **Attributes** node, and then select **Template Attributes**.



The Template Attributes pane opens in a new tab, displaying a list of the Available Attributes in the right pane.

4. Go to the **Available Attributes** pane, and select the **Attribute** you want to add to the **Template**.



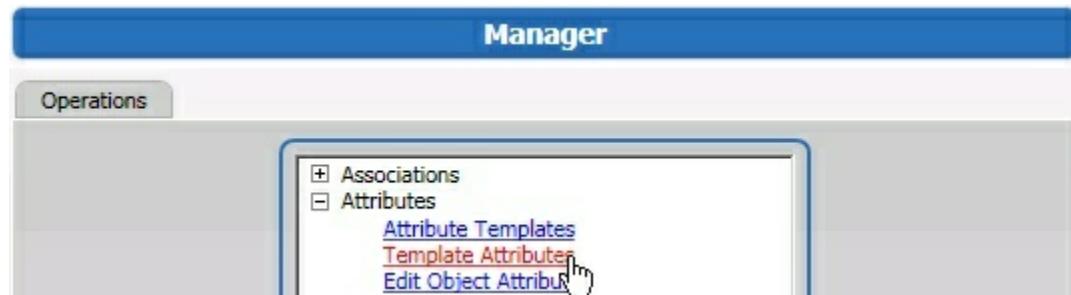
- To add the selected **Attribute** to the **Attribute Template**, select  at the left of the **Available Attributes** pane.

**Note:** The Objects subsequently created from Classes with this Attribute Template will inherit an extra Attribute. You must create an extra Attribute for a Class, if a suitable Attribute is not already available in the Available Attributes list.

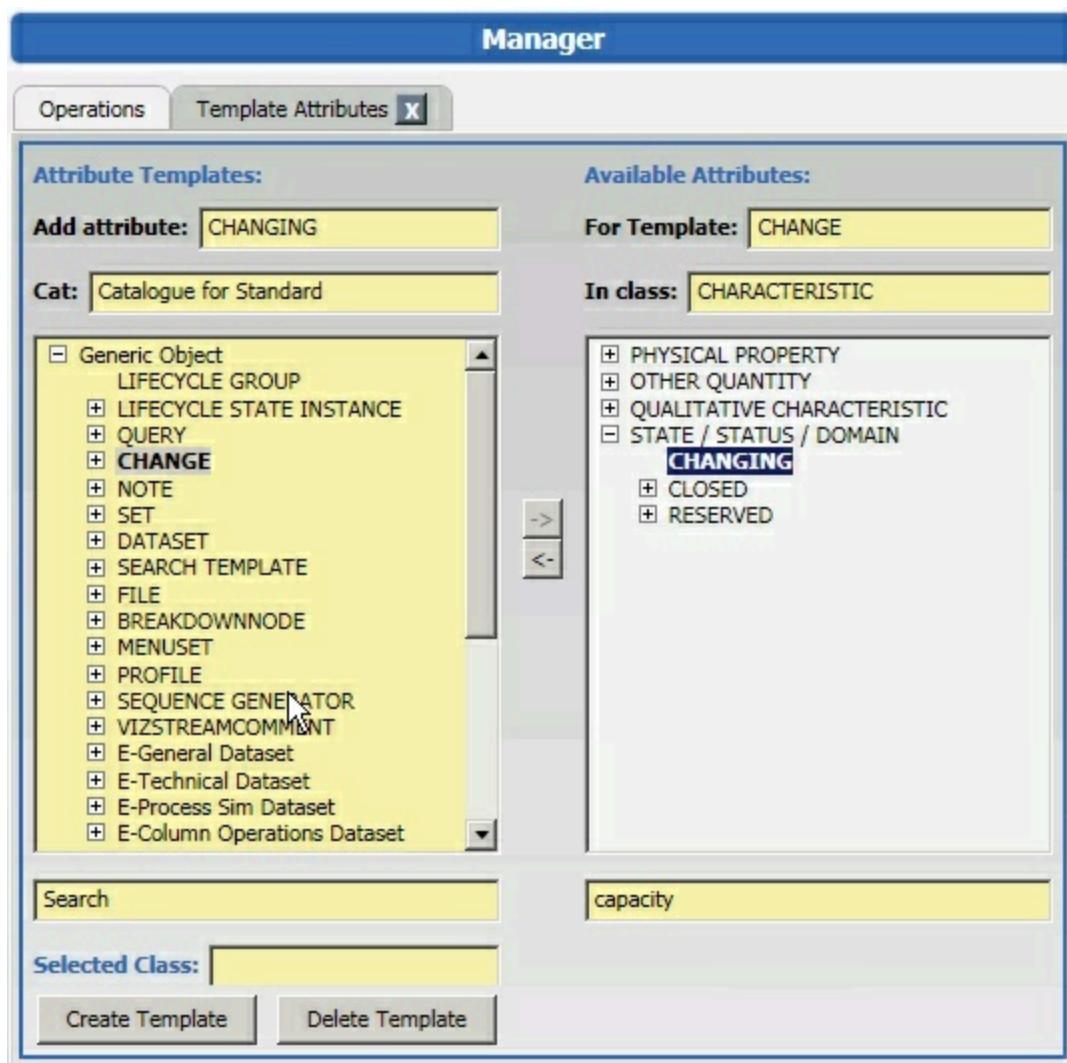
## Removing an Attribute

To remove an Attribute:

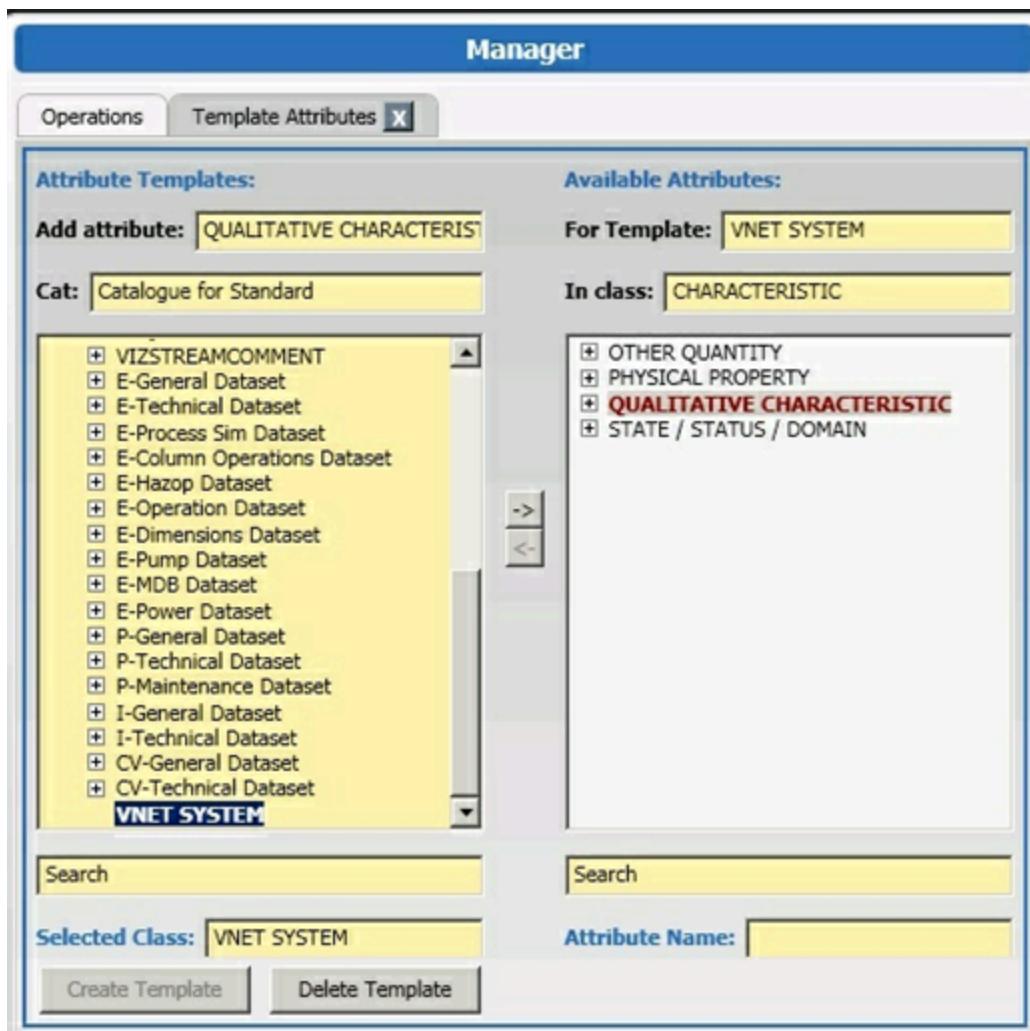
- Go to the **Class** pane in the **Admin Tool**.
- Select a **Class** in the **Class Library**.
- In the **Manager** pane, select the  icon to expand the **Attributes** node, and then select **Template Attributes**.



The Template Attributes pane opens in a new tab, displaying a list of the Available Attributes in the right pane.



4. To remove the **Attribute** from the **Attribute Template**, select the **Attribute** in **Available Attributes** pane.
5. Go to the **Attribute Templates** pane, and select the **Template** from which you want to remove the **Attribute** you added.



6. Select at the right of the **Attribute Templates** pane.

A message confirming if you want to remove the attribute appears.

7. Select **Yes** or **No**.

### Searching an Attribute

To search an Attribute:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.
3. In the **Manager** pane, select the icon to expand the **Attributes** node, and then select **Template Attributes**.



The Template Attributes pane opens in a new tab, displaying a list of the Available Attributes in the right pane.

4. In the **Available Attributes** pane at the right, go to the box at the bottom, and type all or a part of an **Attribute** name.

**Note:** Wildcard search is supported. Wildcard characters are database-dependent, but Microsoft SQL Server and Microsoft Data Engine (MSDE) use the same wildcard conventions.

5. Press **Enter**.

### Deleting Attribute Template

If you delete an Attribute Template, the Objects subsequently created from Classes will not have attributes of the deleted Template. However, the existing Objects will continue to have the same Attributes as earlier.

To delete Attribute Template:

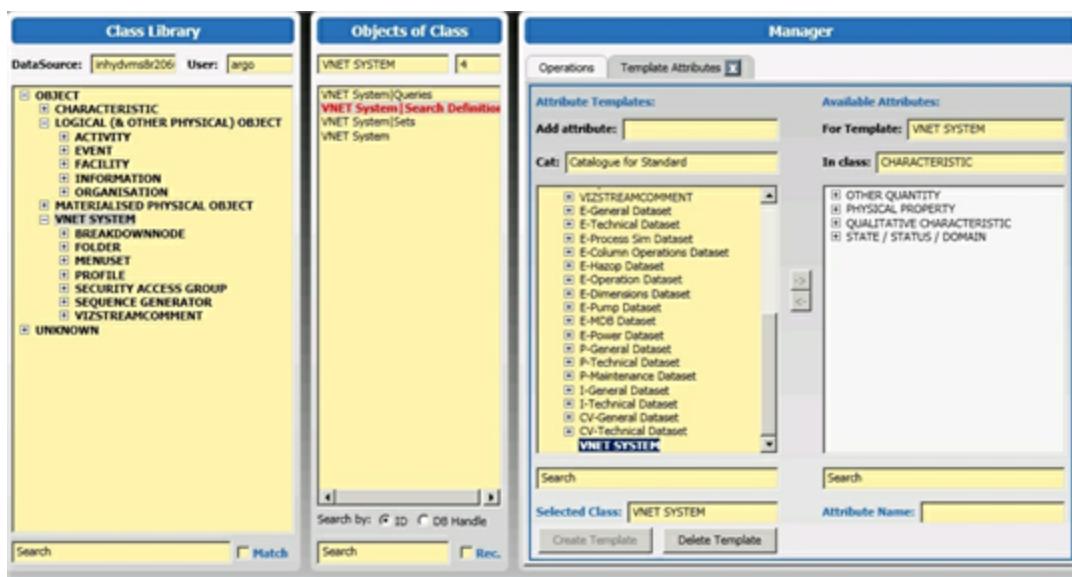
1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.
3. In the **Manager** pane, select the icon to expand the **Attributes** node, and then select **Template Attributes**.



The **Template Attributes** pane opens in a new tab.

4. Select an **Attribute Template**, and then select the **Delete Template** button at the bottom.

The selected Attribute Template is deleted.



A message confirming if you want to remove the attribute appears.

5. Select **Yes** or **No**.

### Setting Template Attribute Values

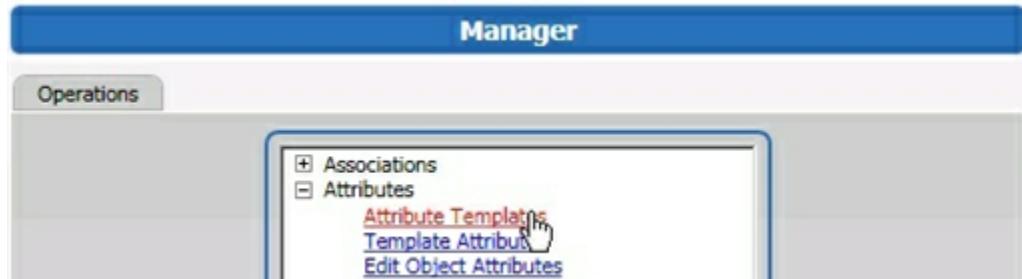
A Generic Object Template is assigned to all objects that do not have attributes in their Class definition. Typically, the Generic Object Template will have only one level below in its hierarchy. The Generic Object Templates names match the Class names with the same attributes. By selecting templates from the Attribute Templates pane, you can set values of that Object template attributes.

To set Template Attribute values:

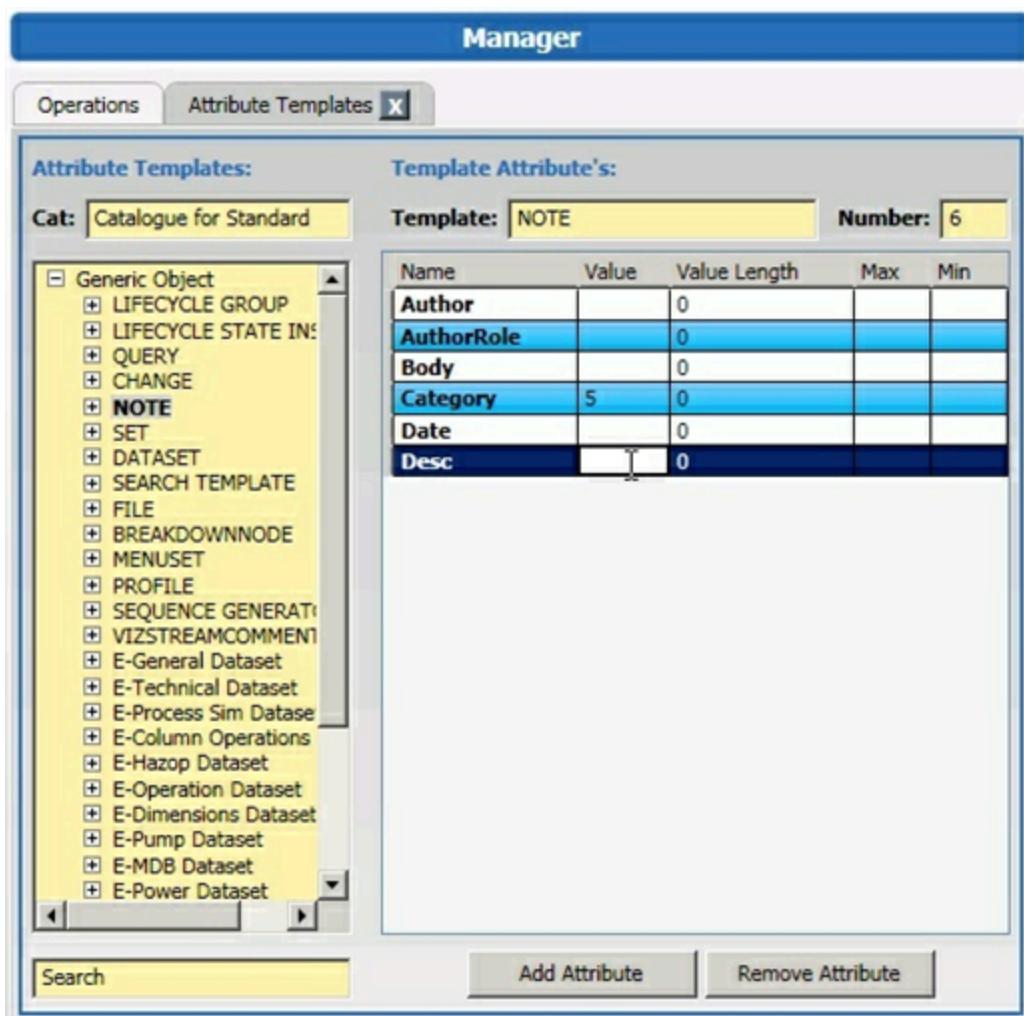
1. Go to the Class pane in the Admin Tool.
2. Select a Class in the Class Library.

All the Objects associated to the selected Class appears in the Objects of Class pane.

3. In the Manager pane, select the icon to expand the Attributes node, and then select Attribute Template.



The pre-defined attribute templates are displayed.



4. In the **Attribute Templates** pane, select the icon to expand the **Attribute Template** node, and select a Template.

A table listing the attributes assigned to that template appears in the **Template Attributes** pane.

**Note:** The Catalogue name of the selected Template appears in the **Cat:** box at the top of the Attribute Templates pane. The Template name and number appears in the boxes at the top of the Template Attributes pane.

5. To set or edit the **Template Attribute** values, select inside the table cells, and enter the value.

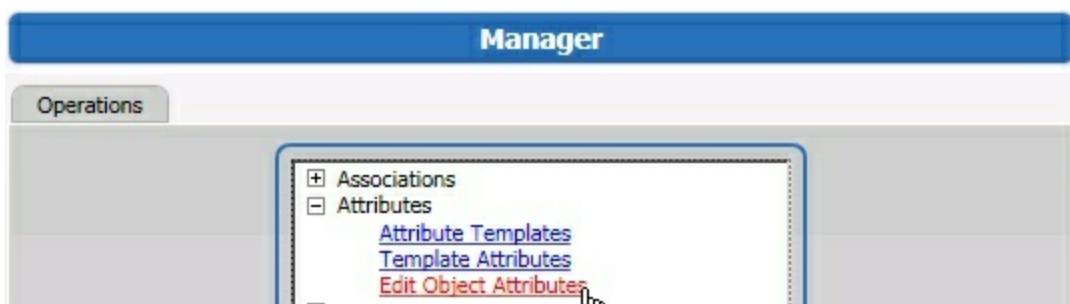
## Editing Object Attributes

To edit **Object Attributes**:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.

All the Objects associated to the selected Class appears in the Objects of Class pane.

3. In the **Objects of Class** pane, select an **Object**.
4. In the **Manager** pane, select the icon to expand the **Attributes** node, and then select **Edit Object Attributes**.



The **Edit Object Attributes** page opens in a new tab, displaying the Object Attributes.

**Note:** The **Edit Object Attributes** page displays data, only if you have created **Template Attributes** for a Class.

5. To edit the **Object Attribute** value, double-click the cells in the **Value** column, and type the value.
6. Press **Enter**.

This screenshot shows the 'Edit Object Attributes' page. At the top, there's a header with tabs for 'Operations' and 'Edit Object Attributes' (which is active, indicated by a red 'X'). Below the header, the title 'Edit Object Attributes:' is followed by 'Attributes For Object: E-9002 Hazop Dataset'. A sub-header 'Edit Object Attribute Value' is visible above a table. The table has columns: ID, TYPE, UOM, MIN, MAX, and VALUE. The rows show attributes for the object: Corrosive, Electrical Power, Erosive, Explosive, Flammable, and Toxic. The 'Electrical Power' row is currently selected, with its 'TYPE' cell highlighted in blue. The 'MAX' and 'VALUE' cells for this row also contain the value 'NO'.

ID	TYPE	UOM	MIN	MAX	VALUE
Corrosive	String				
Electrical Power	String				NO
Erosive	String				
Explosive	String				
Flammable	String				
Toxic	String				

## Modify Unit Names

To modify **Units**:

1. Go to the **Class** pane in the **Admin Tool**.
2. Select a **Class** in the **Class Library**.

All the Objects associated to the selected Class appears in the Objects of Class pane.

3. In the **Objects of Class** pane, select an **Object**.

4. In the **Manager** pane, select the icon to expand the **Units** node, and then select **Property Units**.

The Physical Property Units page opens in a new tab, displaying a list of units available for the selected Class.

**Physical Property Units:**

**Physical Property Class:** Test Pressure

**Measure Class:** Pressure Measure

**Base Unit Row Hightlighted in Red**

Name	Symbol
pounds/sq inch	psi
Newton/square metre	N/m <sup>2</sup>
Pascal	Pa
Millibar	mbar
kg/square cm	kg/cm <sup>2</sup>
Inch of water	in. water
Inch of mercury	in. Hg
dynes/cm <sup>2</sup>	dynes/cm <sup>2</sup>
atmosphere	atmos
barg	barg

- Double-click in the **Cells** in the **Name** column, type the new **Unit** name, and press **Enter**.

## Set Up User Access

This section explains how users' accounts are created, how they are modified, and how access to the *AIM Dashboard* and/or information can be restricted.

### Introduce User Access

Most user access is managed through the *AIM Admin Tool*.

**Note:** The following sections assume you have logged on to the Admin Tool, see [Log on to the Admin Tool](#).

To understand user access in the *AIM Dashboard*, the following rules may help:

- Every person who uses the *AIM Dashboard* has a *User* account.
- Some parts of functionality are only available to a *User* who has been assigned the appropriate *Right*.
- Every data object can have its visibility restricted by associating it with a *Security Access Group (SAG)*.
- Data objects in a *SAG* can only be seen by a *User* who has been assigned the appropriate *SAG*.
- Rights* and *SAGs* can be grouped together to create a *Role*.
- A *Role* can be assigned to a *User*, giving them all its constituent *Rights* and *SAGs* in one go.

## Users

Two *Users* are created during the installation process, other *Users* are created automatically when people visit the *AIM Dashboard* web application.

The first two *Users* are:

- **Admin** - a non-editable account that has all the rights and privileges possible. The password to this account needs to be changed as soon as possible after installation.
- an account for the person performing the installation, using their MS Windows login details.

Both of these *Users* have the built-in **Administrator** and **Default User Roles** assigned to them. Subsequent, automatically-created, *Users* have the **Default User Role** assigned to them, but this can be changed - see [Roles](#) for more information.

Managing Users

To see the **Existing Users** list:

1. In the **Manager** pane expand **Users, Roles, Rights and Groups**.
2. Select **Manage Users**.

It is possible to create *Users*, however, as this is done automatically when people visit the *AIM Dashboard* web application, it is not necessary unless you need to create *Users* in advance so they can be given particular rights and access before they visit, or to deny them access completely - see [Deny Access to AVEVA AIM Dashboard](#).

Two types of *User* can be created:

- Domain User - users are authenticated using their MS Windows logins.
- non-Domain user - for accessing the **Admin Tool** only, authenticated against login information held in the *AIM Workhub* database.

To create a Domain *User*:

1. Make sure the **Existing Users** list is open.
2. Select **New**.
3. Select **Select from available Domain Users**.
4. Select a domain from the **Current Domain** list.
5. Select one or more user(s) from the **Group Members (users only)** list.
6. Select **Add Selected User(s)**.
7. The user(s) are added with the **Default User Role** assigned to them.

To create a non-Domain *User*:

1. Make sure the **Existing Users** list is open.
2. Select **New**.
3. Select **Create a non-Domain User**.
4. Enter the *User* information (see the following table), select **Create New User**, and then select **OK**.

**Create non-Domain User Parameters**

Parameter	Description
Username	Mandatory field and it is the login name of the user.
Email Address	E-mail address of the user.
Name	Descriptive Name of the user.
Password/Confirm Password	Password for the user login. Password is always mandatory because minimum characters must be > 0 (zero).
Force password change on users first access	If selected, users will need to change the password on their first login attempt.
Set password to never expire	Select this option to set no password expiry.
Description	General description about the user.

To edit a non-Domain *User*:

1. Make sure the **Existing Users** list is open.
2. Select the *User* you want to edit.
3. Select **Edit**.
4. Edit the required information, and then select **Save**.

To delete a *User*:

1. Make sure the **Existing Users** list is open.
2. Select the *User* you want to delete.
3. Select **Delete**, and then select **Yes**.

---

**Note:** Built-in users like **Admin** cannot be deleted.

---

Viewing Users' Rights and Access

To see existing *Users'* rights and access:

1. In the **Manager** pane expand **Users, Roles, Rights and Groups**.
2. Select **Assign Roles, Rights and Groups**.
3. Select the *User* from the **Existing Users** list (top-left).
  - The *Rights* assigned to the *User* are shown in the **Users's Total Rights** list (middle-left).
  - The *SAGs* assigned to the *User* are shown in the **Users's Total Groups** list (bottom-left).
  - The *Roles* assigned to the *User* are shown in the **Users's Current Roles** list (top-Center).

## Rights

*Rights* give users the ability to perform certain actions in *the AIM Dashboard*, the built-in *Rights* are:

Right	A user with this right can:
AssignRight	Assign <i>Rights</i>
CreateRight	Create new <i>Rights</i>
DeleteRight	Delete <i>Rights</i>
ModifyRight	Modify <i>Rights</i>
UnassignRight	Un-assign <i>Rights</i>
AssignRole	Assign <i>Roles</i>
CreateRole	Create new <i>Roles</i>
DeleteRole	Delete <i>Roles</i>
ModifyRole	Modify <i>Roles</i>
UnassignRole	Un-assign <i>Roles</i>
CreateUser	Create new <i>Users</i>
DeleteUser	Delete <i>Users</i>
ModifyUser	Modify <i>Users</i>
QueryFormCreation	Create and delete <i>Query Forms</i>
VisualReportCreation	Create, save and edit <i>Visual Reports</i>
SetCreation	Create and save new <i>Sets</i>
NotesCreation	Create and save new <i>Notes</i>
Print	Print documents from within <i>the AIM Dashboard</i>
CreateExport	Save <i>Export Definitions</i>
CreateAdvancedFind	Save <i>Searches</i>
ManageSettings	Access the <b>Settings</b> area of <i>the AIM Dashboard</i>
ManageSiteSettings	Reserved for use in cloud solutions.
CreateMarkup	Create new markup
EditMarkup	Edit all markup

Right	A user with this right can:
Download	Download file
RunExport	Run exports
ExportMarkup	Export markup for documents

## Managing Rights

To see a list of existing *Rights*:

1. In the **Manager** pane expand **Users, Roles, Rights and Groups**.
2. Select **Manage Roles, Rights and Groups**.
3. Select the **Rights** option.

---

**Note:** Built-in *Rights* are shown in red.

---

It is possible to create and delete User-defined *Rights*, however, attaching functionality to a *Right* is beyond the scope of the document and would need to be done in consultation with your AVEVA Representative. Without this, the *Right* would not control any functionality.

To create a User-defined *Right*:

1. Make sure the existing *Rights* list is open.
2. Type the name of the new *Right* in the **Name** box.
3. Select **Create New**.

---

**Note:** User-defined *Rights* are shown in black.

---

To delete a User-defined *Right*:

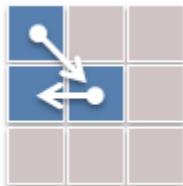
1. Make sure the existing *Rights* list is open.
2. Select the *Right* you want to delete.
3. Select **Delete Existing**.

## Assigning Rights

A *User* can have a *Right* assigned to them:

- directly, or
- indirectly, through a *Role*.

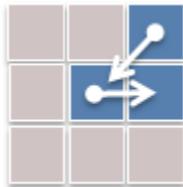
To assign a *Right* directly to a *User*:



1. In the **Manager** pane expand **Users, Roles, Rights and Groups**.

2. Select **Assign Roles, Rights and Groups**.
3. Select the *User* from the **Existing Users** list (top-left).
4. Select a *Right* from the **All Existing Rights** list (middle-center).
5. On the left side of the list select <-.
6. The *Right* appears in the **User's Total Rights** list (middle-left), coloured green to show it has been directly assigned.

To assign a *Right* to a *Role*:



1. In the **Manager** pane expand **Users, Roles, Rights and Groups**.
2. Select **Assign Roles, Rights and Groups**.
3. Select the *Role* from the **All Existing Roles** list (top-right).
4. Select a *Right* from the **All Existing Rights** list (middle-center).
5. On the right side of the list select >.
6. The *Right* appears in the **Role's Current Rights** list (middle-right).
7. All *Users* that have the *Role* assigned to them will now also have the *Right*.

---

**Note:** To assign a particular *Role* to a *User*, see the [Assigning Roles](#) section in the [Roles](#) topic.

---

## Roles

Using *Roles* you can assign multiple *Rights* and/or *SAGs* to *Users* in one go.

This is useful if you want to have groups of users that have different rights and access. For example, an Team Lead Role could have *Rights* for saving searches or *Query Forms* assigned to it, an Electrical Engineer Role might have no *Rights* and only *SAGs* that are associated with engineering type objects.

Two *Roles* are created during installation:

- **Default User** - which has NO *Rights* assigned to it.
- **Administrator** - which has ALL built-in *Rights* assigned to it. This also gives the ability to log on to the *Admin Tool*, therefore, this role MUST NOT be removed.

### Managing Roles

To see a list of existing *Roles*:

1. In the **Manager** pane expand **Users, Roles, Rights and Groups**.
2. Select **Manage Roles, Rights and Groups**.
3. Select the **Roles** option.

To create a *Role*:

1. Make sure the existing *Roles* list is open.
2. Type the name of the new *Role* in the **Name** box.
3. If required, select an existing *Role* to base the new *Role* on.
4. Select **Create New**.

---

**Important:** If you create a new *Role* that is not based on an existing *Role*, it will not function in *AIM Dashboard* until the supporting objects are imported. You must import a Dashboard PROFILE and a Workhub PROFILE - each with corresponding MENUSET object and BREAKDOWNNODE objects.

---

To delete a *Role*:

1. Make sure the existing *Roles* list is open.
2. Select the *Roles* you want to delete, by selecting on the row
3. Select **Delete Existing**.

---

**Note:** You cannot delete a *Role* that is selected as a **Default Role**.

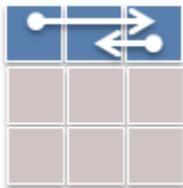
---

A **Default Role** is a *Role* that is given to *Users* when they are created. To select a **Default Role**:

1. Make sure the existing *Roles* list is open.
2. Select the check box next to the appropriate *Role(s)*.

#### Assigning Roles

To assign a *Role* to a User:



1. In the **Manager** pane expand **Users, Roles, Rights and Groups**.
2. Select **Assign Roles, Rights and Groups**.
3. Select the *User* from the **Existing Users** list (top-left).
4. Select a *Role* from the **All Existing Roles** list (top-right).
5. On the left side of the list select <-.
6. The *Role* appears in the **User's Current Roles** list (top-Center).

#### Context Access Control

**Context Access Control** allows the Dashboard to be configured so that only items with certain contexts can be viewed by a user. The access seen by a user is dependent on the role the user is in.

**Context Access Control** allows an administrator to manage and restrict the contextual data a user has access to while using the AIM Dashboard. This is achieved by configuring the list of contexts a user can see (allowed

contexts) and cannot see (denied contexts) for a given AIM Dashboard role.

The **Administrator** role is required to manage **Context Access Control**.

Navigate to the following page in the **Settings** dialog and select the role to be configured.

**NOTE:** All roles can be configured in this way.

The screenshot shows the 'Settings' dialog box. At the top, there are tabs for 'Role' and 'Site', with 'Role' selected. Below the tabs, a dropdown menu shows 'Role' and 'Security User1'. The left sidebar contains a list of settings categories: Browse, General, Data Visibility (which is selected and highlighted in blue), Default Views, Export, Global Navigation, Messages, Query Forms, Search, Tooltips, and Labels. The main content area is divided into two sections: 'General - Data Visibility' and 'Context Access Control'. Under 'General - Data Visibility', there are five checkboxes: 'Show only the latest revision', 'Make all types visible in Browse', 'Show Hidden types', 'Show Hidden attributes', and 'Show items of Unknown type'. Under 'Context Access Control', there are three sections: 'Allow', 'Deny', and 'Allowed root items in Browse'. Each section has a text input field and an information icon (i). At the bottom right of the dialog are 'Save' and 'Cancel' buttons.

If no settings are specified everyone has access to all data (as far as **Context Access Control** settings are concerned).

To configure the Context Access Control, define the following three fields:

- **Allow**

The list of contexts that are allowed to be accessed by a given role.

You can provide multiple values by separating them with a comma.

For example: Site1, Site2|Project1

- **Deny**

The list of contexts that are not allowed to be accessed by a given role.

You can provide multiple values by separating them with a comma.

For example: Site1, Site2|Project1

- **Allowed root items in Browse**

This should be the list of items (full IDs) which are allowed to be shown as root nodes in the Browse panel. This is independent of the allow and deny Context Access Control configurations.

You can provide multiple values by separating them with a comma and percent can be used to match multiple characters.

For example: Item1, Item2%

This is required if a Browse root node is not accessible according to the user's Context Access Control configuration, but the node is still required to start the breakdown.

This configuration ensures that the root node is visible to the user, so that a user can then expand the root node. Though they will still only see items below the root node that they have access to according to the allow and deny settings of the Context Access Control configuration.

---

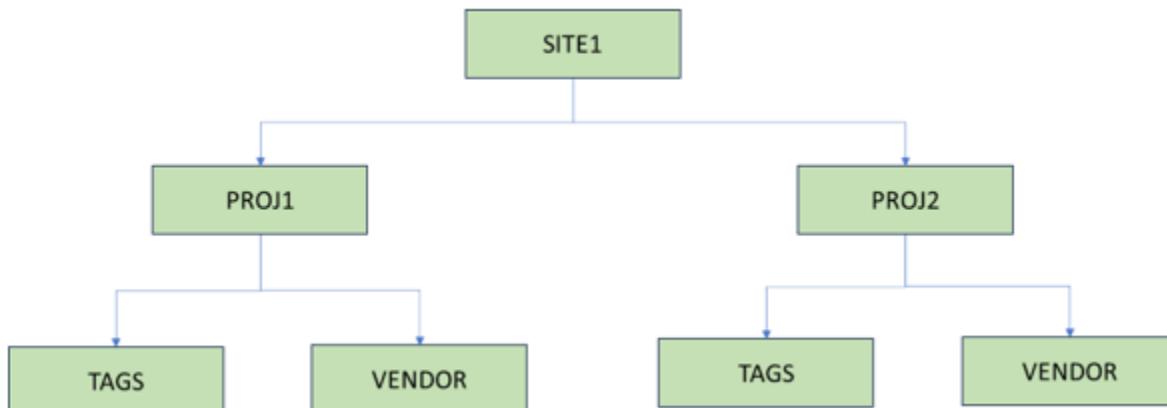
**Notes:**

---

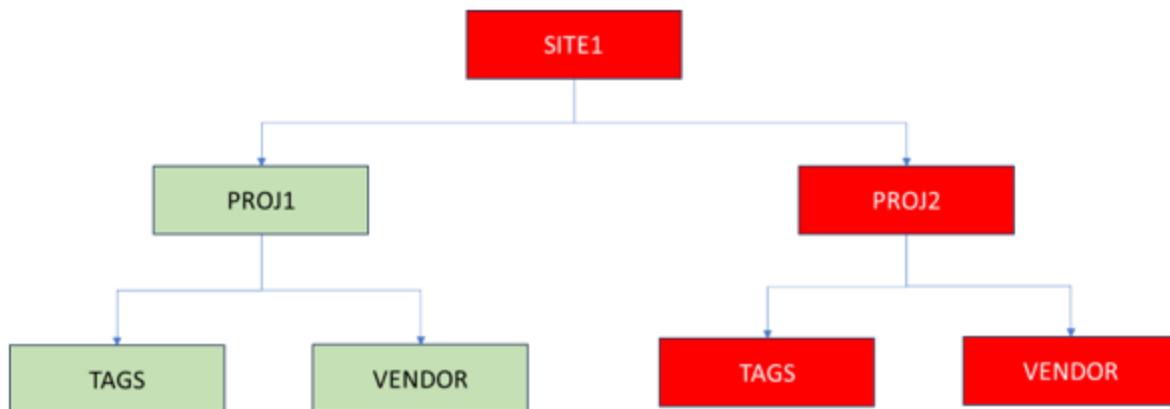
- It is recommended to not add more than 10 assets in total to the **Allow** and **Deny** lists.
- The **Deny** setting takes precedence over the **Allow** setting.
- Independent of the **Allow/Deny** configuration, all users will have access to VNET System data. For example sets, query forms, export definitions and so on.

### Example Configurations

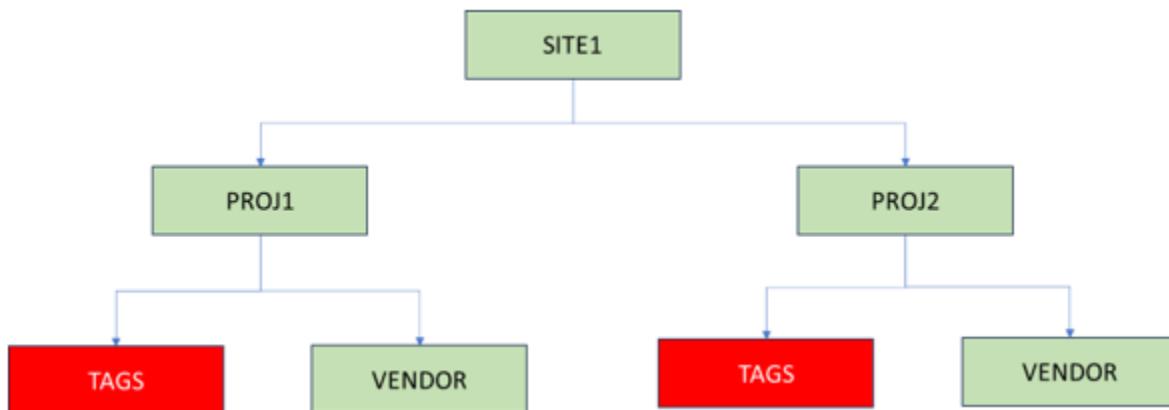
With a hierarchy of contexts, if the **Allow** and **Deny** values are left unset, then all users will have access to all data.



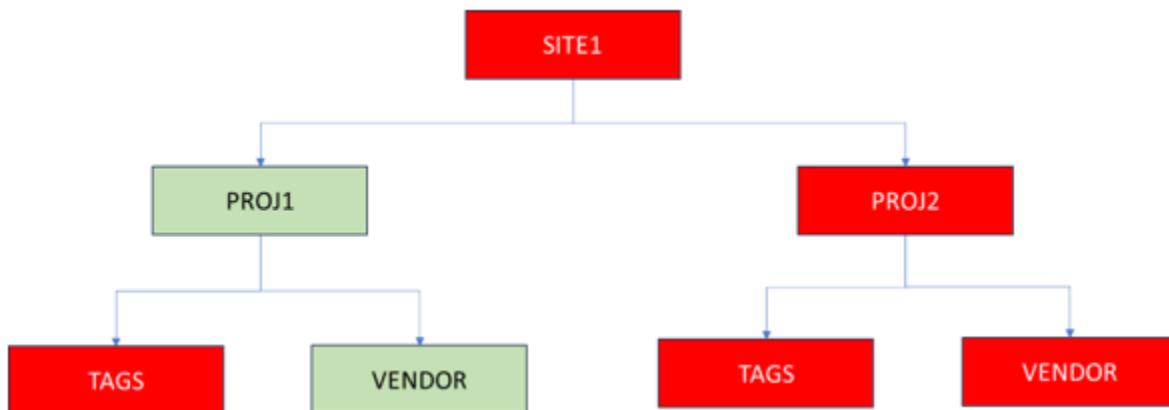
To give a specific role access to only **PROJ1** data, then configure Context Access Control as **Allow = SITE1|PROJ1**. The diagram below represents the data access a user will have in this case. In this case, if the breakdown node in Browse starts from **SITE1**, then configure the **Allowed root items in Browse = SITE1**, so that users can see the root node. However, when expanded, only SITE1|PROJ1 data will be visible.



To deny access to only TAGS data, then configure Context Access Control as **Deny = SITE1|PROJ1|TAGS,SITE2|PROJ2|TAGS**. The diagram below represents the data access a user will have in this case.



To provide access to only SITE1|PROJ1 data, but not SITE1|PROJ1|TAGS, then configure Context Access Control as **Allow = SITE1|PROJ1** and **Deny = SITE1|PROJ1|TAGS**. The diagram below represents the data access a user will have in this case.



## Security Access Groups

A *Security Access Group (SAG)* enables you to restrict the visibility of objects in the *AIM Dashboard*. After you have created a SAG and associated it with an object, that object can only be seen by *Users* who have that SAG

assigned to them, either directly or indirectly through a *Role*.

This section covers creating a *SAG* and assigning it to *Users* and *Roles*.

---

**Note:** You can create a *SAG* and associate it with object(s) directly when importing data, see [Importing Data](#) for more information.

---

### Managing Security Access Groups

To see a list of existing *SAGs*:

1. In the **Manager** pane expand **Users, Roles, Rights and Groups**.
2. Select **Manage Roles, Rights and Groups**.
3. Select the **Groups** option.

---

**Note:** There are no built-in *SAGs*.

---

To create a *SAG*:

1. Make sure the existing *SAGs* list is open.
2. Type the name of the new *SAG* in the **Name** box.
3. Select **Create New**.

To delete a *SAG*:

1. Make sure the existing *SAGs* list is open.
2. Select the *SAG* you want to delete.
3. Select **Delete Existing**.

### Assigning Security Access Groups

A *User* can have a *SAG* assigned to them:

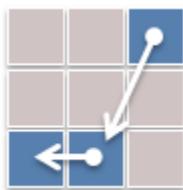
- directly, or
- indirectly, through a *Role*.

To assign a *SAG* directly to a *User*:



1. In the **Manager** pane expand **Users, Roles, Rights and Groups**.
2. Select **Assign Roles, Rights and Groups**.
3. Select the *User* from the **Existing Users** list (top-left).
4. Select a *SAG* from the **All Existing Groups** list (bottom-Center).
5. On the left side of the list select <-.
6. The *SAG* appears in the **User's Total Groups** list (bottom-left), coloured green to show it has been directly assigned.

To assign a SAG to a *Role*:



1. In the **Manager** pane expand **Users, Roles, Rights and Groups**.
2. Select **Assign Roles, Rights and Groups**.
3. Select the *Role* from the **All Existing Roles** list (top-right).
4. Select a SAG from the **All Existing Groups** list (bottom-Center).
5. On the right side of the list select **->**.
6. The SAG appears in the **Role's Current Groups** list (bottom-right).
7. All *Users* that have the *Role* assigned to them will now also have the SAG.

#### Viewing SAGs for Objects

To see existing SAGs for Objects:

1. In the Class Library pane expand the classes.
2. Select the class containing the object you are looking for.
3. In the Objects of Class pane, select the object.
4. In the Manager pane expand Security.
5. Select Security Access.

The SAGs associated with the selected object and the *Users* who have access are shown. If more than one SAG is associated to the object, you can see which *Users* have access via which SAG.

To see *Users* that have access to the object via a specific SAG:

- Select the appropriate SAG.

The list of *Users* having access to the object is updated.

---

**Note:** After you have the **Security Access** tab open, selecting a different object in the **Objects of Class** pane, will show the details for that object.

---

#### Associating Objects with SAGs

You can associate Objects with the SAG, using the Import Controller.

To associate Objects with SAG:

1. Create an XML file (For example, SAG\_null.xml) in the following format:

```
<?xml version="1.0" encoding="utf-8"?>
<vl:VNETList xmlns:vl="http://www.aveva.com/VNET>List"
  xmlns="http://www.aveva.com/VNET/eiwm">
  <Template>
    <ID>SAG</ID>
    <Object>
      <ID>[Object ID] </ID>
```

```
<Context>
<ID>[Name of the Context]</ID>
</Context>
<ClassID>[Class ID of the Object]</ClassID>
<Association type="is in security access group">
<Object>
<ID>[Name of the Security Access Group]</ID>
<Context>
<ID>[Name of the Context]</ID>
</Context>
<ClassID>SECURITY ACCESS GROUP</ClassID>
</Object>
</Association>
</Object>
<!-- More objects can be added to SAGs by using the <object> tag as shown above-->
</Template>
</v1:VNETList>
```

2. Replace the highlighted scripts with relevant values.
3. Save the script in the **Staging Area**.
4. Process the file, using the **Import Controller**.

## Deny Access to AVEVA AIM Dashboard

As stated in the [Users](#) topic, user accounts are created automatically when people visit the *AIM Dashboard* web application. Therefore, everyone with a Windows domain account on the server can access *the AIM Dashboard*.

However, if this is not desired, users can be denied access by modifying the [web.config](#) file to include a [`<AccessControlList>`](#) section. When the [`<AccessControlList>`](#) section is present, *Users* must either be granted access in the [`<Allow>`](#) element, or denied access in the [`<Deny>`](#) element. The [`<Deny>`](#) element takes precedence, and if a *User* is named here or belongs to a group in this element the user cannot access *the AIM Dashboard*. To access *the AIM Dashboard* a *User* must not appear in the [`<Deny>`](#) element and must be named in the [`<Allow>`](#) element as either a *User* or a group they belong to. You can specify that all *Users* have access by setting the [`<Allow>`](#) element's [Everyone](#) attribute to [True](#).

**Note:** The XML described here gets passed to the *AIM* web server. Therefore, it is recommended that you try to keep the XML as short as possible, for example, by avoiding long comments.

If [`<Group>`](#) is used, *the AIM Dashboard* will need to access Active Directory. The application will check whether the logged-in user [is member of](#) the parent AD group as well as its nested group hierarchy. Make sure that the Web server has access to Active Directory. The first user who accesses *the AIM Dashboard* may experience a short delay while the Active Directory data is read for the first time.

The following table gives details of the XML tags that can be used:

XML Tag	Description
AccessControlList	A child of <a href="#"><code>&lt;Portal&gt;</code></a> elements and defines the overall security access for an <i>the AIM Dashboard</i> instance. It contains one or zero <a href="#"><code>&lt;Allow&gt;</code></a> elements and one or zero <a href="#"><code>&lt;Deny&gt;</code></a> elements.
Allow	A child of <a href="#"><code>&lt;AccessControlList&gt;</code></a> elements and defines those users and groups that have access to the

XML Tag	Description
	<i>AIM Dashboard</i> instance, subject to exclusions mentioned under <b>&lt;Deny&gt;</b> . It may contain an <b>Everyone="True"</b> attribute that allows all <i>Users</i> access, again subject to exclusions mentioned under <b>&lt;Deny&gt;</b> . Contains one or zero <b>&lt;Users&gt;</b> elements and one or zero <b>&lt;Groups&gt;</b> elements.
Deny	A child of <b>&lt;AccessControlList&gt;</b> elements and defines those users and groups that are denied access to the Portal instance. It contains one or zero <b>&lt;Users&gt;</b> elements and one or zero <b>&lt;Groups&gt;</b> elements.
Users	A child of <b>&lt;Allow&gt;</b> or <b>&lt;Deny&gt;</b> elements. It contains any number of <b>&lt;User&gt;</b> elements.
Groups	A child of <b>&lt;Allow&gt;</b> or <b>&lt;Deny&gt;</b> elements. It contains any number of <b>&lt;Group&gt;</b> elements.
User	A child of <b>&lt;Users&gt;</b> elements and defines a Windows or Forms user, for example, <b>&lt;UserValue="Domain1\Fred.Bloggs"/&gt;</b> .
Group	A child of <b>&lt;Groups&gt;</b> elements and defines a single Active Directory group, for example, <b>&lt;GroupValue="Group1"/&gt;</b> .

**Note:** A **<Portal>** element, with a specific **ID** attribute, overrides any access control in the **<Portal>** element with an **ID** attribute of **Default**.

### XML Example 1:

```

<Portal PortalID="Portal1">
  <AccessControlList>
    <Allow>
      <Users>
        <User Value="Domain1\John.Smith" />
        <User Value="Domain1\Jane.Jones" />
      </Users>
      <Groups>
        <Group Value="Group1" />
        <Group Value="Group2" />
      </Groups>
    </Allow>
    <Deny>
      <Users>
        <User Value="Domain1\Fred.Bloggs" />
      </Users>
      <Groups>
        <Group Value="Group2.Temp" />
      </Groups>
    </Deny>
  </AccessControlList>
</Portal>

```

```
</Deny>
</AccessControlList>
</Portal>
```

## XML Example 2:

```
<Portal PortalID="Portal1">
  <!-- Allow everyone accept Domain1\Fred.Bloggs -->
  <AccessControlList>
    <Allow Everyone="True">
    </Allow>
    <Deny>
      <Users>
        <User Value="Domain1\Fred.Bloggs" />
      </Users>
    </Deny>
  </AccessControlList>
</Portal>
```

## Use the Replication Tool

The Replication Tool enables you to create replication packages that you can transfer to:

- Remote Workhub database
- Standalone AIM Workhub installation
- Remote site

## Manage the Replication Package

The Managed Data can be stored in a distribution package, which is a compressed archive of the Staging Area.

The Replication Package can:

- Contain a full or delta extract of:
  - The files associated with the managed data.
  - All changes to the data, since the previous full or delta extract.
  - All templates loaded through the Staging Areas or EIA.
- Include only the latest data for the:
  - Object data
  - Class library data
- Be downloaded from the remote Workhub instances after a full or delta extract creation.
- Be deleted manually after a new full extract creation.

---

**Note:** Older versions of full or delta extracts are NOT deleted automatically. You can track the deletions of data in the Workhub using the audit trail. The deletion will be reflected in the replication package through the delete intent attribute.

The Replication Package cannot:

- Contain objects in the Workhub that are not referenced by templates
  - For example:
    - Notes
    - Users
    - Security Access Groups
    - Changes to breakdown nodes
    - Profiles
    - Menu sets
- Exclude any specific import package, as replication is a database-wide operation.

---

**Note:** As replication is not specific to an import package, if multiple import packages are loaded through the import mechanism, then all of them are replicated.

---

## Configure the Replication Tool

When you start the Replication Tool, default values are loaded from the **Replicate.exe.config** file.

To configure the Replication Tool:

1. Open the **Replicate.exe.config** file.

---

**Note:** In a typical installation, the Replicate.exe.config is located in the folder, **C:\Program Files\AVEVA\AVEVA Asset Information Management\Workhub\Install\Replicate**

---

2. In the **Replicate.exe.config** file, go to the **<replicate>** section.

```
<replication maxArchiveSize="" outputDirectory="" replicationDate="">
  <sources>
    <source name="" outputDirectory="">
      <portalConnection dbuser="" dbpassword="" datasource="" encrypted="" />
      <urlMappings>
        <urlMapping url ="" unc="" type="" />
      </urlMappings>
    </source>
  </sources>
</replication>
```

The following are the optional attributes of the replication node **<replication>**:

- **maxArchive**: Maximum size in MB of each individual zip archive. Defaults to 2000MB.
- **outputDirectory**: Location where the replication package will be created. Defaults to "\Output".
- **replicationDate**: Date from which to check for changes in the Database. In the format of "YYYY-MM-DDTHH:mm:ssZ". Defaults to using the last replication run date stored in the database.

The following are the optional attributes of the source node **<source>**:

- **name**: The name of this source section. Used in the command line option **-source="Default"**.
- **outputDirectory**: Location where the replication package will be created. This overrides the setting in the replication node **<replication>**.

The following are the attributes required for the Workhub database connection node **<portalConnection>**:

- **datasource:** Database datasource, database server name.
- **database:** Database name. If not set, then the default database is used.
- **schema:** Database schema. if not set, then the mapped schema is used.
- **dbpassword:** Database password for when dbuser is set.

The following is the optional attribute of the Workhub database connection node <**portalConnection**>:

- **encrypted:** Is the given password encrypted. This defaults to false.

integrated	dbuser	Authentication used
true	not set	Windows credentials of the user running the tool is used.
true	set	The given account credentials is used.
false	set	Normal SQL authentication is used.

The urlMapping nodes <urlMapping> has two mandatory attributes and one optional attribute:

- **url:** The url to match.
- **type:** The type of mapping, either http or viz.

The following is the optional attribute of the urlMapping nodes <urlMapping>:

- **unc:** The unc path to the url.

## Run the Replication Tool

When you run the replication for a database for the first time:

- All templates including the class library are extracted.
- The date of replication run is then stored in the database.
- The subsequent replication runs use this date, unless overridden in the command line option or configuration.

The command line syntax is:

```
replicate.exe -nogui -[source <Source Name>] [-dbuser<database
username>] [-dbpassword <database password>] [-datasource <database
source>] [-replicationdate <lastreplicate date>] [-help]
```

For example:

```
replicate.exe -nogui -source Default
```

This example uses the replication configuration named 'Default'.

---

**Note:** The distribution package is downloaded to the remote Workhub instance. Hence, if you are using the remote Workhub, you can import and load the distribution package using the Import Controller.

## Replicate for the First Time

To replicate for the first time:

1. Create a new AIM Workhub database.

**Note:** This database is your primary database. For information about how to create a new AIM Workhub database, see the *Creating a SQL Database Server* in the [Install and Set up the Requirements](#) topic.

2. Add your Windows user in the primary database with the *Administrator* role.
3. Create an import database in the Import Controller, connecting to the primary database.

**Note:** For information about how to create an import database in the *Import Controller*, see the *Registering the AVEVA Asset Information Management Workhub Database* section in the [Import Controller Tool](#) topic.

4. Create an import package for IPE, and then load the package.

**Note:** For information about creating an import package, see *Creating an Import Package* section in the [Import Controller Tool](#) topic. See also [Running an Update](#).

5. To configure the **Replication Tool**, open the **Replicate.exe.config** file.
6. Update the replicate section **<replication>**, as follows:

```
<replication>
  <sources>
    <source name="Default">
      <portalConnection dbuser="master dbuser" dbpassword="master dbpassword"
        datasource="master datasource"/>
      <urlMappings>
        <!--The following should match the Other Documents URL and Drop Folder
          from the IPE package definition -->
        <urlMapping url="Other Documents URL"
          unc="Other Documents Drop Folder" type="http" />
        <!--The following should match the VizStream Documents Server Address
          and Drop Folder from the IPE package definition -->
        <urlMapping url="//vs/VizStream Documents Server Address/file/path/to/data/
          root"
          unc="VizStream Documents Drop Folder" type="viz" />
      </urlMappings>
    </source>
  </sources>
</replication>
```

See also, [Configuring the Replication Tool](#).

7. Run the replicate executable with the **-nogui** switch. See also, [Running the Replication Tool](#).

The replication package files are generated in the **./Output** directory, from where you have run the replicate executable.

8. Create a new AIM Workhub database.

**Note:** This is your secondary database.

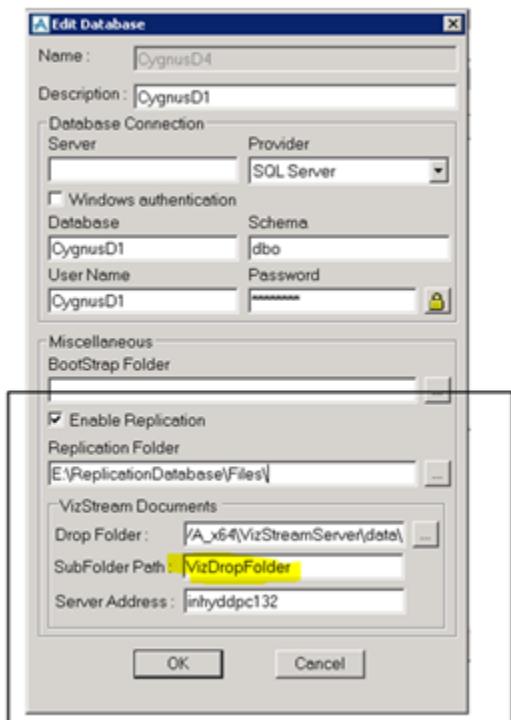
9. Add the Windows user in the secondary database with the *Administrator* role.
10. Create a new import database in the *Import Controller*, connecting to the secondary database.
11. Select **Enable Replication**, and then:
  - In the **Replication** Folder text box, enter the location where the replication package is created.
  - In the **VizStream Documents** sections, enter the details for:

- *Drop Folder*
- *SubFolder Path*
- *Server Address*

---

**Notes:**

- If VizStream Client support has not been installed, then these fields will be grayed out.
- Make sure to enter unique paths, so that the original package is not affected. The VizStream drop folder name should end with backward slash for example, E:\AVEVA\_x64\VizStreamServer\data\. If not, add a backward slash to the SubFolder Path.



12. Expand the *database* node, and then select the *replication package*.
13. Right-click the **replication package**, and then select **Update**.
14. The data is loaded from the replication package into the secondary database. The secondary database is now a duplicate of the primary database.
15. To complete the process, you must issue the information.  
**Note:** For details on how to issue the information, see [Issuing the Information](#).
16. Check for errors in the *Import Controller*.
17. Configure AIM to connect to the secondary database.
18. Launch AIM and confirm if the application is functioning.

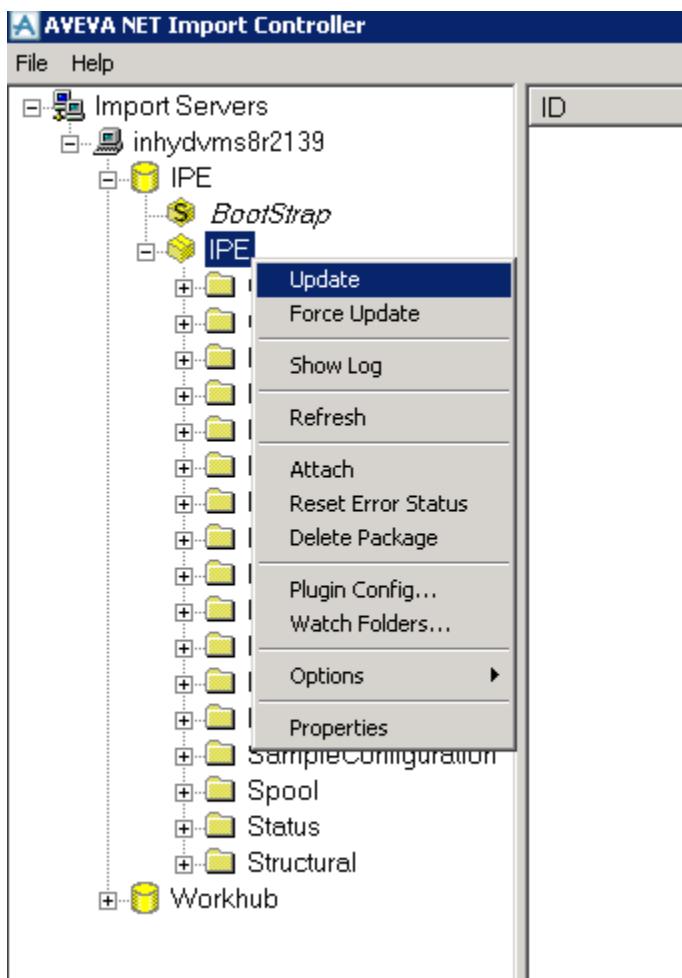
**Run an Update**

---

**Note:** To run an update, you must be a registered user in the AIM database, with the Administrator privileges.

To run an update:

1. Open the **Import Controller**.
2. Right-click the package, and then select **Update**.



The data is loaded from the package into the database.

## Issue the Information

After running an update, you must issue the information to make it viewable in the Dashboard.

To issue the information:

1. Open the **Import Controller**.
2. In the left pane, expand the **Import Servers** node.
3. Right-click the database, and then select **Issue Working**.

The whole database including all the import packages is moved from the *AIM Workhub database* working area into the viewable area of the Dashboard.

4. To verify the results of an update before issuing, switch the view to the working area.

## Replicate Changes

To replicate changes:

1. Go to the **IPE staging area**, and then open the **XML file** you want to update.  
For example, updating the file by adding a new object, or changing the value of a characteristic.
2. Using the **Import Controller**, load the updated **XML file** into the primary database.
3. Run the **Replication Tool**.  
**Note:** For information about how to run the Replication Tool, see [Run the Replication Tool](#).
4. Open the **Import Controller**.
5. Right-click the replication package in the secondary database, and then select **Update Working**.  
The data is loaded from the replication package into the secondary database. The secondary database is now a duplicate of the primary database.
6. To make the changes viewable in Dashboard, you must issue the information.  
**Note:** For details on how to issue the information, see [Issue the Information](#).
7. Check for errors in the **Import Controller**.
8. Configure **AIM** to connect to the secondary database.
9. Launch **AIM** and confirm if the application is functioning.

## Extend AVEVA AIM

This section describes how to integrate AVEVA AIM with other applications.

### Integrate AVEVA AIM with Other Applications

This section provides guidance on integrating AIM with other applications.

#### AVEVA AIM Viewer

The document viewing area of the *AIM Dashboard* can be accessed through an embedded browser component in a desktop application.

Append the following to your *AIM Dashboard* web address:

- viewer?documentId={Document full Id}&>tagId={Tag full Id}

For example: <http://localhost:16000/viewer?documentId=IPE|VPD|Area-15A&tagId=IPE|E-9001>

#### Parameters

Parameter	Mandatory	Description	Value (Example)
documentId	Yes	Full ID of the Document to be rendered.	IPE 905676
tagId	No	Full ID of the Tag to be highlighted in the Document.	IPE E-9002
fileId	No	Some documents can	IPE 905676.svg

Parameter	Mandatory	Description	Value (Example)
		<p>have multiple files (compound documents). If you want to display any file other than the primary file, use this parameter.</p> <hr/> <p><b>Note:</b> The file with the fileId must be a file of the document with documentId.</p>	

There is a sample application located in **INSTALLDIR\Dashboard\Samples\DashboardViewerSample.zip** which shows a sample hosting the viewer.

## Enabling WebGL Rendering in DashboardViewerSample

The machine running the sample application must be configured to enable it to use WebGL rendering.

To enable WebGL rendering in DashboardViewerSample:

1. Open the folder where the Dashboard Viewer Sample is present.  
This default location is **INSTALLDIR/Dashboard/Samples**.
2. Unzip the folder **DashboardViewerSample.zip**.
3. Ensure that you have the necessary permissions to edit the registry.
4. Double-click the **Browser Emulation Settings For WebGL.reg** file to run it.

After running the file, ensure that the Registry has the following entries:

- **DashboardViewerSample.exe** added at **[HKEY\_CURRENT\_USER\Software\Microsoft\Internet Explorer\Main\FeatureControl\FEATURE\_BROWSER\_EMULATION]**
- **DashboardViewerSample.vshost.exe** added at **[HKEY\_CURRENT\_USER\Software\Microsoft\Internet Explorer\Main\FeatureControl\FEATURE\_BROWSER\_EMULATION]**
- **Feature\_GPU\_Rendering** folder created at **[HKEY\_CURRENT\_USER\Software\Microsoft\Internet Explorer\Main\FeatureControl\FEATURE\_GPU\_RENDERING]**

## Handling Events

The following section describes how to handle selection events in the viewer when using the [System.Windows.Forms.WebBrowser](#) control:

- To enable the JavaScript to call your C# application hosting the *WebBrowser* set *ObjectForScripting* to a COM Visible object any time before the URL is set on the control.
- The method called on viewer selection is *OnViewerSelection* and one argument is passed identifying the tag that has been selected.

For example:

```
[PermissionSet(SecurityAction.Demand, Name = "FullTrust")]
[System.Runtime.InteropServices.ComVisibleAttribute(true)]
public class ScriptInterface
{
    public void OnViewerSelection(String message)
    {

    }
}
```

## Interface with DMS

Support for viewing files in Document Management System (DMS) has been implemented using the Content Management Interoperability Service (CMIS), which must be available on the DMS Server.

The CMIS service endpoints are configured in the [web.config](#) file. In this file, there are some comments describing the various attributes, which have been reproduced here for convenience:

```
<!-- port, protocol and authentication are optional. protocol defaults to http,
authentication defaults to httpBasic (options are: ntlm). name is used in UI only. -->
<!-- The URL to the CMIS AtomPub service document will be
<protocol>://<host>[:port]/<serviceDocumentPath> -->
<!-- The repository type must match the value of the infoDMSType attribute for the File
instance. The infoDMSLocator attribute must be of the form
[cmis:repositoryId;]cmis:objectId -->
<!-- loginName, password and passwordEncrypted parameters can be used to set up default
service account credentials to access a repository. These are optional parameters but
must be used together. passwordEncrypted defaults to false-->
```

To configure a repository for a DMS:

1. Open the [web.config](#) file found in the application root.
2. In the appropriate `<portals> - <portal> - <ContentManagementInteroperabilityServices>` section, add a new repository. For example:

- **Documentum**

```
<repository type="DOCUMENTUM" id="[repositoryId]" name="[repositoryName]"
host="[servername]" port="8080" serviceDocumentPath="/emc-cmis/resources"
protocol="http" loginName="[testServiceAccountName]"
password="[testServiceAccountPassword]" passwordEncrypted="false" />
```

- **SharePoint**

```
<repository type="SHAREPOINT" id="[repositoryId]" name="[repositoryName]"
host="[servername]" serviceDocumentPath="/_vti_bin/cmis/
rest/[repositoryid]?getRepositoryInfo" protocol="http" authentication="ntlm"/>
```

**Note:** If the `repositoryId` is missing from the `infoDMSLocator`, the first repository configured for that repository type is used.

You will be prompted for login credentials for a repository as required, which are cached, so you will not need to log in again for the same repository or another repository of the same type.

## File Handlers

Depending on the properties of a File object in the database, a file is returned using a matching file handler. You can plug in custom file handlers on a per-implementation basis. This is useful, for example, if you have custom cookies or authorization tokens that need to be passed to an endpoint when the file is requested. This is important when viewing files in *Accusoft* as it is required that the file can be downloaded in the *AIM Workhub* service and set to the *Accusoft* conversion services.

To create a custom file handler, you must create a class implementing the **IFileHandler** interface from the **AVEVA.NET.Workhub.Domain** assembly and with a constructor that matches the following example:

```
using AVEVA.NET.Workhub.Domain.FileHandling;
using AVEVA.NET.Workhub.Domain.Models;
using System.Net.Http;

namespace AVEVA.NET.SampleExtension
{
    // Class implementing the IFileHandler interface
    public class MyFileHandler : IFileHandler
    {
        public MyFileHandler(IWorkhubSessionRegistry registry,
            IFileHandlerConfiguration configurationResolver,
            HttpRequestMessage parentRequest)
        {
        }

        public bool CanHandle(Workhub.Domain.Models.ContentFile file)
        {
            // Check whether the retrieval of this file can be handled
            throw new NotImplementedException();
        }

        public FileContents GetContents(Workhub.Domain.Models.ContentFile file)
        {
            // Get the contents of the file, the mime type and the stream
            throw new NotImplementedException();
        }

        public FileHandlerDetails GetFileHandlerDetails()
        {
            // Get the authentication and service name of the handler
            throw new NotImplementedException();
        }
    }
}
```

To test the handler you have created, ensure that you have a document and file, which is handled by your file handler. Drop your **.dll** including the file handler into the **Bin** directory of the *AIM Dashboard* website and do an **IISRESET**.

For production, you must package up your file handler with other extensions as part of the Web Deploy package.  
[Configuring the Sample File Handler](#)

A sample file handler application is shipped along with AIM. The sample application is available in the following installation directory:

[InstallationDirectory]\Dashboard\Samples\SampleFileHandler.zip

To configure the sample application to run with the AIM Dashboard installation:

1. Update the following configuration settings in the sample.config file:

```
<paths>: base InfoLocator/base url of the files (comma separated values are accepted for multiple files)
<serviceName>: Name of the service that exposes the file handler
<userName>: Username
<password>: Password
<apiKey>: API Key (Optional)
```

---

**Note:** The above settings are done as a sample, and similar settings can be configured based on the authentication setup.

---

For example:

```
<configuration>
<paths>http://testApp:8099/test.pdf</paths>
<serviceName>SampleLogin</serviceName>
<userName>admin</userName>
<password>admin</password>
<apiKey></apiKey>
</configuration>
```

2. Build the sample application.
3. After the build is successful, use one of the following two approaches to deploy the sample handler:

#### Manual Deploy:

- a. Copy the AVEVA.NET.SampleFileHandler.Extension.dll file to the [application root]\bin directory (C:\inetpub\Dashboard\bin for default installation).
- b. Copy the sample.config file to the [application root] directory (C:\inetpub\Dashboard for default installation).
- c. Copy the SampleExtension folder available under the application's App\custom directory to [application root]\App\custom directory (C:\inetpub\Dashboard\App\custom for default installation).

#### Web Deploy Package:

- d. Right-click on the project and publish to a web deploy package.
  - e. Open IIS and import the package.zip file to the AIM Dashboard website directory ([application root], C:\inetpub\Dashboard for default installation).
4. Select **Start** and run **IISRESET**.

After the setup is complete, the sample application requires any AIM Dashboard user to log in if they access any of the files added under the designated paths. After successful authentication, a cookie is created to identify the user automatically on the subsequent requests.

## AVEVA AIM Dashboard Extensions

The architectural framework of the AIM Dashboard has been built so that you can extend the functionality of the following areas:

- **The Global Navigation Panel** - the bar on the left hand side of the screen that displays the main AIM Dashboard areas of functionality, for example, *Search* or *Browse*.
- **The Tabs Panel** - the bar along the top of the screen that displays tabs for the items you open in *the AIM Dashboard*.
- **Item Views** - are different layouts or "views" of an item and its information, the two default views are the *Document View* and the *Summary view*.
- **The Actions menu** - this enables you to perform an "action" on one or more items simultaneously. It is found where multiple items can be selected at the same time. For examples, opening items from the *Search* panel.
- **The Item View Actions menu** - the specialized **Actions** menu on an Item View, such as the *Document View*, *Summary View* or selected item *Content Card*.
- **The Document View toolbar** - the toolbar at the top-left of the *Document View*.
- **VizStream viewer selection actions** - these are the actions on the **Selection** menu within the VizStream control.

Examples of extensions to these areas can be found in:

[\[installation folder\]\Dashboard\Samples\DashboardExtensionSamples.zip](#)

The types of files that can be found in the various examples are as follows:

- JavaScript (JS) - contains the registration and directive for the extension, always required.
- **HTML** - **HTML** structure, where required.
- **CSS** - Styling for **HTML**, where required.
- **PNG** - image files that can be used, for example, as icons. where required.

To use the example extensions:

1. Copy the example files in to **[application root]\App\custom\**.
2. Reset IIS.

To create your own extensions:

1. Create a new folder in **[application root]\App\custom\**.

**Note:** It is recommended that you use a different folder for each extension.

2. Copy the file(s) from the relevant sample extension folder to the new folder.
3. Alter the file(s) based on your requirements, with reference to the descriptions in the following tables.  
**Note:** All references to images in CSS must be relative to the **App/custom** folder and all references to templates should be from the web root.
4. Reset IIS.

When you create an extension there are, typically, two parts to the JS file:

- The *registration* into an extendible area of *the AIM Dashboard*.
- The *directive* (the control) that is used for that extension.

The following sections contain the reference for the registration and the directive of each extendible area of *the AIM Dashboard*.

## The Global Navigation Panel

This section describes the parameters that can be used in the JS file when creating an extension to add a button to the Global Navigation Panel.

### Registration

Method: `GlobalNavigation.register(id, definition)`

#### Registration Definition Parameters

Parameter	Description	Required/Optional	Default Value
directive	The name of the directive to use to fulfill the functionality.	Required	
order	The order in which, to display this global navigation function.	Optional	10000
floatWidth	The percentage width of the screen that the panels floating width will start as.	Optional	20
linkClass	The class to use for the link to access the panel. Should provide the icon as background image.	Optional	global-nav-default-link
containerClass	The css class that describes the max and min size of the container for the global navigation function.	Optional	global-nav-default-cont
when	A function that can be used to say dynamically, whether the component should be shown returning true or false. This function is called multiple times on the fly, so implement your own caching, if it is a long running function.	Optional	true

## Directive

### Directive Scope Parameters

Parameter	Description	Required/Optional
docked	Whether the panel is docked or not.	Optional
singlePane	Set to true if the panel is displaying in single pane mode.	Optional

## The Tabs Panel

This section describes the parameters that can be used in the JS file when creating an extension to add a tab to Tabs Panel.

You must register both of the following:

- A route - a path to use when linking to the tab.
- A tab with the content tabbing mechanism

It is possible to define two types of tabs:

- Static
- Dynamic

## Routing

### Registration

Method: ContentTabsRoutingProvider.register(path, options)

### Registration Definition Parameters

Parameter	Description	Required/ Optional	Default Value
path	<p>The path for the route.</p> <p><b>Note:</b> For details, refer to <a href="https://docs.angularjs.org/api/ngRoute/provider/\$routeProvider">https://docs.angularjs.org/api/ngRoute/provider/\$routeProvider</a> path documentation.</p> <p>We reserve the right to use any English language route. At the moment we use this route: /item/*</p> <p>Make sure that you use a</p>	Required	

Parameter	Description	Required/ Optional	Default Value
	path that is a unique, but understandable name.		
options	<p>The options for the route.</p> <p><b>Note:</b> For details, see <a href="https://docs.angularjs.org/api/ngRoute/provider/\$routeProvider">https://docs.angularjs.org/api/ngRoute/provider/\$routeProvider</a> route documentation.</p>	Optional	

## Static (ContentTabs.types.static)

### Registration

Method: ContentTabs.register(id, definition)

#### Registration Definition Parameters

Parameter	Description	Required/ Optional	Default Value
directive	The name of the directive to use, to fulfill the functionality.	Required	
text	The text to display for the tab header or a function that returns the text for the tab header.	Required	
type	The type of the tab. ContentTabs.types.static	Required	
href	The href for the tab should correspond to the route, you registered in with ContentTabsRoutingProvider	Required	
icon	The icon to display in the tab header.	Optional	App/src/img/ClassDriven/default.gif
order	The order that this tab should be displayed on the tab bar when initially loaded. After that point,	Optional	10000

Parameter	Description	Required/ Optional	Default Value
	the order that tabs are opened takes over.		

## Dynamic (ContentTabs.types.dynamic)

### Registration

Method: ContentTabs.register(id, definition)

#### Registration Definition Parameters

Parameter	Description	Required/ Optional	Default Value
type	The type of the tab. ContentTabs.types.dynamic	Required	
text	A string representing a property on each object in the tabs array, where the value will be used as the name for the tab.	Required	
tabs	An array for which each element will be a tab.	Required	
retainDOM	A string representing a property on each object in the tabs array, where the value will be used to retain the DOM for that tab when the tab is changed. true/false	Optional	false
order	The order that this tab should be displayed on the tab bar when initially loaded. After that point the order that tabs are opened takes over.	Optional	10000
onCloseAll	A function that is called when a user chooses to close all tabs.	Required (CanClose)	
onClose	A function that is called	Required	

Parameter	Description	Required/ Optional	Default Value
	when a tab is closed passing the id from the id field of the tab to be closed.	(CanClose)	
loading	A string representing a property on each object in the tabs array, where the value will be used to show whether the tab is loading.	Required	
loaded	A string representing a property on each object in the tabs array, where the value will be used to show whether the tab is loaded.	Required	
id	A string representing a property on each object in the tabs array, where the value will be used as the id for the tab. Must be unique for each tab.	Required	
icon	A string representing a property on each object in the tabs array, where the value will be used as icon name.	Optional	App/src/img/ClassDriven/default.gif
href	A function that will be called with the item in tabs array and should return the url to that tab.	Required	
directive	The name of the directive to use to fulfill the functionality.	Required	
canClose	A boolean which specifies whether the tab can be	Optional	false

Parameter	Description	Required/ Optional	Default Value
	closed after it is opened.		

## Directive

### Directive Scope Parameters

Parameter	Description	Required/Optional
item	The item from the array that this is a tab for.	Optional

## Item Views

This section describes the parameters that can be used in the JS file when creating an extension to add a "view".

## Registration

Method: ItemViews.register(id, definition)

### Registration Definition Parameters

Parameter	Description	Required/Optional	Default Value
directive	The name of the directive to use to fulfill the functionality	Required	
text	The text to display in the view selection menu for the action.	Required	
when	An expression for when the view should be shown	Optional	
order	The order in which it should be displayed.	Optional	10000

## Directive

### Directive Scope Parameters

Parameter	Description	Required/Optional
items	The item that this is a view for.	Required

## Actions Menu

This section describes the parameters that can be used in the JS file when creating an extension to add an option to the **Actions** menu.

## Registration

Method: ActionsMenu.register(id, definition)

### Registration Definition Parameters

Parameter	Description	Required/Optional	Default Value
directive	The directive to use to fulfill the functionality.	Required	
text	The text to display for the action.	Required	
order	The order in which, it should be displayed. The Lower number is closer to the top.	Optional	10000

## Directive

### Directive Scope Parameters

Parameter	Description	Required/Optional
items	The array of items that you have to act on.	Required
select	The function to call when the action is selected.	Required
hide	Whether to hide the control.	Optional

## Item View Actions Menu

This section describes the parameters that can be used in the JS file when creating an extension to add an option to the item view **Actions** menu.

## Registration

Method: ItemViewActionsMenu.register(id, definition)

**Registration Definition Parameters**

Parameter	Description	Required/Optional	Default Value
directive	The name of the directive to use to fulfill the functionality	Required	
text	The text to display for the action	Required	
order	The order in which it should be displayed. Lower number is closer to the top	Optional	10000

**Directive****Directive Scope Parameters**

Parameter	Description	Required/Optional
items	The array of items that you have to act on.	Required
select	The function to call when the action is selected	Required
hide	Whether to hide the control.	Optional

**Document View Toolbar**

This section describes the parameters that can be used in the JS file when creating an extension to add button(s) to the Document View toolbar that will open floating and docked panels. A floating panel opens at a specified position and is made draggable by the framework, the docked panels are opened in a container below the Document View.

**Registration**

Method: DocumentViewToolbar.registerGroup(id, definition)

**Registration Definition Parameters**

Parameter	Description	Required/Optional	Default Value
text	The text to display for the group of tools.	Required	
order	The order in which it should be displayed.	Optional	10000

Parameter	Description	Required/Optional	Default Value
iconClass	A css class that can be used to give the group an icon on the toolbar.	Optional	

Method: DocumentViewToolbar.register(id, definition)

#### Registration Definition Parameters

Parameter	Description	Required/Optional	Default Value
directive	The name of the directive to use to fulfill the functionality.	Required	
text	The text to display for the action.	Required	
type	The type of the option. Either DocumentViewToolbar.type.floating or DocumentViewToolbar.type.docked	Required	
order	The order in which it should be displayed.	Optional	10000
group	The group to which this function belongs.	Optional	
when	An expression or function that when true will show the option and when false will hide it.	Optional	

#### Directive

##### Directive Scope Parameters

Parameter	Description	Required/Optional
item	The item which will be a document.	Optional
viewer	The object containing all the options for the viewer.	Optional
file	The file being displayed in the viewer.	Optional

Parameter	Description	Required/Optional
selectedItem	The item selected in the viewer.	Optional

## Viewer Selection Actions

This section describes the parameters that can be used in the JS file when creating an extension to add an action to the Selection menu within the VizStream control.

## Registration

Method: ActionsMenu.register(id, definition)

### Registration Definition Parameters

Parameter	Description	Required/Optional	Default Value
directive	The name of the directive to use to fulfill the functionality.	Required	
text	The text to display for the action.	Required	
order	The order in which it should be displayed. Lower number is closer to the top.	Optional	10000
linkClass	A class added to the link on the actions menu allowing an icon to be specified.	Optional	

## Directive

### Directive Scope Parameters

Parameter	Description	Required/Optional
items	The array of items that you have to act on.	Required
select	The function to call when the action is selected.	Required
hide	Whether to hide the control.	Optional

## Set up EIA

The AIM EIA is an interface for connecting enterprise systems to AIM, using a Service-Oriented Architecture (SOA). The EIA provides the following services:

This Service	Is Used for
Search Manager	Querying the items in a database.
Import Manager	Loading bulk data.
Change Manager	Change management.
Session Manager	Authenticating with EIA.
Class Library Manager	Listing, creating, deleting, and modifying the contents of the Class Library.
Directory Manager	Managing individuals, users, roles, and rights.

**Note:** By default, the Search Manager service is deployed with AIM. However, if you want to develop applications that interact with AIM, you must deploy the complete EIA package, following the procedure explained in this section.

## Software Requirements

The following are the software requirements for EIA installation:

- AVEVA Licensing System 4.1
- Microsoft .NET Framework 4.8

## Install EIA

**Note:** It is assumed that you have already installed AIM, before starting EIA installation. Make sure that you have administrative privileges to execute this process.

To install EIA:

1. From your installation media, run the **EIA** wizard.

**Note:** Your installation media contains installers for 32-bit and 64-bit operating systems. Make sure to run the installer appropriate for your operating system.

2. Select **Next**.

The default install path appears in the **Install AIM EIA Services** to box.

3. If required, change the install path, and then select **Next**.

4. In the **Ready to install AIM EIA Services** window, select **Install**.

5. To go back to the previous window to change the install path, select **Back**.

6. If you do not want to proceed with installation, select **Cancel**.

## Configure EIA

After installing the EIA services, you must configure it to run with the AIM database.

To configure EIA:

1. Go to the EIA Services installation folder:

**Note:** If you have installed to the default folder, the path will be:

C:\Program Files\AVEVA\AVEVA Asset Information Management\EIA

2. Open the **AVEVA.NET.Services.OPE.DomainHost.exe.config** file in a text editor.
3. Go to the **<datasource configuration>** part of the XML:

```
<dataSource name="Name for this Datasource" server="SQL  
Server Instance" username="SQL DB Login username"  
password="Encrypted password of SQL DB Login" />
```

4. Enter values for the following attributes of the datasource in the XML:

- a. Name
- b. Username
- c. Password

**Important:** The EIA services can connect to multiple datasources. Hence, the name for each datasource must be unique. For example, <dataSource name="IPE"

5. To encrypt password for the **SQL** user:

- a. Open the **AIM Import Controller**.
- b. Expand the **Import Servers** node.
- c. Right-click the Database server, and then select Properties.

- d. In the Edit Database window, select  to see the encrypted password of the SQL user.



- e. Copy the Encrypted Password.
6. Go back to the **<datasource configuration>** part in the **AVEVA.NET.Services.OPE.DomainHost.exe.config** file.
  7. Paste the **Encrypted Password**.
  8. To restart the Services:
    - a. From the Start menu, select Run, type services.msc, and then select OK.
    - b. In the Services window, right-click on AIM EIA Services Host, and then select Restart.

**Note:** For information about how to configure EIA to use ADFS, see [AVEVA Asset Information Management EIA WS-Federation Configuration](#).

## Default Permissions

For the **EIA Service** the **NT Server\AVEVANETEIA** virtual account has, by default, Read & Execute, List Folder Contents, Read permissions. The **NT Server\AVEVANETEIA** virtual account has been given permissions using:

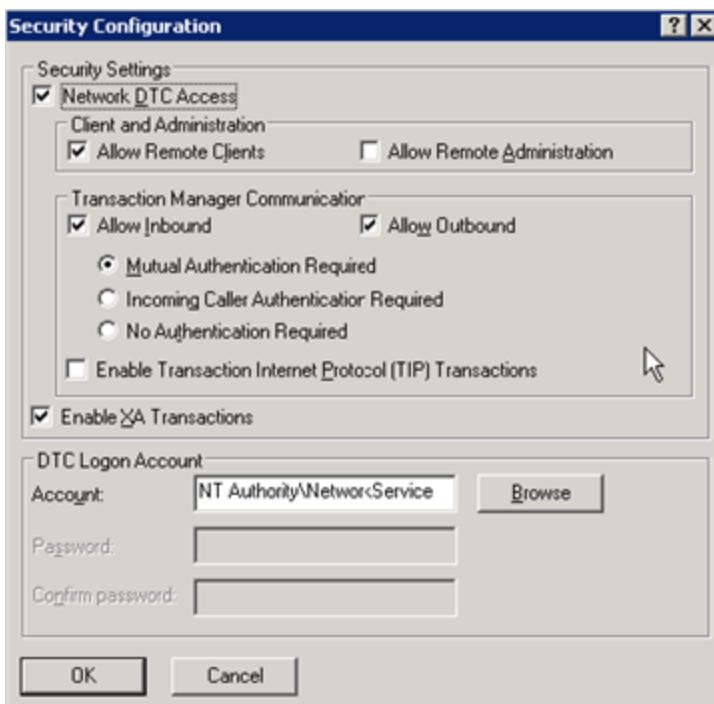
```
netsh http add urlacl url=http://+:7000/ user=AVEVANETEIA
netsh http add urlacl url=http://+:7002/ user=AVEVANETEIA
netsh http add urlacl url=http://+:7004/ user=AVEVANETEIA
netsh http add urlacl url=http://+:7006/ user=AVEVANETEIA
netsh http add urlacl url=http://+:7008/ user=AVEVANETEIA
netsh http add urlacl url=http://+:7010/ user=AVEVANETEIA
```

The above ports are available in the EIA config file. If you want to change different ports for EIA, you need to give permission for the virtual account to use those ports using the **netsh http add urlacl** command.

## Enable Distributed Transaction Coordinator (DTC) Access

To enable Distributed Transaction Coordinator (DTC) Access:

1. From the **Start** menu, select **Run**.
2. Type **dcomcnfg**, and then select **OK**.
3. In the left pane of the Component Services window, expand the following nodes:
  - a. Component Services
  - b. Computers
  - c. My Computer
  - d. Distributed Transaction Coordinator
4. Right-click **Local DTC**, and then select **Properties**.
5. In the **Local DTC Properties** window, select the **Security** tab.
6. Under **Security Settings**, select the following check boxes.
  - a. **Network DTC Access**
  - b. **Allow Remote Clients**
7. Under Transaction Manager Communicator, select the following check boxes as required, based on your environment:
  - a. Allow Inbound
  - b. Allow Outbound



8. If the AIM Application Server and Database Server are on the same server, select Mutual Authentication Required.
9. If AIM Application Server and Database Server are on separate servers:
  - a. On the Application server, select Mutual Authentication Required.
  - b. On the Database server, select either of the following:
    - i. Incoming Caller Authentication Required
    - ii. No Authentication Required
10. If the server is part of a cluster server, select Incoming Caller Authentication Required.
11. In the following instances, select No Authentication Required:
  - a. The network Access is between two domains that do not have a mutual trust configured.
  - b. The network access is between computers that are members of a workgroup.

**Note:** If you have enabled Windows Firewall for Windows Server, you must add the Distributed Transaction Coordinator service to the exception list in the Windows Firewall settings.

## Additional Information

This section provides some additional information about installation process using tools and scripts, AVEVA AIM EIA WS-Federation configuration, and associative object model and XML.

## Installation using Tools and Scripts

This section explains the individual tools and scripts that can be used to install AIM.

## Why use Individual Tools or Scripts?

Tools can be used on their own for their specified purpose or used in sequence for a complete installation.

For example:

- You could use *Import Controller* to add a new data *Package*, but remember the *Deployment Manager* can also do this *and* save a COMPLETE configuration for the deployment in a single XML file.
- If you have your own deployment system, or want to tie specific parts into a larger deployment.
- You find it more convenient to work with a command line.

## Summary of Complete Installation

This section describes how you can install and deploy AIM by using individual tools and/or their respective scriptable versions.

For a new installation the following steps need to be completed. After the installation each individual tool/script can be reused as required.

To install and deploy using tools and/or scripts:

1. Install the necessary System Requirements.
2. Run the AIM MSI Installer.
3. Set the File Store service to run with the non-default credentials (optional).
4. Run the *Database Manager* to:
  - a. Initialize an AIM *Workhub* database.
  - b. Register the File Store with the database.
5. Run the *Import Controller* to:
  - a. Add one or more Import Databases to the *Import Server*.
  - b. Add one or more Import Packages to the *Import Server*.
6. Run the *Admin Tool* (optional, see *Managing Users* section in the [Users](#) topic).
7. Create a site in Microsoft Internet Information Services (IIS) and deploy the *AIM Dashboard* and Accusoft Viewer.

### Tools, Scripts and Functions

Tool	Scriptable version	Purpose
Microsoft Windows Installer package	<a href="#">msiexec.exe</a>	
Windows Services console	"sc" command. Refer to Microsoft documentation for more information.	Set the File Store service to run with the correct domain credentials
Database Manager	Database Manager Console	Initialize a database
Import Controller	Import Controller Console	Connect <i>Import Server</i> to an AIM <i>Workhub</i> database

Tool	Scriptable version	Purpose
		Add Packages to load data
Admin Tool	-	Create and modify data. View and update the Class Library, Objects, and Associations. Create users and assign roles and permissions. Create and edit lifecycle groups and states. Export XML for classes and objects.
IIS	-	Create <i>the AIM Dashboard</i> site.
Web Deploy package	<a href="#">msdeploy.exe</a>	Import <i>the AIM Dashboard</i> into IIS.
DeployAccusoftViewer.bat	The batch file can also be run from a command prompt.	Deploy the Accusoft Viewer.

## AVEVA AIM MSI Installer

To install using the MSI package:

1. From your installation media, double-click [AVEVA.NET.Workhub.and.Dashboard.5.1.12.msi](#).
2. On the **Welcome** screen, select **Next**.
3. If you want to change the **Destination Folder** path, select **Change...**, otherwise select **Next**.
4. Select/deselect the required features.

---

**Note:** If VizStream is not required (for example, if 3D models are to be viewed using AIM-hybrid), ensure that the **VizStream Client** option is not selected (by default, the option is unselected).

---

5. Select **Next**.
6. In the **License server(s)** box, enter the server name, select **Next**.

---

**Note:** If more than one license servers contain the AIM features codes for the features you are installing, enter all the server names, separating each with a semicolon.

---

7. If required, edit the default values for the File Store configuration, select **Next**.
8. If required, edit the default values for the Import Server port, select **Next**.
9. Select **Install**.

10. When the installation has finished, select **Finish** to close the installer.

---

**Note:** If installation is successful, all the AIM components are installed on your machine. Also, the *Database Manager*, *Admin Tool* and *Import Controller* appear as short-cut icons on your desktop and the **Start** menu.

---

To install using the MSI command line in silent mode:

1. Open a command prompt.
2. Type `msiexec /q /i "AVEVA.NET.Workhub.and.Dashboard.5.1.12.msi"`.
3. The following parameters can be passed into the installer through the scripts:

Parameter	Purpose	Description
<code>INSTALLDIR</code>	Installation directory	Default is C:\Program Files\AVEVA\AVEVA Asset Information Management
<code>FSTFILEVAULTDIR</code>	File Store vault directory	Default is C:\ProgramData\AVEVA\AVEVA Asset Information Management\FileStore
<code>FSTHTTPPORT</code>	File Store HTTP port	Default is 7100
<code>FSTCPPORT</code>	File Store TCP port	Default is 7101
<code>FSTHOSTNAME</code>	File Store binding address	Default is *. Only useful for servers on multiple disjoint networks.
<code>IMSENGINEPORT</code>	Import Server Engine Port	Default is #8228. Must be prefixed with "#" due to how MSI interacts with DWORD registry keys.
<code>ADDLOCAL</code>	Passes feature codes	Default is All. Database Manager ( <a href="#">DBM</a> ) Sample Data ( <a href="#">SMP</a> ) Import Server ( <a href="#">IMS</a> ) Import Controller ( <a href="#">IMC</a> ) Dashboard ( <a href="#">DSH</a> ) Admin Tool ( <a href="#">ADM</a> ) DMS Checker ( <a href="#">DMS</a> ) EIA ( <a href="#">EIA</a> )

Example: `msiexec.exe /qn /i AVEVA.NET.Workhub.and.Dashboard.5.1.12.msi INSTALLDIR="K:\AVEVA\AVEVA Asset Information Management" ADDLOCAL=FST,IMS,DSH`

## Manage AVEVA AIM NTFS File Store Service

Make sure that AIM NTFS File Store service is running with the domain user credentials.

To manage the AIM NTFS File Store service:

1. On the Start menu of your computer, right-click **Computer**, and then select **Manage**.
2. In the left pane, select to expand the **Services and Applications** node, and then double-click **Services**.

3. Right-click **AVEVA NET NTFS File Store** service, and select **Properties**.
4. Select **This account**, then select **OK**.
5. The File Store Service is set to run with the domain credentials.

## Default Permissions

The **File Store Service Virtual** account has by default Read & Execute, List Folder Contents, Read permissions after installing. The NT Server\AVEVANETFileStore service has been given permission using:

```
netsh http add urlacl url=http://+:7100/ user=AVEVANETFileStore (7100 port is the File Store port provided at installation time)
```

All of the File Store Vault folders in the File Store vault location have been given access to the File Store virtual account, so that it will have permission in Import and Job.

## Database Manager Tool

This section explains how to use *Database Manager*.

Before using *Database Manager*, create an empty SQL Server database.

Using the *Database Manager* you can:

- Add or remove the AIM Workhub servers and databases.
- Initialize an AIM Workhub database.
  - Create the physical structure of the schema: tables, views and stored procedures.
  - Load the required system information.
- Upgrade a database to the latest version.
- Set the File Store location for a database.
- Update the file references in the database directing you to the new File Store location.

The *Database Manager Console* is a command-line version of the *Database Manager*. You can initialize and upgrade the database, and register the File Store from scripts. It can also encode passwords for use in connection strings.

## Managing Databases

This section explains how to add and remove databases from Database Manager.

To add a database to a server instance:

1. Open **Database Manager**.
2. Right-click **Server Instances**, and then select **Add Server**.  
The Add Server window opens.
3. Do one of the following:
  - If you know the server name, Type that name in the Server Instance box, and then select **OK**.
  - If not, select **Refresh**, and then select the drop-down arrow in the Server Instance box.
  - From the list that appears, select a **Server Instance**, and then select **OK**.

4. Right-click the newly added server, select **Add Database**.  
The Connect to Database window opens.
5. If you want to connect to the database using your **Windows** credentials:
  - a. Select the **Windows Security** check box.
  - b. Type the **Database** and **Schema** you want to use in the SQL server, and then select **Connect**.
6. If you **do not** want to use your Windows credentials to connect to the database:
  - a. Clear the **Windows Security** check box.
  - b. Type the **User Account** (username) and **Account Password** (password) of the **SQL database**, and then select **Connect**.

Depending on the state of the database, one of the following messages appears:

- **The Workhub database has not been initialized.** Click **to initialize now**. See the *Initializing the AVEVA Asset Information Management Workhub Database* section in this topic.
- **The Workhub database is up to date.** Click **OK**. If there are no **File Server** details, select **Register**, see the *Registering File Store* section in topic.
- **The Workhub database is not the latest version.** Click **Yes to upgrade now**. See [Upgrading AVEVA Asset Information Management](#).

To add a schema to a Database:

1. Open Database Manager.
2. Right-click the database, select Add Schema.  
The Connect to Database windows opens.
3. If you want to connect to the database using your Windows credentials:
4. Select the Windows Security check box.
5. Type the Database and Schema you want to use in the SQL server, and then select Connect.
6. If you do not want to use your Windows credentials to connect to the database:
7. Clear the Windows Security check box.
8. Type the User Account (username) and Account Password (password) of the SQL database, and then select Connect.

Depending on the state of the database, one of the following messages appears:

- **The Workhub database has not been initialized.** Click **to initialize now**. See the *Initializing the AVEVA Asset Information Management Workhub Database* section in this topic.
- **The Workhub database is up to date.** Click **OK**. If there are no **File Server** details, select **Register**, see the *Registering File Store* section in topic.
- **The Workhub database is not the latest version.** Click **Yes to upgrade now**. See [Upgrading AVEVA Asset Information Management](#).

To remove a database from Database Manager:

1. Open **Database Manager**.

2. Right-click the database you want to remove.
3. Select **Remove Database**.

---

**Note:** This removes the database and schema from Database Manager. The database and schema still exist in the database server machine, and are not deleted.

---

To remove a schema from Database Manager:

1. Open **Database Manager**.
2. Right-click the schema you want to remove.
3. Select **Remove Schema**.

---

**Note:** This removes all schema from Database Manager. The schema still exists in the database server machine, and are not deleted.

---

## Initializing the AVEVA Asset Information Management Workhub Database

Before loading any data into the AIM *Workhub* database you need to create the correct structure and system information by *initializing*.

To initialize an AIM Workhub database:

1. Open **Database Manager**.
  2. Expand the Server Instances node, and then under the server and the database, double-click the schema you want to initialize.
- 
- Note:** If the server or database is not already added, see Managing Databases for the procedure.
3. If you want to connect to the database using your Windows credentials:
    - a. Select the **Windows Security** check box.
    - b. Type the **Database** and **Schema** you want to use in the SQL server, and then select **Connect**.
  4. If you **do not** want to use your Windows credentials to connect to the database:
    - a. Clear the **Windows Security** check box.
    - b. Type the **User Account** (username) and **Account Password** (password) of the **SQL database**, and then select **Connect**.
  5. In the **Database not initialized** window, select **Yes**. Progress is shown in the **Upgrade Status** box.
  6. When the initialization is complete, select **Close**.

## Registering File Store

To register a File Store with the AIM Workhub database:

1. Open **Database Manager**.
  2. Expand the Server Instances node, and then under the server and the database, double-click the schema you want to update.
- 
- Note:** If the server or database is not already added, see Managing Databases for the procedure.
3. If you want to connect to the database using your Windows credentials:
    - a. Select the Windows Security check box.
    - b. Type the Database and Schema you want to use in the SQL server, and then select Connect.

4. If you do not want to use your Windows credentials to connect to the database:
  - a. Clear the Windows Security check box.
  - b. Type the User Account (username) and Account Password (password) of the SQL database, and then select Connect.
5. Select **Connect**.
6. Select **OK**.
7. Select **Register**.
8. Change the **Binding** information if necessary.
9. When the **File Server** list is populated, select the server where the File Store is located.

**Note:** When the Database Manager registers a Workhub Database with the File Store service, it attempts to discover running instances of the File Store service on your network. This is done using WS-Discovery (<http://specs.xmlsoap.org/ws/2005/04/discovery/ws-discovery.pdf>). If you do not want the File Store service to advertise its endpoint or the Database Manager to send broadcasts to discover instances of this service, block UDP port 3702 in your firewall on the File Store service and Database Manager client machines respectively. Firewalling this port may affect other applications or services that use WS-Discovery.

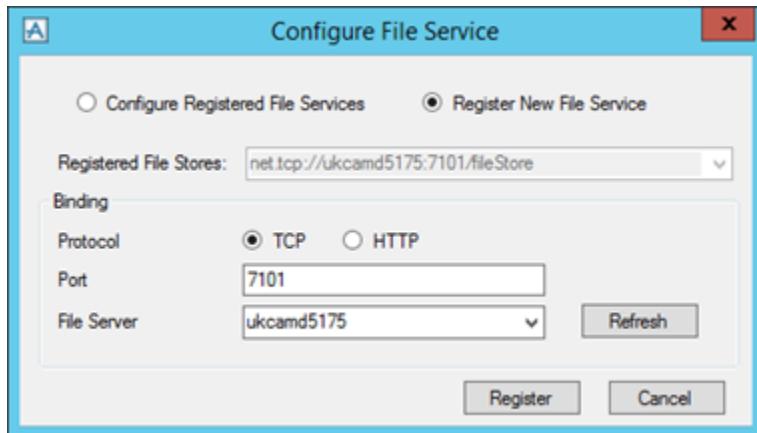
10. Select **Register**.
11. Select **Close**.

To register multiple File Stores to the AIM Workhub database:

1. On the **Connect to Database** window, select **Settings**.

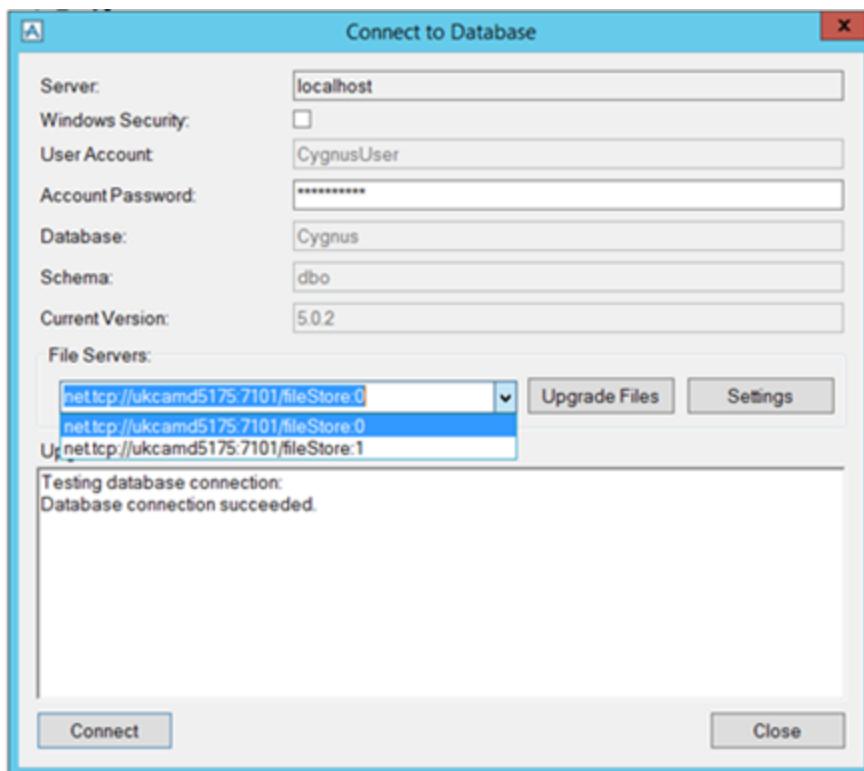
**Note:** This action disables the **Registered File Stores** drop-down menu.

2. On the **Configure File Service** window, select the **Register New File Service** option.



3. Select **Register**.

A new File Store is added to the **File Servers** drop-down menu. The vault number (in this case **0** and **1**) of the File Store is suffixed to the File Server name as visible on the following screen:

**Notes:**

- Up to version 5.0.1 of AIM, the last registered vault for a File Server is considered as the current File Store. So the file store registration does not include any vault number.
- Registered File Stores can be used in Import Controller to define different File Stores for each package.

## Import Controller Tool

This section explains how to use the *Import Controller*.

Using the *Import Controller* you can:

- Register *Import Servers* and databases.
- Add Class Library structure and content to a database.
- Create packages to import data.
- Update the database with new data.

The *Import Controller Console* is a command-line version of the *Import Controller*. You can control the Import Server from scripts, such as:

- Add, modify or delete Import Databases.
- Add, modify or delete Import Packages.
- Start data load process for Import Packages.
- Start and return, or start and wait for completion.

For more information, see [Use the Import Controller from the Command Line](#).

## Registering the Import Server

To register the *Import Server*:

1. Open **Import Controller**.
2. Right-click **Import Servers**, select **Register Import Servers....**
3. Either:
  - Select the *Import Server* that you want to use, and then select **Add >>**, or
  - In the **Host** box, type the server's hostname or IP address, and then select **Add**.
4. Select **OK**.

---

**Note:** The Import Controller broadcasts out on UDP port 7001, which the Import Server listens to, and the Import Server in turn sends responses back on UDP port 7002, which the Import Controller listens to. If the Import Controller is broadcasting service discovery, while using the UDP port 7001 for registering the Import Server, you must firewall this port to disable it.

---

## Registering the AVEVA Asset Information Management Workhub Database

To register the AIM Workhub Database:

1. Open **Import Controller**.
2. Expand the **Import Servers node**.
3. Right-click the server where the database is located.
4. Select **Register Database**.
5. For **Name**, type a unique name for the database.
6. For **Description**, type a description of the database.
7. For **Server**, type the name of the server where the database is located.
8. For **Provider**, select **SQL server**.
9. If you want to connect to the database using your Windows credentials:
  - a. Select the **Windows Authentication** check box.
  - b. Type the **Database** and **Schema** you want to use in the SQL server.
10. If you **do not** want to use your **Windows** credentials to connect to the database:
  - a. Clear the **Windows Security** check box.
  - b. Type the **User Account** (username) and **Account Password** (password) of the SQL database.
11. If **Windows Authentication** is not selected, and you want to use an encrypted password in the web.config file, select **Show Encrypted Password**.

---

**Note:** If Windows Authentication is not selected, the database username and password are also used in the web.config file. By default, the password is unencrypted. For enhanced security, you can use an encrypted password by selecting **Show Encrypted Password**. After encrypting, you must copy and paste the encrypted password to the web.config file.

---

12. Make sure **SQL Server** is selected.
13. Leave **Bootstrap Folder** empty.
14. Select **OK**.

## Bootstrap the AVEVA Asset Information Management Workhub Database

Bootstrapping populates the database with Class Library information that is required before the rest of the data can be uploaded.

See [Change the Out-of-the-box Installation](#) for more information and for details on how to create your own bootstrap files.

To bootstrap the database:

1. Open **Import Controller**.
2. Expand **Import Servers**.
3. Expand the server where the database is located.
4. Expand the database - see the Registering the AVEVA Asset Information Management Workhub Database section. if the database has not already been registered.
5. Right-click on **BootStrap**.
6. Select **Update**.

Bootstrapping is complete when the **Status** of the XML files changes to **Existing**.

## Creating an Import Package

An *Import Package* stores the information required to import data from a *Staging Area* into the *AIM Workhub* database. See [Import Data](#) for more details.

To add a Package to a database:

1. Open **Import Controller**.
2. Expand **Import Servers**.
3. Expand the server where the database is located – if the server has not already been added, see Registering the Import Server section.
4. Right-click on the database – if the database has not already been registered, see Registering the AVEVA Asset Information Management Workhub Database section.
5. Select **Create Package...**
6. Enter the package information (see the following table).
7. Select **OK**.

## Add/Edit Import Database Parameters

Field	Type
<b>Package Name</b>	The name of the Package. This ID is stored in the database, so it is important to choose a unique ID that will not clash with any other identifiers in the database.  <b>Note:</b> Take particular care to avoid a name clash with a Root Object ID.
<b>Dashboard Browse Root Details</b>	
<b>ID</b>	The ID of the Root Object for the <i>AIM Dashboard</i>

Field	Type
	Browse panel, under which all the information imported by this Package is located. During processing the Import Server also uses this ID as the <i>Context ID</i> for the information in this Package. It is possible to have several Import Packages contributing information to one Root Object, so this ID could appear in more than one Package.
<b>Class</b>	The class of the Root Object, typically something like PLANT or PROJECT. This must be a class in the AIM Workhub Class Library.
<b>Description</b>	Defines the tool-tip that is displayed for this Root Object in the Browse panel.
<b>Package Folders</b>	
<b>Staging Area</b>	The pathname of the folder containing the information to be imported by this Package. If the Staging Area is not on the computer where the Import Server is running, you will need to use a UNC or a mapped drive. Before files can be uploaded you must arrange the files in the Staging Area into a specific hierarchical order.
<b>Temporary Area</b>	You need to use a separate Temporary Area for each Package to avoid the risk of clashing filenames. You need to create this folder before running an update. If the Temporary Area is not on the computer where the Import Server is running, you will need to use a UNC or a mapped drive.
<b>VizStream Documents</b>	
<b>Drop Folder</b>	<p>You need to create the Drop Folder before running an update, use a separate Drop Folder for each Package to avoid the risk of clashing filenames. The Drop Folder must be created under the data folder in the location where VizStream was installed for example C:\vs\data\SRP. If the VizStream server is not on the computer where the Import Server is running, you will need to use a UNC or a mapped drive.</p> <p>This pathname must be explicitly visible to the Import Server. So, for example, the user cannot create a share to the VizStream data folder and then use the share name as part of the pathname the user specifies.</p> <p>For example, \\computer1\VizDataShare\SRP is NOT</p>

Field	Type
	<p>suitable because it uses a share name.</p> <p><b>Note:</b> If VizStream Client support has not been installed, then this field will be grayed out.</p>
<b>SubFolder path</b>	<p>A location, where you can drop the Vizstream processed files.</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>The VizStream drop folder name should end with backward slash as follows: <b>E:\AVEVA_x64\VizStreamServer\data\</b>. If not, add a backslash to the SubFolder Path.</li> <li>If VizStream Client support has not been installed, then this field will be grayed out.</li> </ul>
<b>Server address</b>	<p>The IP address or domain name of the VizStream server.</p> <p>This value is used by the client's browser to access the VizStream Server.</p> <p><b>Notes:</b></p> <ul style="list-style-type: none"> <li>If VizStream is configured for secure mode and the clients are using the WebGL viewer, then the Server Address value must match the Common Name of the VizStream Server's SSL certificate; otherwise, the WebGL viewer cannot access the server's 3D models.</li> <li>If VizStream Client support has not been installed, then this field will be grayed out.</li> </ul>
<b>Miscellaneous</b>	
<b>Callout Folder</b>	<p>The pathname of a folder that the Import Server will search for user-defined plug-ins to be invoked during import processing. If you do not have any callout code, leave blank.</p>
<b>Discard Previous Template</b>	<p>Applies when the Import Server encounters an Import Template with the same name as one already imported.</p> <p>Select to delete the existing Template.</p> <p>Clear to retain the existing Template as a predecessor to the new Template.</p>

Field	Type
<b>Check Classification</b>	Select to check whether the classes used when an object has multiple classifications are in the same Class Library.
<b>Allow Merging Objects</b>	Checked (default): If two objects have the same alias, then those two objects will be merged. Unchecked: If two objects have the same alias, the first will be identified by the alias, the second will raise a warning.
<b>Create Content Folders</b>	Select to create content folders.
<b>VizStream Z Up</b>	Select to display the Z axis vertically. Clear to display the Y axis vertically and the Z access coming out of the page.
<b>Allow Change Parent</b>	Select to allow existing classes to be moved in the Class Library.
<b>Force Change Parent</b>	Active when <b>Allow Change Parent</b> is selected. The change of parent will happen even if the class has existing instances.
<b>Include VizStream Geometry Lines</b>	Select to display Geometry lines on the drawing.
<b>Allow Merging of Unknown Objects</b>	This option allows for tags and its aliases to be merged, even when they are unknown. If two unknown objects have the same alias, then they will be merged. Both of the objects will be identified by the alias.
<b>Error Control</b>	
<b>Use Default settings</b>	Select to use the default settings Clear to enter settings for <b>Error Level</b> and <b>Max Errors</b> manually.
<b>Error Level</b>	Select the least serious type of error that you want to cause an import to abort.
<b>Max Errors</b>	Enter the number of errors that are allowed before the import is aborted.

## Web Deploy

When importing a web deployment package using IIS, only a limited number of options are available. So it is recommended that the package is deployed using the command line version, which allows additional rules and

settings to be applied.

For more information about manually installing web packages, refer to <http://www.asp.net/web-forms/overview/deployment/web-deployment-in-the-enterprise/manually-installing-web-packages>.

**Important:**

- While redeploying to an existing 5.x website, ensure that the website is backed up beforehand. Refer to <http://www.iis.net/learn/publish/using-web-deploy/packaging-and-restoring-a-web-site> and <http://www.iis.net/learn/publish/using-web-deploy/web-deploy-automatic-backups>.
- Any custom extensions that have been deployed to the AIM Dashboard website as a web deployment package must be redeployed after upgrade. If Web Deploy was not used, then all custom files must be backed up and reapplied after the upgrade.

To deploy the AIM Dashboard using *Web Deploy*:

1. On the AIM Workhub Web Server, open IIS.
2. Expand the server instance.
3. Expand **Sites**.
4. Right-click on the *AIM Dashboard* site.
5. Select **Deploy**, and then select **Import Application...**
6. Go to <Install Directory>/Dashboard, select the Dashboard application package.zip file, and then select **Next**.
7. Select the contents of the package, and then select **Next**.
8. Enter the Application Package Information, and then select **Next**.
9. After the package finishes installing, select **Finish**.

`msdeploy.exe` is a command-line version of Web Deploy. For more information, see [AVEVA.NET.Dashboard.deploy-readme.txt](#) and example commands in the batch files, both of which can be found in the install directory.

To deploy the AIM Dashboard using `msdeploy.exe`:

1. Open a command prompt.
2. Navigate to the installation folder for Microsoft Web Deploy, for example: `C:\Program Files\IIS\Microsoft Web Deploy V3`.
3. Run the following command:

```
msdeploy.exe -source:package=" [installation folder]\AVEVA.NET.Dashboard.zip"
             -dest:auto,includeAcls="False" -verb:sync -disableLink:AppPoolExtension
             -disableLink:ContentExtension -disableLink:CertificateExtension -setParamFile:"
               [installation folder]\AVEVA.NET.Dashboard.SetParameters.xml"
```

You can provide the following as an additional flag:

- `Whatif` - simulates deployment and creates a report of what will happen when you actually deploy the package.

## Deploy Accusoft Viewer

To deploy Accusoft Viewer:

1. Navigate to the **AccusoftViewer** folder that can be found in *the AIM Dashboard* installation folder, for example: <C:\Program Files\AVEVA\AVEVA Asset Information Management\Dashboard\AccusoftViewer>.
2. Open **AccusoftPackage.SetParameters.xml**, edit the default parameters if required, (see the following table), and then save the file.
3. Double-click **DeployAccusoftViewer.bat** to deploy the viewer.
4. Reset IIS.

#### Accusoft Viewer Parameters

Parameter	Description
IIS Web Application Name	The name of the <i>AIM Dashboard</i> website. Default = Dashboard.
PrizmApplicationServicesScheme	Prizm Service REST API web service scheme. Default = http, set to https if SSL configured.
PrizmApplicationServicesHost	Prizm Service REST API web service hostname. Default = localhost.

### Remove or Redeploy Accusoft Viewer

To remove or redeploy Accusoft Viewer:

1. From the AIM Dashboard installation folder, open the **AccusoftViewer** folder.

For example: <C:\Program Files\AVEVA\AVEVA Asset Information Management\Dashboard\AccusoftViewer>

2. Create a backup of **AccusoftPackage.SetParameters.xml**.

**Note:** Any customizations should be manually reapplied before redeploying.

3. Double-click **RemoveAccusoftViewer.bat**.

The existing Accusoft client files are deleted from the Dashboard website default directory.

For example: <C:\inetpub\Dashboard>

**Note:** If you are not using the default path, run the batch file through a command prompt, and provide the correct path.

For example: <RemoveAccusoftViewer.bat "C:\inetpub\Dashboard\MyWebsite">

4. Apply customizations from the backed-up **AccusoftPackage.SetParameters.xml**.

5. To redeploy Accusoft Viewer, see [Deploy Accusoft Viewer](#).

### Deploy SharePoint Online

This section describes how to set up the SharePoint Online file handler in order to access files stored in SharePoint Online. This file handler is provided with AIM.

**Note:** To access files from SharePoint Online, the "InfoLocator" of the FILE object must be in the following format: <https://{{domain}}.sharepoint.com//sites/{{sitename}}/{{foldername}}/{{filename}}>

For example: [https://test.sharepoint.com//sites/projectCenter/information\\_technology/test.pdf](https://test.sharepoint.com//sites/projectCenter/information_technology/test.pdf)

To deploy SharePoint Online with AIM:

1. Navigate to the [SharePointOnline](#) folder that can be found in the AIM Dashboard installation folder.  
For example: `C:\Program Files\AVEVA\AVEVA Asset Information Management\Dashboard\SharePointOnline`.
2. Open [SharePointOnlinePackage.SetParameters.xml](#), edit the default parameters if required (see the following table), and then save the file.
3. Double-click [DeploySharePointOnline.bat](#) to deploy the viewer.
4. Reset [IIS](#).

#### SharePoint Online Parameters

Parameter	Description
IIS Web Application Name	The name of the <i>AIM Dashboard</i> website. Default = Dashboard.
Paths	Site URL of the files stored in SharePoint Online. For example: <code>https://{{domain}}.sharepoint.com/sites/{{sitename}}</code>  <b>Note:</b> If you are accessing files from multiple sites in SharePoint Online, then the site URLs must be configured with comma separated values.
ServiceName	Default = SPOLogin (Name of the service that exposes the file handler)
AuthorityURI	Base URL of SharePoint Online to authenticate the user's credentials. For example: <code>https://{{domain}}.sharepoint.com</code>
UserName	The SharePoint user name must be encrypted. To encrypt the user name, use the Padlock utility in the <b>Add Database</b> section of the Import Controller.
Password	The password for UserName must be encrypted. To encrypt the password, use the Padlock utility in the <b>Add Database</b> section of the Import Controller.

#### Remove or Redeploy SharePoint Online

To remove or redeploy SharePoint Online:

1. From the *AIM Dashboard* installation folder, open the [SharePointOnline](#) folder.

For example: `C:\Program Files\AVEVA\AVEVA Asset Information Management\Dashboard\SharePointOnline`

2. Create a backup of [SharePointOnlinePackage.SetParameters.xml](#).

**Note:** Any customizations should be manually reapplied before redeploying.

3. Double-click the [RemoveSharePointOnline.bat](#) file.

The existing SharePoint Online client files will be deleted from the *AIM Dashboard* website default directory, for example, <C:\inetpub\Dashboard>.

**Note:** If you are not using the default path, run the batch file through a command prompt, and provide the correct path, for example, <RemoveSharePointOnline.bat "C:\inetpub\Dashboard\MyWebsite">.

4. Apply customizations from the backed-up XML file.

## AVEVA NET Job Server Configuration

The Polling Interval default value can be changed. Also the Database source can be added to the Job Server config.

To configure the *AVEVA NET Job Server*:

1. Navigate to **Services**.
2. Stop the **AVEVA NET Job Server** service.
3. Navigate to the **AIM** installation location and open the **Job** folder.
4. Right-click and open the [AVEVA.NET.Job.Server.exe.config](#) file.
5. Search for the `<sources>` tag, which is present under `<aveva.net.job>` tag.
6. If required, modify the `pollingInterval` value or leave the default value as is.
7. Under `<sources>`, different database source can be added with the following information:

```
<source
provider="SQL or MySQL"
port="port for database server"
name="Name for this source"
server="SQL Server Instance"
database="Database name"
schema="Schema to use"
integrated="use windows authentication true or false"
username="SQL DB Login username"
password="Encrypted password of SQL DB Login" />
```

For example:

```
<aveva.net.job>
<sources pollingInterval="6">
<source
provider="SQL"
port="1433"
name="DB_IPE"
server="inhydvms8r2102"
database="DB_IPE"
schema="dbo"
integrated="false"
username="DB_IPE"
password="VFEwMDFldjJnR2pCM2JzdUFYS0wzdz09LGFpTm5pSXpNc3VkJBY2srWVQ4Z3c9PQ==" />
<source
provider="SQL"
port="1433"
name="DB_SRP"
server="inhydvms8r2102"
```

```
database="DB_SRP"
schema="dbo"
integrated="false"
username="DB_SRP"
password="bFRuNF1EdJJ1T1kremFPbWNaM285dz09LGFCZ0hjMGNFRVpQaGYr0VRKWE8yeXc9PQ==" />
</sources>
</aveva.net.job>
```

## AVEVA AIM EIA WS-Federation Configuration

The AIM EIA can be configured to use the WS-Federation as a specification through which an identity is provided. As an alternative to the typical Active Directory identities, this configuration enables the AIM EIA to use an *Identity Provider* such as ADFS to provide identities. This configuration occurs in the `app.config` for the AIM EIA service and for any client that uses it.

### ADFS Configuration for EIA

Before configuring the AIM EIA to use ADFS, you must first add a Relying Party Trust relationship for your application to the ADFS instance. For more information, see [https://learn.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2012-R2-and-2012/dd807108\(v=ws.11\)?redirectedfrom=MSDN](https://learn.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2012-R2-and-2012/dd807108(v=ws.11)?redirectedfrom=MSDN)

The AIM EIA requires the Name claim to identify the user to AIM. To use the Windows account name where Windows authentication is used, you must have a custom claim rule. The following link provides further details on how to create a custom claim rule: <https://technet.microsoft.com/en-gb/library/ee913567.aspx>

You must first change the service declaration to include an endpoint for users wanting to federate the client identity.

After that, you must configure the client to use that endpoint.

### Server

To change the service declaration to include an endpoint for users wanting to federate the client identity:

1. Define the `ws2007FederationHttpBinding` in `system.serviceModel/bindings`.

*Example:*

```
<ws2007FederationHttpBinding>
<binding transactionFlow="true" maxReceivedMessageSize="1048576"
receiveTimeout="00:10:00">
<readerQuotas maxStringContentLength="1048576" maxArrayLength="65532"/>
<security mode="Message">
<message>
<issuerMetadata address="{IssuerMetadataUrl}" />
</message>
</security>
</binding>
</ws2007FederationHttpBinding>
```

*Tokens:*

`IssuerMetadataUrl` – The metadata URL for the ADFS server is usually <https://adfsserver.<domain>/FederationMetadata/2007-06/FederationMetadata.xml>, where the host address of the ADFS server is <https://adfsserver.<domain>/>.

2. Allocate a protocol to the `ws2007FederationHttpBinding` in `system.serviceModel/protocolMapping`.

*Example:*

```
<add scheme="http" binding="ws2007FederationHttpBinding" />
```

3. Allocate an endpoint and URL for each service that uses the `ws2007FederationHttpBinding`.

*Example:*

```
<endpoint address="sessionServiceFed"
  contract="AVEVA.NET.Services.OPE.Session.ISessionManager"
  binding="ws2007FederationHttpBinding" behaviorConfiguration="LargeDataSetBehavior" />
```

4. Configure each EIA service to use a service behaviour that enables the identity configuration to `system.serviceModel/behaviors`.

*Example:*

```
<serviceBehaviors>
<behavior>
  <!-- To avoid disclosing metadata information, set the values below to false before deployment -->
  <serviceMetadata httpGetEnabled="true" httpsGetEnabled="true" />
  <!-- To receive exception details in faults for debugging purposes, set the value below to true. Set to false before deployment to avoid disclosing exception information -->
  <serviceDebug includeExceptionDetailInFaults="false" />
  <serviceCredentials useIdentityConfiguration="true">
    {ServiceCertificate}
  </serviceCredentials>
</behavior>
</serviceBehaviors>
```

*Tokens:*

`ServiceCertificate` – This certificate is required to configure the service. For example:

```
<serviceCertificate findValue="THUMBPRINT" storeLocation="LocalMachine" storeName="My"
x509FindType="FindByThumbprint" />
```

5. Configure the identity model.

*Example:*

---

```
<system.identityModel>
<identityConfiguration>
<audienceUris>
  {AudienceUris}
</audienceUris>
<issuerNameRegistry
  type="System.IdentityModel.Tokens.ConfigurationBasedIssuerNameRegistry,
  System.IdentityModel, Version=4.0.0.0, Culture=neutral,
  PublicKeyToken=b77a5c561934e089">
<trustedIssuers>
  {TrustedIssuer}
</trustedIssuers>
</issuerNameRegistry>
<certificateValidation certificateValidationMode="None" />
<claimsAuthenticationManager type="AVEVA.NET.Claims.AuthenticationManager,
  AVEVA.NET.Claims" />
```

---

---

```
</identityConfiguration>
</system.identityModel>
```

---

*Tokens:*

**AudienceUrls** – The URL is required for the WCF services that are using the identity provider. For example:

```
<add value="http://localhost:7012/sessionServiceFed" />
<add value="http://localhost:7013/importServiceFed" />
<add value="http://localhost:7014/searchServiceFed" />
<add value="http://localhost:7015/directoryServiceFed" />
<add value="http://localhost:7016/changeServiceFed" />
<add value="http://localhost:7017/ClassLibServiceFed" />
```

**TrustedIssuer** – Use the thumbprint for the ADFS server.

---

**Note:** You may need to turn on the certificate validation in a live environment.

---

## Client

Now the service has been configured to provide a **ws2007FederationHttpBinding** bound endpoint.

To change the client to use that endpoint:

1. Configure a **ws2007FederationHttpBinding** that uses a **ws2007HttpBinding** for the identity issuer in **system.serviceModel/bindings**.

*Tokens:*

- **IssuerUrl** – The URL for the ADFS server is usually **https://adfsserver.<domain>/adfs/ls**, where the host address of the ADFS server is **https://adfsserver.<domain>/**.
- **IssuerMetadataUrl** – The metadata URL for the ADFS server is usually **https://adfsserver.<domain>/FederationMetadata/2007-06/FederationMetadata.xml**, where the host address of the ADFS server is **https://adfsserver.<domain>**.

2. Change the endpoint for each service to use the **ws2007FederationHttpBinding** and a certificate reference for the identity.

*Example:*

```
<endpoint address="http://localhost:7012/sessionServiceFed"
binding="ws2007FederationHttpBinding" contract="OPESessionManager.ISessionManager"
name="sessionLAN">
<identity>
{ CertificateReference }
</identity>
</endpoint>
```

*Tokens:*

**CertificateReference** – This is the reference to a certificate that can be used to identify the client to the server. For example:

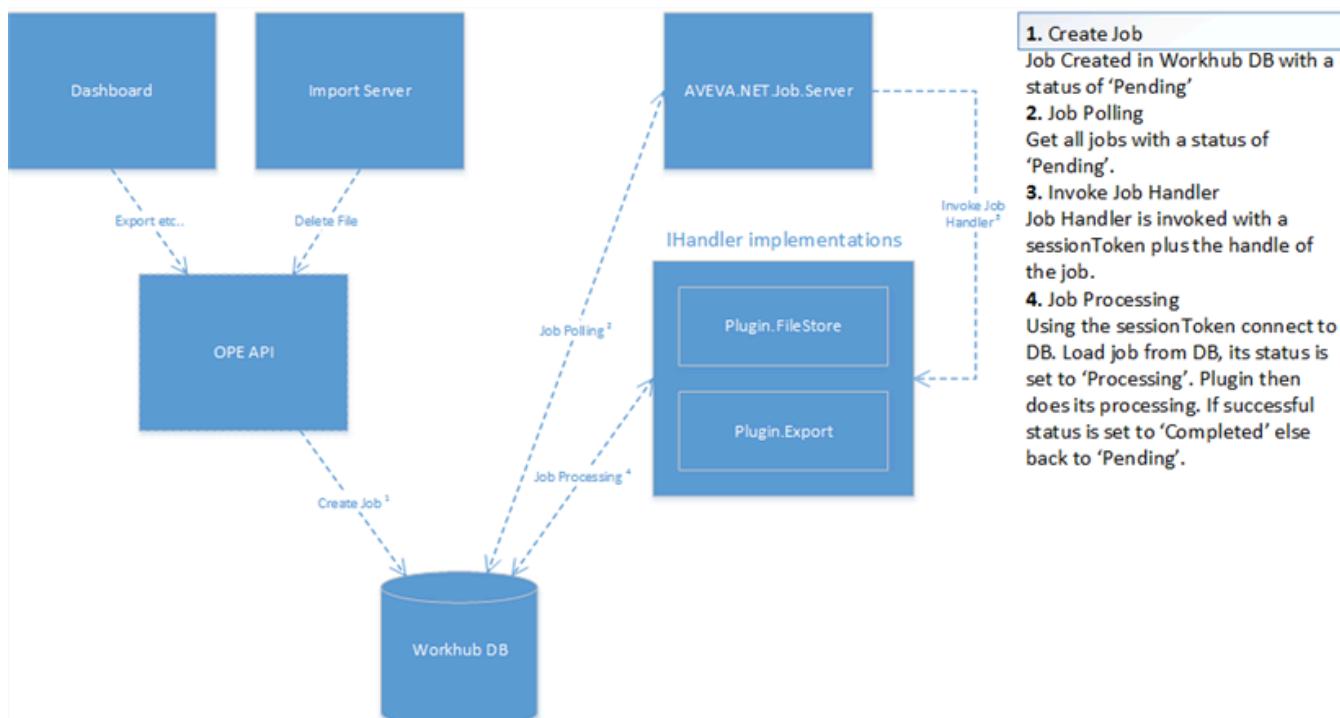
```
<certificateReference findValue="THUMPRINT" storeLocation="LocalMachine" storeName="My"
x509FindType="FindByThumbprint" />
```

3. Add the following endpoint behaviour for all endpoints if you want to disable certificate validation at **system.serviceModel/behaviors**. (You may not want this in production.)

*Example:*

```
<endpointBehaviors>
<behavior>
<clientCredentials>
<serviceCertificate>
<authentication certificateValidationMode="None"/>
</serviceCertificate>
</clientCredentials>
</behavior>
</endpointBehaviors>
```

## Job Server Overview



## Upgrade Accusoft PrizmDoc

When upgrading *Accusoft PrizmDoc*, some entries retained from the previous version affect the new installation. To ensure that the latest version is installed correctly, we advise you to perform the following steps:

1. Stop all Prizm Services, such as:
  - Prizm
  - Prizm Application Services
  - Prizm Cache Manager
  - Prizm Demo
2. If the Cache Manager is enabled, ensure that the service is removed by using **PrizmCacheMgrTool.exe** before uninstalling *Accusoft PrizmDoc*.
3. Select **Stop Service** and then, select **Unregister Service**.

4. Uninstall *Accusoft PrizmDoc*. After it is uninstalled, verify if the following directories have been removed:

- C:\Prizm (Default is C: drive)
- C:\ProgramData\Accusoft\Prizm

---

**Note:** If you want to clear any *PrizmDoc* log files, ensure that you do not delete the *pas* folder, for example, <C:\Prizm\logs\pas>.

---

5. Remove the following Prizm sites from IIS if existing:

- Prizm Content Connect Samples
- Prizm Content Connect Service Website

6. Reboot the machine and install *Accusoft PrizmDoc Server and Client* from scratch.

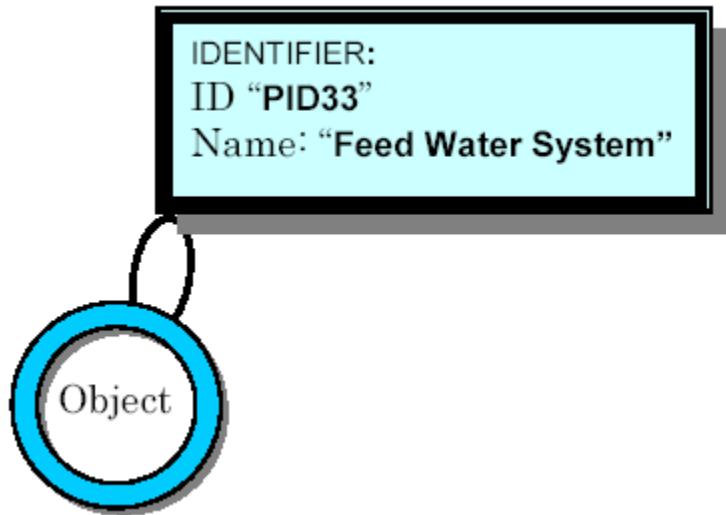
7. During the installation of *Accusoft PrizmDoc Server*, ensure that you close the licensing tool dialog when prompted, and only after the installation is complete, run the <AVEVA.NET.Accusoft.Licence.exe> as an administrator.

## Associative Object Model and XML

The AIM Workhub Object itself contains no information (other than an internal system handle) and is often visualized as a ‘keyring’ with Identifiers and other information attached to it. For an Object to exist in the AIM Workhub Database, it must have at least one Identifier, which consists of:

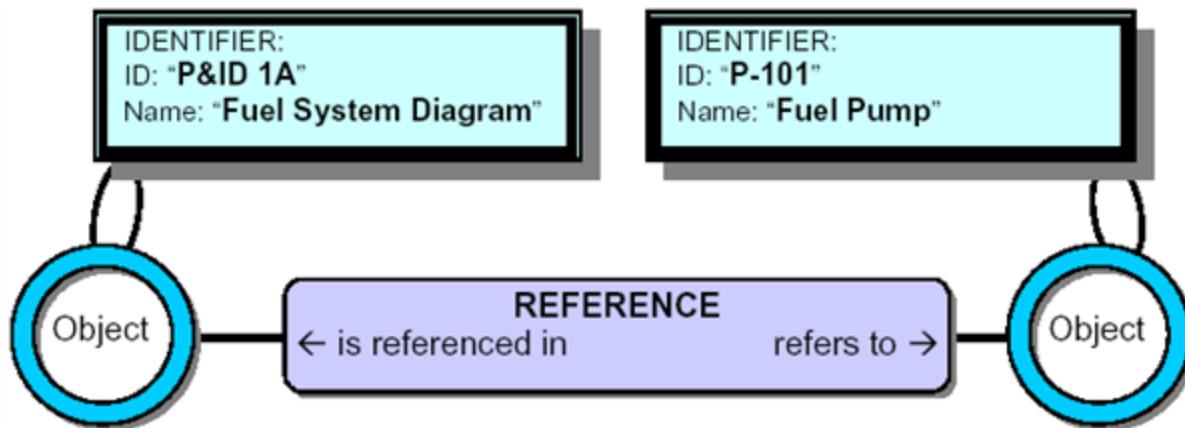
- An ID which must be present and must be unique.
- An optional longer descriptive Name.
- An optional Context or namespace for the ID – refer to Context.
- An optional Revision name or number.

A fully registered Object should also have a Class as discussed below.



## Associations

An Association is a link between two Objects and there is no limit to the number of Associations an Object can have. Here is an example of an Association:



All Associations are bi-directional, so they can be followed in either direction from one Object to another. Most Associations read differently depending on the direction in which they are followed and this is shown in the diagrams by an arrow.

**Note:** For ease of understanding, the text is shown only in one direction, in later diagrams.

An Association can exist only for as long as the two linked Objects exist. If either of them are deleted, AIM Workhub automatically deletes the Association.

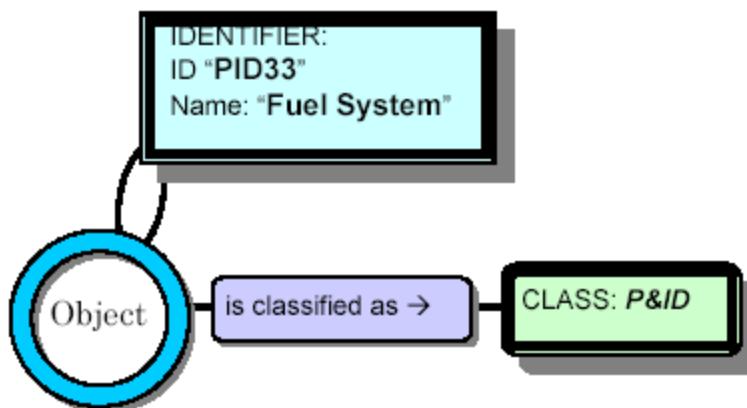
## Association Types

About twenty built-in Association Types have so far been defined. The following diagram lists the most frequently encountered Associations and how they are typically used:

<b>REFERENCE</b>	← is referenced in	refers to	DOCUMENT refers to → EQUIPMENT
<b>ESSENTIAL CLASSIFICATION</b>	← is a classifier of	is classified as	OBJECT is classified as → CLASS
<b>INCIDENTAL CLASSIFICATION</b>	← is an incidental classifier of	is incidentally classified as	OBJECT is incidentally classified as → CLASS
<b>ASSEMBLY</b>	← is an assembly including	is a part of	EQUIPMENT is a part of → UNIT
<b>COLLECTION</b>	← is a collection including	is an element of	OBJECT is an element of → FOLDER
<b>NOTE REFERENCE</b>	← is referenced in note	is a note referring to	A310204 is a note referring to → VALVE
<b>FULFILLMENT</b>	← fulfils	is fulfilled by	DOCUMENT is fulfilled by → FILE
<b>DIRECT CONNECTION</b>	← is connected to	is connected to	PUMP is connected to → VALVE
<b>SUCCESSION</b>	← is a successor to	is succeeded by	DOCUMENT is succeeded by → DOCUMENT
<b>GENERIC ASSOCIATION</b>	← is associated with	is associated with	OBJECT ← is associated with → OBJECT

## Classes

Ideally, every Object is classified and its Class tells us what kind of object it is. Here is an object classified as a P&ID document:



Two kinds of Associations are used for classification:

**ESSENTIAL CLASSIFICATION**  
← is a classifier of                            is classified as →

Primary classification describing the intrinsic nature of this object

**INCIDENTAL CLASSIFICATION**  
← is an incidental classifier of                            is incidentally classified as →

Secondary classification telling us more about the circumstances or role of this object

## Class Library or Reference Data Library (RDL)

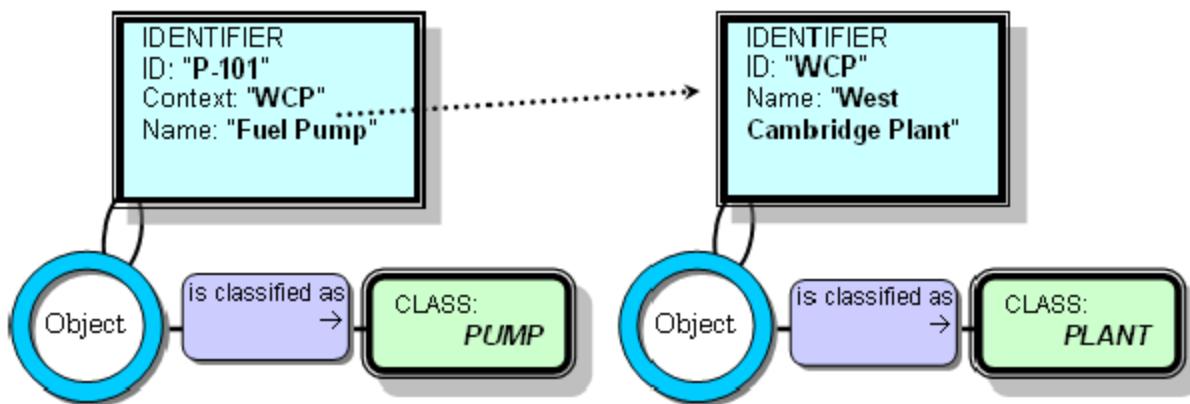
An Object can only be classified using a pre-defined Class from the Class Library, also known as the Reference Data Library (RDL). The AIM Workhub comes supplied with a Class Library of classes that have been found useful in practice. However, it is not necessary to use the Standard Class Library as supplied and the user can add classes or create a whole custom Class Library to suit the job in hand.

When customizing a Class Library, you must be aware of the following restrictions:

- A number of system classes are defined as subclasses of the AIM Workhub SYSTEM class and they cannot be deleted.
- The upper levels of the class hierarchy are system-defined and the functionality of the AIM Workhub depends on this basic framework known as the Upper Ontology.
- Any new Class must directly or indirectly be a subclass of one of these built-in classes.
- You cannot delete a Class that is currently in use as an Essential or Incidental classification of any Object. All such Objects must be deleted before the Class can be deleted.

## Context

An Object Identifier must be globally unique across an entire database. By default, objects have identifiers in the Global or null Context. For an object in this default Context, the object ID must be globally unique. When a Context is specified, an ID only needs to be unique within the namespace represented by that Context. Any ID can serve as the Context for any other Identifier. In the following example, a PUMP is given an ID in the context of the ID of a PLANT:



If the ID of an object is unique within the database, it can be referred to by its short ID, for example "P-101". To make sure that an ID refers to a single object the Context must be supplied as well: "WCP|P-101". Context is not limited to just one level but can be chained without limit.

**Note:** The use of the convention used in the AIM Workhub of a vertical bar (|) to separate the Context from the ID (however, this is not valid in the AIM Workhub XML Schema) and the use of Context should be regarded as mandatory. It is in any case unavoidable when one database contains information from two or more PLANTS or PROJECTS to prevent clashes of identifier between the two sets of data. In an AIM Workhub Import Package, it is necessary to declare a Root Object and the ID of this object is normally used as the Context for all the objects in that Import Package.

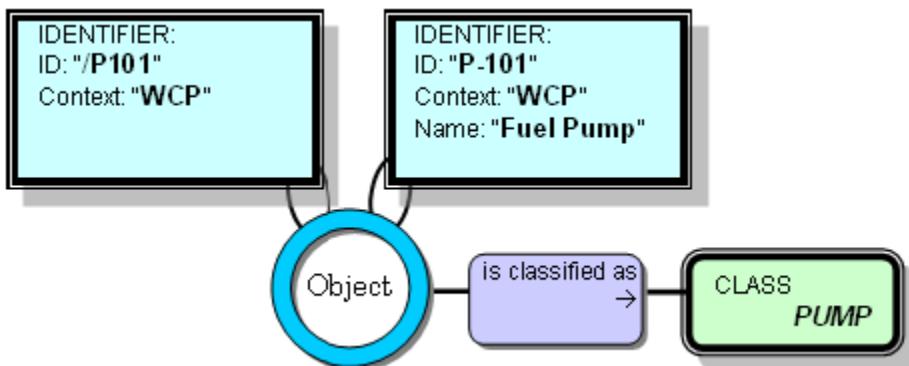
## Unclassified Objects

A fully registered AIM Workhub Object has at least one Identifier and at least one Class. Objects may exist without a Class but this usually only occurs as a transitional state during data import. For example, to store an Association between two objects it may be necessary for the AIM Workhub System to create an object on-the-fly before the full details about that Object have been imported. In a fully populated database unclassified objects would normally be regarded as an error and evidence of some problem with data import.

Unclassified objects are reported as if they are classified as UNKNOWN. The UNKNOWN class may also be used to search for unclassified objects.

## Alias Identifiers

An AIM Workhub Object may have more than one Identifier:



A common example, as shown here, is when PDMS has been used on a project and it is desirable to identify an

object with the PDMS form of the name as it appears on PDMS ISOs as well as the name appearing elsewhere in the project.

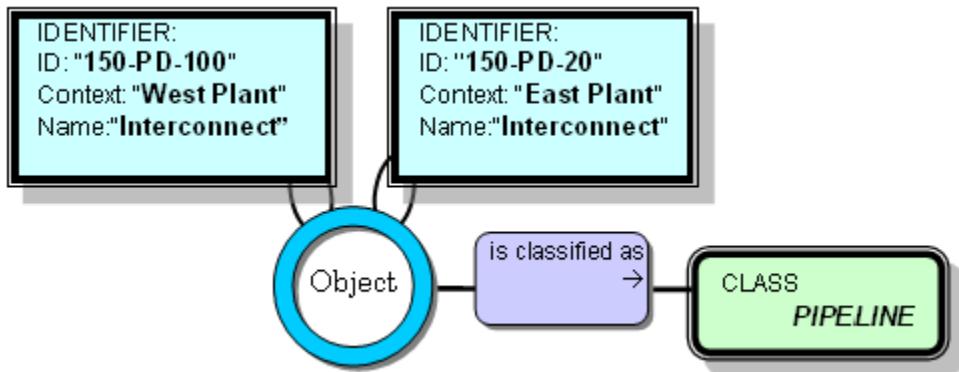
Identifiers can be added and deleted at any time but an Object must always have at least one. The last remaining Identifier cannot be deleted without deleting the Object itself.

When an object has more than one Identifier, one of them is designated as the ‘Preferred Identifier’ and is the first Identifier given to the object. This is the identifier normally displayed in the AIM Dashboard. However, the object may still be referred to and search for using any of its Identifiers.

The AIM Workhub Admin Tool can be used to select a different Identifier as the Preferred Identifier.

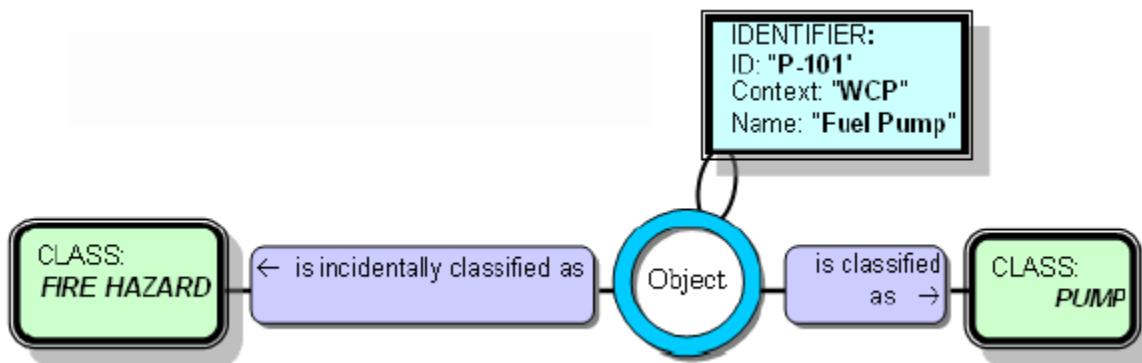
## Objects Common to Two or More Projects

An object that is common to two separate plants should be given two identifiers, each with the Context of the respective Plant. It does not matter whether the ID is the same or different in each context provided the combined identifiers consisting of Context + ID are unique within the AIM Workhub Database.



## Multiple Classification

An AIM Workhub Object may have more than one Class:



In this example, the object has an Incidental Classification of FIRE HAZARD as well as an ‘Essential Classification’ of PUMP. When objects are shown in classified lists in the AIM Dashboard such objects will be listed twice – once under each class (whether the classification was Essential or Incidental).

An object may have any number of classes and classifications may be added at any time.

However, when an object has more than one class, these classes ought to be compatible. For example, an object might be classified as both a ROTARY PUMP and as the PRIMARY FEED PUMP. It would not make sense for an object to be classified as both a ROTARY PUMP and a P&ID DIAGRAM. Only objects that are classified at or below

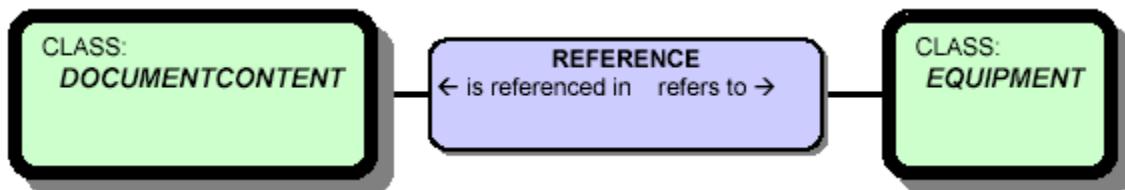
FUNCTIONAL ARTIFACT or DOCUMENT CONTENT can have further essential classifications. Furthermore, if an object is already classified at or below FUNCTIONAL ARTIFACT in the class hierarchy, then further classifications must also be at or below FUNCTIONAL ARTIFACT. The same applies to DOCUMENT CONTENT.

## Permissible Associations

The AIM Workhub System permits Associations to be created only where that Association has been pre-defined as a Permissible Association between objects of such classes. Any of the classes, both Essential and Incidental classifications, contribute to the set of Permissible Associations between two objects.

A Permissible Association is defined in the Class Library as an Association between two classes:

In this example, any object of type DOCUMENT CONTENT may have a 'refers to' Association to any Object of type EQUIPMENT. However, this does not automatically permit the Association in the reverse direction. If this is required (unlikely in this case), a second Permissible Association must be created.

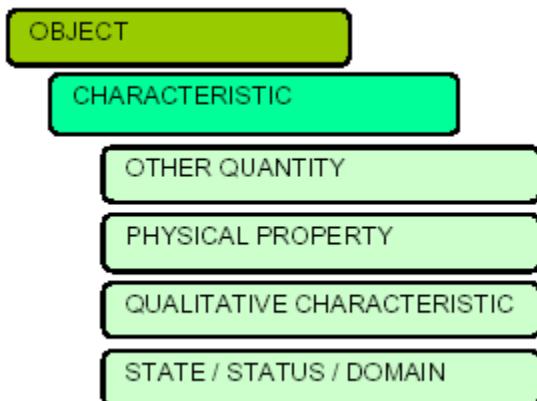


Permissible Associations between Classes are inherited by their subclasses.

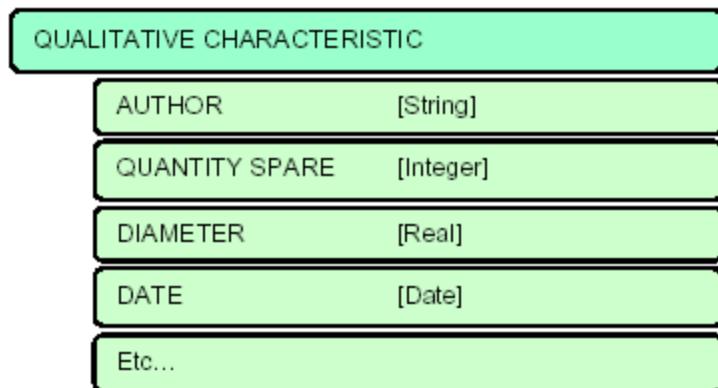
**Note:** For the AIM Dashboard to function properly, all documents should be subclassed directly or indirectly from DOCUMENT CONTENT even in a customized Class Library. Thus, the references to Association above would be permitted for all document types.

## Attributes

The AIM Workhub Objects may have Attributes. An Attribute is defined as a class in the Class Library, which determines both the name and the data type of the Attribute wherever it is used – the same Attribute definition can be used for many classes. Every Attribute is directly or indirectly a subclass of the CHARACTERISTIC class:

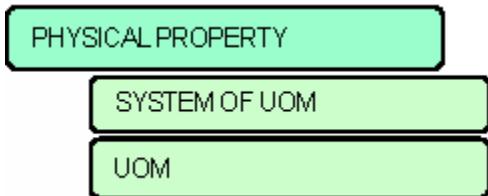


The QUALITATIVE CHARACTERISTIC class allows the user to create attributes classes with a string, real, integer or date data type:



These data types control the AIM Workhub Attribute searching when doing an advanced find.

Specifying the data type for a characteristic gives the possibility to do query like searching for notes created before a specific date (in this case the data type needs to be Date) or searching for documents, where the revision is higher than three (in this case the data type needs to be Integer or Real). Attributes can be applied directly to an object or to its corresponding datasets. In AIM Workhub, attributes created using the QUALITATIVE CHARACTERISTIC class are also known as "Characteristic attributes". Also, simple typed attributes, that is, Characteristics, Attributes, may have Units. Attributes with Units are known as Properties and are based on the PHYSICAL PROPERTY class. A property has a Name/Value pair but also a Unit Of Measure (UOM).



An example of a Characteristic might be:

- Attribute Name = Flow Type
- Attribute Value = Liquid

A Property might be:

- Attribute Name = Design Press. Max
- Attribute Value = 40
- UOM = barg

There are no Units Of Measure defined by default and so they must be defined before any PropertyClasses are defined. The user must define a System of UOM and then define a UOM class. A definition of a PropertyClass can then be created that makes use of a UOM (refer to AVEVA Asset Information Management Workhub XML Schema Reference). A Measure may have many units. A Measure of Length may have units of m, cm, mm, km, mile, furlong, chain, ft, and so on. A Measure will have a base Unit and all other units will supply a scale factor to convert that unit into the base unit. Note that this is only used internally for comparisons during searches. A UOM will only be returned as it was entered into the system. A UOM will never be converted into another UOM for any other purpose.

Some Units require a Constant as well as a scale for converting to the base unit; an example is Degrees Centigrade to Fahrenheit. For this purpose, a Constant may also be defined for a UOM. In this case the constant will be added after the scaling has been applied.

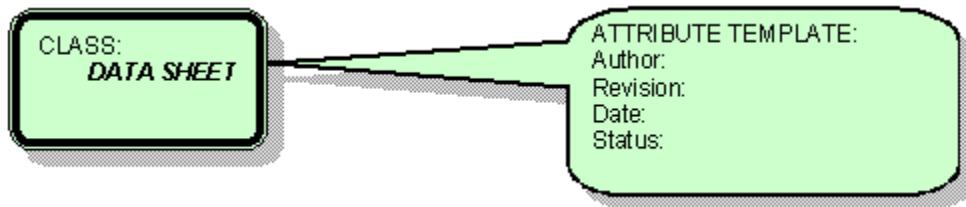
---

**Note:** The Base Unit for a Measure is the UOM that has no Scale and no Constant definition.

#### Attributes Applied to an Object

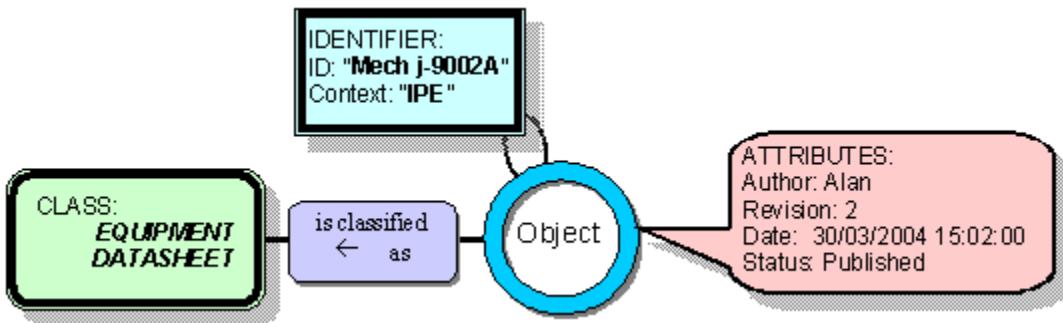
This is the case for all objects, which are classified as a class or a subclass of INFORMATION.

Attributes are added to a class by an Attribute Template. An example of a built-in AIM Workhub class with an Attribute Template is the DATASHEET class:



This is the case for all objects which are classified as a class or a subclass of INFORMATION.

Attributes are added to a class by an Attribute Template. An example of a built-in AIM Workhub class with an Attribute Template is the DATASHEET class:



#### Attributes Stored in Datasets

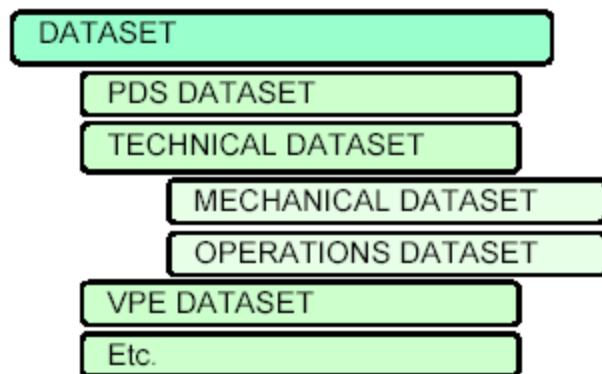
This is the case for all objects, which are NOT classified as a class or a subclass of INFORMATION, for example "PUMP".

An object can have multiple datasets. They can be created in multiple ways:

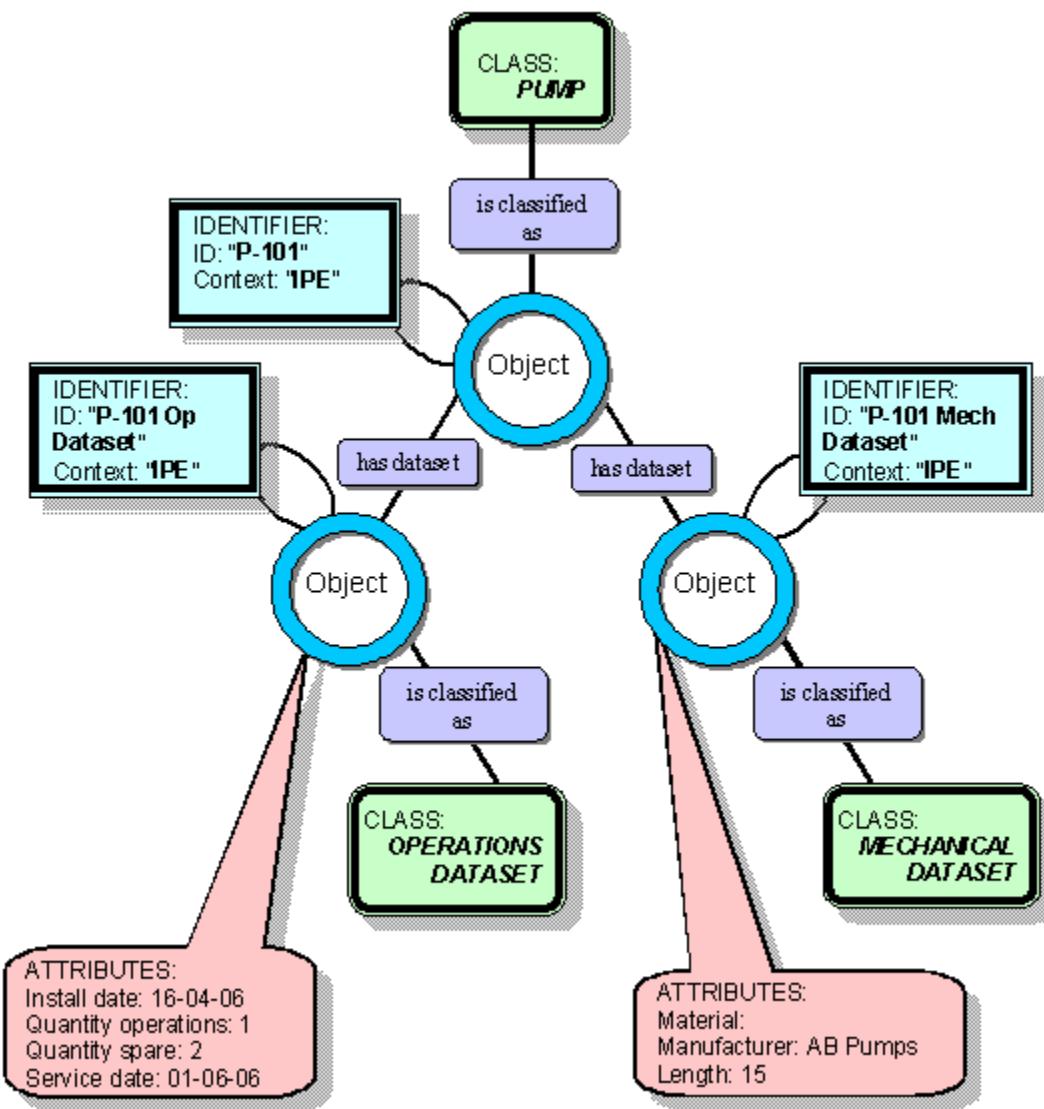
- by type: MECHANICAL DATASET, OPERATIONS DATASET, PIPING DATASET
- by source: PDMS DATASET, VPE DATASET
- by class: PUMP DATASET, VESSEL DATASET
- by type and source

To store attributes in datasets:

1. Create datasets class as a subclass of DATASET:



2. Create Attribute Template for each Dataset created: So all objects which have this type of dataset, can automatically have these attributes created and assigned to this specific object dataset.
3. Populate attributes with values; here is an example of an object of class PUMP with 2 datasets:



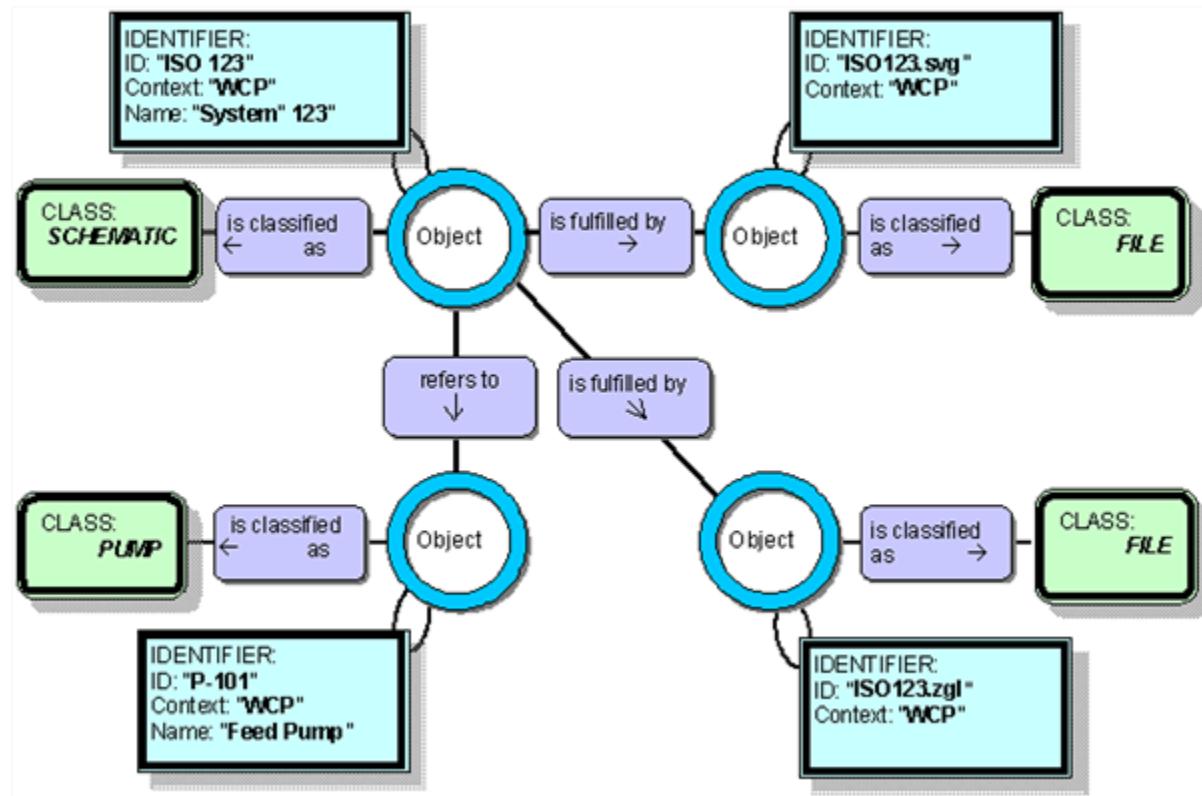
## Documents and Files

This information model distinguishes the logical Document Content from the physical representation of that Content – usually a FILE object. As an example, an Isometric might be available in two formats: as an SVG file and as a **VizStream zgl** file. The AIM Dashboard displays an SVG file in preference to the **VizStream zgl** file format but the latter must be used for mark-up.

The Document Content and the physical File are represented in the database by separate Objects linked by an 'is fulfilled by' Association.

In this example, SCHEMATIC would be a subclass of DOCUMENT CONTENT.

It is important to notice that Associations such as refers to are between the DOCUMENT CONTENT object and the PUMP – not between the FILE object and the PUMP.

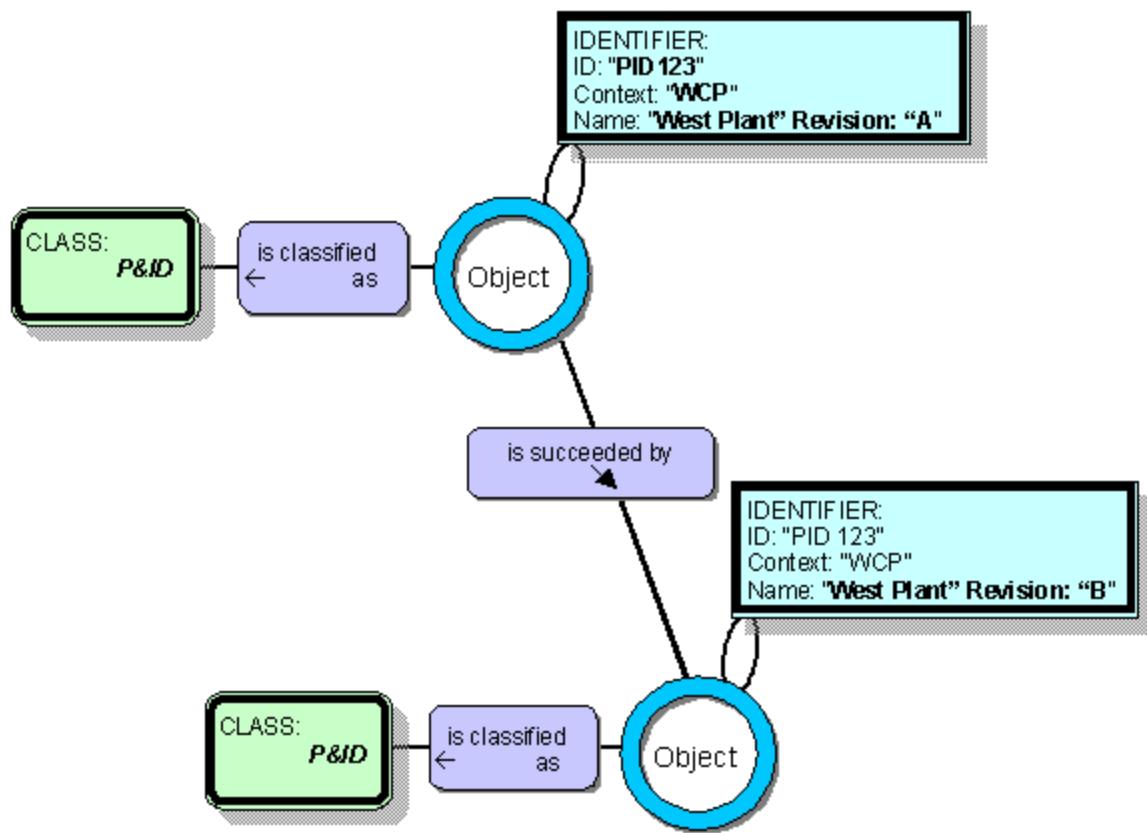


## Revisions and Succession

An object with the same ID as an object already in the database but with a different Revision name is created as a Successor to the existing object. This is normally only appropriate for documents though there is in fact no restriction to prevent this mechanism being used with any class of object.

The AIM Dashboard by default shows the latest Revision – this being chronologically the most recent successor created in the database. The AIM Workhub does not interpret the Revision name in anyway: it is a just a string that could be a name or a number.

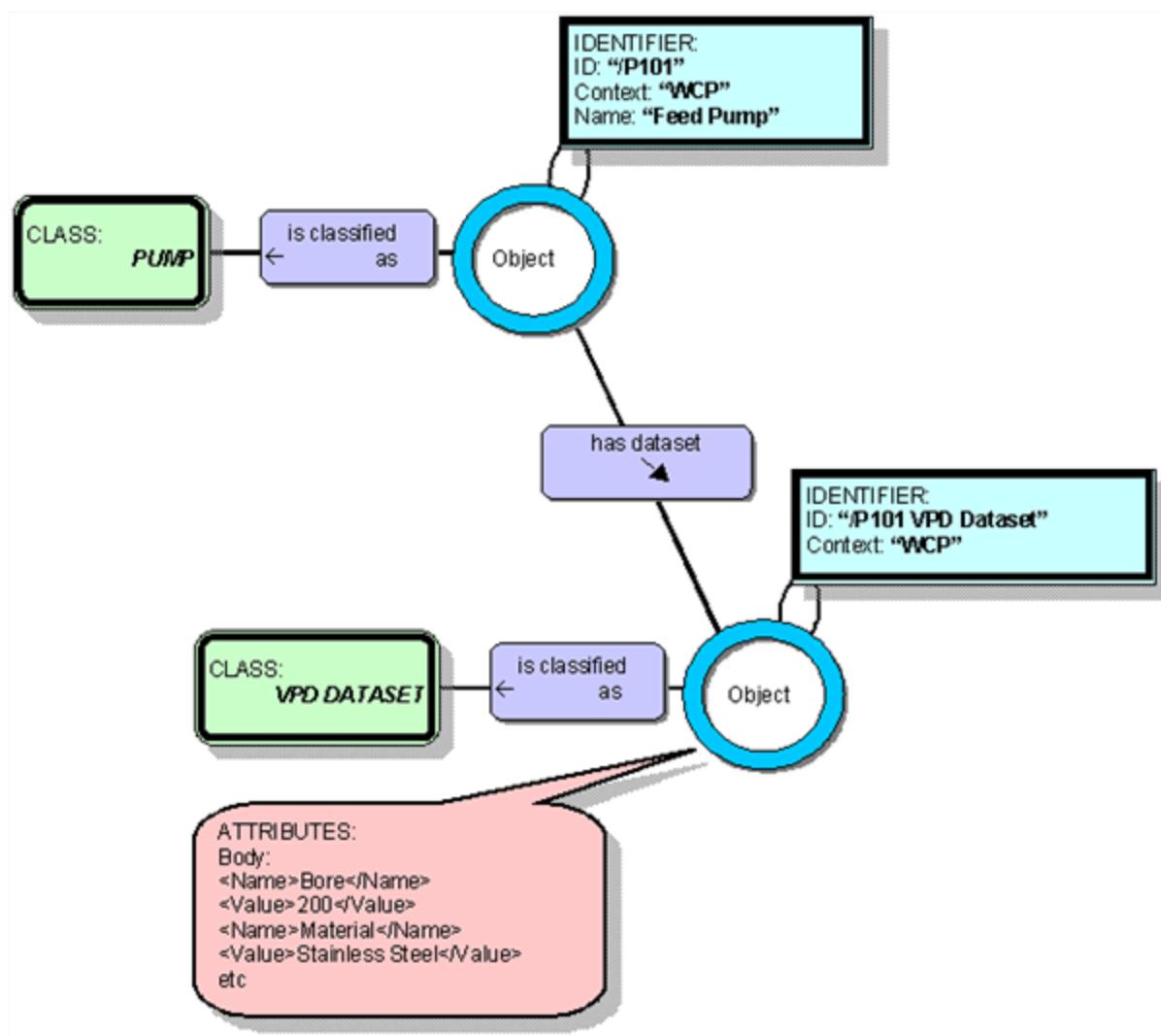
The user has no control over the sequence of Revisions other than by the order in which they are introduced into the AIM Workhub Database.



## Datasets

A Dataset is an object containing attributes as a set of name-value pairs stored as a single XML string within the AIM Workhub Database.

**Note:** The attributes of a Dataset object do not have to be pre-defined in the Class Library and they have no data type.

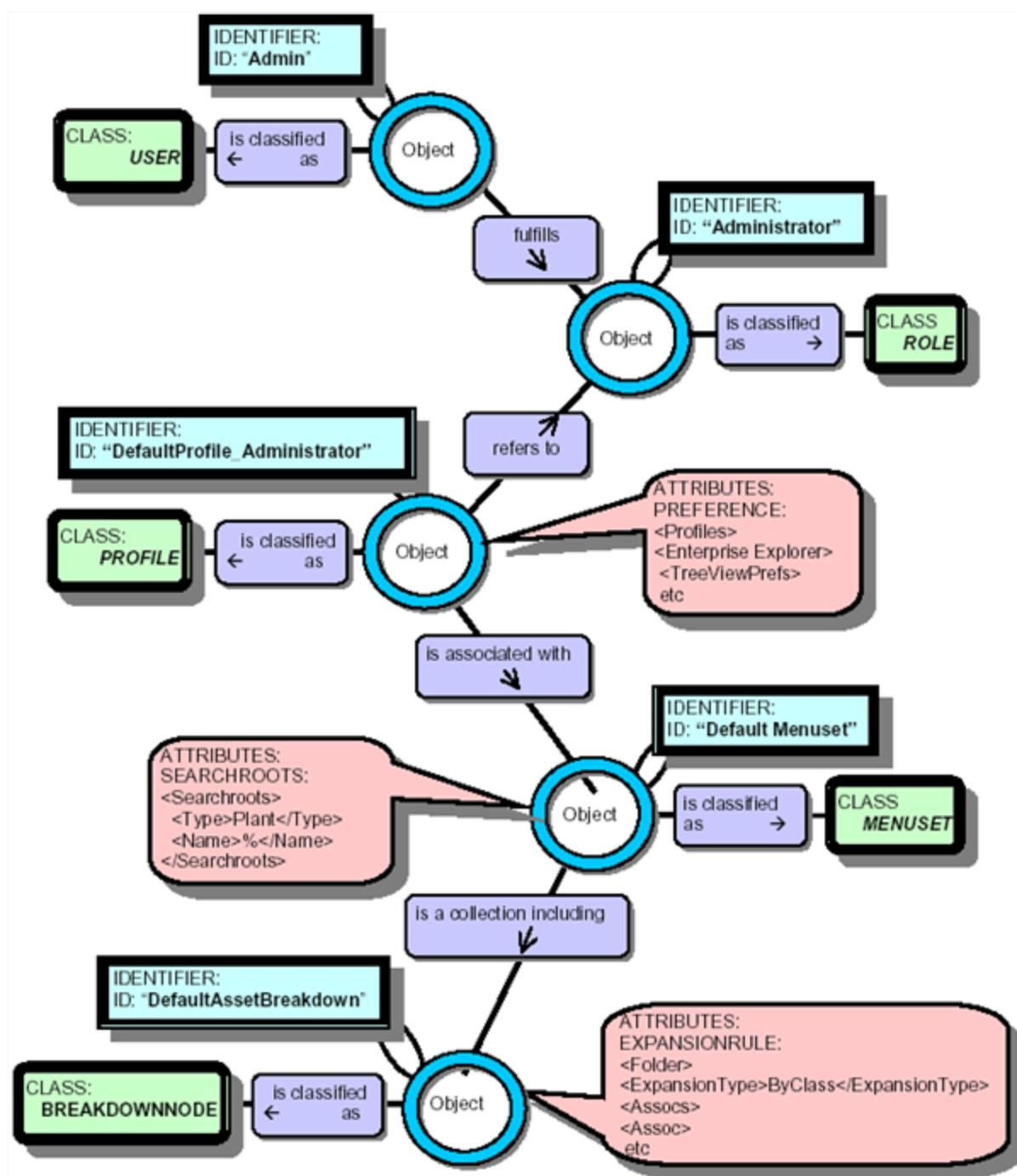


A Dataset is usually given an Identifier based on the ID of the object for which it is a dataset. You can use a non-unique name such as 'Plant Dataset' in the Context of the owning object. However, in practice, this has been found undesirable for performance reasons as it leads to a very large number of objects with the same ID in the AIM Workhub Database.

**Note:** Dataset classes should always be sub-classed from the Class DATASET even in a customized Class Library.

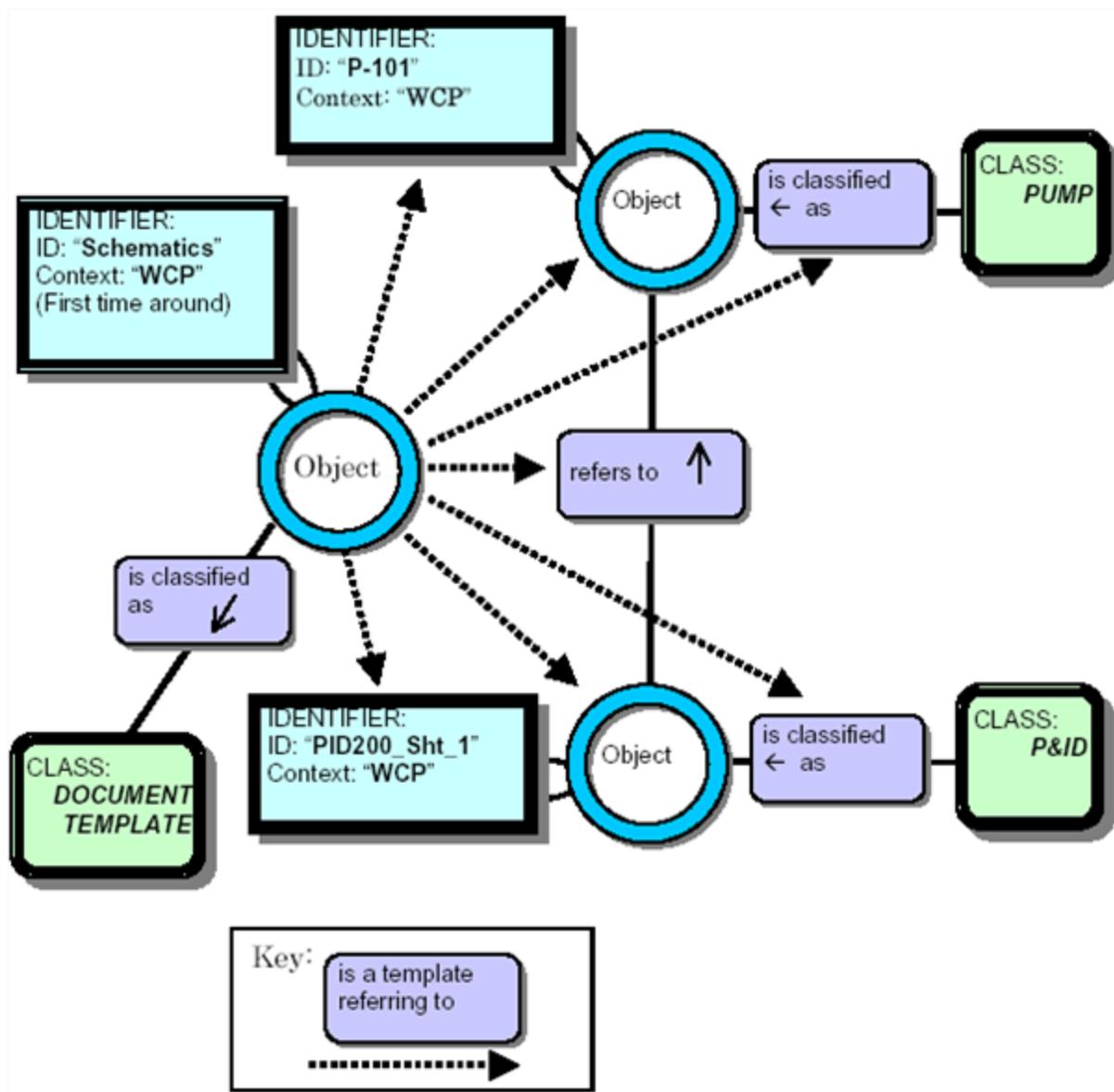
## Menusets and Breakdown Nodes

Configuration of the AIM Dashboard tree-view is based on these Associations between a MENUSET, its BREAKDOWNNODES and a user ID, user ROLE and PROFILE.



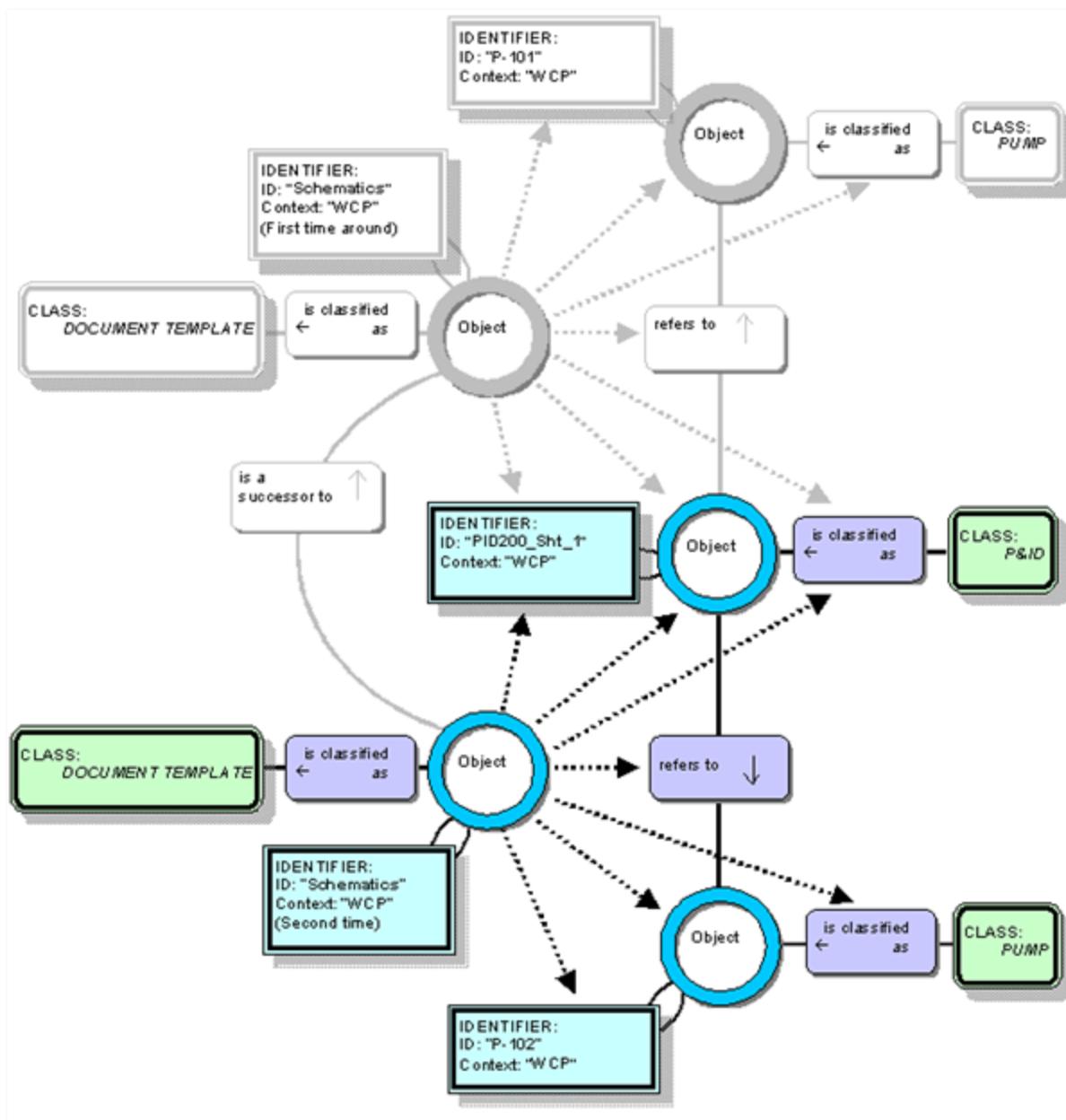
## Import Templates and Incremental Update

In the following example, the import of the template initially creates **PUMP\_P-101** and **P&ID PID200\_Sht\_1**. A template with the same ID is imported at the next update run and exists briefly as a successor to the original. This creates **PUMP-102** and an extra reference to the P&ID. The Import Server then removes the earlier instance of the template.



The following diagram refers to the situation after the update with the deleted objects greyed out. The P&ID and PUMP P-102 are still referenced and so they exist, whereas PUMP P-101 is no longer referenced and hence it has been deleted.

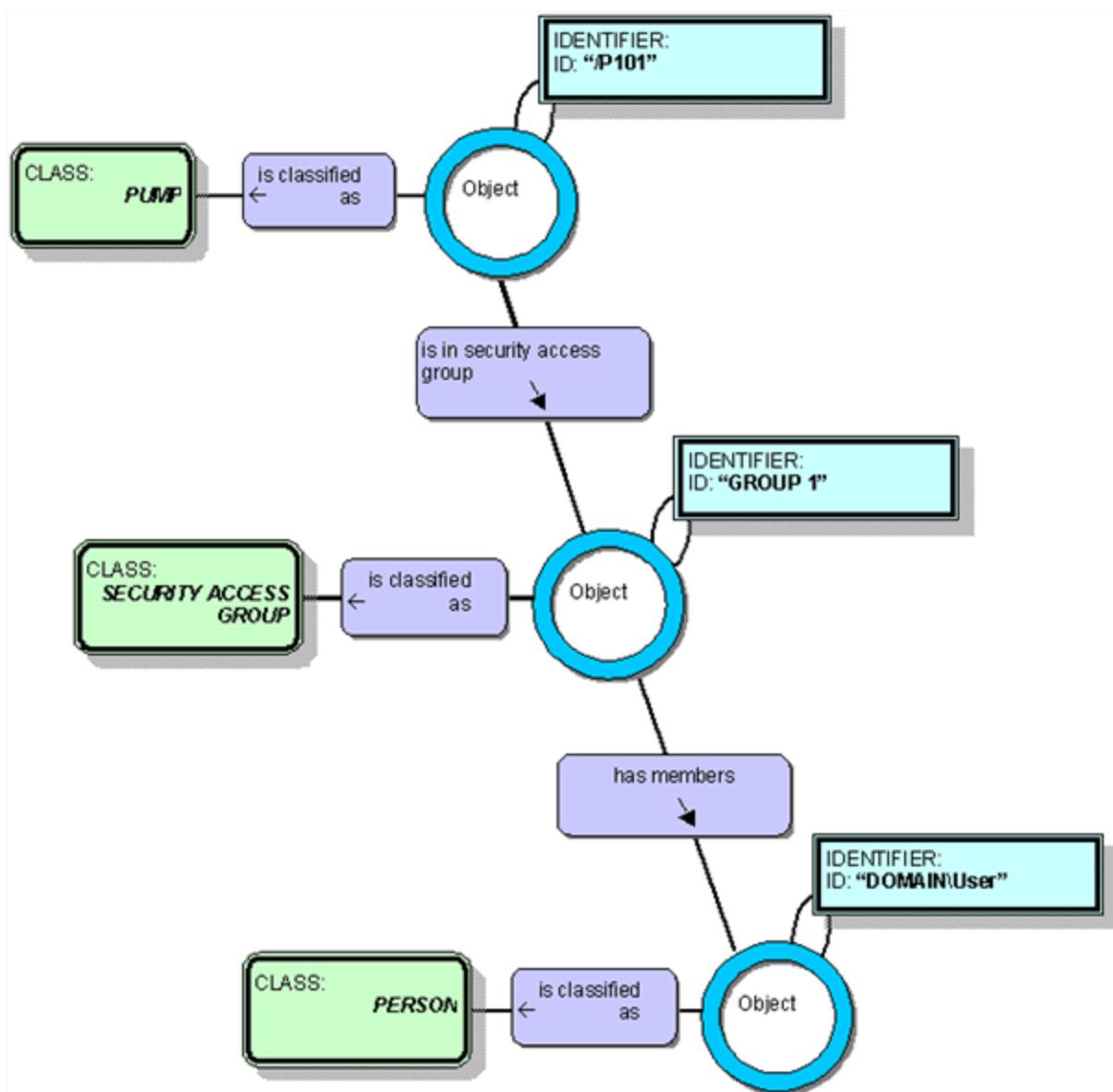
The presence of is a template referring to associations has maintained the existence of the P&ID object, its identifier and classification throughout the update.



### AVEVA AIM Workhub Access Control

An object is removed from the public domain by associating it to a security access group object with the security access group association type ("is in security access group"/"is a security access group for"). The protected object is then only accessible by users who are indirectly associated to that object through a security access group.

**Note:** Several security access groups may be associated to an object, and a user gains access to the object by being associated to any of these.



## Associations and Templates

The models illustrate how objects and associations are organized and instanced for specific purposes or functions. This is not the limit of associations that can be created or used. The whole notion of ISO 15926 is to create a fully flexible model that can be used to represent any data object or association. In most data warehouse implementations, this is typically at a very granular level. To improve the 'human readability' and the system's 'repeatability/reuse' of these objects, the idea of templating these objects and associations together is finding acceptance as a preferred modelling method.

Templates in the AIM Workhub are in two categories:

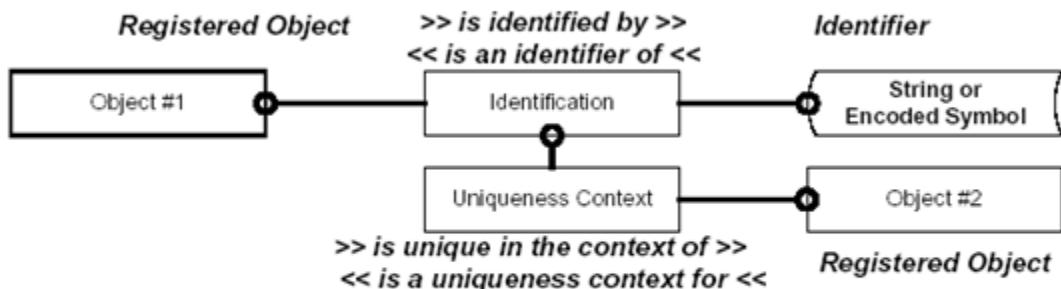
- **Atomic Templates (AT):** is indivisible semantically and normally forms the smallest usable building block of objects
- **Molecular Templates (MT):** is indivisible by business implementation, and represents logical groups of objects that are typically familiar to an end user

The following sections describe typical ATs and the context in which they are used.

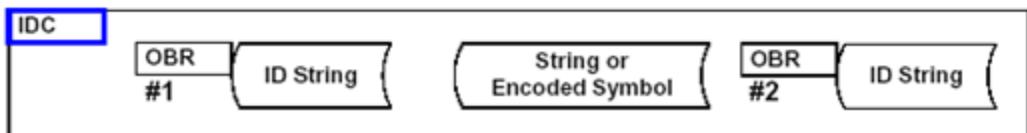
## Identification with Uniqueness Context

### IDC Identification with Uniqueness Context

Logical Reference Model (Gellish - Fully mappable to ISO-15926)



Compact Implementation Model (Object with attributes) **Tertiary**



## Business Usage Semantics (incl Cardinality)

Identification involves assigning a string or other encoded symbol to an object in order for it to be used subsequently to make unambiguous reference to that object.

Each object registered with EIF is to be captured at first installation using the OBR Template, which implicitly includes one embedded instance of the IDC Template. This separate IDC Template is therefore primarily intended for assigning additional identifiers (or aliases) to an object already registered. These additional (unique) identifiers (with their own contexts) are intended to enable sets of users in these particular contexts/phases of the business to navigate and access information via their preferred identification schemes, without losing management of underlying unique identity, and associated consolidation.

For objects which are versionable (essentially all associations and information objects) "version" is an essential part of identification. However physically implemented/constructed, identification therefore consists of <Context Symbol><Unique Symbol><Version Symbol>

## Implementation Notes/Issues/Suggestions

An important aspect of EIF implementation is that not only will interfaces exist to external systems which create, manipulate and persist identifiers, but middle-ware components may themselves be distributed and integrated with other middle-ware systems. Whilst internal to EIF, controlled system numbering (for example, uid's) is expected, it is essential that uniqueness of identification is managed and validated according to the agreed standard template at all interfaces.

Often business context produces standard formatted forms for the unique symbolic string – typically referred to as "tags". Often such tags contain embedded encoded information about the context, the type, and other

attributes of the identified object. It is essential that the "unique identification" aspect and the implicit or explicit "encoded information" are handled distinctly. (See separate notes on identification, tags and aliases.)

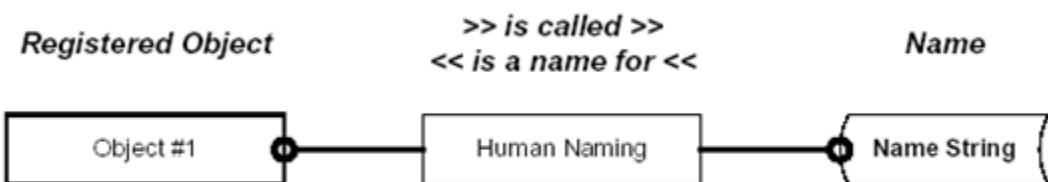
Implicit in this template is that the "context" part of the identification is handled distinct from the unique symbolic string, whereas the "version" component is embedded in the unique symbolic string. This is an acceptable implementation at the interface, since the same template can capture identification, whether the object is versionable or not. It is anticipated that versioning/time-stamping/suppression-tree aspects will be handled through meta-data in implementation, however additional formal templates may be generated for this purpose as necessary.

Inherent in the EIWM template model is the nested assembly of information sets – which itself provides useful context hierarchies, very similar to the construction of XML Namespaces/URL's/URI's. it is recommended that this fact is exploited in efficient handling of identifiers and contexts.

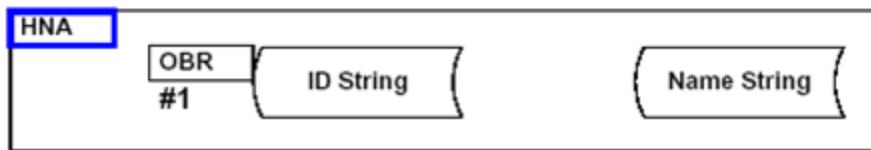
## Human Naming

### **HNA Human Naming**

#### Logical Reference Model (*Gellish* - Fully mappable to ISO-15926)



#### Compact Implementation Model (Object with attributes) **Binary**



## Business Usage Semantics (incl Cardinality)

An object may be given any number of names as useful human "handles."

The naming template does not require or exploit uniqueness of the name, and EIF therefore provides no management of any such uniqueness. Where uniqueness is intended by the business, the IDC template shall be used.

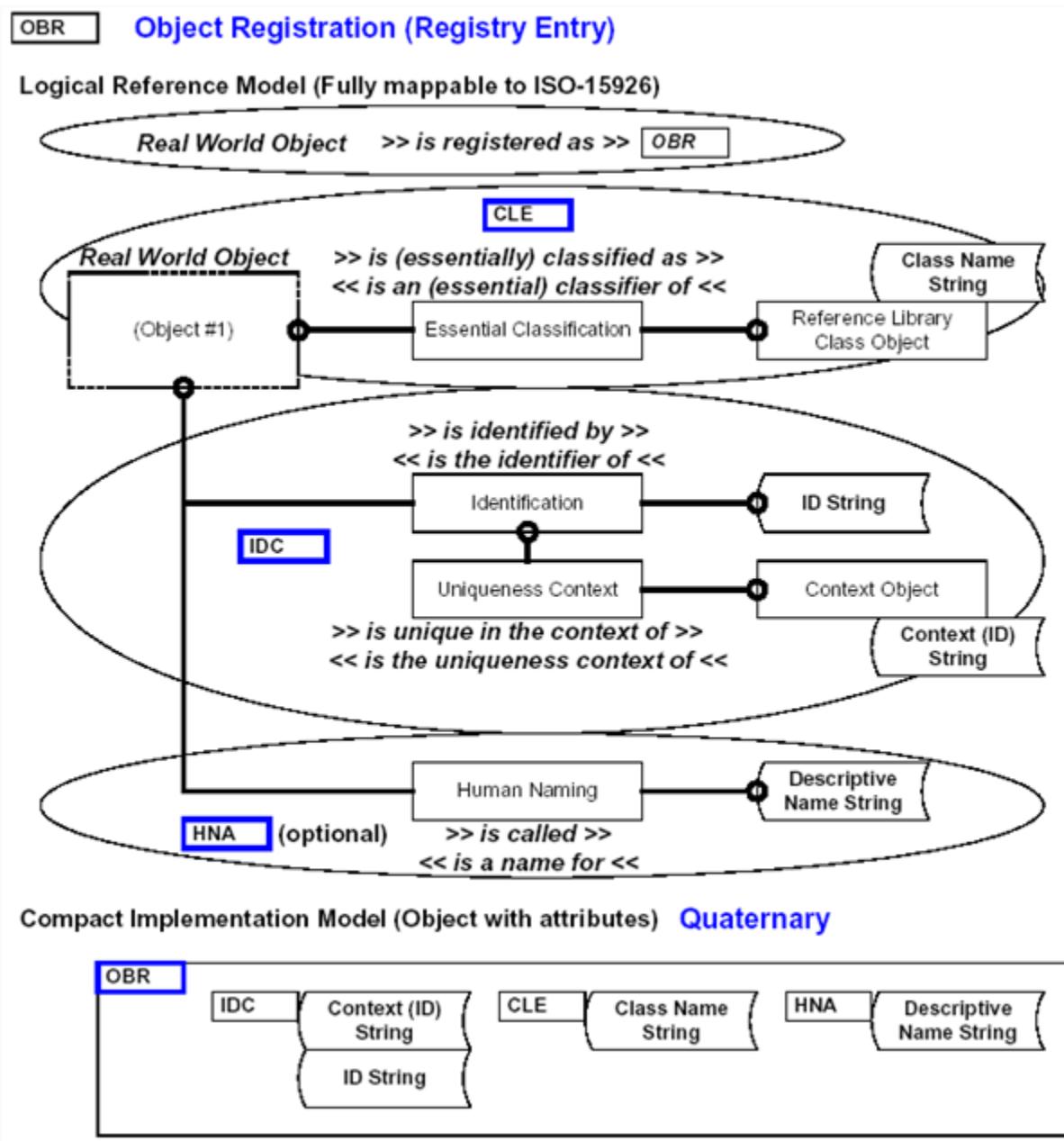
The Name string is generally descriptive for human interpretation. Naming assumes that the context (compound template) in which the name is created makes the name sufficiently intelligible and recognizable self-evidently to human users.

An optional HNA atomic template is part of the OBR registration template on first instantiation of any object.

#### Implementation Notes / Issues / Suggestions

Generally the "Name" is presented for human recognition, often for corroboration or confirmation together with other formal IDC identifiers where there is selection ambiguity or in contexts where uncertainty of human recognition is possible.

## Object Registration (Registry Entry)



## Business Usage Semantics (incl Cardinality)

Every object of interest, of which the EIF is expected to take some part in its future management, or of information about it, must be "Registered" at least once with unique identification and essential classification. The "human name" is an optional component for cross checking purposes, particularly but not exclusively where the identification string or symbol, whilst strictly unique, is not in a form for useful human interpretation.

See IDC, CLE and NAM template definitions for individual semantics.

## Implementation Notes / Issues / Suggestions

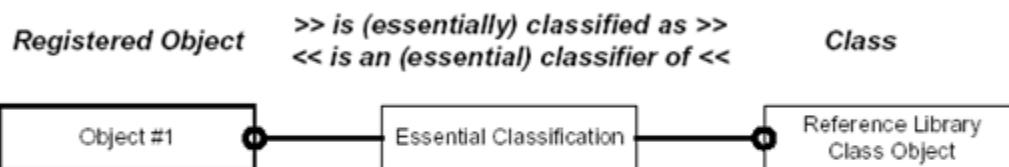
See IDC, CLE and NAM template definitions for individual implementation notes.

Templates and Registered Objects in general are distinct objects each with identity in EIF. For instances of the OBR Atomic Template, ID string for the real world object is intended to be used as a surrogate for the ID of the template instance itself, in order to avoid circular references / enable bootstrapping.

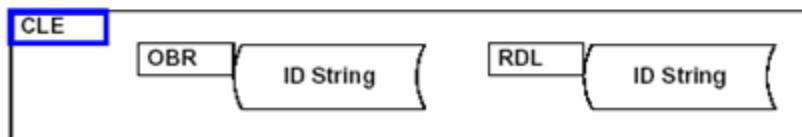
## Essential Classification

### **CLE      Essential Classification**

**Logical Reference Model (Gellish - Fully mappable to ISO-15926)**



**Compact Implementation Model (Object with attributes)      Binary**



## Business Usage Semantics (incl Cardinality)

Every object handled within EIF shall be essentially classified at least once. (Generally, for objects captured in the Registry, this will be achieved once on instantiation via the Object Registration Template)

Essential classification concerns the nature of (some aspect of) the object being classified (registered / instantiated). It is a specialization of the object base entity type (As per the "upper ontology"), independent of the business use of information about the entity, and independent of any additional classification for business management and access reasons for chunking and navigation. (See also Incidental Classification).

Example usages: (Hold)

Mapping guidelines / rules: (Hold)

## Implementation Notes / Issues / Suggestions

RDL class objects should be referred to by unique ID (just like any other registered object). Typically implementations use the non-unique class "name", however whilst a human interpretable name will always be captured at time of first registration (of the class), classes will have alternative names (synonyms) and multilingual translations / representations.

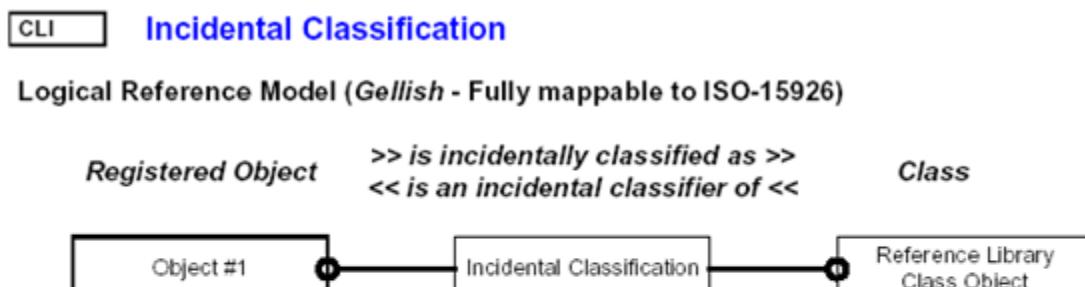
Essential classification(s) should be assumed fixed for the life of an object, however objects may receive additional essential (and incidental) classifications during their life as a result of increasing knowledge of more aspects of the object. Examples of the occurrence of multiple essential classifications include:

- Discovering additional specialization (common event)
- Discovering additional specialization of multiple orthogonal aspects (common event)
- Discovering erroneous earlier classification (hopefully infrequent event)

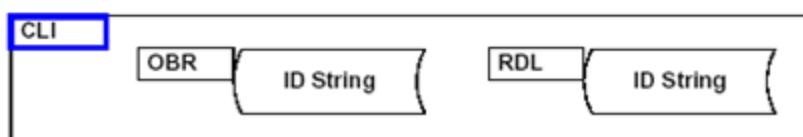
At any one time, one of the essential classifications shall be considered the "default essential classification" of the object, for display, navigation, search purposes etc. This default may be re-assigned to any one of its multiple essential classifications by an "Information Manager" level user with appropriate access rights. (This may be achieved by incidental classification of the essential classification template instance, or by creation of a separate atomic template for this purpose, or by association meta-data for the relevant essential classification association, since it is an implementation artifact to assign this default).

Recognition needs to be given to the inheritance aspects of classification – wherever calls make reference to (say) "pumps", the normal semantic will include "and all subtypes", unless the query is constructed explicitly otherwise to exclude sub-types. One corollary of these last two issues is that as well as "base entity type" and "lowest level specialization class", each object will probably need to have recognized a default organizational node in that hierarchy. Since this is an implementation artifact, a meta-data implementation is acceptable.

## Incidental Classification



### Compact Implementation Model (Object with attributes) **Binary**



## Business Usage Semantics (incl Cardinality)

Any object may be incidentally classified (and subsequently de-classified) any number of times.

Incidental classification is used to create manageable groupings of objects according to any circumstantial (i.e., non-intrinsic) aspects of those objects – aspects which are concerned with their (temporary) involvement or usage in any aspect of the business. (See Essential Classification for classification according to lifelong intrinsic aspects).

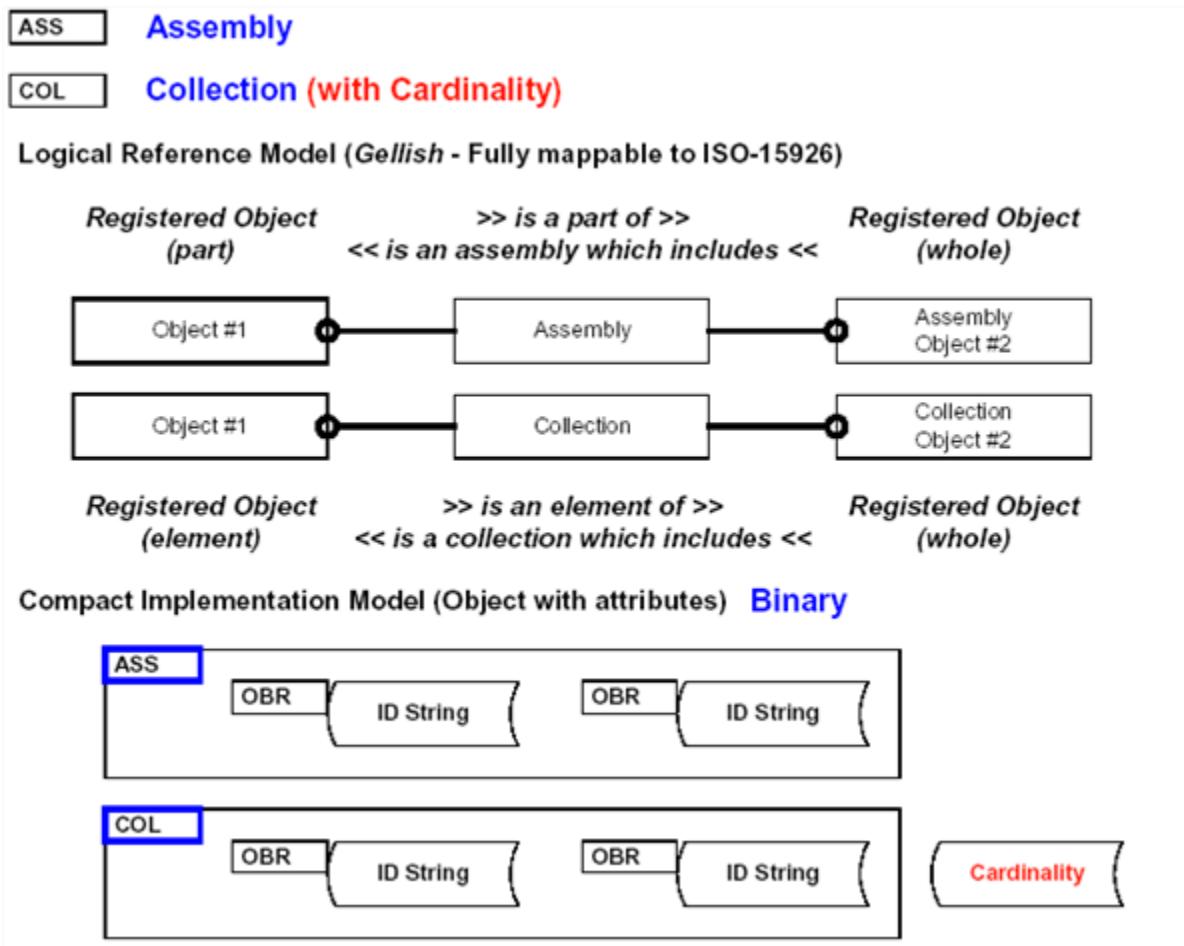
Example usages: (Hold)

Mapping guidelines / rules: (Hold)

## Implementation Notes / Issues / Suggestions

None currently recognized.

### Assembly/Collection



### Business Usage Semantics (incl Cardinality)

The assembly relationship applies between two (whole and part) objects, where the individual part plays a distinct or systematic role in the whole (It says nothing about physical assembly or joining).

The collection relationship applies between two (whole and element) objects, where the individual element plays no distinct role in the whole. (It says nothing about physical proximity or gathering together).

Example usages:

- Pump P102 is a part of System S100.
- Filter F103 is part of System S100.

These are assembly relationships, because although both P102 and F103 are "parts" of the system, they are not wholly interchangeable in their relationship to the system.

Pump MfrZ2002/02/317/M is an element of Shipment PO192/7

Filter MfrX2001/04FQP4/23 is (also) an element of Shipment PO192/7

This instance of Model no BD/PG4010scx is an element of "The set of available 10 bar pressure gauges."

That instance of Model no BD/PG4010scx is (also) an element of "The set of available 10 bar pressure gauges."

These are collection relationships, because there is no different significance in the way the distinct elements relate to the whole.

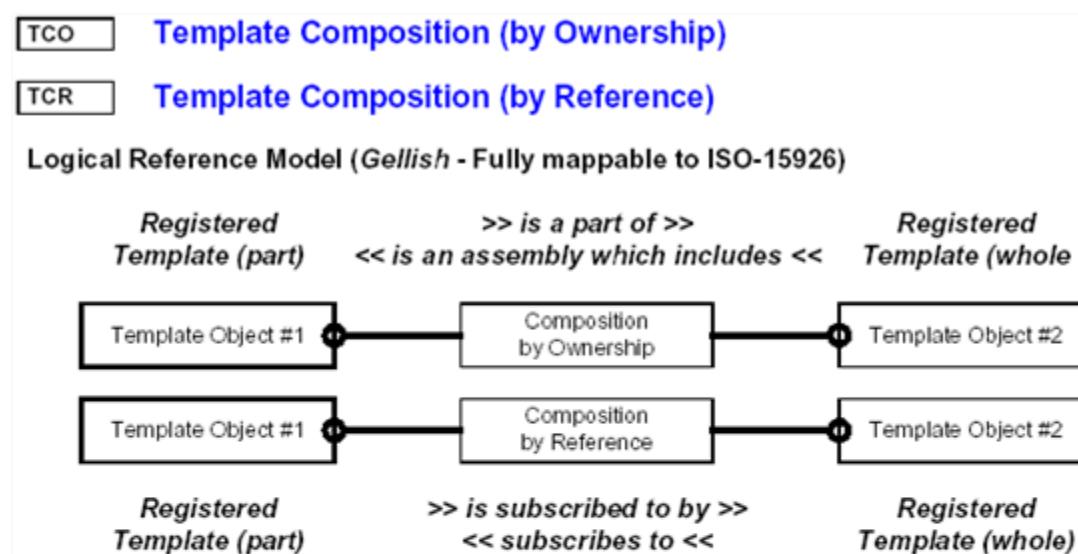
Mapping guidelines / rules:

If in doubt map whole-part relationships to Assembly. In general Collection tends to be about "discovering" useful sets of things post-hoc, and set membership is ultimately indistinguishable from incidental classification.

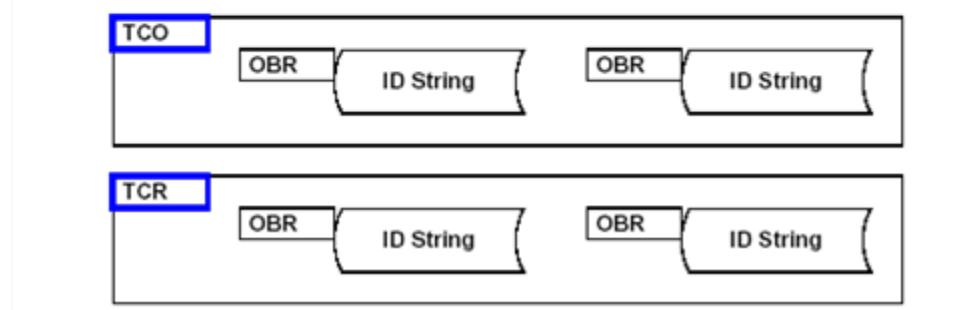
## Implementation Notes / Issues / Suggestions

None.

## Template Composition by Ownership and Reference



## Compact Implementation Model (Object with attributes) Binary



## Business Usage Semantics (incl Cardinality)

A "Template" is an information object whose (relevant) schema is defined according to this EIWM Template

model. They exist as both the Template Schema and Template Instances according to those schema. See the EIWM Overview graphic for the relationship between Templates of various kinds (AT's, MT's and DT's). These TCO and TCR AT's define assembly relationships between other AT's, MT's and DT's.

These template composition AT's are simply specializations of the 'Assembly' AT, applicable when the objects in question are Templates. The semantic differences are:

TCO applies when it is intended that instances share "ownership", that is the part inherits "publish" (create, update and delete) rights from the whole instance. A whole can have many owned parts, but a part can have ONLY ONE OWNING PARENT / whole at any one time.

TCR applies when the part is included (by reference) in the whole, but the instances retain independent ownership and publish rights, and is effectively a "subscribe" relationship. (Parts can be referred to any number of times by any number of parent wholes).

Examples and Mapping Guidelines: To follow on request.

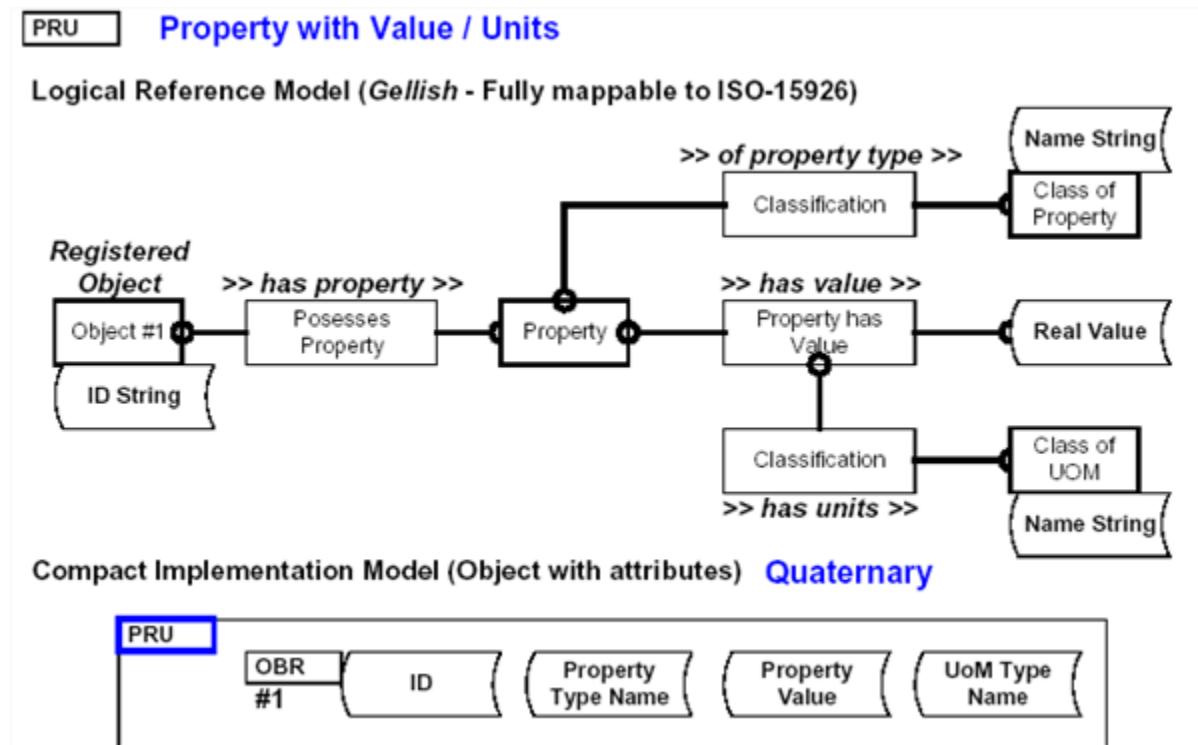
## Implementation Notes / Issues / Suggestions

Need to address Template Schema which confer the above semantics on their instances.

Need to establish minimum essential meta-data content associated with template instances.

Need to consider whether owned parts should also inherit versioning and lifestyle related meta-data, in which case the parts effectively merge into the whole (the whole-part relationships become redundant) for all practical purposes for the instances, except for configuration management of changing schema. (Alternative specializations of Template Composition relationships are conceivable depending on implementation preferences).

## Property with Value/Units



## Business Usage Semantics (incl Cardinality)

This AT is used to assign a real value quantified property to an object (with units unless the property is dimensionless ratio).

Any registered object may possess any number of properties. (The same property may in principle be possessed by any number of registered objects, though this would involve registering and uniquely identifying the property itself).

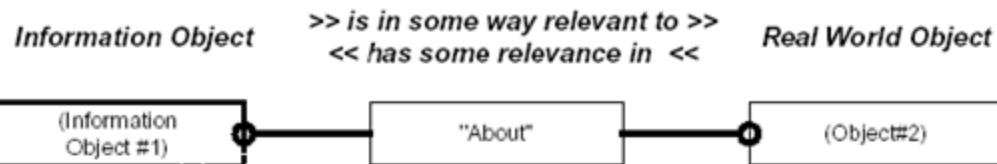
## Implementation Notes / Issues / Suggestions

It is permitted to use specializations of this AT for specific property types (and / or units) if this provides any implementation benefits. (Ex: Possession of Design Temperature in Degrees Centigrade say).

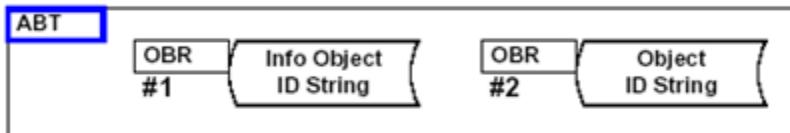
## About Information Linking Groups of ATs

### **ABT      About - (ie The "Information Linking" Group of AT's)**

Logical Reference Model (Gellish - Fully mappable to ISO-15926)



Compact Implementation Model (Object with attributes)



#### **Specialisations of this AT**

The ABT AT is used to indicate that an information object / document is "about" or otherwise relevant to an object, directly or indirectly, only where there is no further specific knowledge available to characterise the relationship.

To indicate that an information object / document explicitly includes a reference to an object identifier.

**IRE      Includes Reference**      **>> refers to >>**  
**<< is referred to in <<**

To indicate that an information object is a direct explicit definition of (some intrinsic aspect of) an object.

**DEF      Directly Defines**      **>> (directly) defines >>**  
**<< is (explicitly) defined in <<**

To indicate that an information object is a definition of (some intrinsic aspect of) an object indirectly or by inheritance from a parent class, set or whole object.

**IDF      Indirectly Defines**      **>> indirectly defines >>**  
**<< is indirectly defined in <<**

To indicate that an information object is a description or is otherwise about (any aspect of) an object explicitly.

**DES      Directly Describes**      **>> (directly) describes >>**  
**<< is (explicitly) described in <<**

To indicate that an information object is a description or is otherwise about (any aspect of) an object indirectly or by inheritance from a parent class, set or whole, or by association with another object.

**IDS      Indirectly Describes**      **>> indirectly describes >>**  
**<< is indirectly described in <<**

## Business Usage Semantics (incl Cardinality)

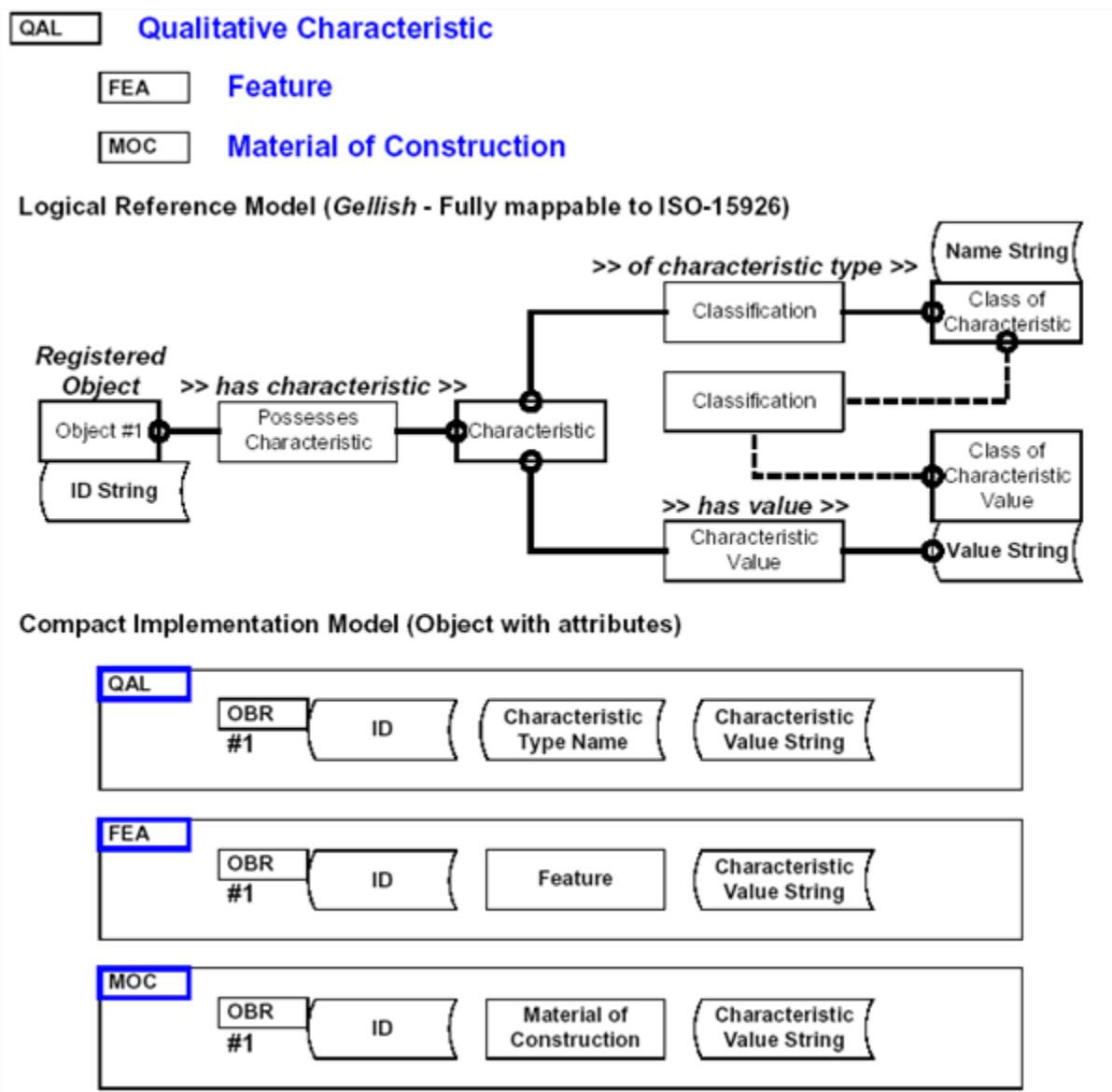
This AT provides the basic "Asset Linking" mechanism to documents or other information objects from any objects (including other information objects). Any number of information objects can be "about" any number of objects.

## Implementation Notes / Issues / Suggestions

The main issue with this (set) of AT's is the mapping choice, not just in which specialization to select, but in being clear as the most appropriate asset to which to link. Example is a "test procedure" about a specific tagged or numbered pump or about a whole class or set of pumps or is a commissioning instruction about a specific item or about all components of a system.

The mapping guidelines will suggest including the "reference" AT for all explicit objects, and a definition or description AT for the true subject. Need to beware for example, where a specification "for" an individual pump (say) includes a reference to a (say) system or process unit, etc.

## Qualitative Characteristic



## Business Usage Semantics (incl Cardinality)

This AT is used to assign qualitative information which characterizes (some aspect of) an object. This is distinguished from PRU by the fact that the characteristic is not a physically dimensioned property (though it may infer one), and its values must be selected from a domain of valid values, rather than any real number value.

Any registered object may possess any number of characteristics.

The specialization FEA is used to characterize a shape or form feature such as having "a bevelled end" or having "a bolted bonnet." The feature is a design form, not merely a distinct component.

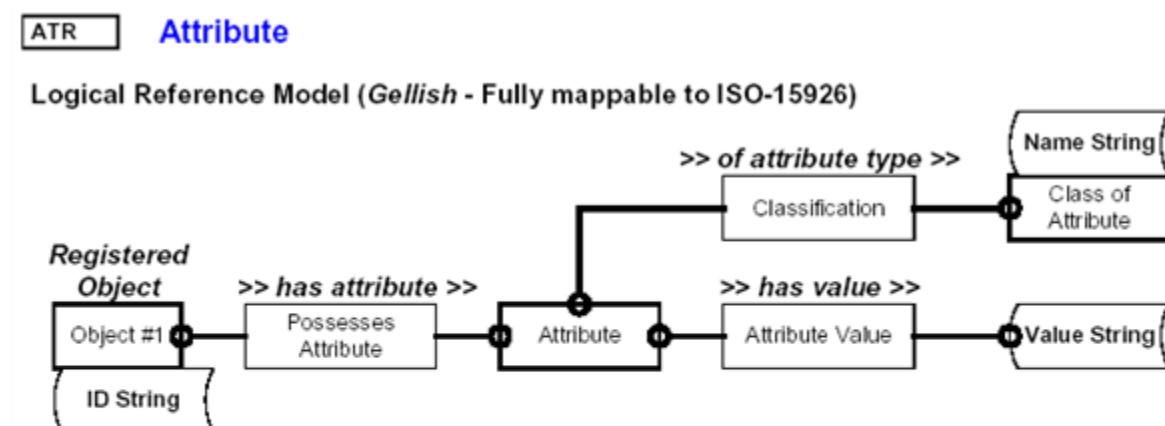
The specialization MOC is used to characterize the material of construction of an object such as "being made of Stainless Steel," or "being made of ASTM A234 WPB".

## Implementation Notes / Issues / Suggestions

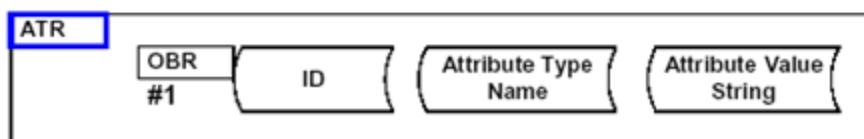
It is permitted to use specializations of this AT for specific characteristic types (and / or units) if this provides any implementation benefits. (Ex: Possession of Size according to ANSI mm Nominal Size, say)

Two particular specializations FEA and MOC are specified.

## Attribute



Compact Implementation Model (Object with attributes)



## Business Usage Semantics (incl Cardinality)

This AT is used to assign an arbitrary information attribute which characterizes (some aspect of) an object. This is distinguished from QAL by the fact that the attribute value is not limited to any domain by the class of attribute.

This is a fallback AT to be used only where other AT's are inapplicable or insufficient knowledge exists to select a more specific AT.

Any registered object may possess any number of attributes.

## Implementation Notes / Issues / Suggestions

None.

### Direct/Indirect Connection

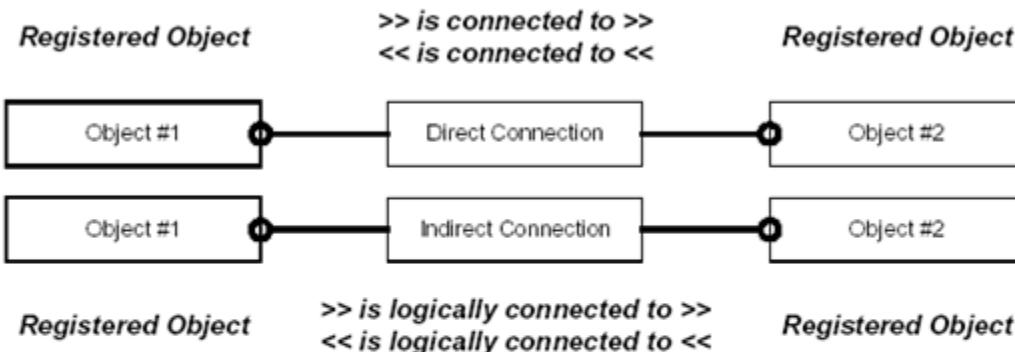
**DCO**

**Direct Connection (Contiguous)**

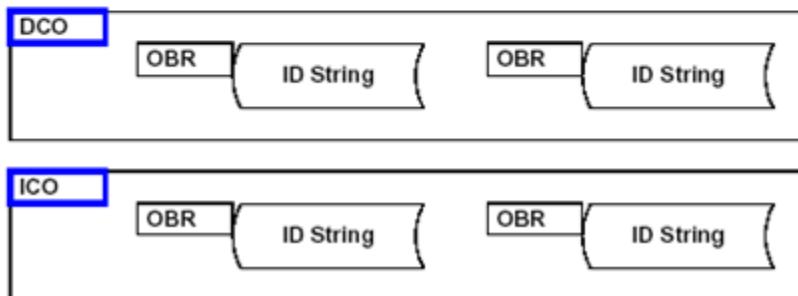
**ICO**

**Indirect Connection (Logical)**

Logical Reference Model (*Gellish* - Fully mappable to ISO-15926)



Compact Implementation Model (Object with attributes) **Binary**



## Business Usage Semantics (incl Cardinality)

These AT's are used to indicate that objects are connected to each other.

DCO is used when the two objects are contiguous, physically touching (barring any materials actually used to make the connection into a joint).

ICO is used to indicate that two objects are connected indirectly in some systematic or logical way only.

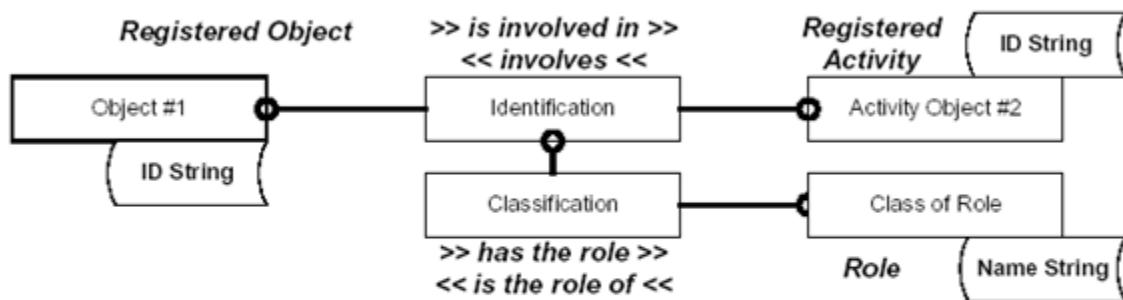
## Implementation Notes / Issues / Suggestions

None.

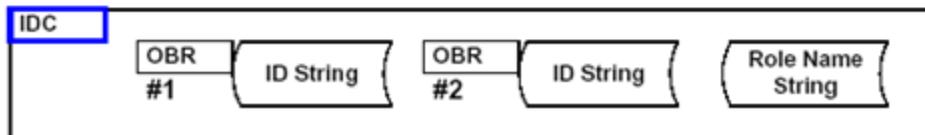
## Involvement in Activity

### **INV** Involvement in Activity

Logical Reference Model (Gellish - Fully mappable to ISO-15926)



Compact Implementation Model (Object with attributes) **Tertiary**



## Business Usage Semantics (incl Cardinality)

This AT is used to indicate that an object is involved in an activity (and its role in that activity).

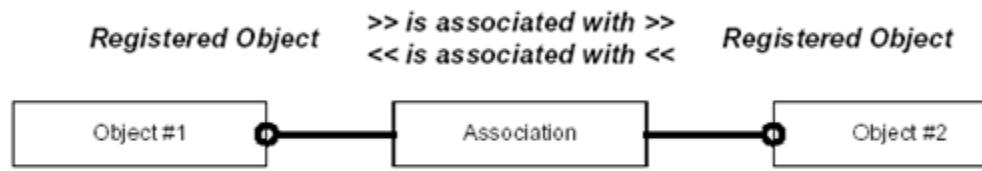
## Implementation Notes / Issues / Suggestions

None.

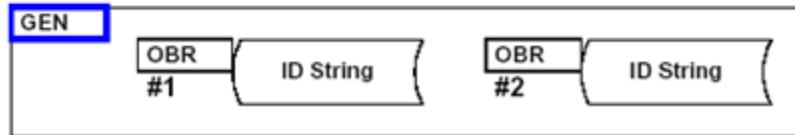
## Generic Association/Relationship

### **GEN** Generic Association / Relationship

Logical Reference Model (Gellish - Fully mappable to ISO-15926)



Compact Implementation Model (Object with attributes) **Binary**



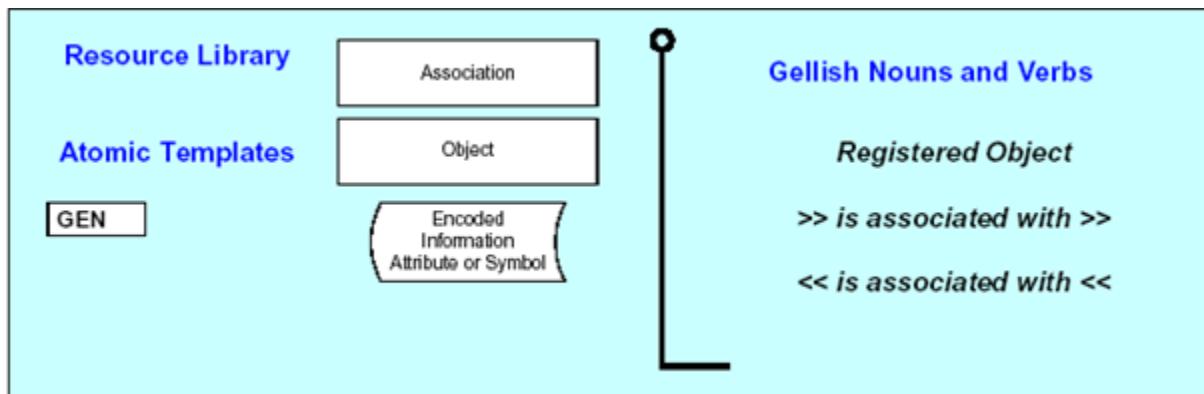
## Business Usage Semantics (incl Cardinality)

Used to capture the existence of a non-specific relationship between two objects, only where no applicable more specific atomic (binary) template exists in the template library at the time of instantiation, or knowledge about the association is insufficiently complete at that point in time.

As such, this Template offers no other semantic constraints on object types, string contents or cardinalities.

## Implementation Notes / Issues / Suggestions

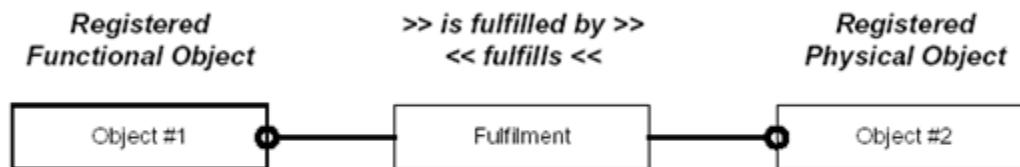
It is conceivable that the business may wish to add knowledge to a generic association, by further classification of the association instance, until such time as more explicit alternative AT is implemented.



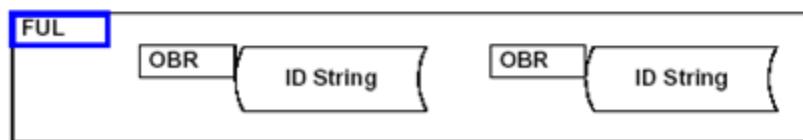
Fulfillment



Logical Reference Model (Gellish - Fully mappable to ISO-15926)



Compact Implementation Model (Object with attributes) **Binary**



## Business Usage Semantics (incl Cardinality)

This AT is used to indicate that a materialized physical object fulfills the "role" of a logical or functional physical object.

Main examples are:

The relationship between a "tagged" process item location (ex as defined on a P+ID) and an individual physical plant item of a specific serial number and model number installed at that location.

The relationship between a numbered and versioned document or other logical information content object, and a rendition of that document in some physical format or representation.

## Implementation Notes / Issues / Suggestions

None.

### AVEVA AIM Workhub XML Schema Reference

**Note:** IDs must not contain any of the following characters: left brace ({), right brace (}), vertical bar (|).

XML Schema	Reference
Object ID (Unclassified)	<pre>&lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;/Object&gt;</pre>
Object with Essential Classification	<pre>&lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;ClassID&gt;P&amp;ID&lt;/ClassID&gt; &lt;/Object&gt;</pre>
Object ID with Access Control	<pre>&lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;ACE&gt;Finance Group&lt;/ACE&gt; &lt;/Object&gt;</pre>
Descriptive Name	<pre>&lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;Name&gt;Fuel System Diagram&lt;/Name&gt; &lt;ClassID&gt;P&amp;ID&lt;/ClassID&gt; &lt;/Object&gt;</pre>
Context	<pre>&lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;Context&gt; &lt;ID&gt;IPE&lt;/ID&gt; &lt;/Context&gt; &lt;ClassID&gt;P&amp;ID&lt;/ClassID&gt; &lt;/Object&gt;</pre>
Nested Context	<pre>&lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;Context&gt; &lt;ID&gt;Design Documents&lt;/ID&gt; &lt;Context&gt; &lt;ID&gt;IPE&lt;/ID&gt; &lt;/Context&gt; &lt;/Context&gt; &lt;ClassID&gt;P&amp;ID&lt;/ClassID&gt; &lt;/Object&gt;</pre>
Association	<pre>&lt;Object&gt; &lt;ID&gt;PID 410&lt;/ID&gt; &lt;ClassID&gt;P&amp;ID&lt;/ClassID&gt; &lt;Association type="refers to"&gt; &lt;Object&gt; &lt;ID&gt;150-PD-125&lt;/ID&gt;</pre>

XML Schema	Reference
	</Object> </Association> </Object>
Alias Identifier	<Object> <ID>PID 410</ID> <ClassID>P&ID</ClassID> <Association type="is identified by"> <Object> <ID>P&ID 410 Sheet 3</ID> <Context> <ID>IPE</ID> </Context> <Revision>B</Revision> <Name>Fuel System Sheet 3</Name> </Object> </Association> </Object>
Document File	<Object> <ID>PID 113</ID> <Context> <ID>IPE</ID> </Context> <ClassID>P&ID</ClassID> <Association type="is fulfilled by"> <Object> <ID> PID_410_SVG </ID> <Context> <ID>IPE</ID> </Context> </Object> </Association> </Object>
Attributes	<Object> <ID> PID_410_SVG</ID> <ClassID>FILE</ClassID> <Context> <ID>IPE</ID> </Context> <Characteristic> <Name>InfoLocator</Name> <Value>/vs/IPE/P&IDs/P410_Sht_3.svg</Value> </Characteristic> <Characteristic> <Name>InfoType</Name> <Value>application/zgl</Value> </Characteristic> </Object>
Inline Dataset	<Object> <ID>P100</ID> <ClassID>PUMP</ClassID> <Context> <ID>IPE</ID>

XML Schema	Reference
	<pre> &lt;/Context&gt; &lt;Association type="has dataset"&gt; &lt;Object&gt; &lt;ID&gt;P100 Data Set&lt;/ID&gt; &lt;ClassID&gt;VPD DATASET&lt;/ClassID&gt; &lt;Context&gt; &lt;ID&gt;IPE&lt;/ID&gt; &lt;/Context&gt; &lt;Characteristic&gt; &lt;Name&gt;Bore&lt;/Name&gt; &lt;Value&gt;200&lt;/Value&gt; &lt;/Characteristic&gt; &lt;Characteristic&gt; &lt;Name&gt;Material&lt;/Name&gt; &lt;Value&gt;Stainless Steel&lt;/Value&gt; &lt;/Characteristic&gt; &lt;/Object&gt; &lt;/Association&gt; &lt;/Object&gt; </pre>
Import Template	<pre> &lt;?xml version="1.0" encoding="UTF-8" ?&gt; &lt;vl:VNETList xmlns:vl="http://www.aveva.com/VNET&gt;List" xmlns="http://www.aveva.com/VNET/eiwm"&gt; &lt;Template&gt;&lt;ID&gt;VPE P&amp;ID&lt;/ID&gt; : &lt;Object&gt; &lt;ID&gt;PID 113&lt;/ID&gt; &lt;/Object&gt; : &lt;/Template&gt; &lt;/vl:VNETList&gt; </pre>
Define Units of Measure	<pre> &lt;SystemOfUOMClass&gt; &lt;ClassID&gt;SI&lt;/ClassID&gt; &lt;ClassName&gt;SI&lt;/ClassName&gt; &lt;Definition&gt;SI&lt;/Definition&gt; &lt;UOMClass&gt; &lt;ClassID&gt;Metre&lt;/ClassID&gt; &lt;ClassName&gt;Metre&lt;/ClassName&gt; &lt;Definition&gt;Metre&lt;/Definition&gt; &lt;Abbrev&gt;m&lt;/Abbrev&gt; &lt;/UOMClass&gt; &lt;UOMClass&gt; &lt;ClassID&gt;Centimetre&lt;/ClassID&gt; &lt;ClassName&gt;Centimetre&lt;/ClassName&gt; &lt;Definition&gt;Centimetre&lt;/Definition&gt; &lt;Abbrev&gt;cm&lt;/Abbrev&gt; &lt;/UOMClass&gt; &lt;/SystemOfUOMClass&gt; </pre>

This example defines the SI system of units of measure (UOM), and also defines the two UOM classes – one for Metre (m) and another for Centimetre (cm).

Measure classes are defined as given in this snippet:

```
<MeasureClass>
<ClassID>Length Measure</ClassID>
<ClassName>Length Measure</ClassName>
<Definition>Length Measure</Definition>
<UnitOfMeasure>
<UOMClassID>Metre</UOMClassID>
</UnitOfMeasure>
<UnitOfMeasure>
<UOMClassID>Centimetre</UOMClassID>
<Scale>0.01</Scale>
</UnitOfMeasure>
</MeasureClass>
```

Here, a Length Measure is defined with its base UOM as Metre and another UOM of Centimetre.

**Note:** The Scale factor converts Centimetre to the base unit Metre.

Following is the definition of a PropertyClass that makes use of a UOM:

```
<PropertyClass>
<ClassID>LENGTH</ClassID>
<ParentClassID>PHYSICAL PROPERTY</ParentClassID>
<ClassName>Length</ClassName>
<Definition>Length</Definition>
<MeasureClassID>Length Measure</MeasureClassID>
</PropertyClass>
To import an Object that uses this Property
<Object>
<ID>TestObject02</ID>
<Context>
<ID>IPE</ID>
</Context>
<Property>
<Name>LENGTH</Name>
<Value>10</Value>
<Units>cm</Units>
</Property>
</Object>
```

A Property can be provided with an empty `<Units/>` element (or `<Units></Units>`). If Units are not provided, then the Property will not gain the Base Unit, but will be set to Null. If a Characteristic is supplied for an attribute that is actually a Property, then it will gain the Base Unit for the Property. EIA SearchResults will return an empty `<Units/>` element for Properties that have null Units to match the EIWM schema.

The EIWM allows for the creation of Rights and the assignment of those Rights to appropriate Roles and Persons.

The following is an EIWM example of creating a Right:

```
<?xml version="1.0" encoding="UTF-8" ?>
<?vnet xslt="NULL" ?>
<vl:VNETList xmlns:vl="http://www.aveva.com/VNET>List" xmlns="http://www.aveva.com/VNET/
eiwm">
<Right>
<Name>NewRight</Name>
</Right>
</vl:VNETList>
```

The following is an EIWM example of assigning a Right to a Person and a Role:

```
<?xml version="1.0" encoding="UTF-8" ?>
<?vnet xslt="NULL" ?>
<vl:VNETList xmlns:vl="http://www.aveva.com/VNET>List" xmlns="http://www.aveva.com/VNET/
```

```
eiwm">
<Template>
<ID>BootBootstrapUsers.xml::template</ID>
<Object>
<ID>AVEVA\Person1</ID>
<ClassID>PERSON</ClassID>
<Association type="has right">
<Right>
<Name>NewRight</Name>
</Right>
</Association>
</Object>
<Object>
<ID>Default User</ID>
<ClassID>ROLE</ClassID>
<Association type="has right">
<Right>
<Name>NewRight</Name>
</Right>
</Association>
</Object>
</Template>
</vl:VNETList>
```

Rights can be assigned to either Roles or Persons with the following conditions:

- Right should be existing before assigning it to a Role or a Person. If it is not existing, then Import Controller displays the message: [Right not assigned - no such Right '<name of the right>'](#)
- Associating any object other than Role or Person to the Right is not permissible. If the Administrator tries to assign any other object apart from Role or Person to a new or existing Right, the following message is shown to the user while importing the XML: [Cannot assign '<name of the right>' right to '<name of the object>' object. Rights can be assigned only to persons and roles.](#)
- Rights cannot be deleted if there are some references still existing. Only the unreferenced rights are deleted and then the Import Controller displays messages like this for each existing referenced rights: [Right '<name of the right>' not deleted as it is still referenced.](#)

## Use the Import Controller from the Command Line

The AIM Import Controller is used to configure the Import Server and to load data and documents into AIM. The **Import Controller Console** is a command-line version of the Import Controller. You can control the Import Server using scripts.

### Import Controller Console Commands

The following sections provide descriptions for the Import Controller Console commands and the corresponding acceptable parameters.

To get help on the available parameters for a command, type [\[commandName\] /Help](#). For example, [encrypt password /Help](#).

#### Encrypt Password

This command encrypts the given password.

Command	Parameter	Parameter Type
<code>encrypt password -Password:PasswordString</code>	Password	Required

## Engine Commands

The following are the various engine commands.

### Show Engine

This command displays Import Engine configurations.

Command	Parameter	Parameter Type
<code>show engine -EngineHost:localhost -EnginePort:8228</code>	EngineHost	Required (default: localhost)
	EnginePort	Required (default: 8228)

### Set Engine

This command sets the Import Package properties for an engine.

Command	Parameter	Parameter Type
<code>set engine -EngineHost:localhost -EnginePort:8228</code>	AllowChangeParent	Optional
	AllowCombiningObjects	Optional
	AllowUnknown	Optional
	CalloutPath	Optional
	CheckClassification	Optional
	CreateContentFolders	Optional
	DiscardPrevious	Optional
	EngineHost	Required (default: localhost)
	EnginePort	Required (default: 8228)
	ErrorLevel	Optional
	ForceChangeParent	Optional
	MaxErrors	Optional
	TemporaryArea	Optional
	VizStreamIncludeGeometryLines	Optional
	VizStreamZUp	Optional

## Database Commands

The following are the various database commands.

### List Database

This command lists all databases associated with the engine.

Command	Parameter	Parameter Type
<code>list database -EngineHost:localhost -EnginePort:8228</code>	EngineHost	Required (default: localhost)
	EnginePort	Required (default: 8228)

### Add Database

This command adds a database to a given engine host.

Command	Parameter	Parameter Type
<code>add database -Id:DatabaseId -Datasource:YourServerName -Integrated:False -Database:YourDatabaseName -Username:DatabaseUserName -Password:DatabasePassword -PasswordEncrypted:False -EnginePort:8228 -BootStrapFolder:&lt;ProviderCo nfig type='S3'&gt;&lt;Region value='Your-Region-Name' desc='Region' type='string' /&gt;&lt;Bucket value='Your-Bucket-Name' desc='Bucket' type='string' /&gt;&lt;Path value='Folder-Path' desc='Path' type='string' &gt;&lt;/ProviderConfig&gt;</code>	BootStrapFolder	Optional
	Database	Optional
	Datasource	Required
	EngineHost	Required (default: localhost)
	EnginePort	Required (default: 8228)
	Force	Required (default: False)
	Id	Required
	Integrated	Required (default: False)
	Name	Optional
	Password	Optional
	PaaswordEncrypted	Optional (default: True)
	ReplicationEnabled	Optional (default: False)
	ReplicationFolder	Optional
	ReplicationRelativeVizStreamDropF older	Optional
	ReplicationVizStreamDropFolder	Optional

Command	Parameter	Parameter Type
	Schema	Optional
	Username	Optional

## Delete Database

This command deletes a database from the given engine host.

Command	Parameter	Parameter Type
<code>delete database -Id:databaseName</code>	EngineHost	Required (default: localhost)
	EnginePort	Required (default: 8228)
	Id	Required

## Package Commands

The following are the various package commands.

### Add Package

This command adds a package to a database.

Command	Parameter	Parameter Type
<code>add package -Id:databaseName -Package:packageName -RootObjectId:rootPackageId -RootObjectClass:rootClassName -StagingArea:&lt;ProviderConfig type=\"S3\"&gt;&lt;Region value=\"Your-Region-Name\" desc=\"Region\" type=\"string\" /&gt;&lt;Bucket value=\"Your-Bucket-Name\" desc=\"Bucket\" type=\"string\" /&gt;&lt;Path value=\"Folder-Path\" desc=\"Path\" type=\"string\" /&gt;&lt;/ProviderConfig&gt;</code>	AllowChangeParent	Optional
	AllowCombiningObjects	Optional
	AllowUnknown	Optional

Command	Parameter	Parameter Type
	CalloutPath	Optional
	CheckClassification	Optional
	CreateContentFolders	Optional
	DiscardPrevious	Optional
	EngineHost	Required (default: localhost)
	EnginePort	Required (default: 8228)
	ErrorLevel	Optional
	Force	Required (default: False)
	ForceChangeParent	Optional
	Id	Required
	MaxErrors	Optional
	Package	Required
	RootObjectClass	Required
	RootObjectID	Required

Command	Parameter	Parameter Type
	RootObjectName	Optional
	StagingArea	Optional
	TemporaryArea	Optional
	VizStreamDropFolder	Optional
	VizStreamIncludeGeometryLines	Optional
	VizStreamIPAddress	Optional
	VizStreamRelativePath	Optional
	VizStreamZUp	Optional

### List Package

This command lists all the packages for a database.

Command	Parameter	Parameter Type
<code>list package -Id:databaseName</code>	EngineHost	Required (default: localhost)
	EnginePort	Required (default: 8228)
	Id	Required

### Show Package

This command displays the package configuration details.

Command	Parameter	Parameter Type
<code>show package -Id:databaseName -Package:packageName</code>	EngineHost	Required (default: localhost)
	EnginePort	Required (default: 8228)
	Id	Required
	Package	Required

### Delete Package

This command deletes a package from a database.

Command	Parameter	Parameter Type
<code>delete package -Id: databaseName -Package:packageName</code>	EngineHost	Required (default: localhost)
	EnginePort	Required (default: 8228)
	Id	Required
	Package	Required

### Set Package

This command sets or updates the properties of a package.

Command	Parameter	Parameter Type
<code>set package -Id: databaseName -Package:packageName</code>	AllowChangeParent	Optional
	AllowCombiningObjects	Optional

Command	Parameter	Parameter Type
	AllowUnknown	Optional
	CalloutPath	Optional
	CheckClassification	Optional
	CreateContentFolders	Optional
	DiscardPrevious	Optional
	EngineHost	Required (default: localhost)
	EnginePort	Required (default: 8228)
	ErrorLevel	Optional
	ForceChangeParent	Optional
	Id	Required
	MaxErrors	Optional
	Package	Required
	StagingArea	Optional
	TemporaryArea	Optional

Command	Parameter	Parameter Type
	VizStreamDropFolder	Optional
	VizStreamIncludeGeometryLines	Optional
	VizStreamIPAddress	Optional
	VizStreamRelativePath	Optional
	VizStreamZUp	Optional

### Process Package

This command processes the packages for a given database.

Command	Parameter	Parameter Type
process package -Id: databaseName -Package:packageName	EngineHost	Required (default: localhost)
	EnginePort	Required (default: 8228)
	Force	Required (default: False)
	Id	Required
	Object	Required (default: "") (that is, it takes empty string)
	Package	Required
	ShowLog	Required (default: False)

Command	Parameter	Parameter Type
	Wait	Required (default: False)

## Use Microsoft Entra ID

AIM can be configured to use Microsoft Entra ID for access to the Dashboard website.

Microsoft Entra ID can also be used to define the groups used in the Access Control Lists (for limiting access to Portal IDs) as defined in the web.config file.

**Note:** The following integrations are not supported:

- Integration with AVEVA AIM-hybrid
- Integration with AVEVA Point Cloud Manager Viewer
- Integration with AVEVA Engage/Design in Context/DA Connector

### Configure AIM to use Microsoft Entra ID for Accessing the Dashboard

To configure AIM to user Microsoft Entra ID for access to Dashboard website:

1. Log in to the Azure portal, for example <https://portal.azure.com/#home>.
2. Select Microsoft Entra ID from the side menu bar.

The screenshot shows the Microsoft Azure Active Directory Overview page. The left sidebar has a 'Manage' section with various options, one of which, 'Microsoft Entra Connect', is highlighted with a yellow box. The main content area displays basic information about the tenant, including Name, Tenant ID, Primary domain, and License. It also features an 'Alerts' section with a message about Azure AD becoming Microsoft Entra ID, and a 'My feed' section with a link to the Microsoft Entra admin center.

Microsoft Azure

Home > [REDACTED] | Overview

Overview

Preview features

Diagnose and solve problems

Manage

- Users
- Groups
- External Identities
- Roles and administrators
- Administrative units
- Delegated admin partners
- Enterprise applications
- Devices
- App registrations
- Identity Governance
- Application proxy
- Custom security attributes
- Licenses
- Cross-tenant synchronization
- Microsoft Entra Connect**
- Custom domain names
- Mobility (MDM and WIP)
- Password reset

Add Manage tenants What's new Pre

Azure Active Directory is now Microsoft Entra ID. [Learn more](#)

Overview Monitoring Properties Recommendations

Search your tenant

**Basic information**

Name: [REDACTED]

Tenant ID: [REDACTED]

Primary domain: [REDACTED]

License: [REDACTED]

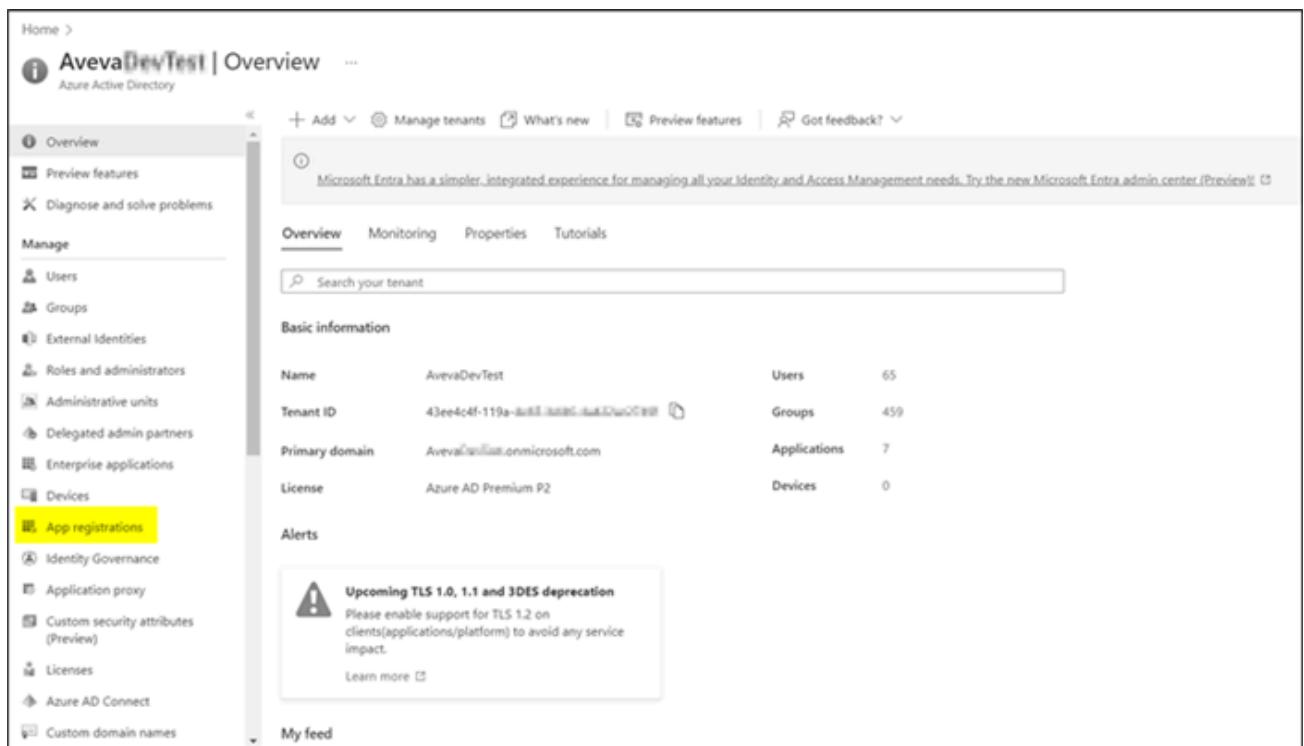
**Alerts**

**Azure AD is now Microsoft Entra ID**  
Microsoft Entra ID is the new name for Azure Active Directory. No action is required from you.  
[Learn more](#)

**My feed**

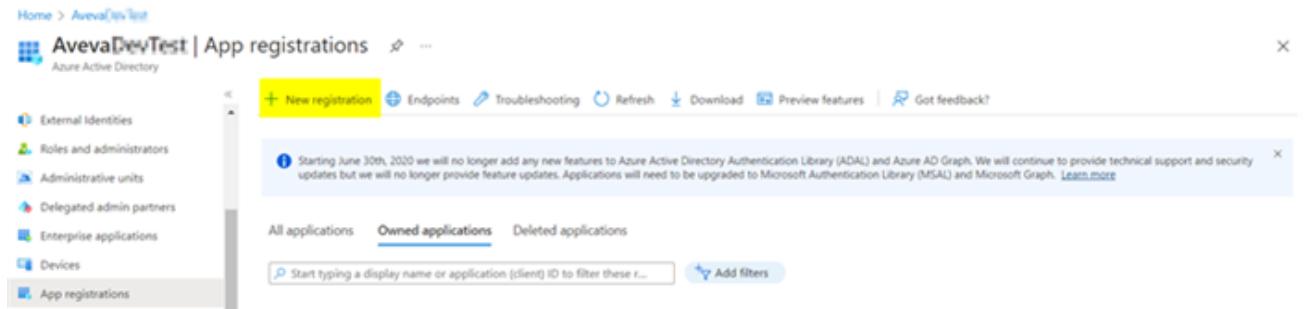
**Try Microsoft Entra admin center**  
Secure your identity environment with Microsoft Entra ID, permissions management and more.  
[Go to Microsoft Entra](#)

3. Select **App registrations** from the side menu bar to create an app registration.



The screenshot shows the Azure Active Directory Overview page for the tenant 'AvevaDevTest'. The left sidebar lists various management options like Overview, Preview features, Diagnose and solve problems, Manage (Users, Groups, External Identities, Roles and administrators, etc.), and App registrations (which is highlighted with a yellow box). The main content area displays basic information about the tenant, including Name (AvevaDevTest), Tenant ID (43ee4c4f-119a-4811-8885-1a8d32w0C98), Primary domain (AvevaDevTest.onmicrosoft.com), License (Azure AD Premium P2), and metrics for Users (65), Groups (459), Applications (7), and Devices (0). Below this, there's an 'Alerts' section with a warning about Upcoming TLS 1.0, 1.1 and 3DES deprecation.

4. Select **New registration** to create a new registration.



The screenshot shows the 'App registrations' page for the same tenant. The left sidebar includes App registrations (highlighted with a yellow box) and other options like External identities, Roles and administrators, etc. The main area shows a message about the deprecation of ADAL and Graph starting June 30th, 2020. It has tabs for All applications, Owned applications (which is selected and highlighted with a yellow box), and Deleted applications. A search bar at the bottom allows filtering by display name or application ID.

5. Provide a Name, Supported account types and Redirect URI. For example:

Home > Aveva  | App registrations >

## Register an application

...

### \* Name

The user-facing display name for this application (this can be changed later).

AssetInfoMgt



### Supported account types

Who can use this application or access this API?

- Accounts in this organizational directory only (Aveva  only - Single tenant)
- Accounts in any organizational directory (Any Azure AD directory - Multitenant)
- Accounts in any organizational directory (Any Azure AD directory - Multitenant) and personal Microsoft accounts (e.g. Skype, Xbox)
- Personal Microsoft accounts only

[Help me choose...](#)

### Redirect URI (optional)

We'll return the authentication response to this URI after successfully authenticating the user. Providing this now is optional and it can be changed later, but a value is required for most authentication scenarios.

Single-page application (SPA) 

https://xxxxxxxxx.xxxx.com:12345



Register an app you're working on here. Integrate gallery apps and other apps from outside your organization by adding from [Enterprise applications](#).

By proceeding, you agree to the [Microsoft Platform Policies](#) 

[Register](#)

6. When the registration is created, in the **Overview** section you will see details similar to those below. Make a note of the Application (client) ID and Directory (tenant) ID which will be used for the AIM setup.

Home > Aveva<sup>TM</sup> | App registrations >

**AssetInfoMgt**

Search Delete Endpoints Preview features

Overview Quickstart Integration assistant

Manage Branding & properties Authentication Certificates & secrets Token configuration API permissions Expose an API App roles Owners Roles and administrators Manifest

Support + Troubleshooting Troubleshooting New support request

**Essentials**

Display name : AssetInfoMgt Client credentials : Add a certificate or secret

Application (client) ID : 2afadd72-3011-4394-8700-f88f50e6879 Redirect URIs : 0.web.1.spa.0.public client

Object ID : 773ce076-1111-4444-8888-00000000000 Application ID URI : Add an Application ID URI

Directory (tenant) ID : 43ee4c4f-1111-4444-8888-00000000000 Managed application in L... : AssetInfoMgt

Supported account types : My organization only

Copy to clipboard

Welcome to the new and improved App registrations. Looking to learn how it's changed from App registrations (Legacy)? [Learn more](#)

Starting June 30th, 2020 we will no longer add any new features to Azure Active Directory Authentication Library (ADAL) and Azure AD Graph. We will continue to provide technical support and security updates but we will no longer provide feature updates. Applications will need to be upgraded to Microsoft Authentication Library (MSAL) and Microsoft Graph. [Learn more](#)

Get Started Documentation

### Build your application with the Microsoft identity platform

The Microsoft identity platform is an authentication service, open-source libraries, and application management tools. You can create modern, standards-based authentication solutions, access and protect APIs, and add sign-in for your users and customers. [Learn more](#)

7. Navigate to **Expose an API** and set the Application ID URI, scope and client application.

Home > Aveva<sup>TM</sup> | App registrations > AssetInfoMgt

**AssetInfoMgt | Expose an API**

Search Got feedback?

Overview Quickstart Integration assistant

Manage Branding & properties Authentication Certificates & secrets Token configuration API permissions **Expose an API** App roles Owners Roles and administrators Manifest

Support + Troubleshooting Troubleshooting New support request

Application ID URI Set

Scopes defined by this API

Define custom scopes to restrict access to data and functionality protected by the API. An application that requires access to parts of this API can request that a user or admin consent to one or more of these.

Adding a scope here creates only delegated permissions. If you are looking to create application-only scopes, use 'App roles' and define app roles assignable to application type. [Go to App roles](#).

Add a scope

Scopes	Who can consent	Admin consent display ...	User consent display na...	State
No scopes have been defined				

Authorized client applications

Authorizing a client application indicates that this API trusts the application and users should not be asked to consent when the client calls this API.

Add a client application

Client Id	Scopes
No client applications have been authorized	

8. Set the **Application ID URI** by selecting **Set**.

Home > AvevaCloud | App registrations > AssetInfoMgt

**AssetInfoMgt | Expose an API**

Search Got feedback?

Overview Quickstart Integration assistant

Got a second to give us some feedback? →

**Application ID URI** Set

Scopes defined by this API

Define custom scopes to restrict access to data and functionality protected by the API. An application that requires access to parts of this API can request that a user or admin consent to one or more of these.

Adding a scope here creates only delegated permissions. If you are looking to create application-only scopes, use 'App roles' and define app roles assignable to application type. [Go to App roles](#).

+ Add a scope

- By default, `api://{clientId}` will be present, so just add /AIM after {clientId}. Then select **Save**. For example:

### Set the App ID URI

Application ID URI

api://2afadd72-...-439-470-138708m7g/AM

**Save** Discard

- Select **Add a scope**. The Add a scope window opens.
- Enter the details as shown in the following example.

Home > AvevaCloud | App registrations > AssetInfoMgt

**AssetInfoMgt | Expose an API**

Search Got feedback?

Overview Quickstart Integration assistant

Application ID URI: api://2afadd72-...-439-470-138708m7g/AM

Scopes defined by this API

Define custom scopes to restrict access to data and functionality protected by the API. An application that requires access to parts of this API can request that a user or admin consent to one or more of these.

Adding a scope here creates only delegated permissions. If you are looking to create application-only scopes, use 'App roles' and define app roles assignable to application type. [Go to App roles](#).

+ Add a scope

Scopes	Who can consent	Admin cons.
No scopes have been defined		

Authorized client applications

Authorizing a client application indicates that this API trusts the application and users should not be asked to consent to this API.

+ Add a client application

Client Id	Scopes
No client applications have been authorized	

**Add a scope**

Scope name \* AvEVA.NET.Workhub

Who can consent? Admins and users Admins only

Admin consent display name \* Aveva Asset Information Management

Admin consent description \* Aveva Asset Information Management

User consent display name e.g. Read your files

User consent description e.g. Allows the app to read your files.

State Enabled

Add scope Cancel

- Select **Add scope** at the bottom of the window.
- Navigate to **Overview** and copy the Application (client) ID.

Home > AvevaOimini | App registrations >

The screenshot shows the 'AssetInfoMgt' application registration in the Azure portal. The 'Overview' tab is selected. Key details shown include:

- Display name:** AssetInfoMgt
- Application (client) ID:** 2afadd72-3e0c-4055-9f75-0f03d40013
- Object ID:** 773ce076-1011-4ab0-90b4-4a823a2798f
- Directory (tenant) ID:** 43ee4c4f-1094-4bb0-90b4-4a823a2798f
- Supported account types:** My organization only
- Client credentials:** Add a certificate or secret (button highlighted)
- Redirect URIs:** 0.web.1.spa.0.public client
- Application ID URI:** api://2afadd72-3e0c-4055-9f75-0f03d40013
- Managed application in L:** AssetInfoMgt

14. Navigate to **Expose an API** and select **Add a client application**.

The screenshot shows the 'Expose an API' blade for the 'AssetInfoMgt' application. The 'Expose an API' tab is selected. Key details shown include:

- Application ID URI:** api://2afadd72-3e0c-4055-9f75-0f03d40013/ AIM
- Scopes defined by this API:** A section for defining custom scopes.
- Authorized client applications:** A section for authorizing external applications. It shows a button labeled '+ Add a client application'.

15. Paste the value of the copied **Application (client) ID** into the **Client ID** field.

## Add a client application

Client ID ⓘ  
2afadd72-[REDACTED]-a750-4807-9d4e07961f96 ✓

Authorized scopes ⓘ  
 api://2afadd72-[REDACTED]-a750-4807-9d4e07961f96/AVEVA.NET.Workhub

**Add application** **Cancel**

16. Select the checkbox under the **Authorized scopes** section.
17. Select **Add application**.
18. Navigate to Manifest and update the **accessTokenAcceptedVersion** value to 2 to get the **preferred\_username** claim.
19. Update the **groupMembershipClaims** value to **SecurityGroup** or **All** to get the groups claim.  
For **groupMembershipClaims**, a value of **null** excludes all groups, a value of **SecurityGroup** includes only **Active Directory Security Group** memberships, and a value of **All** includes both Security Groups and Microsoft 365 Distribution Lists.
20. Select **Save**.

**Note:** Ensure that the user is not in more than 200 groups (for JWT tokens). For more information, see <https://learn.microsoft.com/en-us/entra/identity-platform/security-tokens>.

The editor below allows you to update this application by directly modifying its JSON representation.

```

1  {
2    "id": "773ce076-3f11-45d1-a70e-1a87f0f11a",
3    "acceptMappedClaims": null,
4    "accessTokenAcceptedVersion": 2,
5    "addIns": [],
6    "allowPublicClient": null,
7    "appId": "2afadd72-3f11-45d1-a70e-1a87f0f11a",
8    "appRoles": [],
9    "oauth2AllowUrlPathMatching": false,
10   "createdDateTime": "2022-11-08T04:46:22Z",
11   "description": null,
12   "certification": null,
13   "disabledByMicrosoftStatus": null,
14   "groupMembershipClaims": "SecurityGroup",
15   "identifierUris": [
16     "api://2afadd72-3f11-45d1-a70e-1a87f0f11a/AIM"
17   ],
18   "informationalUrls": {
19     "termsOfService": null,
20     "support": null,
21     "privacy": null,
22     "marketing": null
23   },
24   "keyCredentials": [],
25   "knownClientApplications": [],
26   "logoUrl": null,
27   "logoutUrl": null,
28   "name": "AssetInfoMgt",
29   "notes": null,

```

21. Configure AIM's web.config to use **Microsoft Entra ID Authentication (Identity Provider)**.
22. Add or modify the following settings in the Dashboard's web.config file.
23. All the settings must be prefixed with **avevanet:**. For example, <add key="avevanet:/\*" value="\*" />

Parameter	Description
<b>authenticationProvider</b>	Set as Microsoft Entra ID (case-sensitive).
<b>applicationRootUri</b>	The root URI of AIM's Dashboard application. For example: https://sample.example.com/Dashboard
<b>authorityUri</b>	The URI of the Microsoft Entra ID authority. For example: https://login.microsoftonline.com/{tenantId}/v2.0
<b>dashboardClientId</b>	Application (client) ID
<b>resourceScope</b>	The resource scope to be passed.

Parameter	Description
	For example: api:// {clientId}/AIM/AVEVA.NET.Workhub

For example:

```
<add key="avevanet:authenticationProvider" value="AzureAD" />
<add key="avevanet:applicationRootUri" value="https://sample.example.com/Dashboard" />
<add key="avevanet:authorityUri" value="https://login.microsoftonline.com/{tenantId}/v2.0" />
<add key="avevanet:dashboardClientId" value="{clientId}" />
<add key="avevanet:resourceScope" value="api://
{clientId}/AIM/AVEVA.NET.Workhub" />
```

24. To allow communication with **Microsoft Entra ID**, in the **web.config** file under **<content-Security-Policy enabled="true">** and then under **<connect-src self="true">** add: **<add source="https://login.microsoftonline.com/" />**.

## Configure AIM to Use Microsoft Entra ID Groups for Restricting User Access based on Portal IDs

If there is a requirement to use multiple Portal IDs and you want to restrict a Portal ID's access based on user groups, then it can be achieved by creating Microsoft Entra ID groups.

1. Ensure you have followed the steps in the previous section in the *Configure AIM to use Microsoft Entra ID for access to the Dashboard* topic.
2. To create an **Microsoft Entra ID** group, navigate to the tenant page and select **Groups**.

The screenshot shows the Azure Active Directory Overview page for the tenant 'AvevaDevTest'. The left sidebar lists management options like Overview, Preview features, and Groups. The main area displays basic information: Name (AvevaDevTest), Tenant ID (43ee4c4f-1111-4e00-9e40-0e2140ff), Primary domain (AvevaDevTest.onmicrosoft.com), License (Azure AD Premium P2), and metrics for Users (71), Groups (462), Applications (7), and Devices (0). A prominent warning message at the bottom left states: 'Upcoming TLS 1.0, 1.1 and 3DES deprecation. Please enable support for TLS 1.2 on clients/applications/platform to avoid any service impact.' with a 'Learn more' link.

3. Select **New group**.

The **New Group** screen opens.

Home > AvevaDevTest | Groups >

## Groups | All groups

AvevaDevTest - Azure Active Directory

All groups

Deleted groups

Diagnose and solve problems

Settings

General

Expiration

New group

Download groups

Refresh

Manage view

Delete

Got feedback?

Dynamic group memberships have not been updated due to system delays. We're working to resolve the issue.

Search

Search mode Contains

462 groups found

Add filter

4. Enter the **Group Type** as **Security** or **Microsoft 365**. Add the **Owners** and **Members** based on requirements. Click **Create**.

Home > AvevaDevTest | Groups > Groups | All groups >

## New Group

...

Got feedback?

Group type \* ⓘ

Security

Group name \* ⓘ

AIMDefaultGroup



Group description ⓘ

AIMDefaultGroup



Membership type \* ⓘ

Assigned



Owners

1 owner selected

Members

1 member selected

Create

5. The **Group** will be shown under **All groups**. Take a note of the **Object Id** for each required group so that they can be configured in the Portal ID's **AccessControlList** (in the web.config) to **Allow or Deny Groups**.

The screenshot shows the 'Groups | All groups' page in the Azure Active Directory portal. The sidebar includes 'All groups', 'Deleted groups', 'Diagnose and solve problems', 'Settings' (General, Expiration, Naming policy), 'Activity' (Privileged access groups [Preview], Access reviews, Audit logs), and navigation links like 'Home', 'AvevaDevTest', and 'Groups'. The main area displays a search bar, a 'Search mode' toggle set to 'Contains', and a message about dynamic group memberships. A table lists 462 groups found, with columns for 'Name', 'Object Id', 'Group type', and 'Membership type'. Three specific groups are highlighted in yellow: 'AIMDefaultGroup' (Object Id: a1f63aef-4c7f-452f-92d4-4d33e030d0f0, Security, Assigned), 'AIMGroup' (Object Id: 7bab2887-42f0-4a29-94b5-8878ff75178, Microsoft 365, Assigned), and 'AIMPortalGroup' (Object Id: 17462d33-d117-459f-9fbc-88316ee41234, Security, Assigned).

6. Apply the group for a **Portal ID**, for example:

```
<portal id="portal1">
<ConnectionString .... />
<AccessControlList>
<Allow Everyone="False" nodetype="leaf">
<Users> <User Value="abc@xyz.com" /> </Users>
<Groups><Group Value="17462d33-d117-459f-9fbc-88316ee41234" /></Groups>
</Allow>
<Deny nodetype="leaf">
<Users> </Users>
<Groups></Groups>
</Deny>
</AccessControlList>
<VizStream>...</VizStream>
<ContentManagementInteroperabilityServices>...</ContentManagementInteroperabilityServices>
<AVEVANETPlayer>...</AVEVANETPlayer>
</portal>
```

## Configure AVEVA AIM Authentication

Besides the Windows authentication, AIM supports an additional authentication mode that can be used to connect the AIM Dashboard with authentication providers not dependent on a domain. The authentication mode is:

- Web Services Federation (WS-Federation), which allows you to use Active Directory Federation Services (ADFS)

To configure this authentication, you must deploy *the AIM Dashboard* without using the deployment tool.

To deploy *the AIM Dashboard* manually:

1. Open IIS.
2. Right-click the application on which you wish to deploy *the AIM Dashboard*.
3. Select **Import**.

You can then enter the authentication details as explained below as part of the web deploy process.

## WS-Federation Authentication

The WS-Federation option allows *the AIM Dashboard* to be authenticated by any Identity Provider that supports the WS-Federation specification. For example, ADFS. This option does not support authentication for the following:

- Identity Delegation to the Workhub API or *the AIM Dashboard* Viewer
- Digital Asset Connector (DA Connector)

## Configuring AVEVA Asset Information Management to Use WS Federation Authentication

To configure AIM to use a WS-Federation enabled Identity Provider, you must disable the Windows authentication option and ensure that the AIM runs under the HTTPS protocol.

All the settings are prefixed with `avevanet:` and are added or modified in the `appSettings` section of the *AIM Dashboard* `web.config` file, that is:

```
<add key="avevanet:*" value="*" />
```

**Note:** It is recommended that you configure all the settings via the Web Deploy Package for *AIM Dashboard*.

Parameter	Description
authenticationProvider	Set as WS-Federation
applicationRootUrl	The root URL of the application. For example: <code>https://mydashboardapps.contoso.net/HelloWorld</code>
authorityUrl	The URL of the WS-Federation authority. For example, if you have an ADFS instance and its URL is <code>https://myadfs.contoso.net/</code> , that URL is your <code>authorityUrl</code> .
dashboardClientId	An alternative ID to use for the <i>AIM Dashboard</i> client application when talking to the Identity Provider. The default ID is <code>AVEVA.NET.Dashboard</code> .

## Configuring ADFS

If you are using ADFS as the WS-Federation identity provider, you must configure AIM as a relying party.

For that, you must add a Relying Party Trust with the following settings:

1. Set the Relying Party Identifier for *AIM Dashboard* as the `applicationRootUrl` plus `/identity`. For example, if the URL to your *AIM Dashboard* site is `https://mydashboardapps.contoso.net/HelloWorld`, then while adding the relying party identifier, the URL should be `https://mydashboardapps.contoso.net/HelloWorld/identity`.
2. Set the Relying Party Identifier and add a WS-Federation Passive Endpoint for the application URL plus the identity path. For the example above, the site `https://mydashboardapps.contoso.net/HelloWorld` has Relying

Party Identifier and WS-Federation passive endpoint as <https://mydashboardapps.contoso.net/HelloWorld/identity>.

3. Add the following claims for the AIM Relying Party:

Name – Used as the name displayed under profile information in the AIM UI.

Name ID – A unique name identifier that is used internally.

Both the claims can have the same value.

---

**Note:** If you have an existing AIM installation, the user name used should be the **Windows account name** (that is, `CONTOSO\username`). The same user is used within the application while switching to the WS-Federation authentication option. The Name and Name ID claims must be set as **Windows account name**.



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