

SmartPlant Fusion

Installation and Configuration Guide



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Preface

This document contains information about the installation and configuration of SmartPlant® Fusion. This document is intended for system administrators and users who are installing and setting up SmartPlant Fusion.

SmartPlant Fusion Product Documentation

SmartPlant Fusion documentation is available as Help and as Adobe® PDF files. To view printable guides for SmartPlant Fusion, click **Help > Printable Guides** in the software.

Intergraph gives its customers permission to print as many copies of the delivered PDF files as they need for their non-commercial use. Do not print the PDF files for resale or redistribution.

Installation and Overviews

- *SmartPlant Fusion Release Bulletin* - Provides information on the SmartPlant Fusion features for the current release.
- *SmartPlant Fusion Installation and Configuration Guide* – Provides installation, set up, and configuration information. It also provides information about troubleshooting the software.
- *SmartPlant Fusion Getting Started Guide* - Provides overview information to help users start working in SmartPlant Fusion.

Administrative Guide

- *SmartPlant Fusion Administrator's Guide* - Provides information such as general conceptual information, procedures, and vocabulary necessary to use the SmartPlant Fusion Data Capture Administration module.

User's Guides

- *SmartPlant Fusion Reviewer's Guide* - Provides information such as general conceptual information, procedures, and vocabulary necessary for the reviewer to use the SmartPlant Fusion Quality Control module.
- *SmartPlant Fusion Document Controller's Guide* - Provides information such as general conceptual information, procedures, and vocabulary necessary for the document controller to use the SmartPlant Fusion commands available in the SmartPlant Foundation Desktop Client and SmartPlant Fusion Data Capture Task Manager module.
- *SmartPlant Fusion Viewer's Guide* - Provides information such as general conceptual information, procedures, and vocabulary necessary for the viewer to use the SmartPlant Fusion commands and functionality available in the SmartPlant Fusion Data Capture Task Manager module, SmartPlant Fusion Web Portal and SmartPlant Foundation Desktop Client.
- *SmartPlant Fusion Pre-Processor Utility Guide* – Provides information such as general conceptual information, procedures, and vocabulary necessary for the administrator and document controller to use the SmartPlant Fusion commands available in the SmartPlant Fusion Pre-Processor Utilities module.

Customer Support

For the latest support information for this product, use a World Wide Web browser to connect to <http://support.intergraph.com> (*http://support.intergraph.com*). Also, you can submit any documentation comments or suggestions you might have on the Intergraph support site.

SECTION 1

Welcome to SmartPlant Fusion

SmartPlant Fusion consists of a server application and end-user applications for rapidly capturing and indexing unstructured data sources, such as documents and drawings. Built on top of SmartPlant Foundation, SmartPlant Fusion captures the objects and the various relationships between the document and tags, to create an object-relationship model for intuitive navigation across the entire database system. For example, a relationship is created between an equipment item and the documents that have the equipment in them. This relationship enables the user to search for the equipment within folder structure, file name, tags, and content from other documents.

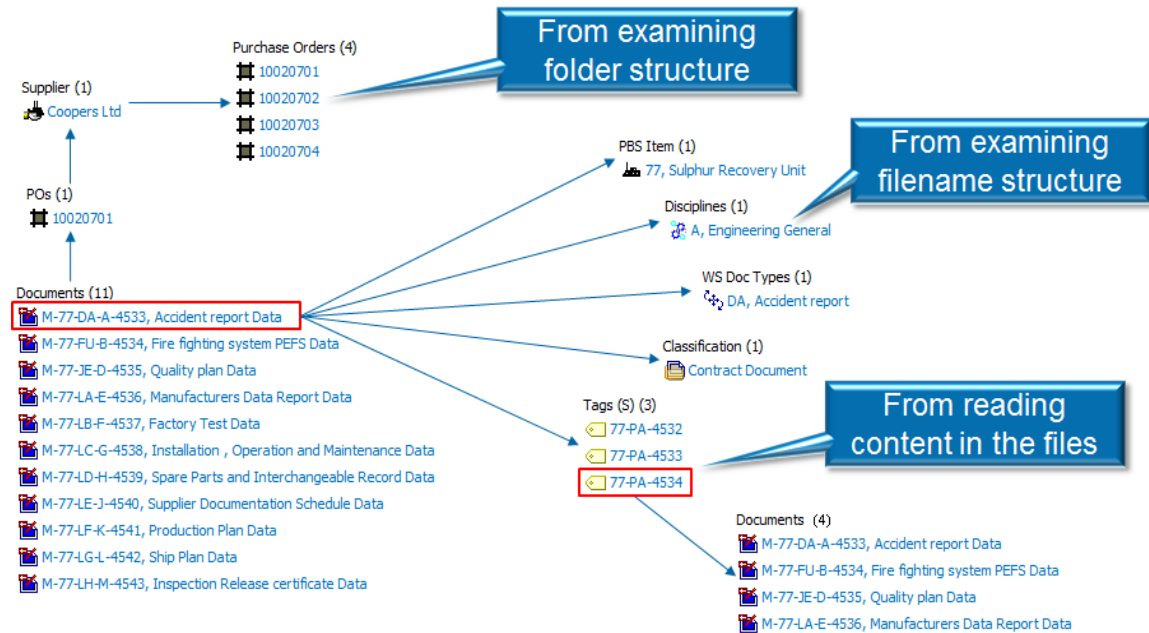
The users can access the data as task-based modules in the SmartPlant Dashboard and in the TruView Integrator Web Portal. The server application uses either a Microsoft SQL or Oracle relational database management system for meta-data and object-relationship storage, vaults for file storage, and a web server for web portal execution and presentation.

The SmartPlant Fusion server runs a number of server processes:

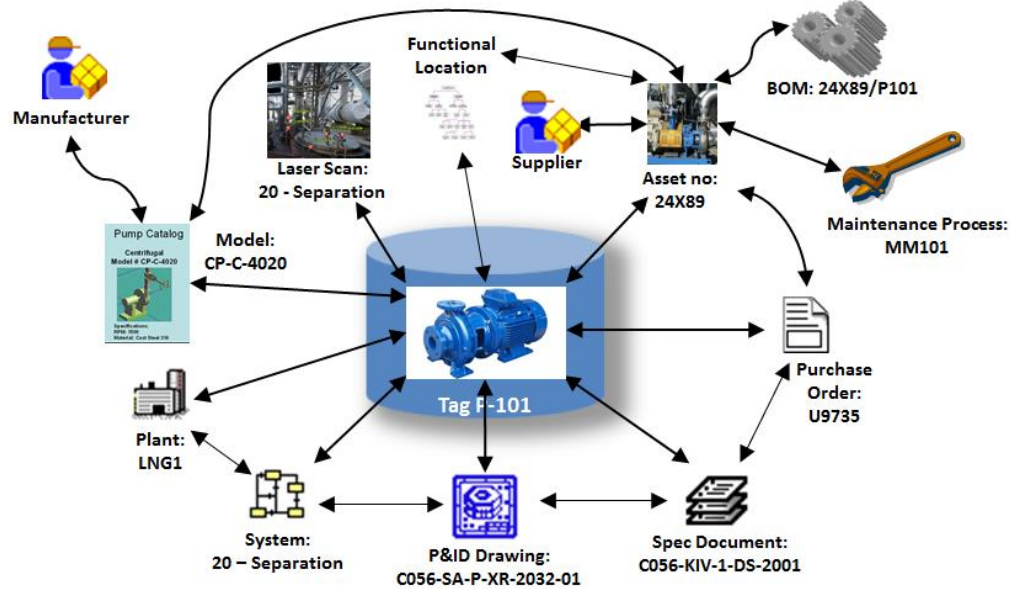
- Workflow - For the execution of the various processes.
- SmartPlant Markup Plus - For the extraction of tag numbers from vector file formats.
- SmartSketch® – For the extraction of drawings from drawing file formats.

IMPORTANT Before you create, modify, or view SmartPlant Fusion objects, you must set your SmartPlant Foundation Desktop Client active scope to the SmartPlant Fusion project. For more information on setting the active scope, see *Learn more about setting the active scope* in the *SmartPlant Foundation Desktop Client User's Guide*.

You can rapidly search, capture, and navigate information found in a database to improve data and information quality for projects and operations. Using SmartPlant Fusion can reduce document duplication and errors, reduce time and cost consuming mistakes often found in hierarchical, file-based system models, and organize brownfield data into structured, easily examined data content.



SmartPlant Fusion takes your information as it exists today and creates objects and relationships among the available items to organize your database. After installation and configuration, it quickly and efficiently captures documents to avoid long data quality assessment and modeling exercises, as well as to avoid any costly upgrading, redrawing, indexing, or correction of the data. This continuous data acquisition of unstructured source information results in a structured, interconnected database of information.



SmartPlant Fusion provides a range of tools to capture specific data types and make that content accessible to all stakeholders. You can navigate and view the data through a common user interface, so there is no need to install the native tools. Alternate renditions of each file are created in a default PDF format, hence viewable in the Web Portal. This system harmonizes your existing legacy information with the latest generation tools and provides a bridge between older, brownfield data and future projects. All captured files of the same document are stored as versions in a vault, and are attached to the defined document master record. This system never assumes that the last updated file is the master record.

A system administrator can help with the initial configuration, but the SmartPlant Fusion is set up so that a business administrator can quickly take over and manage ongoing information capture.

SECTION 2

SmartPlant Fusion Hardware and Software Recommendations

Before beginning the installation of SmartPlant Fusion, verify that your servers and client workstation computers meet the following hardware and software recommendations.

SmartPlant Fusion Database Server

Please refer to your Oracle or Microsoft SQL Server product documentation for information on configuring your database server hardware.

SmartPlant Fusion database server has the same hardware and software requirements as SmartPlant Foundation. For more information on SmartPlant Foundation hardware and software recommendations, see the *SmartPlant Foundation Installation and Setup Guide* delivered with SmartPlant Foundation software.

SmartPlant Fusion Application Server

The SmartPlant Fusion application server must be installed on a SmartPlant Foundation application server, and it has no additional hardware requirements. SmartPlant Fusion application server has the same software requirements as SmartPlant Foundation with some additional software requirements. For more information on SmartPlant Foundation hardware and software recommendations, see the *SmartPlant Foundation Installation and Setup Guide* delivered with SmartPlant Foundation software.

The SmartPlant Fusion server is a 64-bit application.

Software Prerequisites

- SmartPlant Foundation 2016 Hotfix 1 or later.
- SmartPlant Markup Plus 2016 (for processing of Microsoft Office files)
- Microsoft Silverlight 5.1

Software Recommendations

- TruView Integrator for SPE/SPO 2016 (required for viewing the Laser Scan files)
- SmartPlant Interop Publisher 2014 or later (for processing of the 3D Model files)
- Microsoft Internet Explorer 9 or 10 in compatibility mode (required for Web Portal and viewing the online documentation delivered with the software)
- Microsoft Office Excel 2010 SP1 or 2013 with VBA 32-bit (required for viewing the Ad-hoc reports)
- Microsoft Office Word 2010 SP1 or 2013 with VBA 32-bit (required for viewing the Open XML reports)

- Microsoft Access Database Engine 64-bit version (required if using Microsoft Excel as data connection in Data Reader Pattern module and Tag Pattern Extractor utility)
- SmartSketch 2014 R1 (for processing the Drawing files)

NOTE For more information on TruView Integrator for SPE/SPO installation, see the *TruView Integrator for SPE/SPO Installation and Configuration Guide* delivered with TruView Integrator software.

SmartPlant Fusion Workstation

The SmartPlant Fusion client can be installed in a 64-bit environment.

Minimum Hardware Recommendations

- 8 core 2.13 GHz processor
- 16 GB RAM
- DVD drive access, either locally or through a network connection for installation

Supported Operating Systems

- Microsoft Windows 7 Professional or Enterprise Service Pack 1 (64-bit)
- Microsoft Windows 8.1 Professional or Enterprise (64 bit)
- Microsoft Windows 10 Professional or Enterprise (64 bit)

Software Prerequisites

- SmartPlant Foundation 2016 Hotfix 1 or later.
- SmartPlant Markup Plus 2016 (for processing of Microsoft Office files)
- Microsoft Silverlight 5.1

Software Recommendations

- TruView Integrator for SPE/SPO 2016 (required for viewing the Laser Scan files)
- SmartPlant Interop Publisher 2014 or later (for processing of the 3D Model files)
- Microsoft Internet Explorer 9.0 or 10.0 in compatibility mode (required for Web Portal and viewing the online documentation delivered with the software)
- Microsoft Office Excel 2010 SP1 or 2013 with VBA 32-bit (required for viewing the Ad-hoc reports)
- Microsoft Office Word 2010 SP1 or 2013 with VBA 32-bit (required for viewing the Open XML reports)
- Microsoft Access Database Engine 64-bit version (required if using Microsoft Excel as data connection in Data Reader Pattern module and Tag Pattern Extractor utility)
- Windows Media Player (if recording or playing back an animation recording)

Licensing

SmartPlant Fusion is licensed concurrently with SmartPlant Foundation. When you install and configure SmartPlant Foundation and its prerequisite software, you must also install SmartPlant License Manager on the SmartPlant Fusion server.

For more information about licensing for SmartPlant Foundation, see the *SmartPlant Foundation Licensing Guide* delivered with SmartPlant Foundation or the *SmartPlant License Manager Installation and User's Guide* delivered with SmartPlant License Manager.

SECTION 3

Setting up the SmartPlant Fusion Server

IMPORTANT Before installing SmartPlant Fusion, do the following.

- Install and configure SmartPlant Foundation and its prerequisite software. If you already have SmartPlant Foundation installed, you only need to install SmartPlant Fusion.
- Configure the Oracle Listener connection if you are using an Oracle database.

For more information on SmartPlant Foundation installation, see the *SmartPlant Foundation Installation and Setup Guide* delivered with the SmartPlant Foundation software.

Install prerequisite software

Before you install SmartPlant Fusion on the SmartPlant Foundation application server, verify the installation of the recommended software. SmartPlant Fusion server does not require any additional hardware. SmartPlant Fusion must be installed on a SmartPlant Foundation application server. For more information, see the *SmartPlant Fusion Hardware and Software Recommendations* (on page 11) or the SmartPlant Foundation hardware and software recommendations in the *SmartPlant Foundation Installation and Setup Guide* delivered with SmartPlant Foundation software.

Install SmartPlant Fusion

SmartPlant Fusion can be installed on the same or a different drive than where you installed SmartPlant Foundation.

NOTES

- You can install the software in silent mode, which requires no user interaction during the installation process. For more information, see *Installing the Software in Silent Mode* (on page 15).
 - The installation process checks whether the prerequisite software is installed on the server. If software prerequisites are not installed, the **Prerequisite** page will be displayed with a list of required software.
1. From the product installation DVD, if the installation does not start automatically, double-click setup.exe.
 2. In the **Welcome** window, click **Start Setup**.
 3. In the **Details and Features** window, enter your **Serial Number**, **User Name**, and **Company**.
 4. In the **Select Features To Install** section, select the components you want to install:

IMPORTANT You can clear the check boxes for any software that you do not want to install. However, if this software installation is a modification to a previous installation, do not clear any selected check boxes unless you want those components to be uninstalled.

- **All Features** - Installs all the items described below.
- **SmartPlant Fusion Client** - Installs the SmartPlant Fusion Client functionality on the user's local computer.
- **SmartPlant Fusion Server** - Installs the SmartPlant Fusion Server.

NOTE If you select the **SmartPlant Fusion Client** option, the installation process checks for the installation of Silverlight 5.0 or later version on the client computer.

5. In the **Install Path** section, enter the path on the local server where the software is to be installed.
6. Click **Next**.

TIP Required information is marked by a red star.

7. In the **License Agreement** window, from the **Country or Region** list, select your country or region.
8. Carefully read the licensing agreement. When you are finished, select **I agree to the license agreement and conditions**, and click **Install**.
9. Click **Finish** when the installation is complete.

Installing the software in silent mode

1. Prior to running a silent setup of SmartPlant Fusion over a network, ensure that the following conditions are met:
 - All existing versions of the software are uninstalled prior to network installation.
 - The target computer meets the free disk space recommendations specified in *SmartPlant Fusion Hardware and Software Recommendations* (on page 11).
 - All applications are closed.

2. Open the **Command Prompt** window from the **Start** menu.

3. At the command prompt, type:

```
[setup source folder path]\Setup.exe /silent /install SLAACCEPT=YES  
SERIALNUM=00000027401206 ADDLOCAL=ALL /I C:\Temp\my.log
```

4. Check the .log file to ensure that the installation proceeded without errors. A successful silent installation produces a .log file looking something like this:

```
UIStateHandler:ShowView:Installation Complete  
Apply complete, result: 0x0, restart: None, ba requested restart: No  
Shutting down, exit code: 0x0  
Variable: COMPANYNAME = Microsoft  
Variable: IGRSETUPEXE =  
\\in-fusionbuild\CI_NetworkDeployment\Setup\current\Setup.exe  
Variable: InstallFolder = C:\Program Files  
(x86)\SmartPlant\Fusion\2015  
Variable: INSTALLLEVEL = 2
```

```
Variable: LegacyVersionExist = 0
Variable: MarkupVersion = 05.04.00.0048
Variable: ProgramFilesFolder = C:\Program Files (x86)\
Variable: SERIALNUM = 0000007891401
Variable: SilverlightVersion = 5.1.20513.0
Variable: SPFVersion = 05.01.00.0018
Variable: TruViewVersion = 03.01.00.01
Variable: USERNAME = Microsoft
Variable: WixBundleAction = 4
Variable: WixBundleElevated = 1
Variable: WixBundleLog =
C:\Users\FUSION~1\AppData\Local\Temp\Intergraph_SmartPlant_Fusion_20
150226203916.log
Variable: WixBundleLog_MainProduct =
C:\Users\FUSION~1\AppData\Local\Temp\Intergraph_SmartPlant_Fusion_20
150226203916_0_MainProduct.log
Variable: WixBundleManufacturer = Intergraph
Variable: WixBundleName = Intergraph SmartPlant Fusion
Variable: WixBundleOriginalSource =
\\in-fusionbuild\CI_NetworkDeployment\Setup\current\Setup.exe
Variable: WixBundleProviderKey =
{3f627152-ae62-4104-93da-48241d923b40}
Variable: WixBundleRollbackLog_MainProduct =
C:\Users\FUSION~1\AppData\Local\Temp\Intergraph_SmartPlant_Fusion_20
150226203916_0_MainProduct_rollback.log
Variable: WixBundleTag =
Variable: WixBundleVersion = 2.0.0.15
```

IMPORTANT In addition to the log file, a *<log_file_name>_0_MainProduct.log* file is created and you can check for the following message in it to verify the successful installation of the product.

Windows Installer installed the product. Product Name: Intergraph SmartPlant Fusion. Product Version: 03.00.00.05. Product Language: 2057. Manufacturer: Intergraph. Installation success or error status: 0.

Required Silent Install Parameters

SLAACCEPT=Yes	Yes indicates that you agree to the software license agreement. If you enter No, setup will not complete.
SERIALNUMBER=<serial number>	Defines the serial number for your product.

ADDLOCAL=ALL

Defines the component of the software that you want to install.

- ALL - Installs both client and server components
- SPFNClient,SPFNRegistry - Installs the client components
- SPFNServer,SPFNRegistry - Installs the server components

Optional Silent Install Parameters

/l <path, file name of logging file>

Defines the location for a log file. If you do not specify a name or location for the log file. If you do not specify a name or location for the log file, it is automatically given a unique name
Intergraph_SmartPlant_Fusion_YYYYMMDDHHMMS
S.log. The log file is created in the %temp% folder.

USERNAME=<user_name>

Defines the name of the licensed user for your product.

COMPANYNAME=<company_name>

Defines the name of the company for which the product is licensed.

INSTALLDIR=<Path>

Defines the folder where you want to install the product.

SECTION 4

Configuring SmartPlant Fusion Site in Server Manager

After you have installed SmartPlant Fusion, use SmartPlant Foundation Server Manager to configure the following server settings for your SmartPlant Fusion site:

- Install DLLs
- Update configuration XML files on a SmartPlant Foundation site

For more information about using SmartPlant Foundation Server Manager and creating sites, see the *SmartPlant Foundation Server Manager User's Guide* delivered with SmartPlant Foundation.

Set up a License Manager site

IMPORTANT If you have configured a licensing site for SmartPlant Foundation, you do not need to configure a licensing site for SmartPlant Fusion and can proceed to *Create a new SmartPlant Fusion site* (on page 22).

The Server Manager **New License Server Wizard** allows you to create a new SmartPlant License Server virtual directory. This wizard performs the basic steps required for creating a new license server.

IMPORTANT

- In order to create a new license server site, the License Service component must be installed on the server. The node and commands for license management are available in Server Manager only if this component is installed.
- Intergraph recommends that you add and delete sites only through the Server Manager application. Do not use IIS to delete any virtual directories created using this wizard.
- Only one license server virtual directory is allowed to be configured per machine.
- SmartPlant License Manager is supported on both 32-bit and 64-bit operating systems.

NOTE Creating a license server site also creates a virtual directory in IIS that points to the licensing data source.

TIP See *SmartPlant Foundation Installation and Setup Guide* for the specific hardware and software requirements for the license server.

Run the license server wizard

To start the **New License Server Wizard**, right-click the **SmartPlant License Manager** node in the tree view and click **New**.

The **New License Server Wizard** displays the **Server Information** page.

TIP You can also select **New License Server** from the **Edit** menu.

NOTE The new license server wizard checks for the existence of a web.config file. If none is present, an error message is displayed. If one exists, the process continues.

Define server information

1. In the **Server Information** page, type the new **License server virtual directory name** and **License server virtual directory path**.
2. Click **Next**.

NOTES

- The **Create local operating system users for site application pools** option is selected by default, and it creates local users on the operating system, sets them to run as the identity of the related application pool, sets permissions for the users, and adds the local user to the **SPFUsers** group. If you prefer to perform this process manually, do not select the option and refer to *Appendix D: Configuring IIS Application Pools and User Accounts Manually* in the *SmartPlant Foundation Installation Guide*.
- Do not use special characters in the virtual directory name. Special characters cause errors if used.
- Server names should not exceed 20 characters. If you allow the wizard to create local users for the license server application pools, your server name should not exceed 20 characters. The wizard uses the license server name for the user name and Windows local user names cannot exceed 20 characters.
- The wizard creates an application pool with the same name as the virtual directory value.

Update sites with new license server

1. Select the site or sites that you want to use with the license server from the **Update Sites** list. Click **Next**.

NOTES

- The wizard updates the SPFAppServer.config files of the sites selected at the end of the process. It will add a new entry to the SPFAppServer.config file, which allows the administrator to direct each site to a license server. For example:

```
<add key="LicenseServerURL"
value=http://localhost/SPFLicenseServer />
```

- If no site is selected or none exists, click **Next** and the license server site creation continues. However, you have to manually go to the SmartPlant Fusion site's settings in Server Manager and add the license server URL you want to use. For more information,

see *Link the license server to a SmartPlant Foundation site in SmartPlant Foundation Installation and Setup Guide*.

2. Click **Next**.

Define database system information

1. In the **Database type** box, select **Oracle** or **SQL Server**. The required information on the **Database System** page varies according to your selection.
2. Enter the following information, depending on the selection made in the **Database Type** box:
 - **Oracle** - In the **Oracle alias** box, type the Oracle Net alias to the server that hosts this server (for example, the name of the database instance that contains the tablespace being created here).
 - **SQL Server** - In the site **Database server** box, type the name of the Microsoft database server that hosts the database being created here.

TIP To create a new Oracle tablespace or a new SQL Server physical database file and log file using the delivered dump file, clear the **Use existing database** option, and enter the following information:

- In the **System user** box, type the name of the Oracle or SQL Server user who has privileges to create SmartPlant Foundation or SmartPlant Basic Integrator users. (If using a SQL Server database, you can select the **Use Windows authentication** option to use the credentials of the logged in user, instead of supplying a system user to connect to SQL Server.)
- Type the **System password**.

NOTE If you want to use an existing database, select the **Use existing database** option.

3. Click **Next**. The wizard tests the database connection using the supplied credentials. If the test succeeds, the **Data Schema** page appears. If it fails, an error message appears.

NOTE If you are using Oracle, refer to *Create an Oracle database* (on page 20). If you are using SQL Server, refer to *Create a SQL server database* (on page 21).

Create an Oracle database

1. If you are using an existing Oracle database, skip to step 5. Otherwise, type, or browse to, the **Location of the scripts to create tables** to specify the scripts used to create the tables.

TIP This script is the default script installed with Server Manager.

NOTES

- An example of the default script to create tables for an Oracle site can be found at:
C:\Program Files(x86)\SmartPlant\Foundation\2016\ServerManager\DatabaseScripts\Template_SP LMDbaseTablesOracle.sql
 - If you are using an existing Oracle database, this option and the boxes for the Oracle tablespace and temp tablespace are disabled.
2. If you want to save the script path for future operations, select the **Save as default** option.

3. Select the **Oracle tablespace** from the list of valid tablespaces, or type the name of the tablespace.

NOTES

- By default, the name of the new tablespace created appears in the list as the name of the site with a suffix of **_Data**.
- The name of the temp tablespace created appears in the list as the name of the site with a suffix of **_DataTemp**.

4. Select an **Oracle temp tablespace**, or type the name of the temp tablespace.

NOTE The name of the temp tablespace to be created appears in the list as the name of the site with a suffix of **_DataTemp**.

5. In the **Database username** box, type the name of the Oracle user who owns the objects in the Data database schema.
6. Type and then confirm the **Database password** for the Oracle database user.
7. Click **Next** to display the **Ready to Create License Server** page.
8. Review the new server parameters, and click **Back** to make any changes.
9. Click **Next**. The **Server Creation Status** appears as the site is created, and then the **After License Server Creation** page appears.
10. Read the information about the additional steps required to fully configure the new server, and then click **Finish** to create the server. The new server appears in the tree view.

For more information about fully configuring the server, see *Configure the license server for performance* (on page 22).

NOTE At the end of the process the wizard adds a new entry to each selected site's SPFAppServer.config file, which allows the user to direct each site to a license server. For example:

```
<add key="LicenseServerURL" value=http://localhost/SPFLicenseServer />
```

Create a SQL Server database

1. If you are using an existing SQL Server database, skip to step 5. Otherwise, type, or browse to, the **Location of the scripts to create tables** to specify the scripts used to create the database.

TIP This script is the default script installed with Server Manager.

NOTES

- An example of the default script to create tables for a SQL server site can be found at:
C:\Program Files
(x86)\SmartPlant\Foundation\2016\ServerManager\DatabaseScripts\Template_SPLMD
baseTablesSQL.sql
 - If you are using an existing SQL Server database, this option and the boxes for the physical database file and log file location are disabled.
2. If you want to save the current path for future operations, select the **Save as default** option.
 3. Accept the default **Physical database file location**.

4. Accept the default **Log file location**.
5. In the **Database username** box, type the name of the database user who owns the objects in the data database schema.
6. Type and then confirm the **Database password** for the SQL Server database user.
7. Click **Next**. The **Ready to Create License Server** page appears. Review the new server parameters, and click **Back** to make any changes.
8. Click **Next**. The **Server Creation Status** appears as the site is created, and then the **After License Server Creation** page appears.
9. Read the information about the additional steps required to fully configure the new site, and then click **Finish** to create the site. The new site displays in the tree view.

For more information about fully configuring the server, see *Configure the license server for performance* (on page 22).

NOTE At the end of the process the wizard adds a new entry to each selected site's SPFAppServer.config file, which allows the user to direct each site to a license server. For example:

```
<add key="LicenseServerURL" value=http://localhost/SPFLicenseServer />
```

Configure the license server for performance


After you have created your new license server site, verify that the new license server is fully configured for optimum performance in the SmartPlant Fusion environment. To fully configure a new license server site, Intergraph recommends the services of the following experts:


- A qualified network system administrator, who can configure IIS and properly assign security settings.
- A qualified database administrator, who can make the necessary adjustments to the physical database design and performance.

IMPORTANT

- For detailed information and procedures on configuring the license server and IIS and security settings in particular, refer to the *Configuring security for the application server* section of the *SmartPlant Foundation Installation and Setup Guide* or the *Integration Setup Guide*.
- The documentation provides additional information about configuring license servers; however, the documentation is not a substitute for a qualified expert.

Create a new SmartPlant Fusion site

1. Open **SmartPlant Foundation Server Manager**.
2. Select the **SmartPlant Foundation Sites** node.
3. Click **New**  on the Server Manager toolbar.
4. On the **Site Type** page, select **Primary Site**, and click **Next**.
5. On the **Database Platform** page, select your database.

6. Click **Next**.
7. On the **Site Name, Path and Scripts** page, type a site name in the **Enter the site name** box, and click **Next**.
8. On the **File Service Information** page, click **Next**.
9. On the **FTR Service Information** page, click **Next**.
10. On the **Remote Service Information** page, click **Next**.
11. On the **Database Settings** page, select **I want to create a new user and load the database to the new user**.
12. Type the Oracle instance name in the **Enter the Oracle Net alias for the database instance where the tablespace resides** box.
13. Type the user name for the database in the **System username** box.
14. Type the password for the database in the **Password** box.
15. On the **Oracle dump File** page, select the **Custom** option.
16. Click **Browse**  to navigate to the SmartPlant Fusion Oracle dump file. The default location of the SmartPlant Fusion Oracle dump file is *[installation directory]\Program Files (x86)\SmartPlant\Fusion\version\Database\Oracle*.

NOTE SmartPlant Fusion provides two dump files, SPFNMIN.dmp and SPFNADW.dmp.

Dump file	When to use
SPFNMIN.dmp	This dump file is recommended if you are installing and using only SmartPlant Fusion. It contains the schema for SmartPlant Fusion and TruView Integrator.
SPFNADW.dmp	This dump file is recommended if you want to extract data from SmartPlant Foundation and SmartPlant Owner Operator systems, and to view in the Smart™ Enterprise Portal.

17. Click **Next**.
18. On the **New Username and Password** page, type the database password in the **Password** box and the **Please confirm the database password** box.
19. Click **Next**.
20. On the **License Server Information** page, type the URL of the license server in the **Enter the URL for the SmartPlant Foundation License Server** box, and click **Next**.
21. On the **Summary** page, click **Next**.
22. On the **Site Creation** page, click **Next**.
23. Click **Finish**.

Configure a SmartPlant Fusion site

1. In SmartPlant Foundation Server Manager, expand the **SmartPlant Foundation Sites** node.
2. Right-click the SmartPlant Fusion site, and click **SmartPlant Fusion > Configure**.

NOTES

- Once the SmartPlant Fusion site is configured, you must recycle the application pool that is associated with the site in IIS to avoid errors. For information on recycling application pools using the Microsoft IIS Manager, refer to your Microsoft IIS documentation.
- When you configure SmartPlant Fusion for a site, the **Is SmartPlant Fusion configured?** property for the site's **Settings** node is set to **Yes**.
- To remove the configuration of the SmartPlant Fusion site, right-click the SmartPlant Fusion site, and click **SmartPlant Fusion > Remove**.

Idle time-out property

The application pool Idle Time-out (minutes) property for the sites configured with SmartPlant Fusion must be set to zero as follows:

1. On the application server, log in as a user with administrative rights, and open the **Control Panel**.
2. Open **Administrative Tools > Internet Information Services**.
3. Expand the web server node in the tree view.
4. Select **Applications Pools**.
5. Right-click application pool that has the same name as your Fusion site, and select **Set Application Pool Defaults**.
6. In the **Application Pool Defaults** dialog box, set the Idle Time-out (minutes) property to 0.
7. Click **OK**.
8. Right-click the application pool, and select **Recycle**.

SECTION 5

Configuring Vaults

A vault is an identified directory on the network used to store the physical files associated with an object. Vault configuration requires relating the vault to both infrastructure and document management objects. Vaults are configured using SmartPlant Foundation Desktop Client.

Vaults are related to hosts. The host identifies the file server on which a vault is configured.

Create a host

A host is any computer that stores files. Host identification includes both computers that store files for a long term and computers used for short term processing, such as PDF generation.

To store and manipulate physical files such as documents and drawings in SmartPlant Foundation, users, organizations, and vaults must be created and then related to a host object. To uniquely identify each directory location on each host where the files are stored, a vault object must be created. The file storage vault is determined by conditions on the relationship between interfaces on the object and the vault.

Hosts are configured using the SmartPlant Foundation Desktop Client.

1. In the SmartPlant Foundation Desktop Client, click **File > New > Administration > Host**.
2. On the **New Host** dialog box, type the host name in the **Name** field and a description in the **Description** field. If the new host is secure, select the **Is host secure** box. If the file server is remote, enter the remote server's name as the host name.

The screenshot shows the 'New Host' dialog box. It has a title bar with 'New Host' and a close button. The dialog is divided into two main sections. The first section, 'Main details', contains two text input fields: 'Name: *' and 'Description:'. The second section, 'Host details', contains a checkbox labeled 'Is host secure:'. At the bottom of the dialog, there is a checkbox labeled 'Collapse sections automatically'. Below this, there is a row of buttons: 'Collapse All', 'Expand All', 'Print', '< Back', 'Next >', 'Apply', 'Finish', and 'Cancel'.

3. Click **Finish** to create the new host. The new host displays in the **New Items** window.

Create an external company

If you plan to distribute documents to external companies or clients using external transmittals, you must create external companies in the SmartPlant Foundation Desktop Client first. For more information about configuring the transmittal functionality, see *Setting up transmittals* in the *SmartPlant Foundation Desktop Client Help*.

1. Click **File > New > Organization / Support Items > External Company** in the Desktop Client.

NOTE You must have document controller or administrator role privileges to access the **Organization / Support Items** submenu.

2. Type a **Name** and **Description** for the company.

NOTES

- An asterisk (*) indicates that an option is required to create a new object.
- To make this organization available for external transmittals, select the **External organization** option in the **Company optional interfaces** section.

3. Click **Finish** to create the company.

Create relationships between hosts and organizations

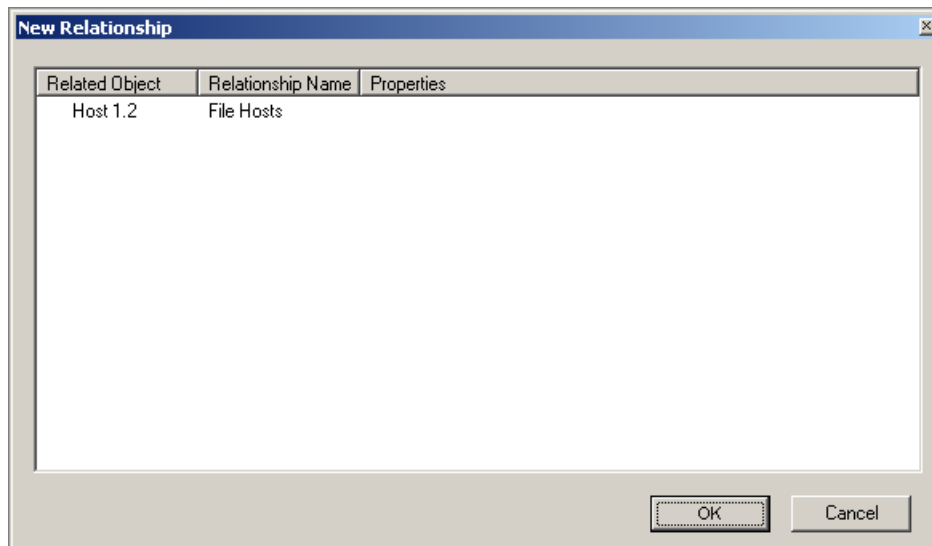
Users are associated with an organization or company. A host or a collection of hosts are associated with an organization or company. Users have relationships to hosts through their relationship to a company or organization.

When you create an organization, you can associate it with one or more hosts. You define the host of your external organization on the **New External Company** form.

If you did not associate the organization with a host when it was created using the **New External Company** or **New Department/Office** form, you can create the relationship by dragging the host on the company object.

1. Click the host and drag it on the company object.

2. On the **New Relationship** dialog box, click **OK** to create the new relationship.



Relate the SmartPlant Fusion and SmartPlant Foundation vaults with the new host

IMPORTANT You must relate the SmartPlant Fusion and SmartPlant Foundation vaults to new hosts.

1. In the SmartPlant Foundation Desktop Client, click **Find > Administration > Vault** to find a vault.
2. Right-click the vault, then click **List Editing > List Edit Vaults**.
3. In the **List Edit** window, select a new host name in the **Host** column.
4. Click **OK**.

Relate the TruView Integrator vault to a new host

Terminate the relationship with the old vault

1. In the SmartPlant Foundation Desktop Client, click **Find > Laser Scan > Vault** to find the TruView Integrator vault, **TruViewIntVault**.
2. Right-click on the vault, then click **Terminate Relationships**.
3. In the **Terminate Relationships to TruViewIntVault** dialog box, select localhost.
4. Click **OK**.

Create a relationship with the new vault

1. Find the new host.
2. Click the **TruViewIntVault** vault and drag it to the host object.

3. Select **Apply to similar items**, and then click **OK**.

SECTION 6

Configuring SmartPlant Fusion Web Portal in Server Manager

After you have installed SmartPlant Fusion, use SmartPlant Foundation Server Manager to configure the settings for the SmartPlant Fusion Web Portal.

IMPORTANT After installing SmartPlant Fusion on the SmartPlant Foundation application server, the **SmartPlant Foundation Web Portals** node appears in the tree view.

NOTE The SmartPlant Fusion web portal configuration is not required for use with Smart Enterprise Portal.

Configure a SmartPlant Fusion web portal

1. In SmartPlant Foundation Server Manager, expand the **SmartPlant Foundation Web Portals** node.
2. Right-click the SmartPlant Fusion web portal, and click **SmartPlant Fusion > Configure**.

NOTE Right-click the SmartPlant Fusion web portal, and click **SmartPlant Fusion > Remove** to remove the configuration of the SmartPlant Fusion web portal.

SECTION 7

Setting up the SmartPlant Fusion Database for Using Data Reader Patterns

Data reader patterns consist of predefined statements that retrieve selective data from the database. The database domain discovery task uses data reader patterns to extract tags and documents that exist in external databases. The tags and documents are saved to a newly created domain in the SmartPlant Fusion database. The database domain discovery task uses the query defined in the data reader pattern to extract the domain data and saves the data to the domain specified in the data reader pattern

NOTE You must load the database scripts if you plan to load data from an external database source, such as an Oracle database or a Microsoft SQL or Access database. These scripts create the tablespaces you need to load data from an in-house application database, for example, and load that data into SmartPlant Fusion.

To set up the SmartPlant Fusion database for using data reader patterns, complete the following steps:

1. In SmartPlant Foundation Server Manager, expand the **SmartPlant Foundation Sites** node.
2. Right-click the SmartPlant Fusion site, and click **SmartPlant Fusion > Load Database Scripts**.
3. To set up an Oracle database, type the system user name, password, and tablespace in the **Load Database Scripts** window.

NOTE This step is not necessary in order to set up a SQL Server database.

4. Click **Load**.

NOTE After the scripts are loaded, the PROC_SPFNLoadScripts.txt file that records database script execution information is created in the SmartPlant Fusion site location. By default, this file is created at *[drive]:\SmartPlant Foundation [version] Server Files\Web_Sites\your_site_name\SPFusion\LoadScripts*.

SECTION 8

Installing a SmartPlant Fusion Client Workstation

Install prerequisites

Before you install SmartPlant Fusion on a client workstation, verify the installation of the recommended software. For more information, see the *SmartPlant Fusion Hardware and Software Recommendations* (on page 11).

Install SmartPlant Fusion on the client workstation

NOTES

- You must know the Web server host name before you install SmartPlant Fusion.
- The SmartPlant Fusion client is not required for Smart Enterprise Portal.

IMPORTANT The installation process checks whether the software prerequisites are installed on the server. If software prerequisites are not installed, the **Prerequisite** page displays with a list of required software.

1. From the product installation DVD, if the installation does not start automatically, double-click setup.exe.
2. In the **Welcome** window, click **Start Setup**.
3. In the **Details and Features** window, enter your **Serial Number**, **User Name**, and **Company**.
4. In the **Select Features To Install** section, select **SmartPlant Fusion Client**.
5. In the **Install Path** section, enter the path on the local server where the software is to be installed.
6. Click **Next**.

TIP Required information is marked by a red star.

7. In the **License Agreement** window, from the **Country or Region** list, select your country or region.
8. Carefully read the licensing agreement. When you are finished, select **I agree to the license agreement and conditions**, and click **Install**.
9. Click **Finish** when the installation is complete.

SECTION 9

Getting Started in SmartPlant Fusion

The SmartPlant Fusion Getting Started Guide provides a hands-on way for you to get started in your new system with sample data. SmartPlant Fusion delivers sample data with the product (delivered to [drive]:\SmartPlant Foundation [version] Server Files\Web_Sites\<site_name>\SampleData).

Once loaded and configured, the sample data helps you learn about the features and options in SmartPlant Fusion. You can find the SmartPlant Fusion Getting Started Guide on the printable guides page.

SECTION 10

Upgrading SmartPlant Fusion

This section provides step-by-step instructions for upgrading SmartPlant Fusion to the latest version. Upgrading SmartPlant Fusion requires you to follow a series of steps that varies slightly depending on the SmartPlant Fusion version currently installed on your computer.

Upgrade to SmartPlant Fusion 2016 R1

You can upgrade to SmartPlant Fusion version 2016 R1 from versions 2014 and later.

IMPORTANT If you are using a version prior to SmartPlant Foundation 2012 R3, you must upgrade SmartPlant Foundation prior to the upgrading of SmartPlant Fusion.

The SmartPlant Foundation Server Manager **Upgrade Wizard** allows you to upgrade the database. You can also create a backup of the database before the upgrade begins.

NOTE The **Upgrade Wizard** compiles a list of available upgrade paths based on the version of SmartPlant Foundation and SmartPlant Fusion that is consistent with the data in the selected site. When you start the Upgrade Wizard, the software reads a control file that defines the available upgrades. The control file, **UpgradeControls.xml**, and Upgrade folder are delivered to the **ServerManager** subfolder of the product installation folder. For example, *[drive]:\Program Files\SmartPlant\Foundation\2016\ServerManager\SPFusionUpgrade\Upgrade*.

IMPORTANT Prior to running the upgrade wizard, you must rename the **UPG_SPFNADW_02.00.00.18-03.00.00.09_04.00.00.13.xml** file available in the *[drive]:\Program Files\SmartPlant\Foundation\2016\ServerManager\SPFusionUpgrade\Upgrade* folder to **UPG_SPFNADW_03.00.00.09_04.00.00.13.xml** if you are doing one of the following:

- Upgrading from SmartPlant Fusion version 2014 to SmartPlant Fusion version 2016 R1.
 - Upgrading from SmartPlant Fusion version 2014 to version 2015 to version 2016 to version 2016 R1.
1. In Server Manager, right-click a site and click **Tools > Upgrade Wizard** from the quick menu.
 2. In the **Upgrade Path** page, select your upgrade path from the list of available upgrades and click **Next**.
 3. In the **Upgrade Options** page, select the actions you would like the Upgrade Wizard to perform and click **Next**.
 - To upgrade and transform your data, click **Upgrade data in the database**.
 - To back up your database, click **Back up database before upgrade** and enter or browse to the location where you want the backup files to be saved.

4. In the **Ready to Upgrade** page, review the scripts that the Upgrade Wizard is preparing to execute and click **Next** to begin the upgrade.

NOTES

- If the wizard runs a procedural SQL script (PL/SQL for Oracle or T-SQL for SQL Server), the tracing output for the script is saved to the Server Manager temp directory under the default root path in a separate log file, UpgradeWizardPLSQLOutput.log or UpgradeWizardTSQLOutput.log, depending on the type of script that was run. The script results are also written to the main log file, UpgradeWizardlog.xml.
 - Critical errors cause the upgrade to stop. Click **Back** to make changes to your upgrade selections.
 - Non-critical errors are logged, but the upgrade continues.
5. In the **Upgrade Results** page, click **Finish** to view the log file.

NOTES

- Once the SmartPlant Fusion site is configured, you must recycle the application pools to avoid errors.
- Server Manager logs every action it performs in a log file called UpgradeWizardlog[*date*]-[*time*].xml saved in the temp directory under the default root path (for example, C:\SmartPlant Foundation 2016 Server Files\Temp\ServerManager).
- Upgrade instructions can fail to process. This failure may occur because some reports are new in this version of SmartPlant Fusion. You must load the Fusion QC Report.xmlldr file available in the **Upgrade** folder to use these reports.
- You can upgrade the ProjectCodes to move all the project codes under a desired plant. In Server Manager, right-click a site and click **SmartPlant Fusion > Upgrade ProjectCodes** > select a plant from **Plant** list > **Upgrade** from the quick menu.

SECTION 11

Troubleshooting

This section contains troubleshooting information for SmartPlant Fusion and SmartPlant products such as SmartPlant Markup and SmartConverter that are used by SmartPlant Fusion for content extraction and tag extraction from files. It also includes troubleshooting information for TruView Integrator.

Using the Diagnostic Utility

In the SmartPlant Foundation Server Manager, you can use **Diagnostics** to verify the status of the product.

1. In SmartPlant Foundation Server Manager, expand the **SmartPlant Foundation Sites** node.
2. Right-click the SmartPlant Fusion site, and click **SmartPlant Fusion >Diagnostics**.

SmartPlant Markup Plus Troubleshooting

SmartPlant Fusion uses the SmartPlant Markup Plus application to extract the content file from Office files and this content file is further processed for tag extraction.

SmartPlant Markup Plus installation fails

Problem

SmartPlant Markup Plus installation fails

Solution

1. Locate the SmartPlant Markup Plus and the Blazon installation log files.
NOTE The name and location of these log files depend on how SmartPlant Markup Plus is installed. If installing interactively, the log file name is generated by the installer (for example, SmartPlant Markup Plus_20151016080319.log) and is placed in your %temp% folder. If installing silently, the log file name and location can be specified using the `-l` or `-log` parameters.
2. Check the messages in the log file.
3. From the **Start** menu, click **Control Panel > Programs and Features**.
4. If Intergraph SmartPlant Markup Plus Client or Intergraph SmartPlant Markup Plus Server are listed, right-click and select **Uninstall**.
5. Delete the Markup folder from `[installation location]\SmartPlant`.
6. Restart your computer.

Errors occur while trying to install IGC Writer

Problem

Errors occur while trying to install IGC Writer.

TIP You can find the error message in the *[installation location]\ProgramData\IGC\Install Logs* folder.

Possible Cause

This problem may occur when reinstalling SmartPlant Markup Plus after uninstalling versions prior to SmartPlant Markup Plus 2011 R5.

Solution

1. From the **Start** menu, click **Control Panel > Programs and Features**.
2. Right-click **IGC Writer** and select **Uninstall**.

TIP Use the Black Ice Cleaner tool to remove IGC Writer if the program is not listed under **Programs and Features**. For more information, see *Black Ice Cleaner* in the *SmartPlant Markup Plus Troubleshooting Guide*.

Errors occur while trying to install Blazon

Problem

Errors occur while trying to install Blazon.

TIP You can view the error message in the Blazon installation log file. The name and location of this log file depends on how SmartPlant Markup Plus is installed. If installing interactively, the log file name is generated by the installer (for example, SmartPlant Markup Plus_20151016080319_0_Blazon.log) and is placed in your %temp% folder. If installing silently, the log file name and location can be specified using the `-l` or `-log` parameters.

Solution

1. Click **OK** on the error message dialog box.
2. Click **Finish** on the installation wizard to complete setup.
3. From the **Start** menu, click **Control Panel > Administrative Tools > Services** to verify that **Net.TCP Port Sharing Service** status is **Started**.
4. Turn off **Windows Firewall**.
5. Turn off any virus scanning software.
6. From the **Start** menu, click **Control Panel > Programs and Features**. Right-click **SmartPlant Markup Plus** and select **Uninstall**.
7. Delete the Markup folder from *[installation location]\SmartPlant*.
8. Restart your computer.

NOTE If you are using a virtual machine, make sure you are logged on from the console only. If it is a physical machine, please go physically to the machine to install the setup. Do not use Remote Desktop, VNC, or any other connection method.

To check if you are logged on using the console on a VM, open **Task Manager**. Select the **Users** tab. The **Session** value should display **Console**.

9. Try to install SmartPlant Markup Plus again.

SmartPlant Markup Plus incorrect access error

Error Message

Incorrect access given to users and User Access Control Level is On.

Solution

Provide Read and Write privileges to the users for the C:\Temp directory. For Windows 2008 R2 systems, the possible causes are its registry virtualization and UAC features. Check to be sure UAC is turned off.

Check the Role Services installed for IIS 7

Problem

You have installed the SmartPlant Markup Plus Server before installing SmartPlant Foundation.

Solution

For Windows Server 2008 R2 with SmartPlant Server Manager:

- Add Internet Information Services (IIS) 7 with the following role services:
 - Microsoft ASP.Net
 - Microsoft .NET Framework 4
 - Internet Information Services (IIS) 6 Management Compatibility components:
 - IIS 6 Management Compatibility - IIS 6 Metabase Compatibility
 - IIS 6 Management Compatibility - IIS 6 WMI Compatibility
 - IIS 6 Management Compatibility - IIS 6 Scripting Tools
 - Authentication
 - Security - Basic Authentication
 - Security - Windows Authentication

Testing the CSF/PDF file conversion

View rendition (CSF) will not generate

Problem

A view rendition (CSF) is not generated when selecting **Generate View Rendition** on a PDF file in the SmartPlant Foundation Desktop Client.

Solution

From the Command Prompt, follow the below steps to test view rendition (CSF) generation.

1. Verify that the SmartPlant Markup Plus Server status is **UP** on the **Markup Server Status** page (**Start > All Programs > Intergraph SmartPlant Markup Plus > Markup Server Status**).
2. To test view rendition (CSF) generation, create a Microsoft Word document (such as test.docx) and a .dgn file (such as tag.dgn) in the C:\temp folder.
3. Type the following commands at the Command Prompt:

```
dmredl.exe -p c:\temp\test.docx -csf c:\temp
```

```
dmredl.exe -p c:\temp>tag.dgn -csf c:\temp
```
4. Verify that test.csf and tag.csf have been generated in the C:\temp folder.
5. If only tag.csf is generated, go to *File conversion (CSF/PDF) fails from the command line* (on page 38).
6. If both tag.csf and test.csf are not generated, go to *File conversion (CSF/PDF) fails from SmartPlant Foundation*.

File conversion (CSF/PDF) fails from the command line

Use the following steps if your file failed to convert to the CSF format.

1. Open Microsoft Word and complete the installation.
2. Look in C:\temp for a text file that will have the same file name as the file to be converted (as shown in *View rendition (CSF) will not generate* (on page 38)). This text file contains an error message from the SmartPlant Markup Plus Blazon server.

NOTE If the log file contains the following error message, please contact *Intergraph Customer Support* (<http://support.intergraph.com>).

```
File = c:\temp\Test.docx ~ License Expired ~ Invalid License ~
publish_error
```

3. If the test.docx.log file contains one of the following error messages, refer to the *Configuring CSF Writer* topic in the *SmartPlant Markup Plus Installation and Setup Guide*.
 - File = C:\Temp\Test.docx ~ Unable to load file: C:\Temp\Test.docx ~ Can't open source file(s) ~ Error opening one or more files ~ publish_error
 - File = c:\temp\Test.docx ~ Job aliveness check failed ~ publish_error

- File = c:\temp\test.docx ~ Exception processing filepublish_error
4. If the test.docx.log file contains the following error message, you need to set two system environment variables (TEMP and TMP). Refer to the following steps to resolve the error message.
- File = c:\temp\test.docx ~ Can't open source file(s) ~ Critical CDL Error: Print Publishing: Temp folder not found (0x005B):
c:\temp\test.docx ~ Error opening one or more files ~ Unable to load file: c:\temp\test.docx ~ publish_error
5. If the Job Processor Status page contains the error messages listed below, save the Office file to your machine in the same file format as the Office version located on the server, and then try converting the Office file to CSF again.

error_x0020_0	Critical CDL Error (0x800A): 'Initialization of 'System.Windows.Documents.FixedDocument' threw an exception.' Line number '4' and line position '3'.
error_x0020_1	CDL Error 23, Failed to load: C:\Windows\Temp\14230955621_xlsx.xls
error_x0020_2	CDL Error 23, Failed to load: C:\Windows\TEMP\SPFFileService\d7ee9ce4-03f5-43b1-9844-8b3a5cc997ad\9e9b1ebc-1878-4708-9525-7e25dfbdc9e\1a.xlsx.xlsx
error_x0020_3	Unable to load file: C:\Windows\TEMP\SPFFileService\d7ee9ce4-03f5-43b1-9844-8b3a5cc997ad\9e9b1ebc-1878-4708-9525-7e25dfbdc9e\1a.xlsx.xlsx
error_x0020_4	Error opening one or more files
error_x0020_5	Can't open source file(s)

NOTE If the file conversion still fails after you perform steps 1 through 5, the CSF Writer and the SaveAsXPS functionality are not working properly.

6. If the Job Processor Status page contains the error messages listed below, browse to C:\Program Files\IGC\IGC Writer and open the BIPrint.ini file.

error_x0020_0	CDL Error 23, Failed to load: C:\Windows\Temp\14230884771_ppt.xls
error_x0020_1	CDL Error 23, Failed to load: C:\Windows\TEMP\SPFFileService\ef4016ca-fc55-4028-af27-bdf0ecd5d62\8aff71a0-41ba-4cd3-958c-e9b4fdee71b9\SPF 2009 Web Portal Demo 090209.ppt.ppt
error_x0020_2	Unable to load file: C:\Windows\TEMP\SPFFileService\ef4016ca-fc55-4028-af27-bdf0ecd5d62\8aff71a0-41ba-4cd3-958c-e9b4fdee71b9\SPF 2009 Web Portal Demo 090209.ppt.ppt
error_x0020_3	Error opening one or more files
error_x0020_4	Can't open source file(s)

Modify the BIPrint.ini file as described below:

- Remove the file extensions or place a semicolon in front of the file extensions.
- Set the **Use DDE for Printing** value to **Yes**.

TIP See the following figure for an example of the BIPrint.ini file before and after the modifications described above.

```
Before edits
SaveAsXPS]
Excel=xls,xlsx,xlsm
PPT=ppt,pps,pptx,ppsx
Visio=vsd,vdx,vsd
Word=doc,docx,dotm
*****

After edits
[UseDDEForPrinting]
value=Yes

[SaveAsXPS]
Excel=xls,xlsx,xlsm
;Removed the .ppt related entries PPT=ppt,pps,pptx,ppsx
Visio=vsd,vdx,vsd
Word=doc,docx,dotm
```

For Microsoft Windows Server 2003, use the following instructions.

1. Right-click **My Computer** and select **Properties**.
2. Select the **Advanced** tab and click **Environment Variables**.
3. Set the **System variables TEMP** and **TMP** to **Variable value** %SystemRoot%\TEMP.
4. Click **OK** to dismiss the dialog boxes and save your changes.

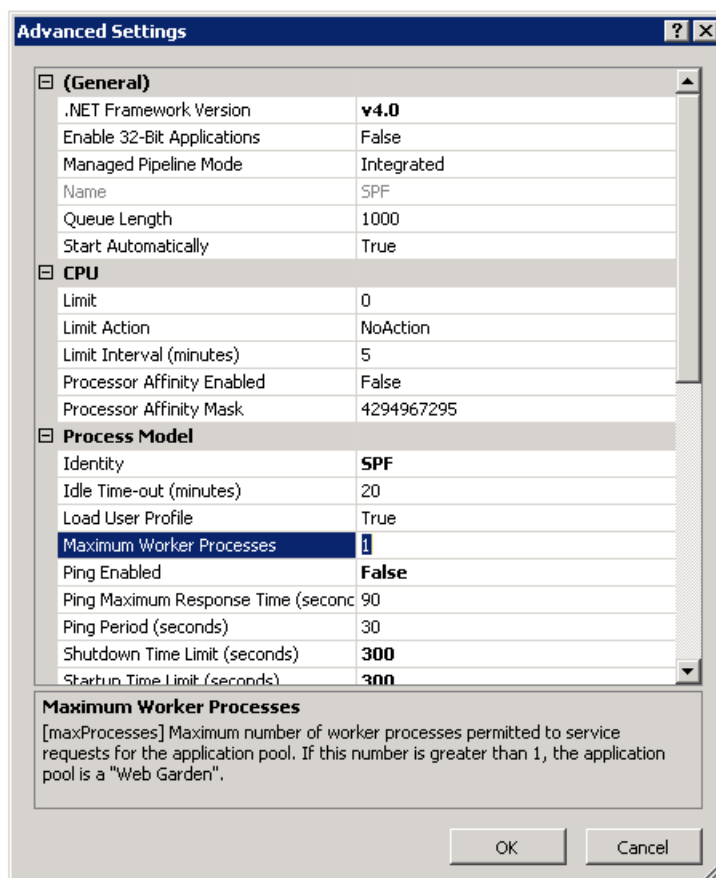
For Microsoft Windows Server 2008 R2, use the following instructions.

1. Right-click **My Computer** and select **Properties**.
2. Select **Advance system settings** and click **Environment Variables**.
3. Set the **System variables TEMP** and **TMP** to **Variable value** %SystemRoot%\TEMP.
4. Click **OK** to dismiss the dialog boxes and save your changes.

Verify IIS settings on Windows Server 2008 R2 for CSF conversion

1. Click **Start** and type **Administrative Tools** in the **Search programs and files** box.
2. Select **Administrative Tools** from the Start menu.
3. Double-click to open the **Internet Information Services (IIS) Manager**.
4. Expand the tree view and click **Application Pools**.
5. Select the SmartPlant Foundation server site.
6. Right-click and select **Advanced Settings**.

7. Verify that the **Maximum Worker Processes** box is set to 1.

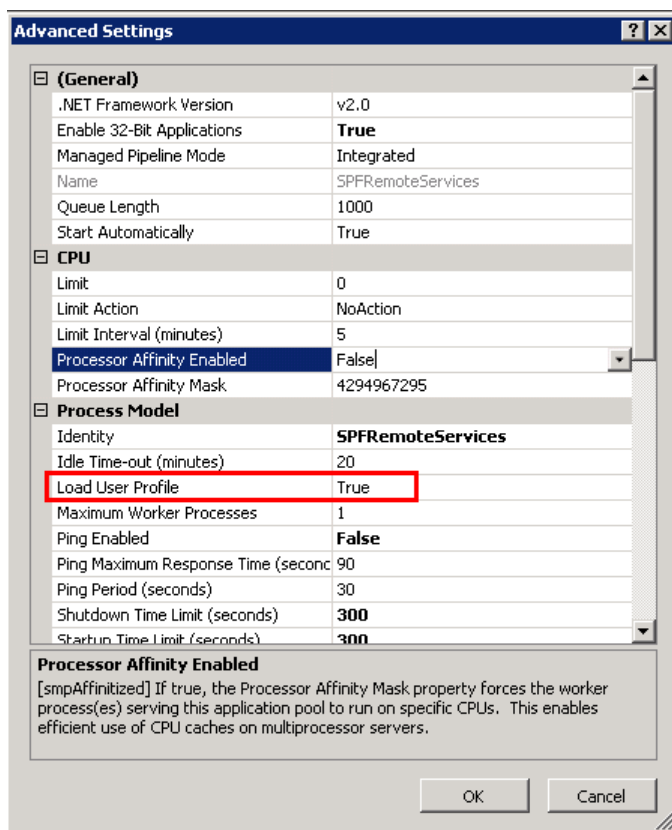


Check load user profile settings

Verify that the following options are set to **True** by editing the **Advanced Settings** of the application pool.

1. Using IIS Manager, set the **SPFRemoteServices** application pool **Load User Profile** property to **True**.
2. Using IIS Manager, set **Load User Profile** to **True**. You can do this by editing the **Advanced Settings** of the application pool.

NOTE If the file conversion still does not work, go to Collect debug files for alternate rendition.



SmartPlant Markup Plus server status is unknown or down

Problem

The SmartPlant Markup Plus Server **Status** is **UNKNOWN** or **DOWN** in the **Job Processor Status** section of the **SmartPlant Markup Plus Server Status** page.

Job Processor Status

Machine	Status	Last Checked
Machine Name	UNKNOWN	2/10/2014 10:54:05 AM

Solution

Use the following steps to restart Blazon Enterprise Services.

1. Click **Start > Control Panel > System and Security > Administrative Tools > Services**.
2. Verify that the **Net.TCP Port Sharing Service** status is **Started**.
3. Restart Blazon Enterprise Services:
 - a. Right-click **IGC JobProcessor** and select **Restart**.
 - b. Right-click **IGC Blazon Enterprise QueueServer** and select **Restart**.

4. Recycle the **Blazon AppPool** application pool.
5. Restart the computer.
6. Check the server status again in the **Job Processor Status** section of the **SmartPlant Markup Plus Server Status** page.

WARNING On your computer, you must use a domain user account that has administrative privileges to avoid permissions errors after installing Blazon Enterprise Services. The services cannot run correctly on a local system account because the services must interact with other processes and components. Attempting to run Blazon Enterprise Services on a local system account will cause unexpected behaviors with Blazon Enterprise Services.

Thumbnail generation does not work properly

Error Message

Thumbnail Generation does not work properly.

Solution

IMPORTANT Ensure that SmartPlant Markup Plus is installed properly.

1. Remove SmartPlant Markup Plus using the **Control Panel**.
2. Install SmartPlant Markup Plus again.

SmartConverter Troubleshooting

SmartPlant Fusion uses SmartConverter to extract the content file from Drawing files and this content file is further processed for tag extraction.

For the SmartConverter to run on the SmartPlant Foundation server, you must ensure that SmartSketch is your default symbol editor, set DCOM configuration settings, and grant full control access to a registry key.

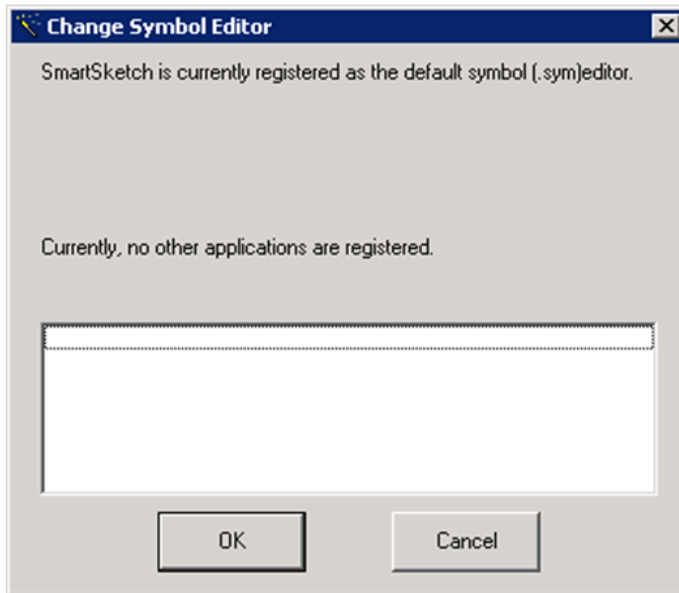
SmartSketch is not registered as the default symbol editor

Error Message

SmartSketch is not registered as the default symbol editor.

Solution

Run the **changesymboleditor.exe** utility located in the SmartSketch program folder to ensure that SmartSketch is the default symbol editor.



SmartSketch Symbol is not in the Registry

Error Message

SmartSketch is not added to the Registry. Run SmartSketchSymbol.Reg.

Solution

IMPORTANT This procedure ensures that the SmartSketch Symbol entry appears correctly in DCOM Configuration. If SmartSketch is loaded on your computer but you are unable to find the SmartSketch Symbol entry, the application name for SmartSketch in DCOM Configuration may have been changed by other loaded software.

To reset the name to SmartSketch Symbol,

- Double-click **SmartSketchSymbol.reg** in the SPFSmartConverter subfolder of the SmartPlant Foundation installation folder. For example: *<product installation folder>\SmartPlant\Foundation\SPFSmartConverter*.

Authentication level must be set to NONE

Error Message

Authentication Level needs to be set to NONE.

Solution

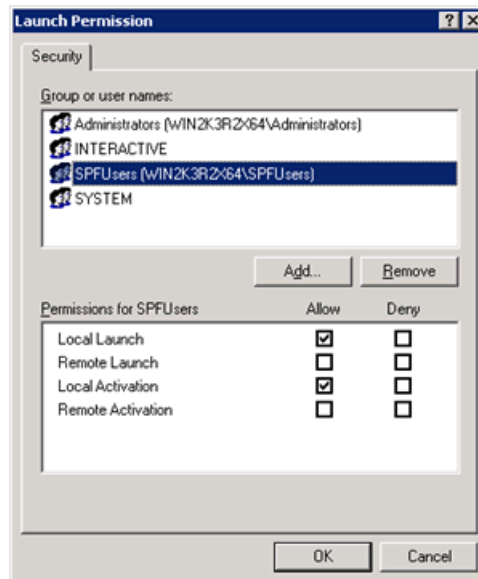
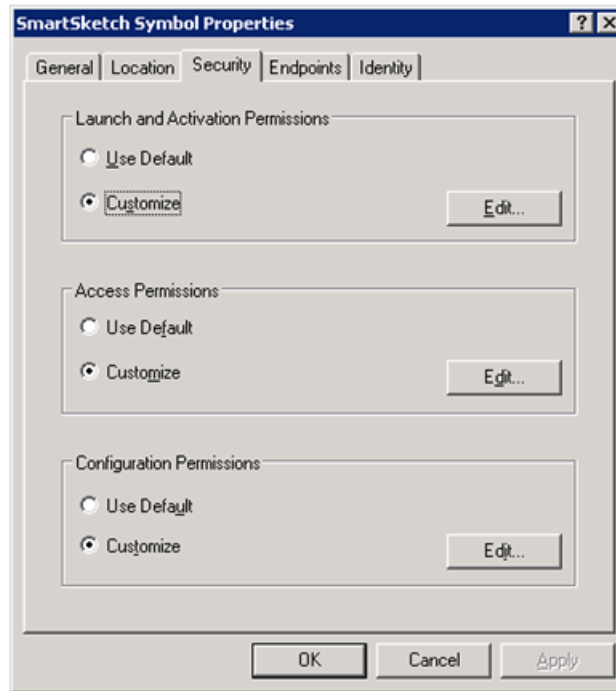
The following configuration is required on all SmartPlant Foundation servers that run the SmartConverter.

1. Click **Start > Administrative Tools > Component Services**.
2. In the tree view, expand **Component Services > Computers > My Computer > DCOM Config**.

3. Right-click **SmartSketch Symbol**.
4. On the shortcut menu, click **Properties**.
5. Click the **General** tab.
6. Change the **Authentication Level** option to **None**.
7. Click the **Identity** tab.
8. Click **This user**, and type the server name and user name separated by \ in the **User** box.

NOTE The user must have permission to run SmartSketch on the SmartPlant Foundation Server.
9. In the **Password** and **Confirm password** boxes, type the password for the SmartSketch Symbol identity user account.
10. Give the SPFUsers group permission to launch SmartSketch by performing the following steps:
 - Click the **Security** tab.
 - Change the **Launch and Activation Permissions** to **Customize**.

- Click **Edit** in the **Launch and Activation Permissions** section, and add the SPFUsers group created by the SmartPlant Foundation Server Manager.



- Click **OK** to dismiss the **Launch Permission** dialog box, and then **OK** again to dismiss the **SmartSketch Symbol Properties** utility.

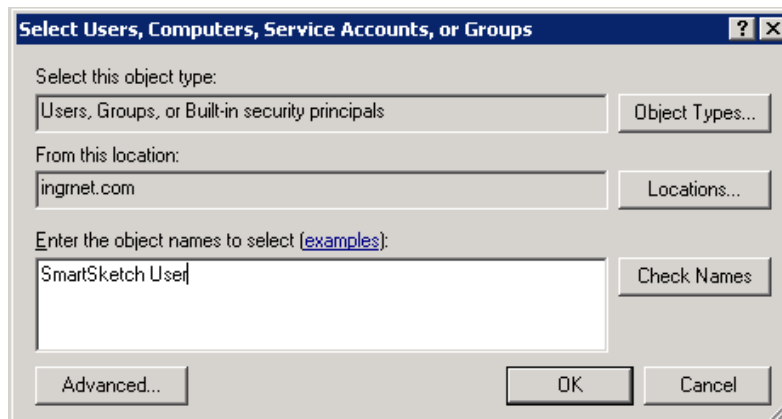
Enable full control of registry keys for the SmartSketch symbol identity user account

Error Message

Set Identity to (SmartSketch User).

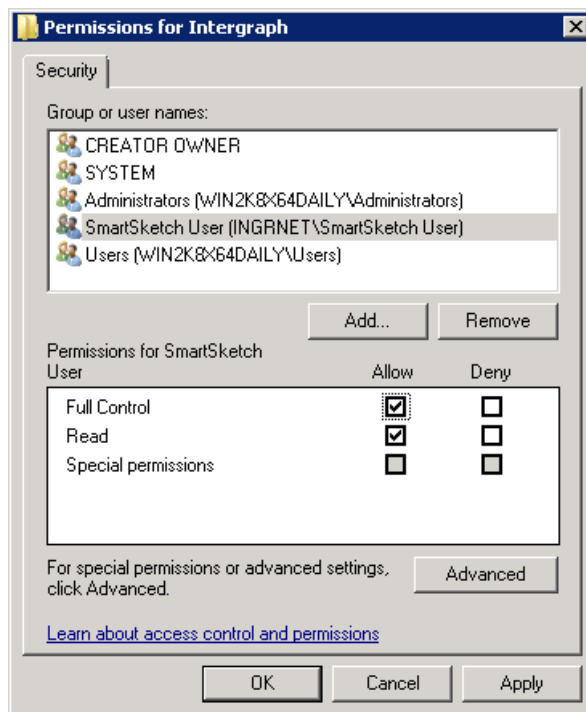
Solution

1. Click **Start > Run**, and then enter **regedit** to edit the registry.
2. Open the **HKEY_USERS** folder.
3. Browse to the **HKEY_USERS\DEFAULT\Software** key.
4. If an **Intergraph** folder appears under **Software**, select the **Intergraph** folder.
5. Click **Edit > Permissions**.
6. Click **Add** on the **Permissions for Intergraph** dialog box.
7. In the **Select Users, Computers, Service Accounts, or Groups** dialog box, add the SmartSketch Symbol Identity user account.

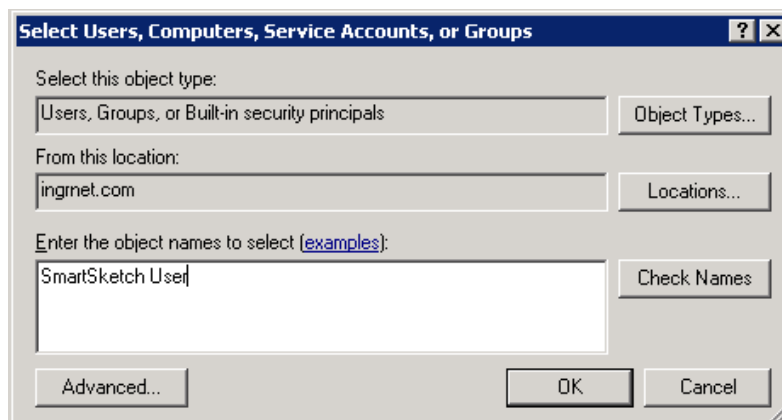


8. Click **OK** to close the **Select Users, Computers, Service Accounts, or Groups** dialog box.

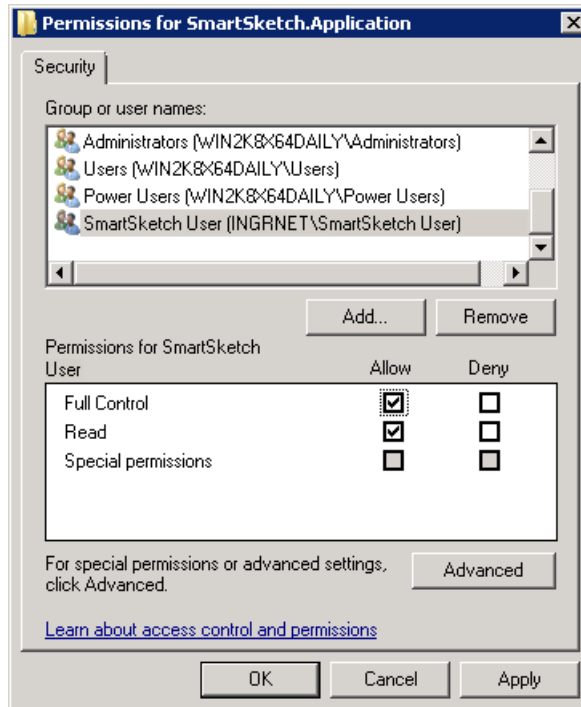
9. In the **Permissions for Intergraph** dialog box, select the SmartSketch Symbol Identity user account, and then select the **Allow** check box for **Full Control** in the **Permissions for SmartSketch User** list.



10. Click **OK**.
11. Open the **HKEY_LOCAL_MACHINE** folder.
12. Browse to the **HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Intergraph\Applications\SmartSketch.Application** registry key.
13. Click **Edit > Permissions**.
14. Click **Add** on the **Permissions for SmartSketch.Application** dialog box.
15. In the **Select Users, Computers, Service Accounts, or Groups** dialog box, add the SmartSketch Symbol Identity user account.

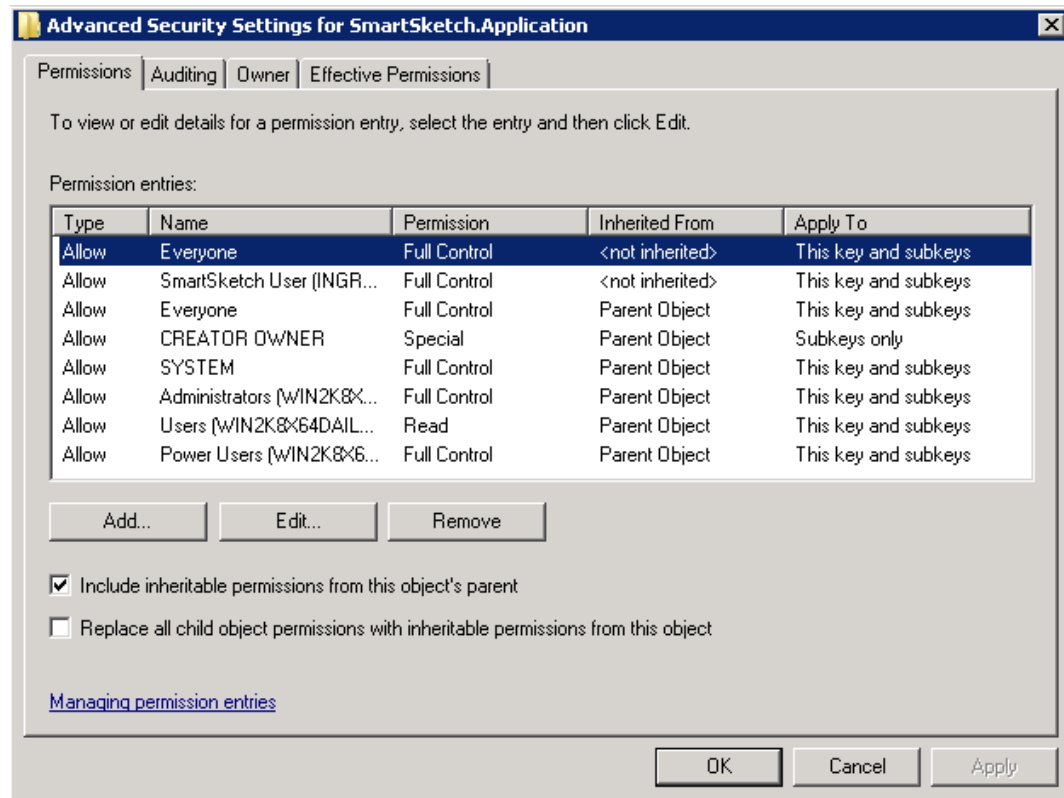


16. Click **OK** to close the **Select Users, Computers, Service Accounts, or Groups** dialog box.
17. In the **Permissions for SmartSketch.Application** dialog box, select the SmartSketch Symbol Identity user, and then select the **Allow** check box for **Full Control** in the **Permissions for SmartSketch User** list.



18. Click **Advanced** on the **Permissions for SmartSketch.Application** dialog box.
19. In the **Advanced Security Settings for SmartSketch.Application** dialog box, ensure that the **Replace all child objects permissions with inheritable permissions from this object** check box is cleared.

IMPORTANT If this check box is selected, important privileges will be removed from the subkeys.



20. Click **OK** to close the **Advanced Security Settings for SmartSketch.Application** dialog box.
21. Click **OK** to close the **Permissions for SmartSketch.Application** dialog box.

Local Service account does not have permissions

Error Message

LOCAL SERVICE does not have Launch and Activation Permissions.

Solution

1. Open Component Services, expand **Component Services > Computers**.
2. Right-click **My Computer** and click **Properties**.
3. Click the **COM Security** tab.
4. In the **Launch and Activation Permissions** area, click **Edit Default**.
5. Click **Add**.
6. Type **Local Service**, and then click **OK**.
7. Select **Local Service**.
8. Check the **Allow** check box for the following items:

- Local Launch
 - Local Activation
9. Click **OK**, and then click **OK** again.

DAT MIME types is not found

Error Message

.dat mime type is not found.

Solution

1. On the application server, open the **Control Panel**.
2. Open **Administrative Tools > Internet Information Services**.
3. In the tree view, select the **Default Web Site** node, and then double-click **MIME Types** in the **Features View** window.

TIP If the **Features View** window is not visible, right-click the **Default Web Site** node in the tree view and click **Switch to Features View**.
4. If the file extension for files that you want to download and view using the SmartPlant Fusion client does not appear in the list, click **Add** in the **Actions** window.
5. In the **Add MIME Type** dialog box, do the following:
 - In the **File name extension** box, type **.dat**.
 - In the **MIME type** box, type MIME type for the file type.

TIP If you do not know the correct MIME type for a file extension, you can use **application/octet-stream** as the default.
6. Click **OK** to save the new MIME type.

Tags are not extracted for non- English characters

If the tags are not extracted for non-English characters, use the following procedures:

Change the Encoding of the SPFHotspotter.ini file to Unicode

1. Open the SPFHotspotter.ini file.
2. Click **File > Save as**.
3. Select **Unicode** from the **Encoding** list to set the encoding type as unicode.
4. Click **Save** to save the changes.

Change the Encoding of the pre-processed XML files to Unicode

1. Open the pre-processed XML file.
2. Click **File > Save as**.
3. Select **Unicode** from the **Encoding** list to set the encoding type as unicode.
4. Click **Save** to save the changes.

SmartPlant Fusion Troubleshooting

Unable to extract tags in content discovery task

Problem

The error message “Content extraction failed” appears if you do not configure the patterns before running a content discovery task in a newly configured plant. .

Solution

When you are manually configuring tag patterns in a new plant, you must ensure that the FusionTextContentRules.ini file is present in the FusionRuleFiles folder, located at *[drive]: \SmartPlant Foundation 2016 Server Files\Web_Sites\FDWServer\FusionRuleFiles*, with the same name as the new plant.

Unable to load sample data in a newly configured plant

Problem

The sample data load file fails in a newly configured plant.

Solution

You must regenerate the sample data when configuring a new plant. To regenerate the sample data, rename the plant name in the existing XLSM files located at *[drive]: \SmartPlant Foundation 2016 Server Files\Web_Sites\SPFusionServer\SampleData\Sample Project Setup* folder, and click **Generate Load file** to generate the XML files. After you have generated the XML files, load them using the SmartPlant Foundation Loader.

TruView Integrator for SPE/SPO Troubleshooting

SmartPlant Fusion uses TruView Integrator for SPE/SPO to view the laser scan files that are processed for tag extraction.

Check for installed software

Error Message

You must first install TruView Integrator V3.1 or later.

Solution

1. Remove TruView Integrator using the **Control Panel**.
2. Install TruView Integrator 3.1 or later.

IMPORTANT Leica TruView is a prerequisite for being able to use TruView Integrator.

Setting the MIME types at the website level

Error Message

This Leica TruView data was published by Cyclone Publisher 5.6. Distance measurements are correct, but individual coordinates may not be correctly reported. You data administrator may wish to republish this data with an updated version of Cyclone Publisher (version 5.7.1 or later).

Solution

1. On the application server, open the **Control Panel**.
2. Open **Administrative Tools > Internet Information Services**.
3. In the tree view, select the **Default Web Site** node, and then double-click **MIME Types** in the **Features View** window.

TIP If the **Features View** window is not visible, right-click the **Default Web Site** node in the tree view and click **Switch to Features View**.
4. If the file extension for files that you want to download and view using the TruView Integrator for SPE/SPO client does not appear in the list, click **Add** in the **Actions** window.
5. In the **Add MIME Type** dialog box, do the following:
 - In the **File name extension** box, type **.ini**.
 - In the **MIME type** box, type MIME type for the file type.

TIP If you do not know the correct MIME type for a file extension, you can use **application/octet-stream** as the default.
6. Click **OK** to save the new MIME type.

Verify the vault configuration for ZFS files

Error Message

Markup file cannot be updated.

Solution

Ensure that the ZFS files that are processed in the content discovery task are available in the TruView Vault.

Unable to perform View Item in Laser Scan and 3D Model action

If a tag does not open in a laser scan or 3D Model when you select a tag and select **View Item in Laser Scan and 3D Model** option.

Use the following steps if you are not able to open the related document in the viewer and view the tag in it.

1. On the client workstation, open Internet Explorer 8 or 9, and click **Tools > Internet options**.
2. Click the **Advanced** tab.
3. In the **Security** section, select the **Allow active content to run in files on My Computer** check box.

IMPORTANT You must enable the LeicaGeosystems.TrUIView.BHOIEContextMenu add-on in the Internet Explorer to view the tags in laser scan files. Click Tools > Manage Add-ons in Internet Explorer and then set LeicaGeosystems.TrUIView.BHOIEContextMenu to Enabled.

Leica TruView Troubleshooting

This section provides troubleshooting information for configuring and using Leica TruView.

Check for installed software

Error Message

Update to Leica TruView V3.2 or greater.

Solution

1. Remove Leica TruView using the **Control Panel**.
2. Install Leica TruView 3.2 or later.

Glossary

3D reader

Validates tags, creates and cross-references the tags to the documents, and extracts visual file and tag data from the 3D models.

alias tag

A tag that is named differently, but represents the master tag in the system.

business objects

Complex objects representing more than one class definition.

content discovery task

Extracts content from the master file, creates and relates, relates master and alias tags to the documents, and relates documents to the organizational items.

database domain discovery task

A process that uses a defined database reader pattern to connect to a database and extract documents and tags along with their properties as defined within the pattern.

database reader

Reads data directly from a database. Administrators can define specific tables and fields to be transferred so that they can be used for data comparisons.

database reader pattern

Defines the database tables and properties that need to be extracted and mapped to classes and properties within SmartPlant Fusion.

delimiter

Identifies the end of a tag.

document attribute

A constant which allows additional information to be added to the data created in SmartPlant Fusion.

document discovery

Reads documents (typically office generate files) and using patterns loads them into SmartPlant Fusion.

document discovery pattern

Defines the base directory that needs to be crawled, the file name pattern to extract and the document name pattern that needs to be created. Additionally, document attributes can also be defined.

document discovery task

A process that uses a document discovery pattern to crawl a directory system and load documents and files that match the specified file pattern. After which thumbnails are created and related to the document.

document index

A defined excel list or a defined data object within SmartPlant Fusion that defines metadata about a file. This is referenced when files are loaded into the system and if a match is found the file will be loaded with the properties defined from the document index.

document name pattern

Defines a document name for files with a specific file name pattern comprised of the parts, constants, and documents attributes.

document naming system

Defines the parts of a file name. Additional information can be defined to define constants and relate them to existing objects in the database when data extraction occurs.

domain tag

A representation of the tag, specifically from a discipline within a domain.

drawing reader

Extracts cross-referenced and linked information contained in a drawing file.

duplicate document

A document with multiple files attached but different file types or multiple versions of the same document attached to it.

file index

Specifies the file name, associated name, and attributes for a document before it is processed by the document discovery task.

file name parts

Sections that represent data in a file name.

file name pattern

Consists of one or more file parts with each file part being defined as a document naming system item.

file properties or attributes

Values that are stored on the file object. The data is transferred to the document if the file is selected for data extraction.

hotspotting

Hyperlinks in a document on the area where the tag exists in the file.

image reader

Extracts tag and other related information contained within any image using an Optical Recognition (OCR) engine.

laser scan reader

Captures Leica TruView HDS information created from plant scans.

master file

The file that is used for data and content extraction.

master tags

Extracted tags that follow a set of standard naming conventions in a project or a plant that the engineers should follow for defining tag names.

orphan tags

Tags that are not related to any document or domain tag.

property group

A group of properties.

property list

Allows you to create property group names (interface definition names) and properties (property definitions), which can be related to a business object (class definitions).

regular expression

A pattern that is used for tag matching and defining selected file parts.

separator

Separates file parts and tag parts. Common separators include a dash (-), slash (/), tilde (~), and so forth. For example, the instrument tag LCV-157 uses the separator to separate the tag name (LCV) from the drawing name (157).

tag discovery pattern

Used to extract the master and alias tags from the content of a master file.

tag naming system

Defines the parts of a tag name and relates them to existing objects in the database.

text reader

Captures simple text files and processes the data directly without needing an application to extract the data.

thumbnail

A small size image representation of a larger file intended to make it easier and faster to manage it.

thumbnail rendition

Generates .png images for various file extensions.

title block

The portion of a drawing that contains information about the drawing, such as who created the drawing, when it was created, who approved it, and so on. The type of information included in the title block varies by drawing type, industry, and organization.

transpose

Returns a vertical range of range of cells as a horizontal range, or vice versa.

UoM

A unit of measurement.

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