Welcome to the CARA v5 Configuration Course – July 2022

Barry Prince – Head of Training and Curriculum

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Objectives

- Demonstrate end user functionality.
- Explore and detail the core configuration options of CARA v5.
- Create a complete configuration from new in the recommended order.
- Identify required and optional configuration elements.
- This training includes lab exercises, not a formal exam. A certificate of attendance will be provided at course completion for those who complete the labs.

This training is based on topics from the CARA v5 Configuration manual and the CARA v5 End User manual, which I can provide. These manuals are comprehensive, with detailed instructions and are your primary reference documents for this training and in general when working with CARA v5.


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CARA Version 5.6
Configuration Manual

16 February 2022

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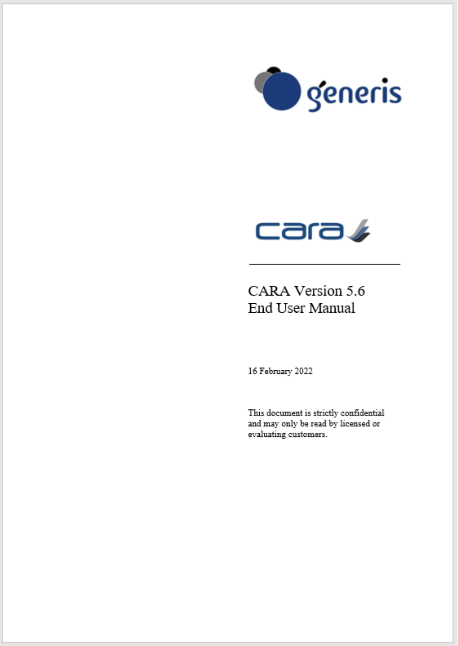
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CARA Version 5.6
End User Manual

16 February 2022

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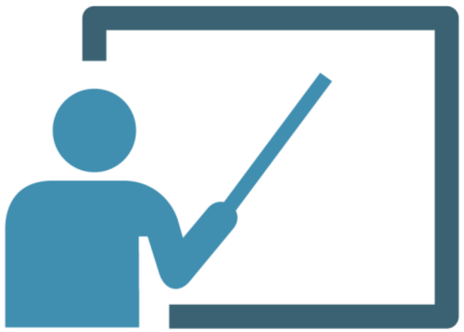
Introductions

- It is not necessary to have previous experience of CARA. End user and configuration overviews are available on our Learning Management System: http://generis.talentlms.com
- Please introduce yourselves: name, location and current knowledge of CARA are a good start!
- If you don’t want to use a microphone please feel free to send chat messages instead.
- Myself: Working in teaching and IT training since leaving university. 8 years at EMC as the EMEA Training Team Leader for Documentum, delivering installation, administration and end user training. Led the roll out of D2 eTMF Lifesciences solution training. Located just outside London. Joined Generis in May 2017. I manage, create and deliver CARA training courses and write the CARA product manuals.



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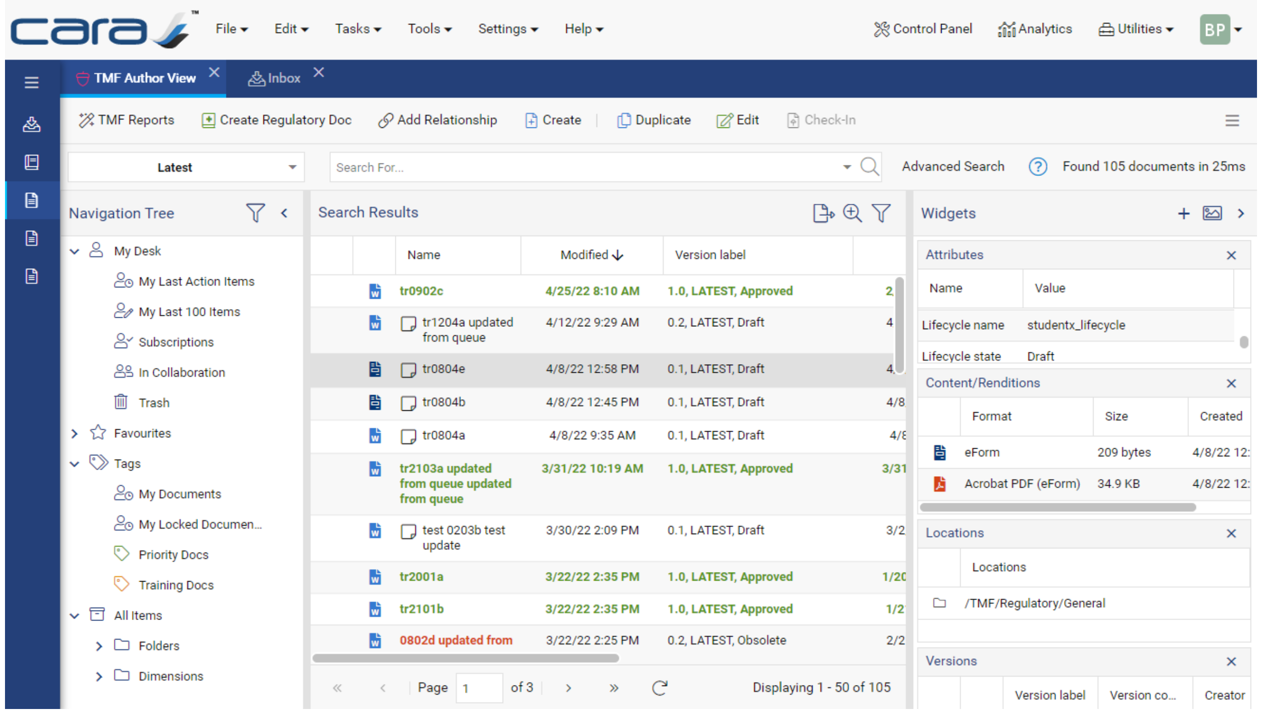
Agenda

Day1

- End user demonstration.
- Core configuration including:
    - Users and groups
    - Dictionaries and taxonomies
    - Type definitions
- Lab part 1

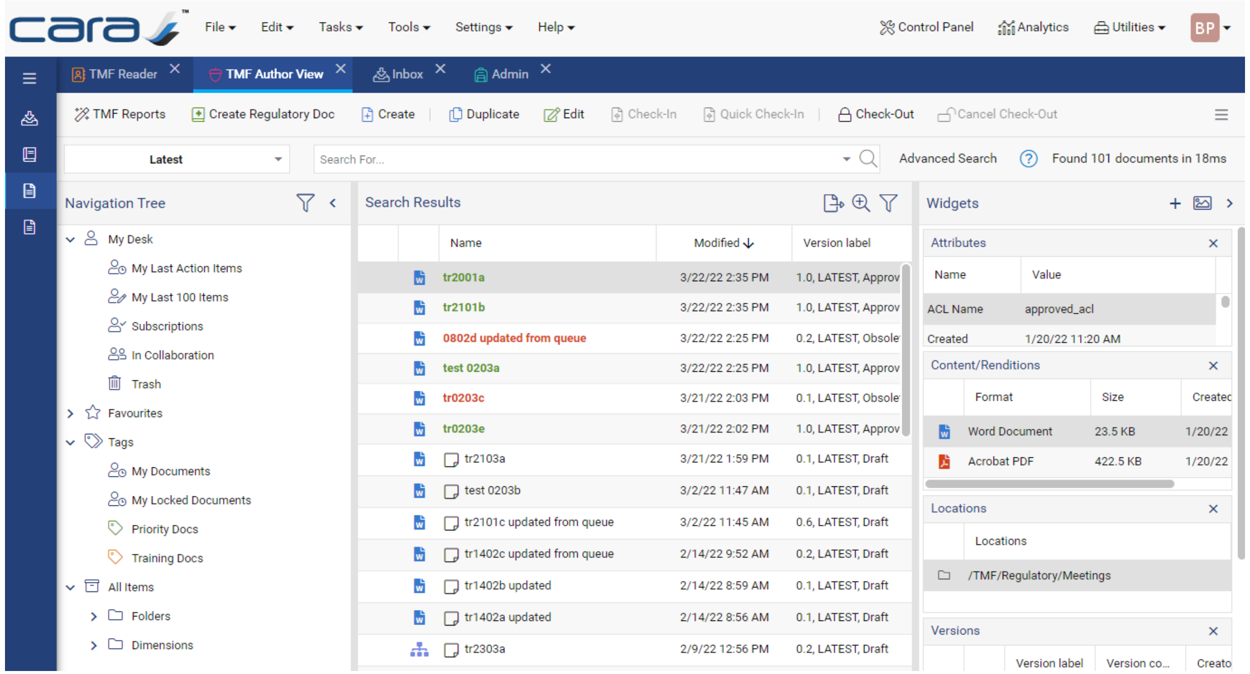
Day 2

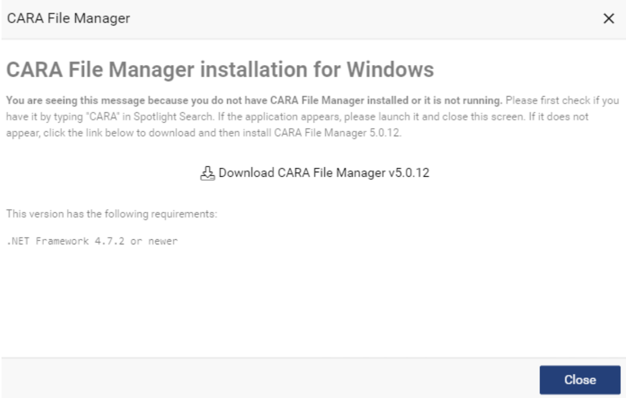
- Additional configuration including:
    - Workflow templates
    - Reports
    - Configuration import and export
- Lab part 2



End User Demonstration

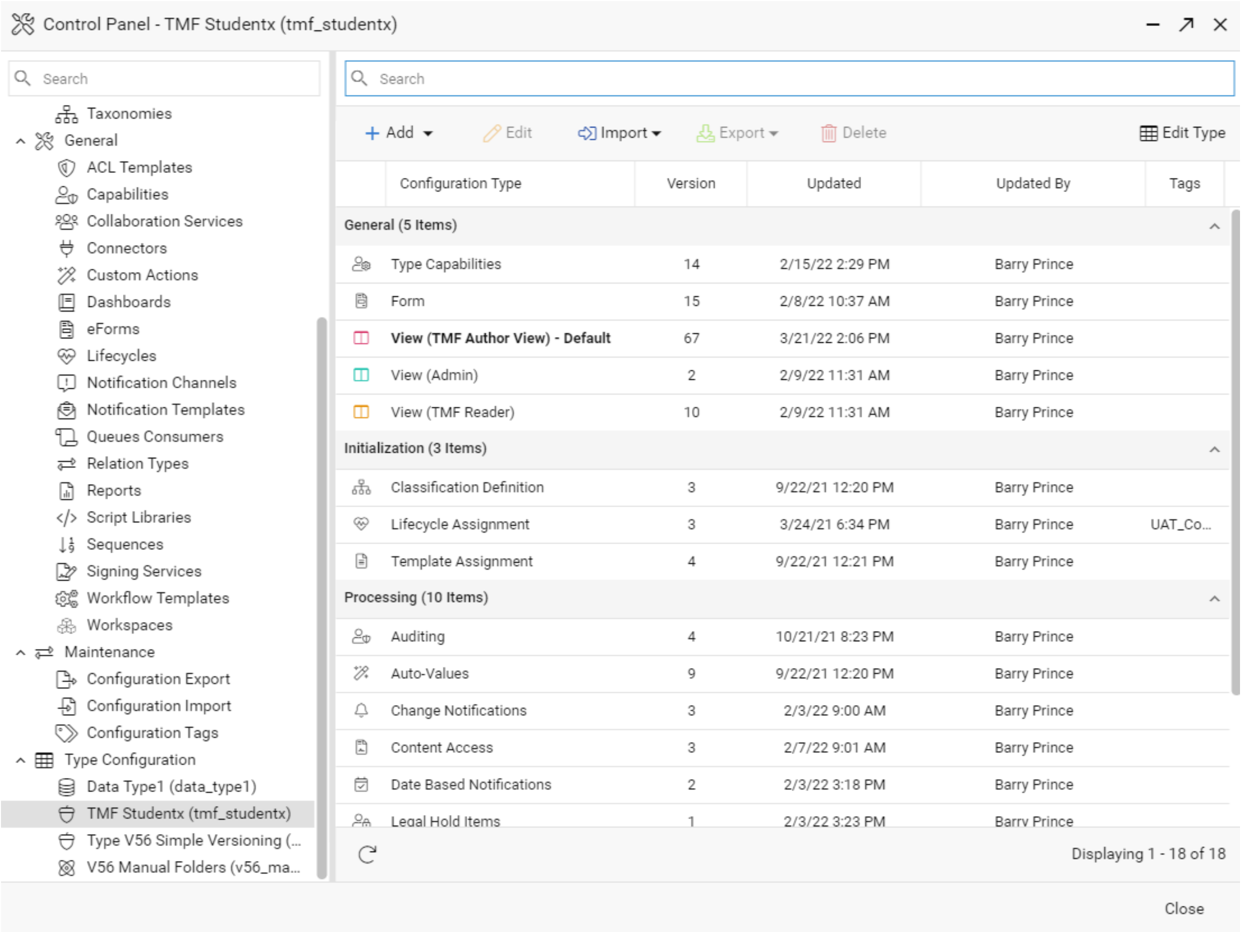
- Demonstrate main end user functions including GUI navigation, document creation, editing, and workflow.
- CARA is browser based, supporting the main browsers.
- CARA file manager simplifies upload and download of files when viewing and editing. User guide walks through the install.





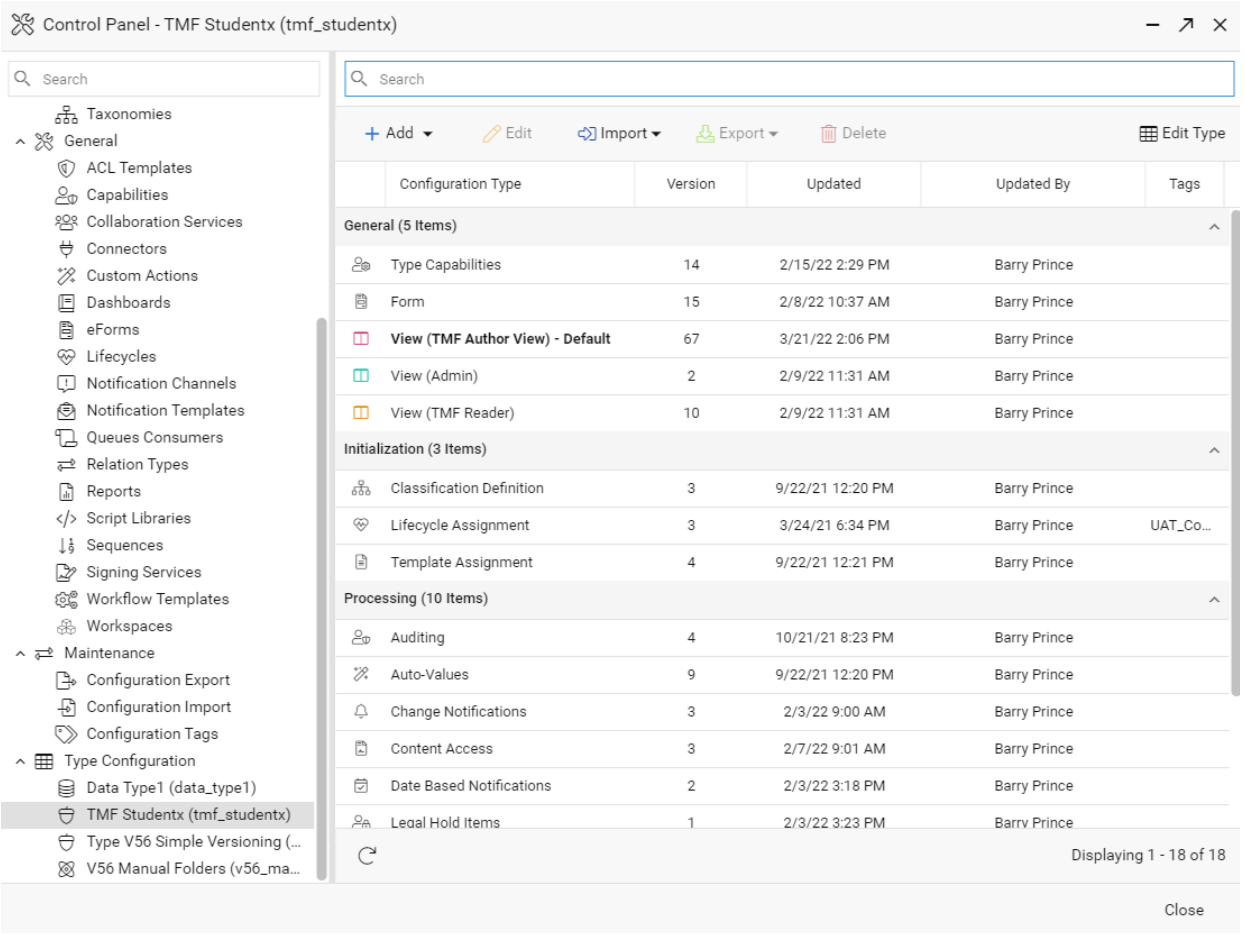
Quick Tour of the Control Panel

- This is where we will spend most of the 2 days.
- Note that a significant amount of configuration is type specific.



Core Configuration Summary and Checklist

1. Users and groups.
2. Set system capabilities.
3. Define at least 1 type.
4. Create dictionaries and taxonomies for the main classification.
5. Set type capabilities.
6. Update the properties form.
7. Configure the default view.
8. Add the view to a workspace.
9. Classification definition, point to your taxonomy.
10. Set template assignment and import templates.
11. Add linking rules (unless folders are manual).
12. Set type security.
13. Create and assign lifecycles.
14. Create workflows.
15. Export configuration.



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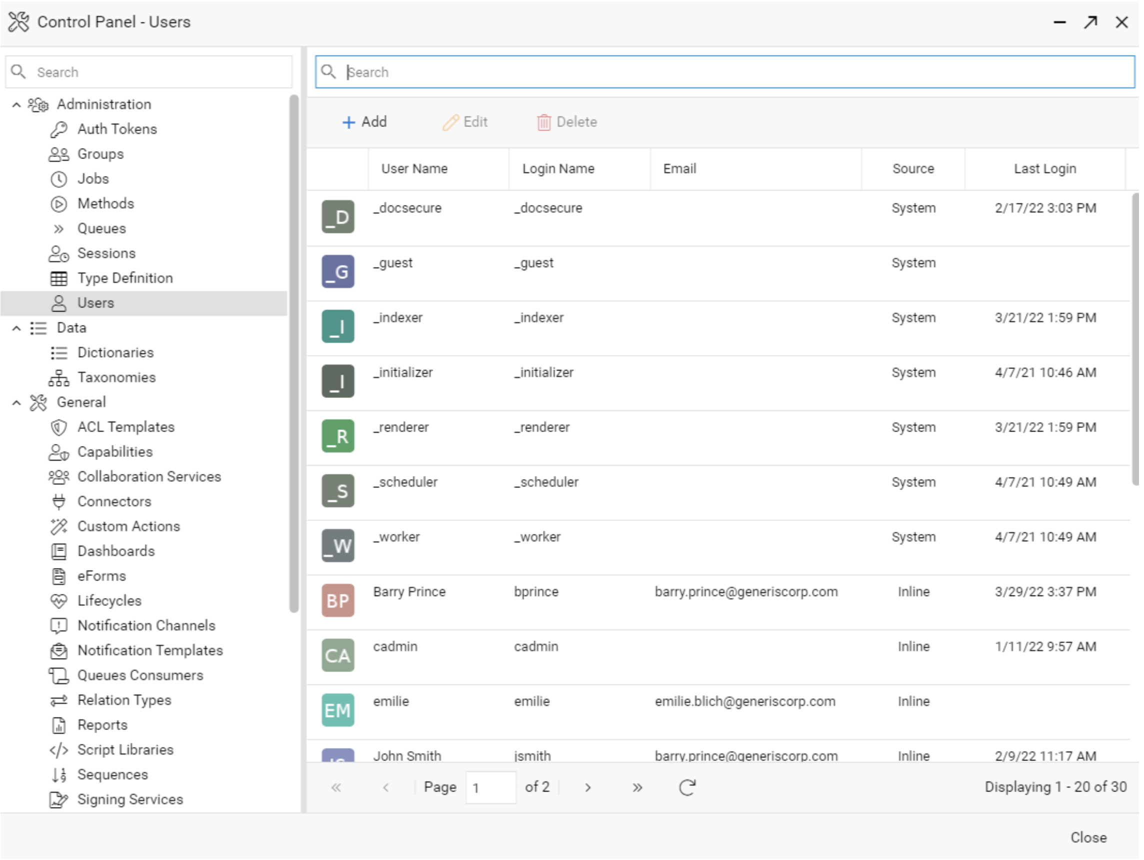
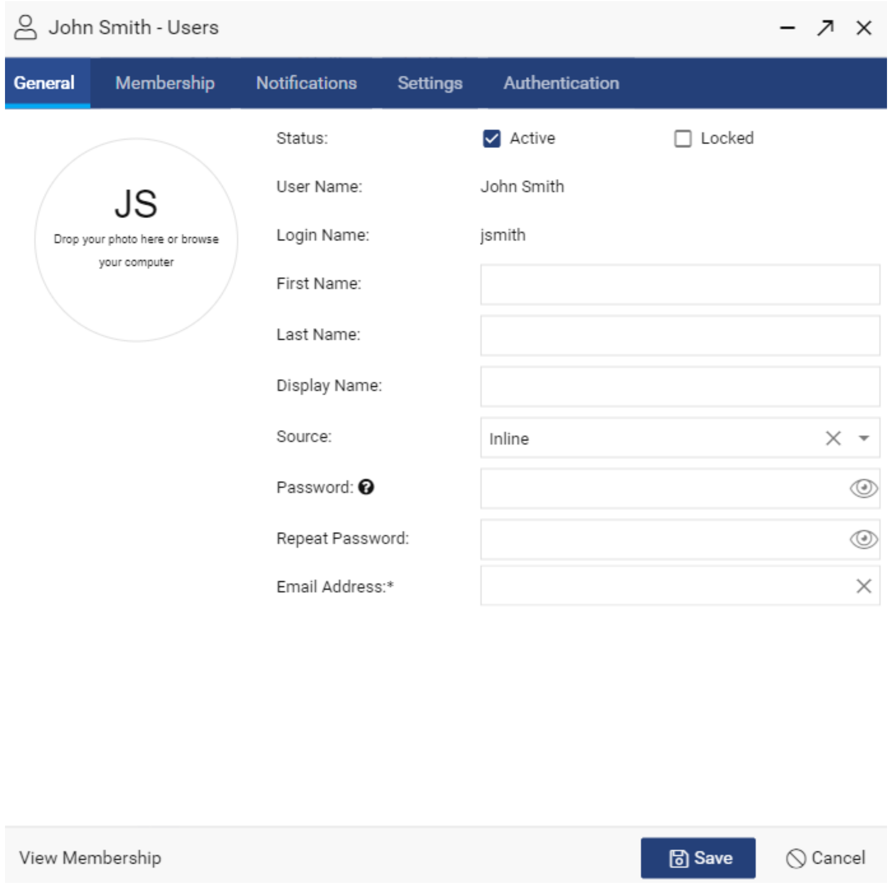
Users

- Created manually or imported via LDAP.
- System users are prefixed with an underscore and cannot be deleted, for example _renderer.
- **Inactive** users are grey.
- **Locked** users have a strikethrough.
- User’s **Audit Trail Report** and **Recent Activity** are available from the right-click menu.
- Users are granted general **System Capabilities** and specific **Type Capabilities** in other configuration windows.
- Users can be renamed, both their username and login name.



User Properties

- **Active**: Allowed to login.
- **Locked**: When the number of password attempts has been exceeded. Default is 5 attempts.
- **User Name** & **Login Name** must both be unique.
- **Source**:
  - Inline - encrypted password stored within CARA. High password complexity is required.
  - LDAP - network password.
  - System - no manual login, uses authentication token.
  - External. Single sign-on on using SAML or OIDC.
  - OKTA – Single sign-on on using OKTA authentication services.
- **Email Address**. Used for notifications. Must be a valid email format.
- **Photo/Image File**. Optional. Drag and drop or browse.
- **Membership: Groups**: Membership can be viewed and set.
- **Notifications: Channel & Locale**. Can be set by users.
- **Settings**: Additional properties set by script only.



Multi-Factor Authentication (MFA)

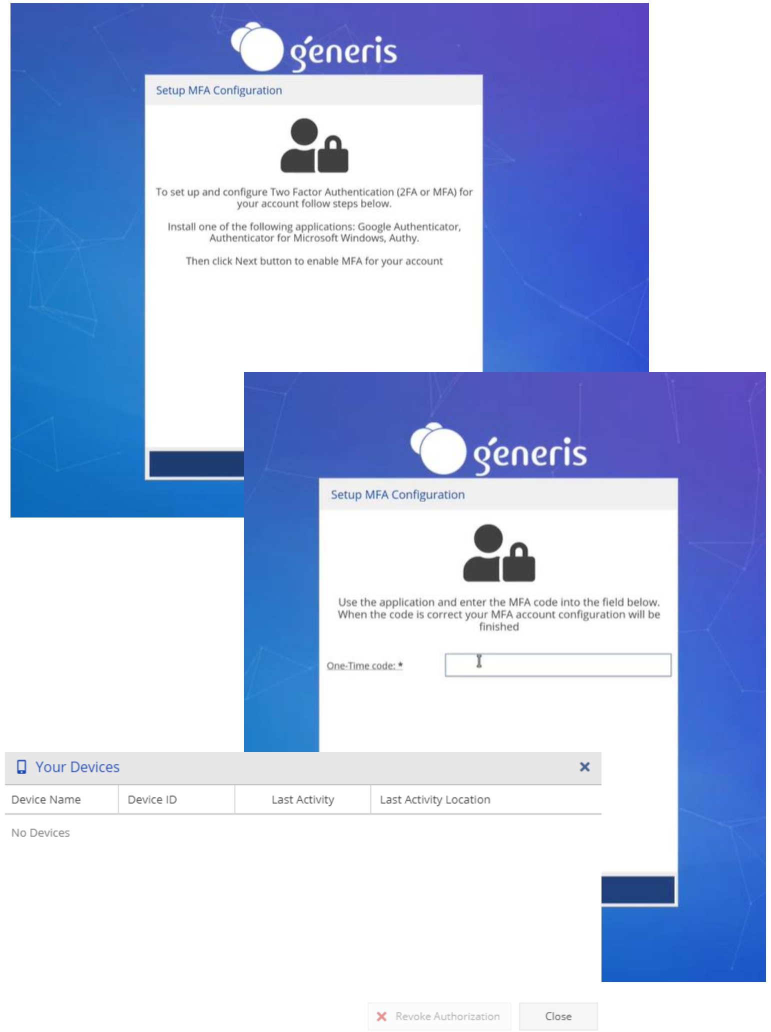
- **MFA** is supported for both user login and e-signatures on tasks and other events.
- Users add a device after initial login. CARA provides a setup code for entry into the users choice of authentication application, such as Google Authenticator. Subsequently the user enters a OTC (One Time Code) when logging in or signing a task or event.
- Users can reset and remove their device in CARA under Your Devices.
- Full instructions are provided in the user and configuration manuals.
- MFA is enabled on the CARA server in the **application-dev.yml file**.

  There are 3 settings in the **authentication** section of the file:

  mfa_enabled. True or False. Applies to login.

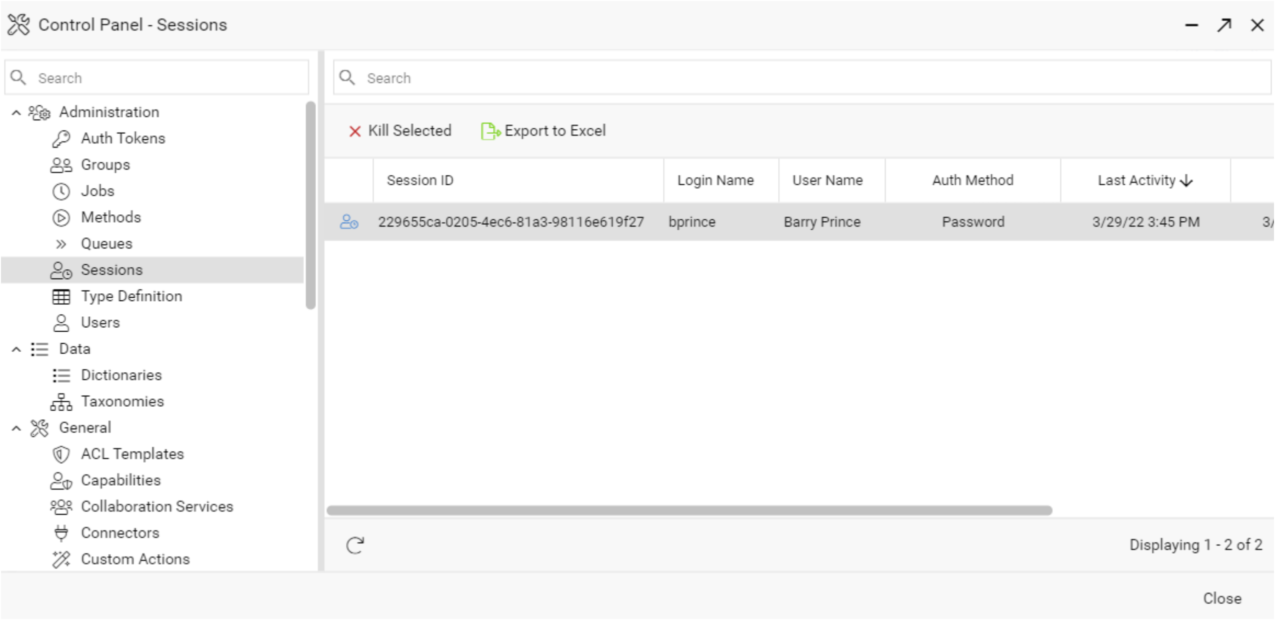
  user_signature_method. OTC or password. Applies to e-signatures.

  exclusions. Users entered here are not required to use MFA.



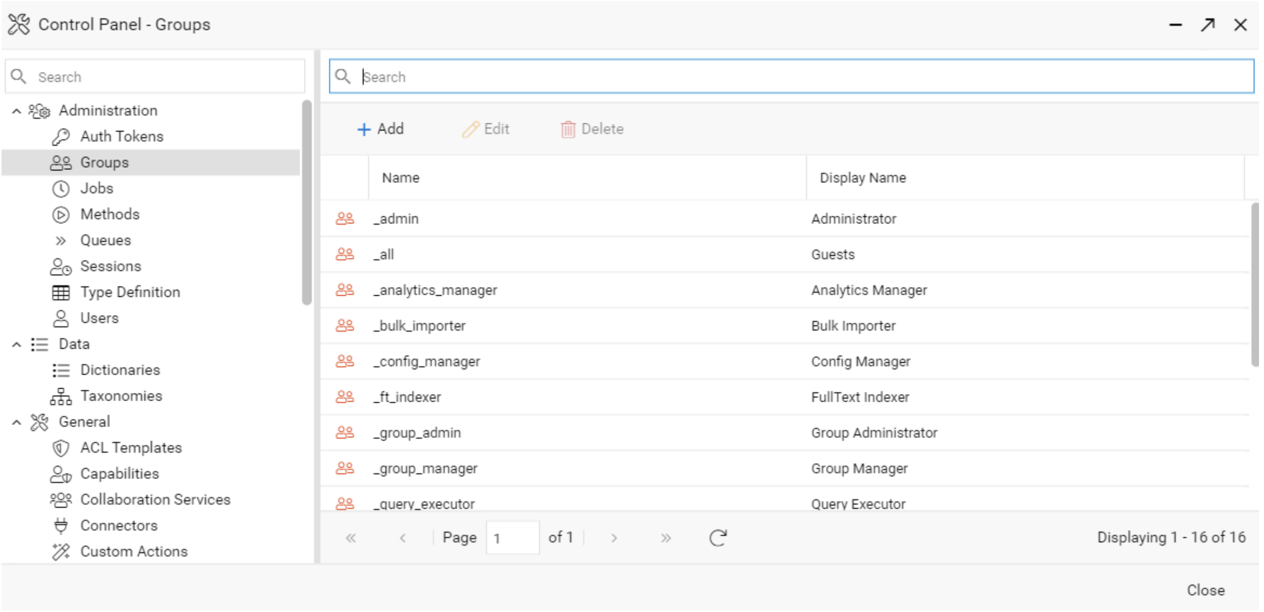
User Sessions

- Current user sessions are visible in a separate window within the control panel.
- Sessions can be killed via the right click menu.
- Includes Last Activity and Login Date.
- Details can be exported.
- Last Login is also available from the main users window.



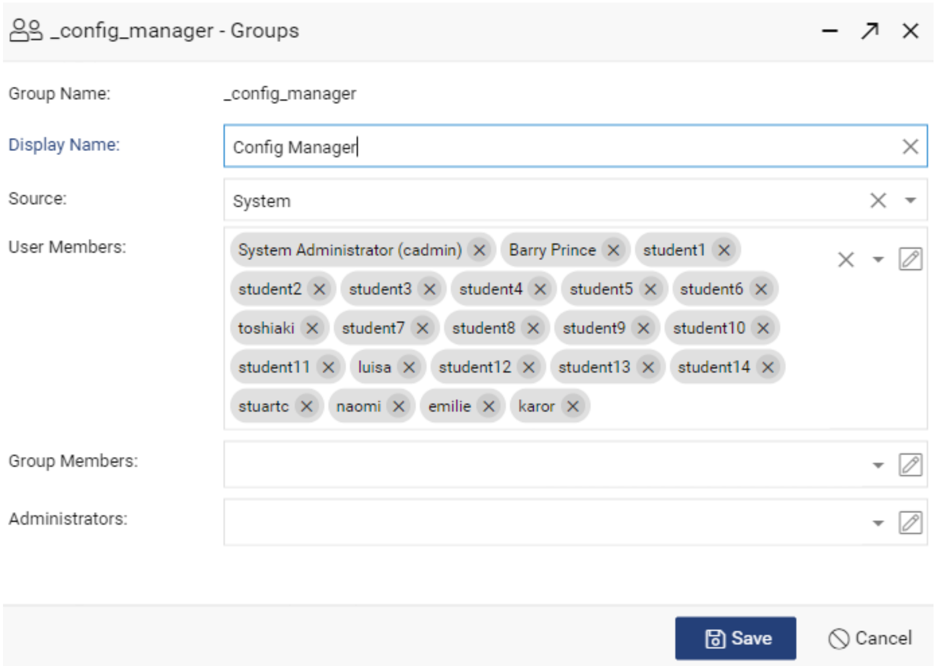
Groups

- Groups are used extensively throughout CARA to determine what users can see and do, for example ACL's, capabilities and view access.
- Created manually or via LDAP, which is indicated by the **Source** field. Group membership can be populated via LDAP (uses a job and config file ldap-ad-authentication.yml).
- System groups are those with an underscore prefix and displayed in red, these cannot be removed. System groups have Source set to System.
- A group's **Audit Trail Report** is available from the right-click menu. It shows changes to the group such as members being added or removed.



Group Properties

- **Group Name** can only contain lowercase letters, numbers and underscores. It cannot be changed once saved.
- Source = Inline, LDAP or System. For manually created groups Source = Inline.
- Groups can be nested within other groups (Group Members).
- Group **Administrators** can add and remove members.



System Groups

_super_admin. Members have access to user sessions, logs, clear cache, authentication tokens, type definitions and queues. It is the only group that can modify system group access.

_admin. Members have access to users, groups, jobs and methods. They cannot modify system group access.

_config_manager. Provides members with access to the control panel. Access within is determined by other group membership.

_analytics_manager. Provides members with access to the analytics window.

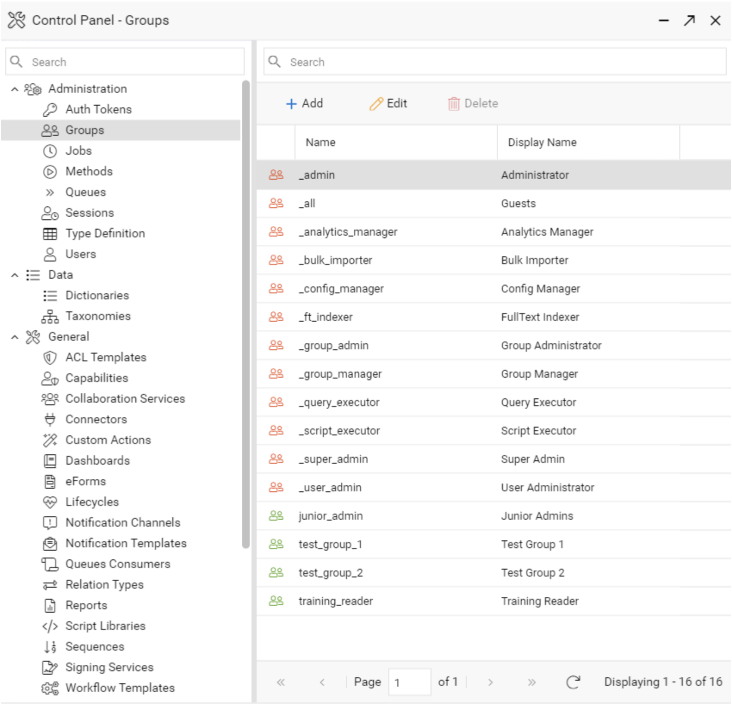
_query_executor. Provides members with access to the query editor.

_script_executor. Provides members with access to the script editor.

_user_admin. Members have access to the users section of the control panel. Members can add and edit users, however they cannot provide or modify user access to system groups.

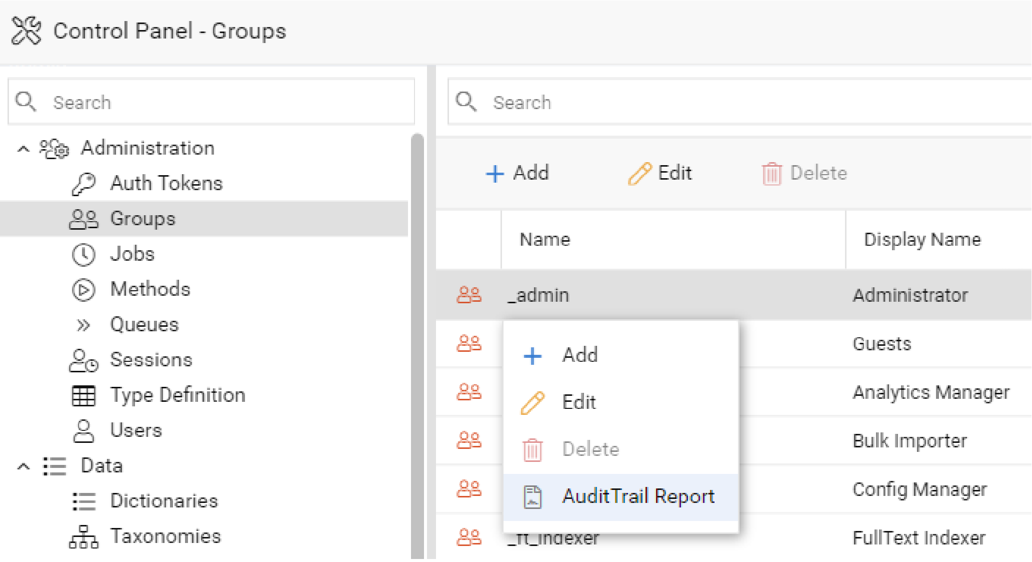
_group_admin. Members have access to the groups section. Members can delete non-system groups. They can also create new groups and can change non-system group membership.

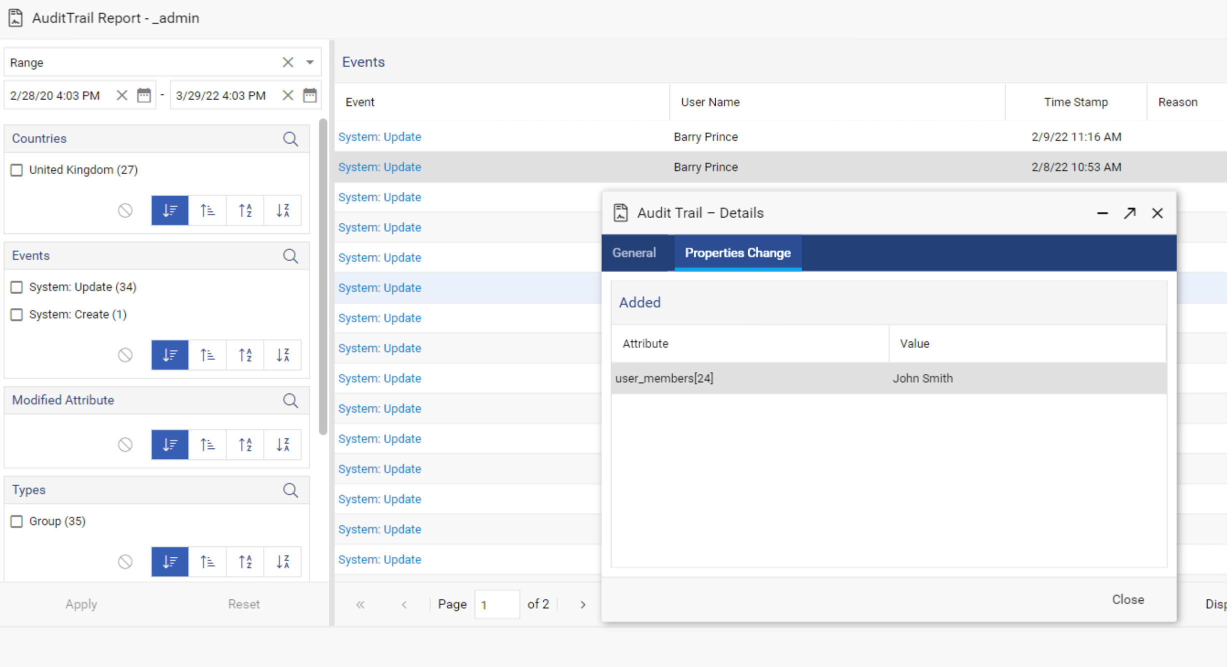
_group_manager. Members have access to the groups section. Members cannot delete any groups. They can create new groups and can change non-system group membership.



Groups Audit Trail Report

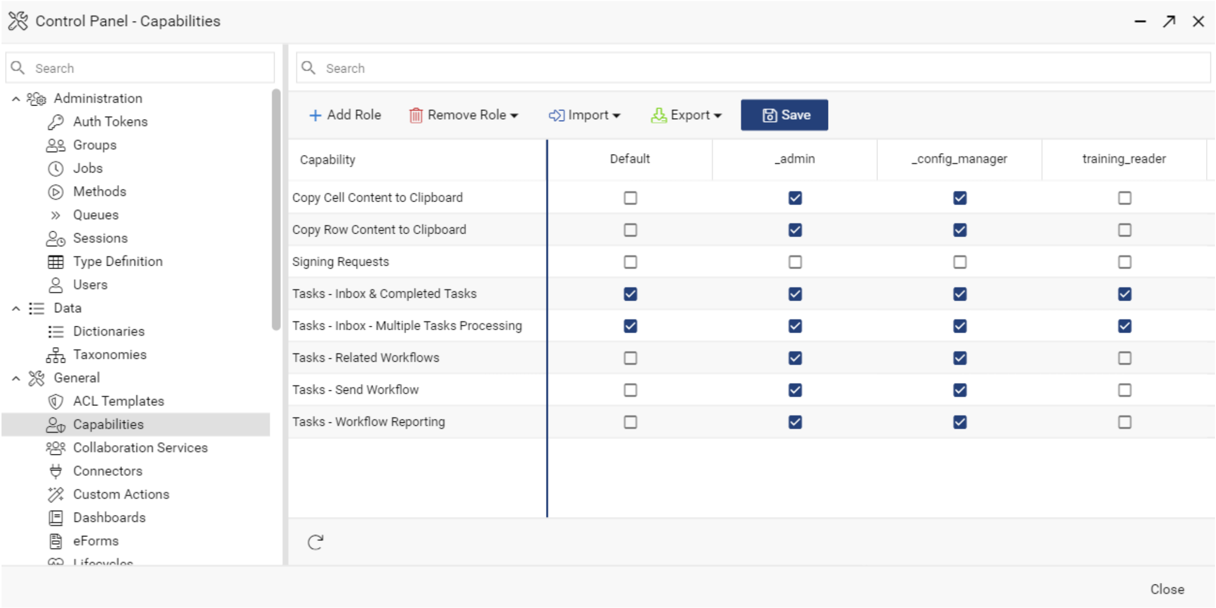
- A group's **Audit Trail Report** displays changes to the group, such as members being added or removed.
- Click **View** to see the changes made in a separate window.
- The Audit Trail Report can be filtered by user and date.





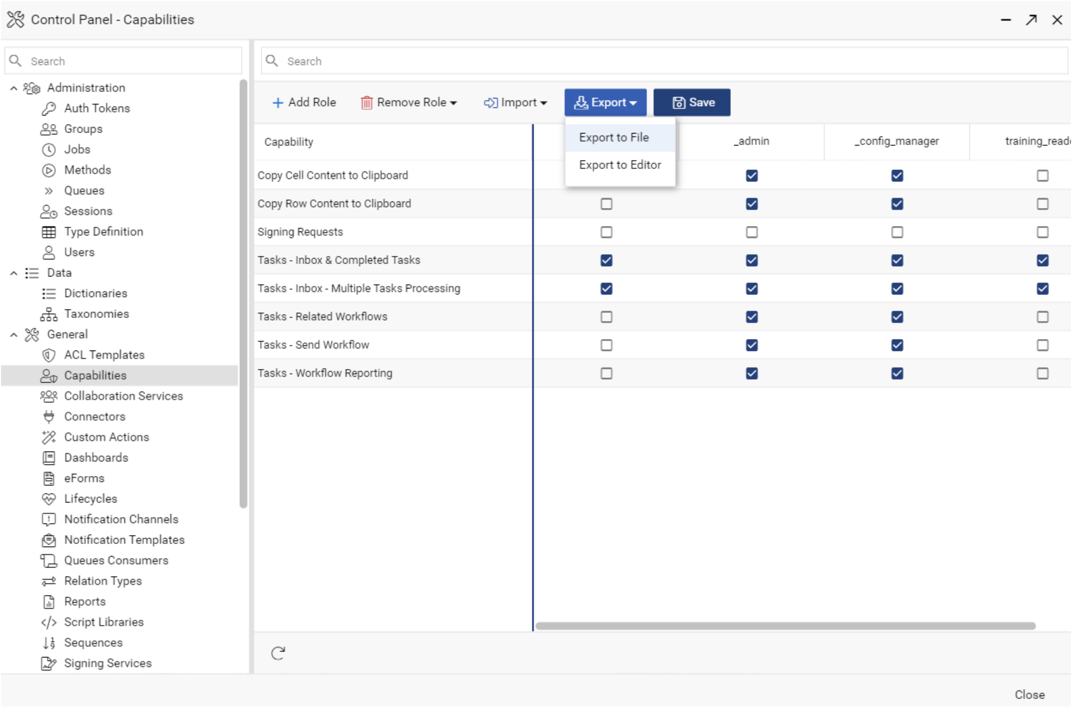
System Capabilities

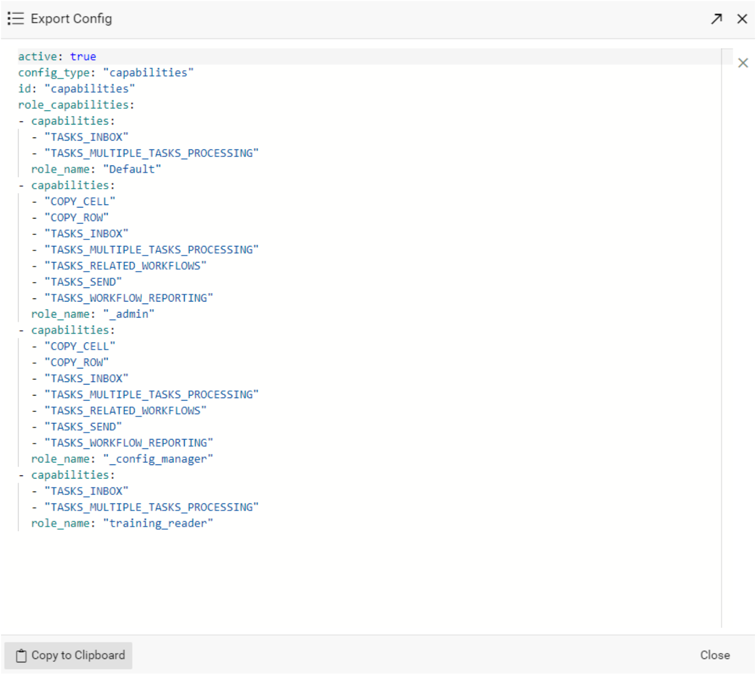
- Enable **system wide functions** such as control panel access or sending and receiving workflow tasks. **Separate from the type specific capabilities**.
- The **_admin and _config_manager** system groups have all system capabilities enabled by default, these should not be changed. Add other groups as appropriate.
- **Default** cannot be removed but its capabilities can be changed.
- **Default** only applies when the user belongs to no other listed groups.
- Apart from the Default group, capabilities are **cumulative**.



Configuration Editing, Export and Import

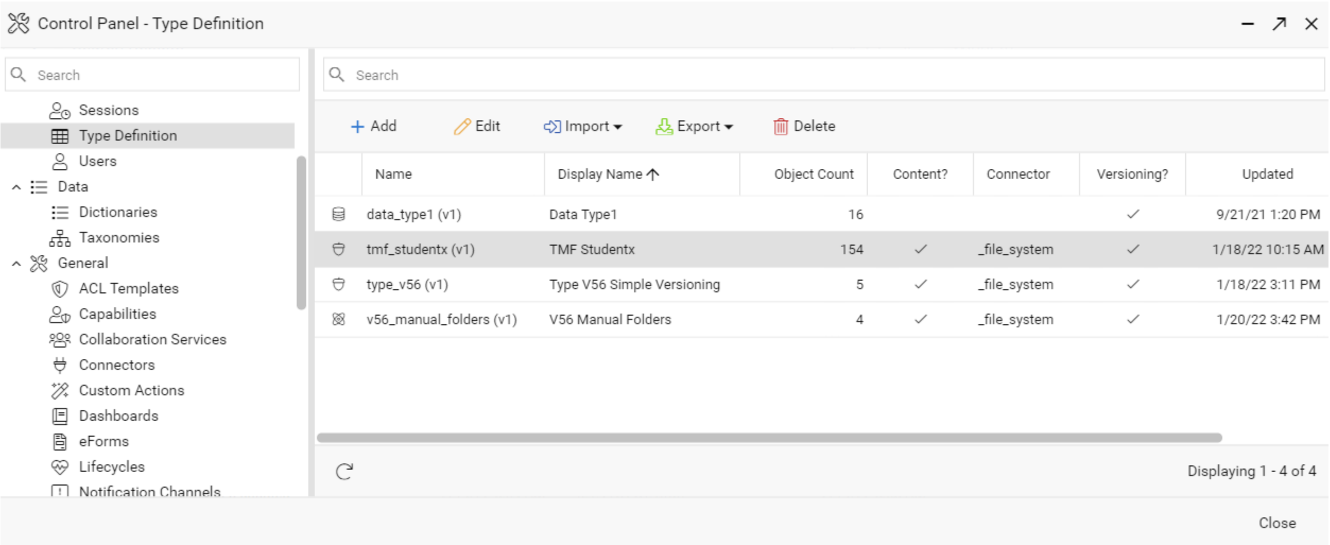
- As with other configuration elements, capabilities can be imported and exported to a .yml file or the editor. They can also be imported from a .yml file either directly or into the editor for updating.





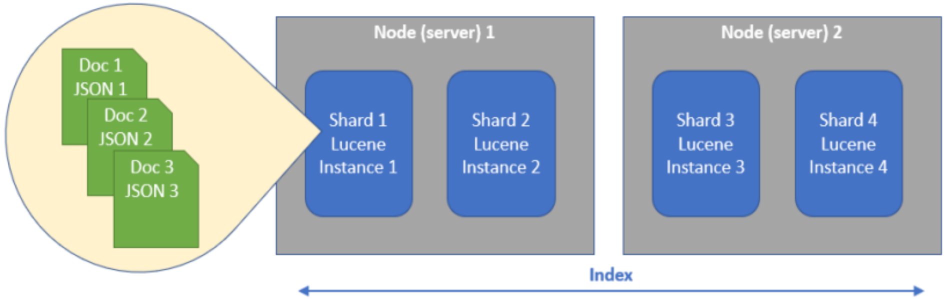
Type Definition Introduction

- **Define the document/object types that users will work with.** Typically documents which are versioned, with content, but there are other options.
- Could have one or many types. A type per organisation or department etc..
- Define attributes, versioning, content storage etc..
- A large proportion of subsequent CARA config is type specific e.g. views, folder rules, security, auto-values.



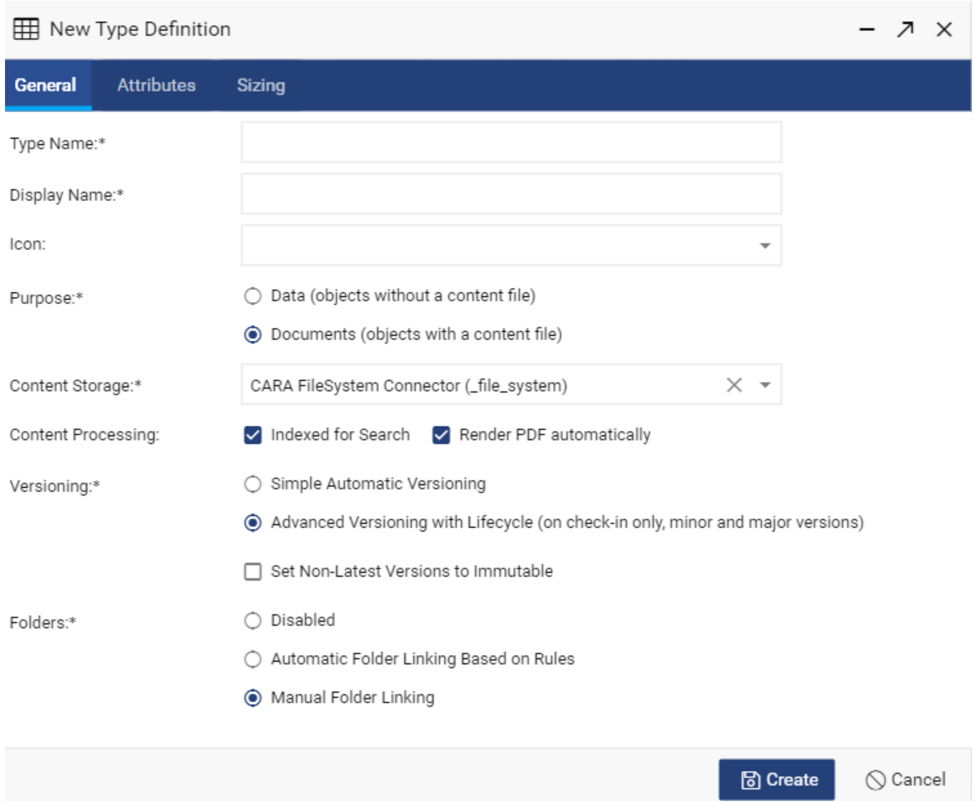
The Elasticsearch Platform & Object Data Storage

- CARA v5 uses the **Elasticsearch** platform.
- The Elasticsearch platform is **JSON-based** web server built on top of **Lucene**. Lucene is an open source search engine written in Java.
- It is not a relational database and therefore SQL/DQL is not applicable, however we do use a simple query language (CQL) in some configuration.
- There is a set of core properties available to all types such as object_name, creator, created. See the configuration manual for the list of core properties.
- Each document or object is stored within Elasticsearch as a JSON file (JavaScript Object Notation).
- The JSON file contains default attributes, type specific attributes and full-text.
- Each object can be uniquely identified by a combination of its type and ID, for example clinical_document (type) number (ID) 34.
- The **dump** operation displays all of the properties from the JSON file, except for the full-text which is hidden for convenience (as full-text can be very large).



Type Definition General Options

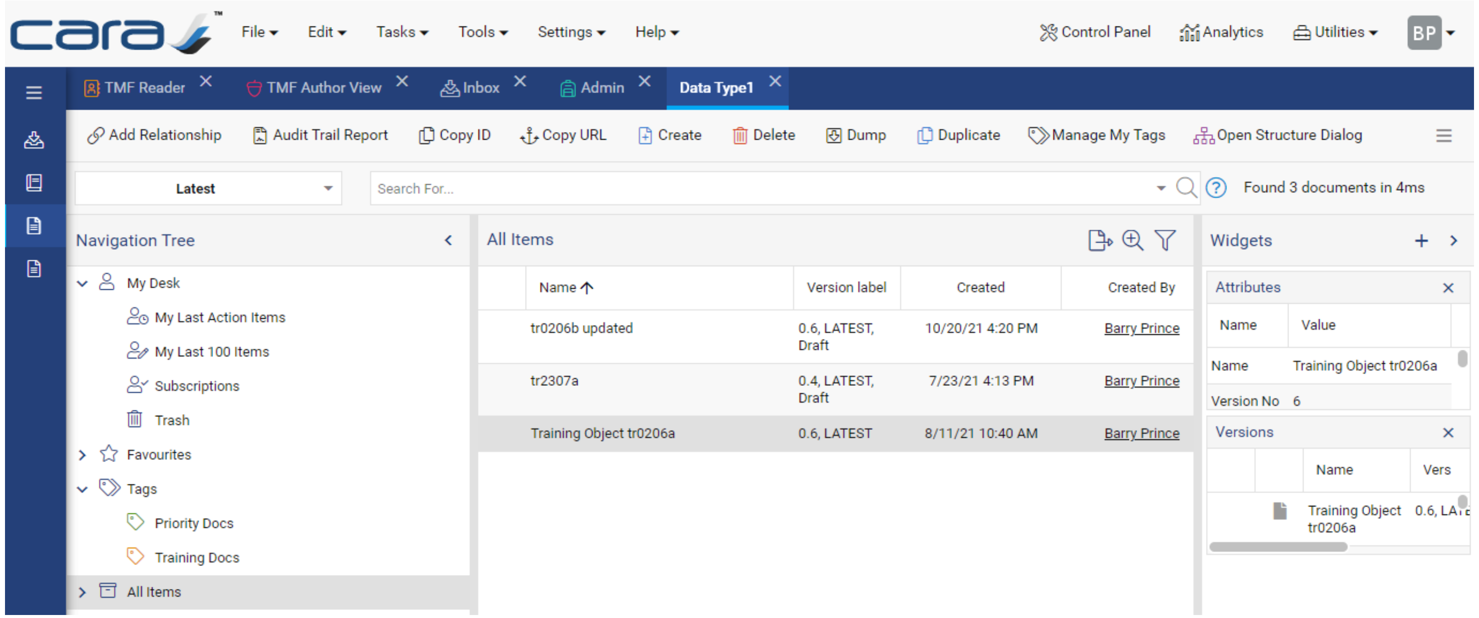
- **Type Name** must be unique. Type names can only contain letters, numbers and underscores. They must start with a letter.
- **Purpose.** Data or Documents. Data objects are those such as forms which contain only metadata.
- **Content Storage**. Select the connector for content storage. Could be cloud-based such as Amazon S3, file system, Box etc.. The connectors are configured in a .yml file on the server.
- **Content Processing**. Indexing and rendering to pdf are usually set to automatic.
- **Versioning.** Advanced versioning provides minor version numbers such as 0.1, 0.2 with labels. If not selected, major version numbers only (simple versioning).
- **Set Non-Latest Versions to Immutable.** Objects cannot be edited or deleted.
- **Folders. Automatic Vs Manual.** Documents are usually placed within a folder hierarchy automatically. If manual linking is selected, users can create and delete folders.

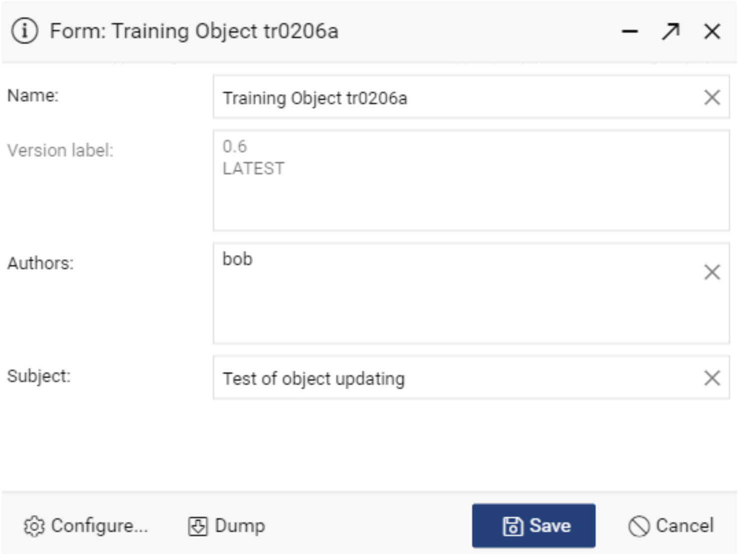


Recommendation: Most options **cannot** be changed later. Leave the defaults (enabled) if unsure of linking and lifecycles requirements.

Data Object Type Notes

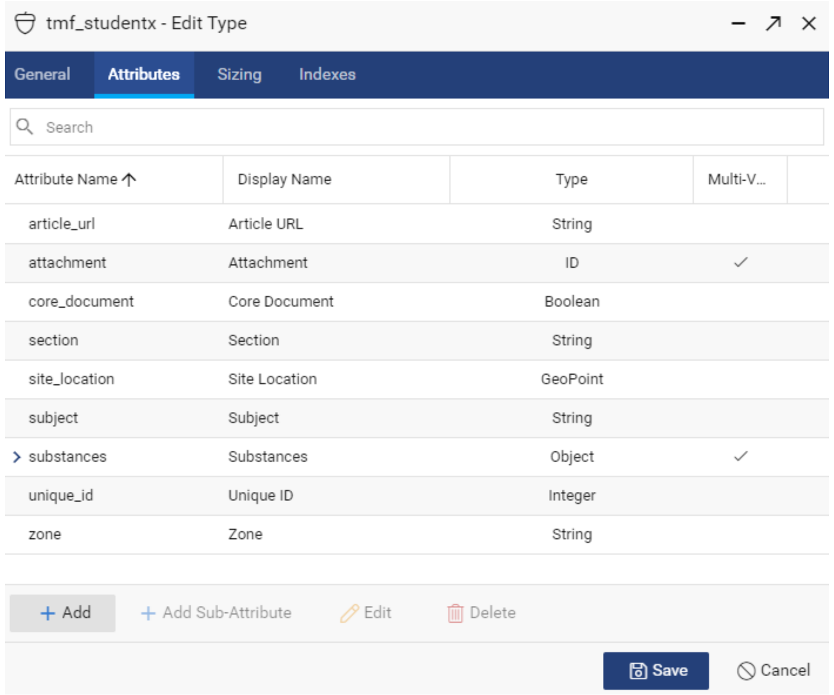
- **Data** object types do not have content.
- They are **versionable**, even though they do not have any content. Check-in and check-out do not apply to them, instead when the properties of a data object are updated and saved, a new version of the object is automatically created.

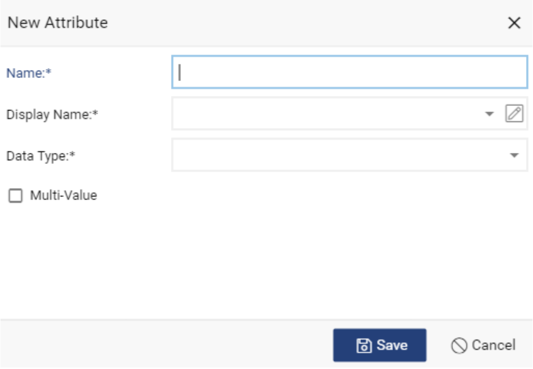




Type Attributes

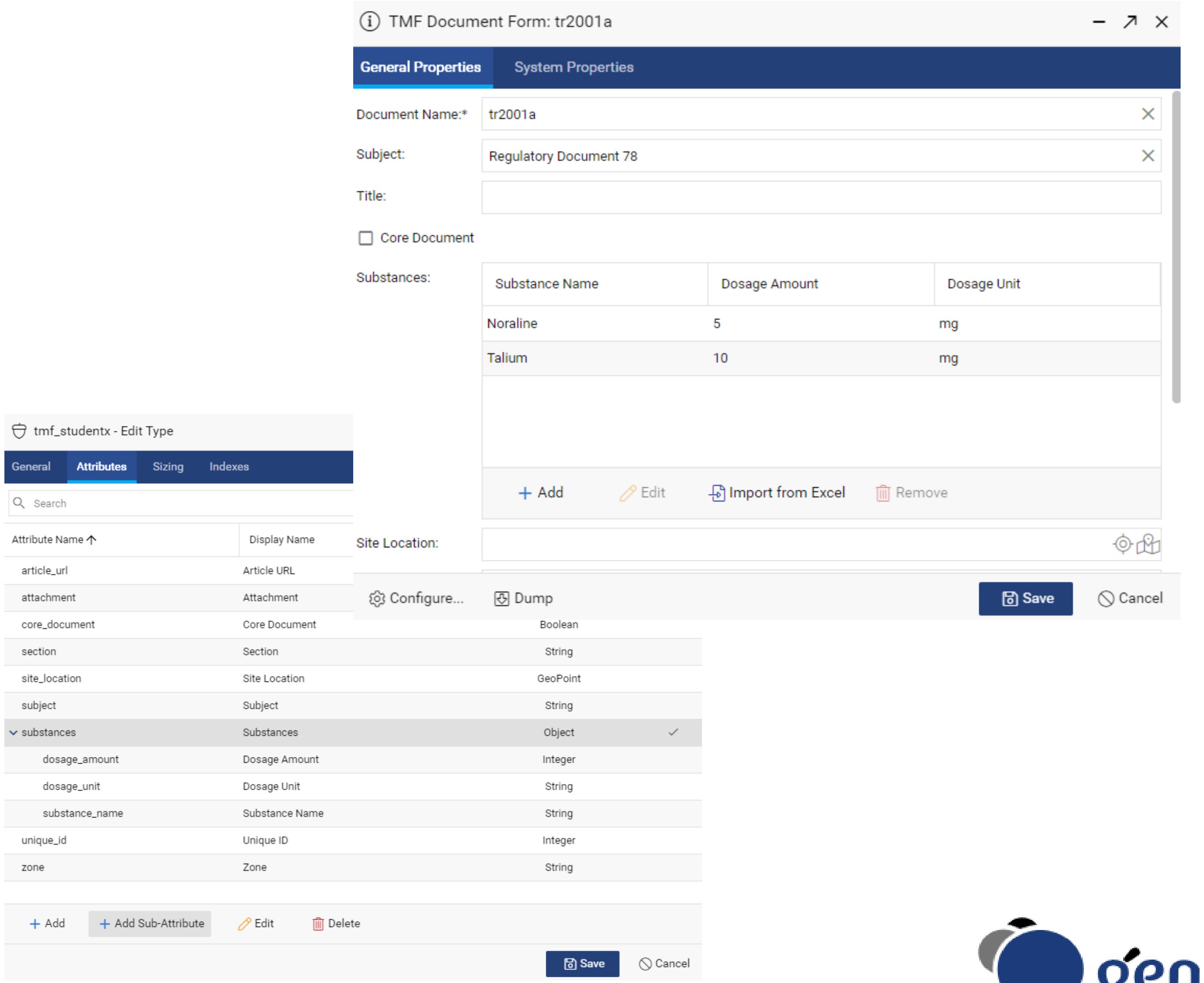
- Define the properties/attributes for the type.
- There are a set of core/default attributes that are always available such as object_name, creator and created.
- Type specific attributes are prefixed with doc. in subsequent config windows, for example **doc.**product_name
- Attribute types include string, Boolean, integer, decimal, date, date and time and are detailed in the configuration manual.
- Object type attributes are those with sub-attributes, for example substance with dosage amount and unit, see the next slide.
- Attributes can be single or multi-value (repeating).





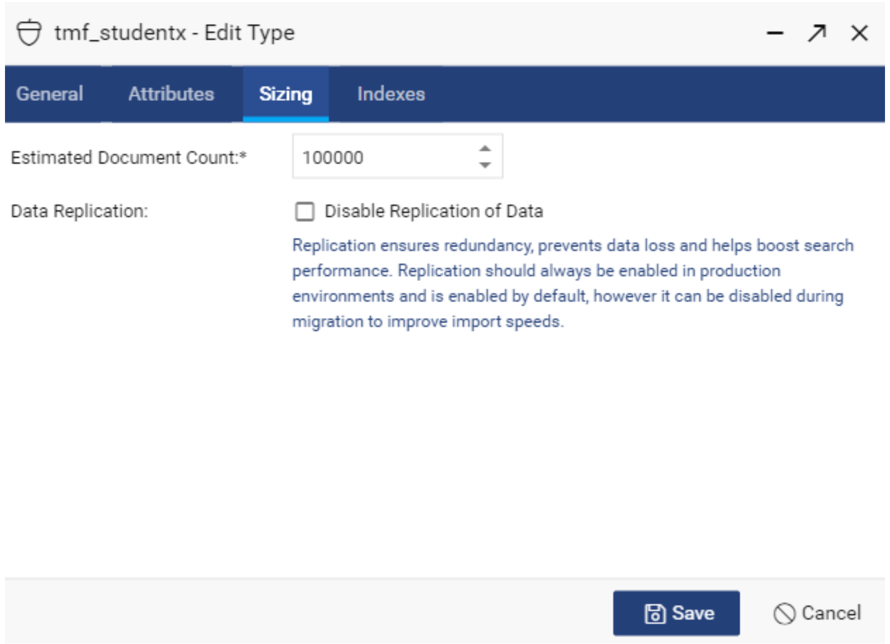
Special Attribute Data Types

- **Geopoint** is used for mapping. Required for the map function. Takes of latitude and longitude coordinates.
- **ID (Object Reference).** Used to display the properties of other objects. Must be tied to an object type.
- **Object** is one attribute that has its own sub-attributes, for example substance having sub-attributes dosage amount and dosage unit. These are placed on a **grid** in the properties form, see the example below:



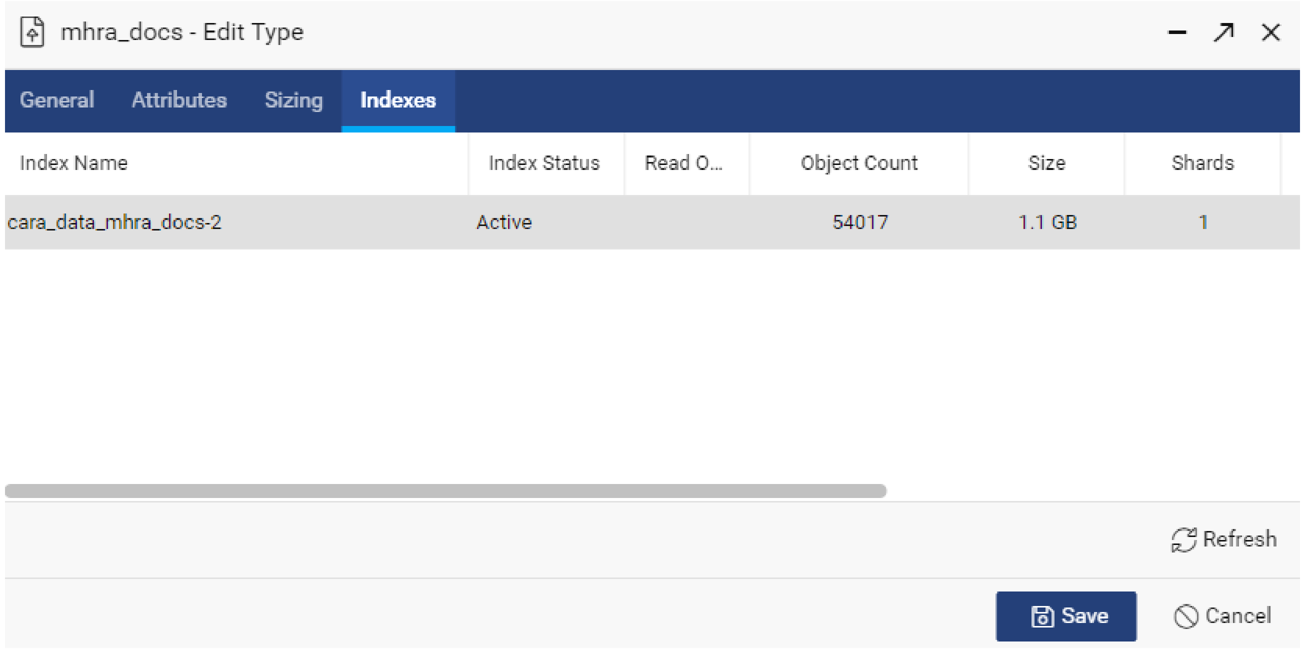
Type Sizing

- **Estimated Document Count.** Shards are stand-alone instances of a Lucene database. Shards can be primary or replicas (backups).
- The number of shards created for a type is based on the estimated document count. Types with an estimated document (object) count of less than 100,000 will have one primary shard and one replica.
- When a cluster has multiple nodes, types with an estimated document (object) count of greater than 100,000 will have as many shards as nodes and one replica
- **Data Replication**. Replication should always be enabled in production environments and is enabled by default, however it can be disabled during migration to improve import speeds



Type Indexes

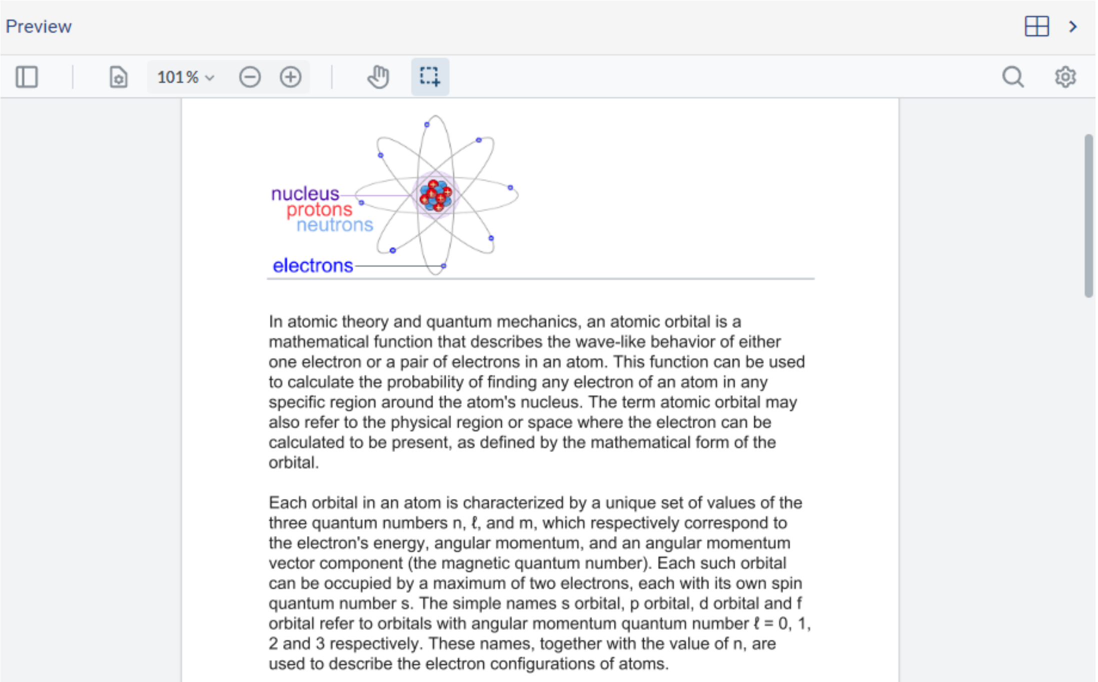
- **Elasticsearch** automatically creates an index for a type when it is defined. The index arranges the distribution of data for the type across available nodes and their shards within a named cluster. It also creates the search index of terms (words), their frequency and the ID's of the documents they appear within.
- The **Indexes** tab is only visible after the type has been initially saved.



Rendition Formats

The following file formats are supported for rendering to PDF

- MS Word formats: doc, docx, dot, dotm, dotx, rtf, odt, docm, mht, html, htm, txt, xml, csv
- MS Excel formats: xls, xlsx, xlsm, xlt, xltx, xltm, xlsb, ods
- MS PowerPoint formats: ppt, pptx, pot, potx, pps, ppsx, pptm, odp
- Email formats: msg, eml
- Visio formats: vsd, vsdx, vsdm, vssx, vssm, vstx, vstm, vdx, vsx, vtx
- MS Project formats: mpp, mpt, mpx
- Image formats: jpg, jpeg, gif, png, bmp, tif, tiff
- CAD formats: dwg, dxf

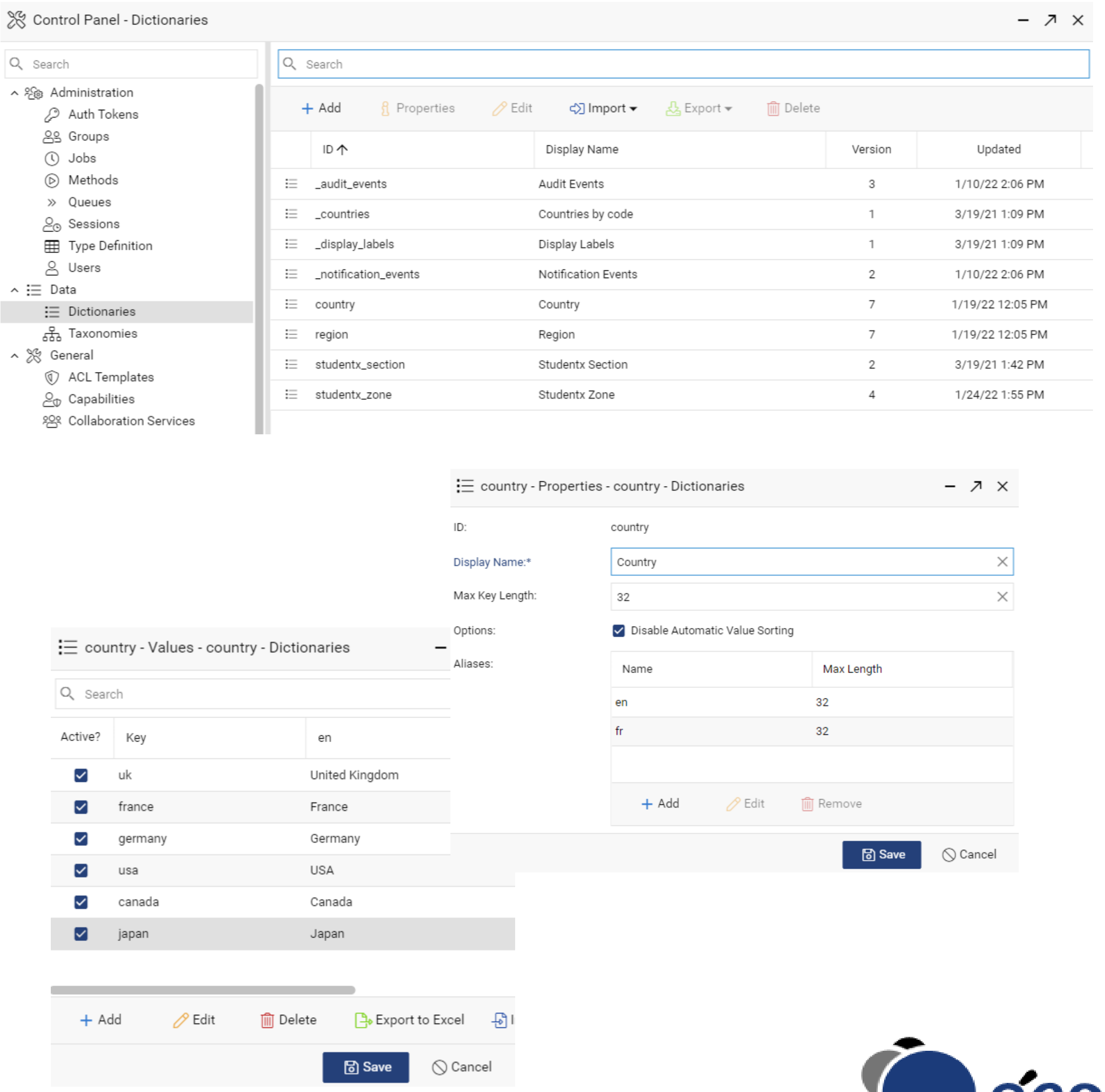


In atomic theory and quantum mechanics, an atomic orbital is a mathematical function that describes the wave-like behavior of either one electron or a pair of electrons in an atom. This function can be used to calculate the probability of finding any electron of an atom in any specific region around the atom's nucleus. The term atomic orbital may also refer to the physical region or space where the electron can be calculated to be present, as defined by the mathematical form of the orbital.

Each orbital in an atom is characterized by a unique set of values of the three quantum numbers n, ℓ, and m, which respectively correspond to the electron's energy, angular momentum, and an angular momentum vector component (the magnetic quantum number). Each such orbital can be occupied by a maximum of two electrons, each with its own spin quantum number s. The simple names s orbital, p orbital, d orbital and f orbital refer to orbitals with angular momentum quantum number ℓ = 0, 1, 2 and 3 respectively. These names, together with the value of n, are used to describe the electron configurations of atoms.

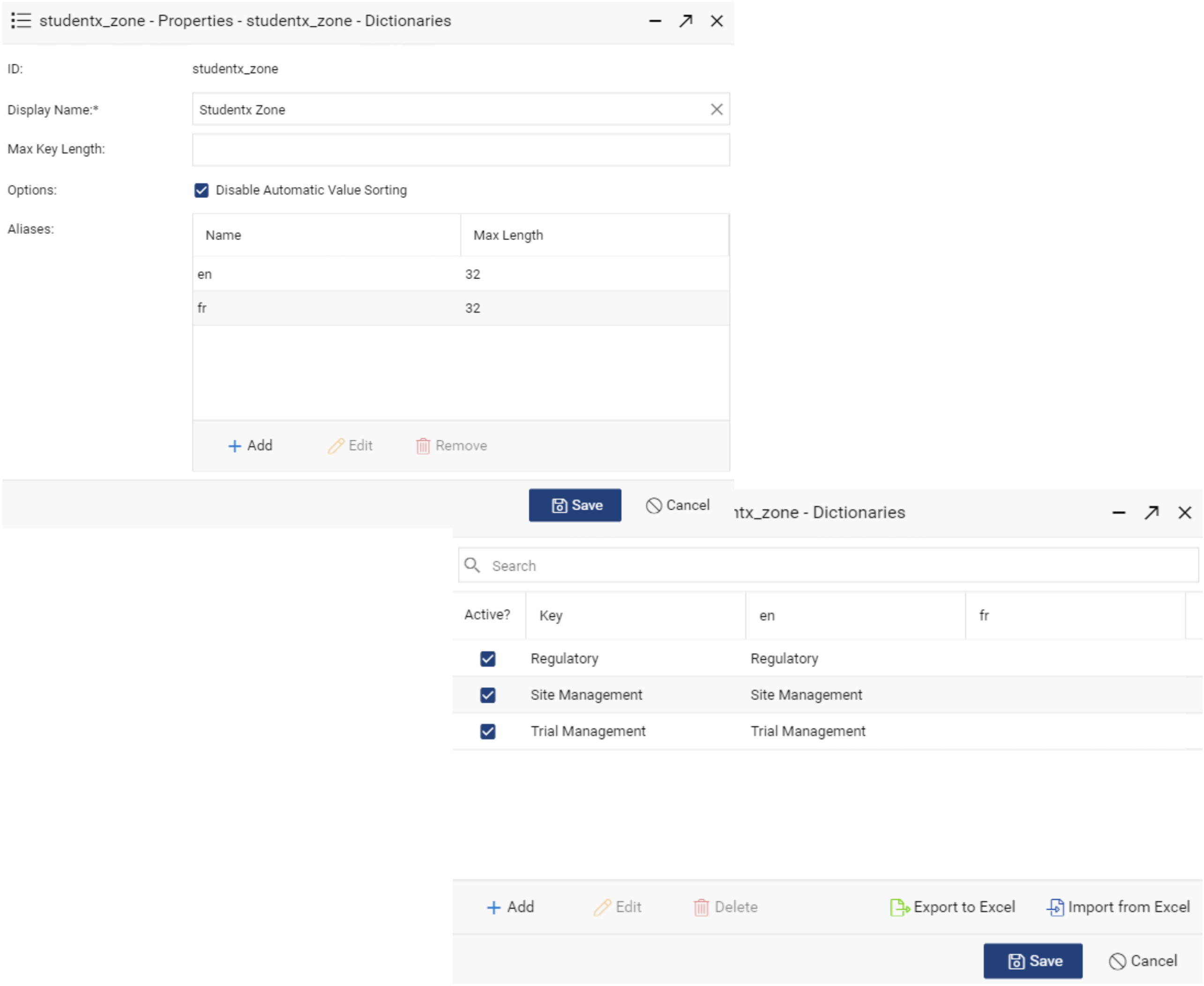
Dictionaries

- Dictionaries provide a list of **drop-down values** for users to choose from, such as on a properties form.
- Can contain **aliases** for different language labels.
- Dictionaries are **versioned** each time they are updated.
- There are default **system dictionaries** such as _display_labels and _audit_events. System dictionaries can be updated.
- Dictionaries can be **managed externally** by using the Export and Import options, which use .yml format. This includes complete dictionary properties, unlike exporting just the values to Excel, which is also an option.



Dictionary Properties

- When creating a new dictionary provide an **ID** and **Description**. ID cannot contain spaces (UI doesn’t allow entering them), can contain upper case letters. Description can contain spaces.
- **Max Key Length** is not required. Limits number of characters that can be entered.
- **Disable Automatic Value Sorting** effects how items in the list are sorted, they can be displayed alphabetically or as they were entered.



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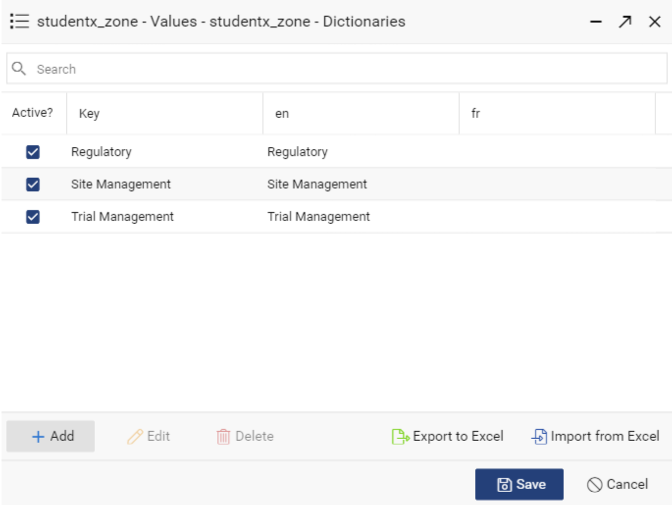
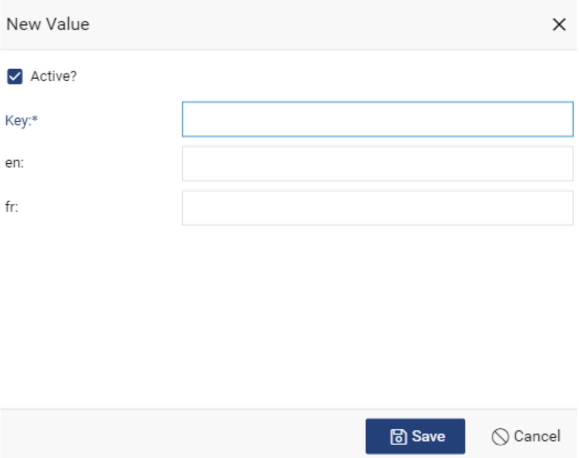
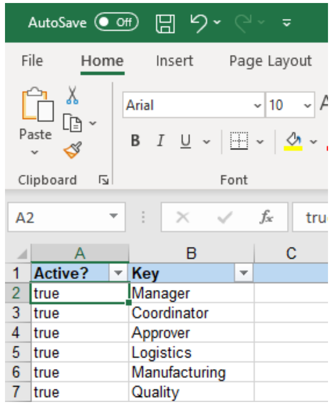
Dictionaries, Adding Values

- Once the dictionary has been created, click **Edit** to open the **Values** window.
- **+ Add** the values. If aliases are not being used, simply enter each **Key** value. Key values can contain spaces and upper case letters.
- If aliases are being used, for each value enter the **Key** and the **alias**/language specific **labels**. If a label if missing, the Key or 1st label will be used.
- Values can be **inactive** (hidden from users), often preferable to deleting them.
- **Deleting** values from a dictionary does not delete those values from existing documents.
- The values within a dictionary can be managed externally by **Export** and **Import** to Excel

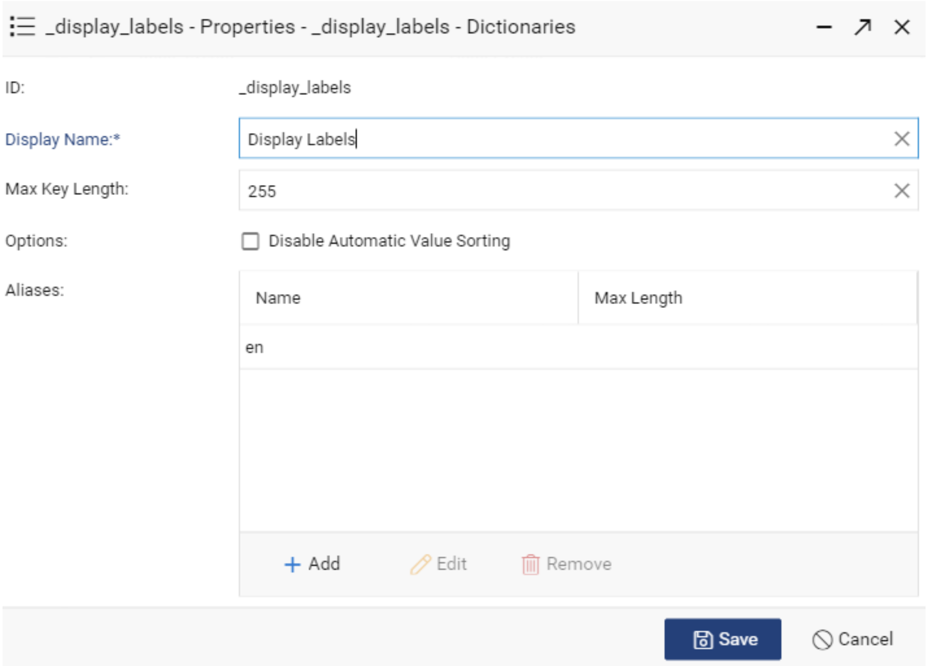






The _display_labels Dictionary

The _display_labels dictionary is intended to provide a list of values which can be selected when configuring user friendly labels in type and other view configuration. By using the display labels dictionary labels should be consistent.



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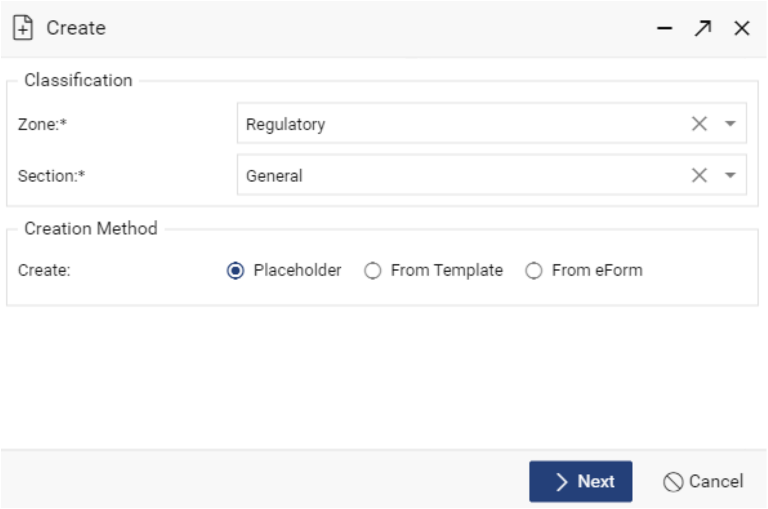
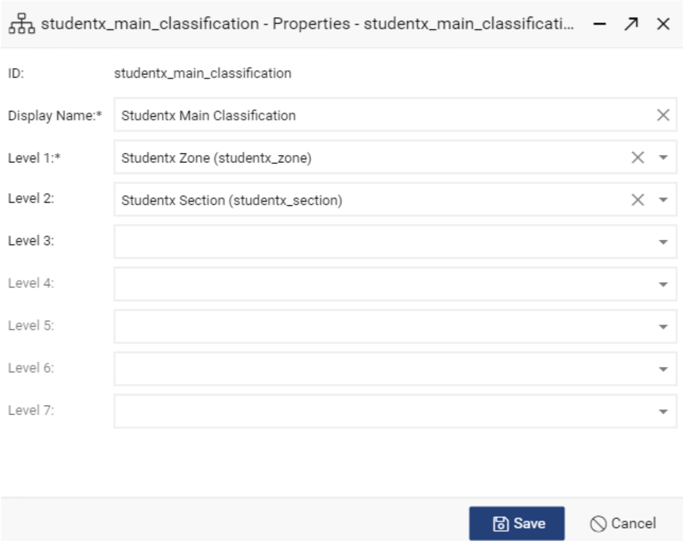
Taxonomies

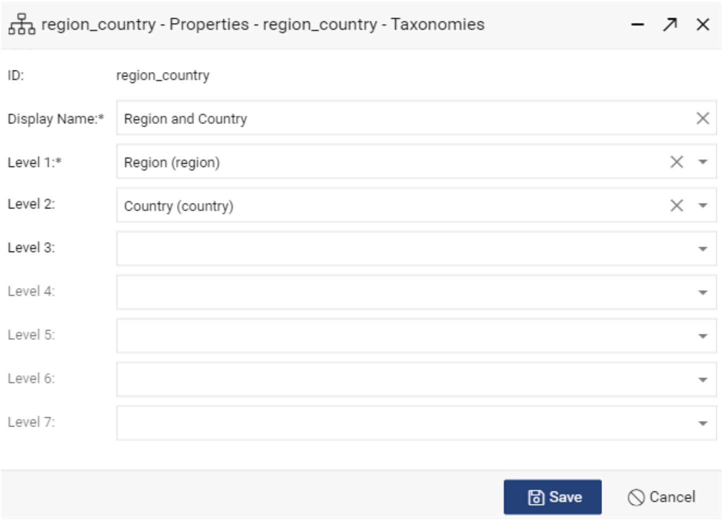
- Taxonomies relate dictionaries together, the choice made from a parent dictionary determines the choices available in a child dictionary. They form the classification choices when creating and importing documents.
- A classic example would be **Region and Country** dictionaries, the selection of region determines the available choice of countries.
- Taxonomies are optional, apart from having one for the **main classification**. There are no system taxonomies.
- Up to **7 levels** of dictionaries can be placed in a taxonomy
- Taxonomies are **versioned** when updated
- Taxonomies can also be **managed externally** by export in a .yml (inc. properties) or Excel (values only) format





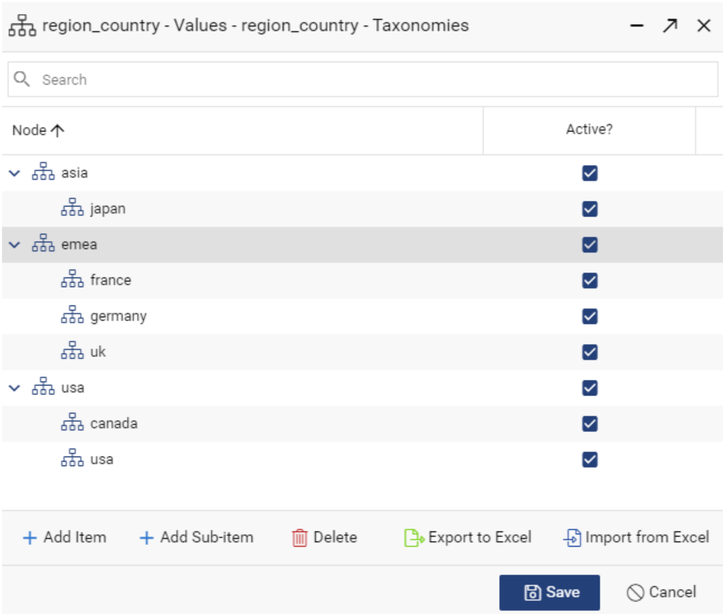
Taxonomy Creation

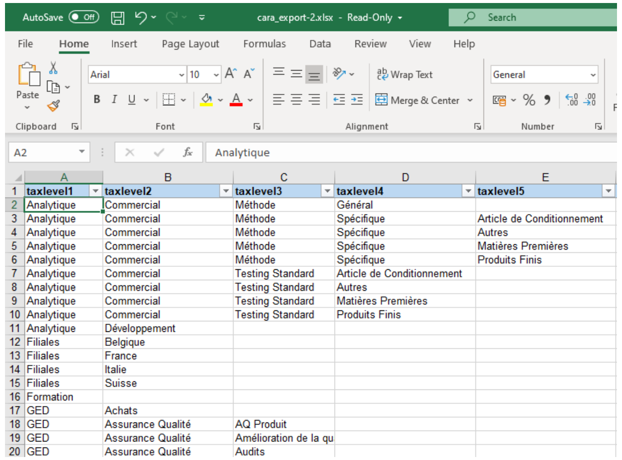
- **ID** is required. Cannot contain spaces, UI prevents their entry. Upper case letters are allowed.
- **Description** is required. Can contain spaces.
- Select which dictionaries are linked together at each **Level.** Dictionaries to be used must already be present.
- Up to 7 dictionaries can be linked.



Taxonomies, Adding Items and Sub-Items

- Select **Edit** (not Properties) from the Taxonomies window.
- Click **+ Add Item** and add values (usually all values) to be available from the Level 1 dictionary.
- For each values from level 1, select the value, click **+ Add Sub-Item** and choose the applicable sub-choices for that value. Repeat for each item at each level.
- Like dictionaries, entries can be marked as **inactive** and so hidden from users.
- Taxonomies items can be managed externally via **Export** and **Import** to **Excel**.





	A	B	C	D	E
1	taxlevel1	taxlevel2	taxlevel3	taxlevel4	taxlevel5
2	Analytique	Commercial	Méthode	Général	
3	Analytique	Commercial	Méthode	Spécifique	Article de Conditionnement
4	Analytique	Commercial	Méthode	Spécifique	Autres
5	Analytique	Commercial	Méthode	Spécifique	Matières Premières
6	Analytique	Commercial	Méthode	Spécifique	Produits Finis
7	Analytique	Commercial	Testing Standard	Article de Conditionnement	
8	Analytique	Commercial	Testing Standard	Autres	
9	Analytique	Commercial	Testing Standard	Matières Premières	
10	Analytique	Commercial	Testing Standard	Produits Finis	
11	Analytique	Développement			
12	Filiales	Belgique			
13	Filiales	France			
14	Filiales	Italie			
15	Filiales	Suisse			
16	Formation				
17	GED	Achats			
18	GED	Assurance Qualité	AQ Produit		
19	GED	Assurance Qualité	Amélioration de la qu		
20	GED	Assurance Qualité	Audits		

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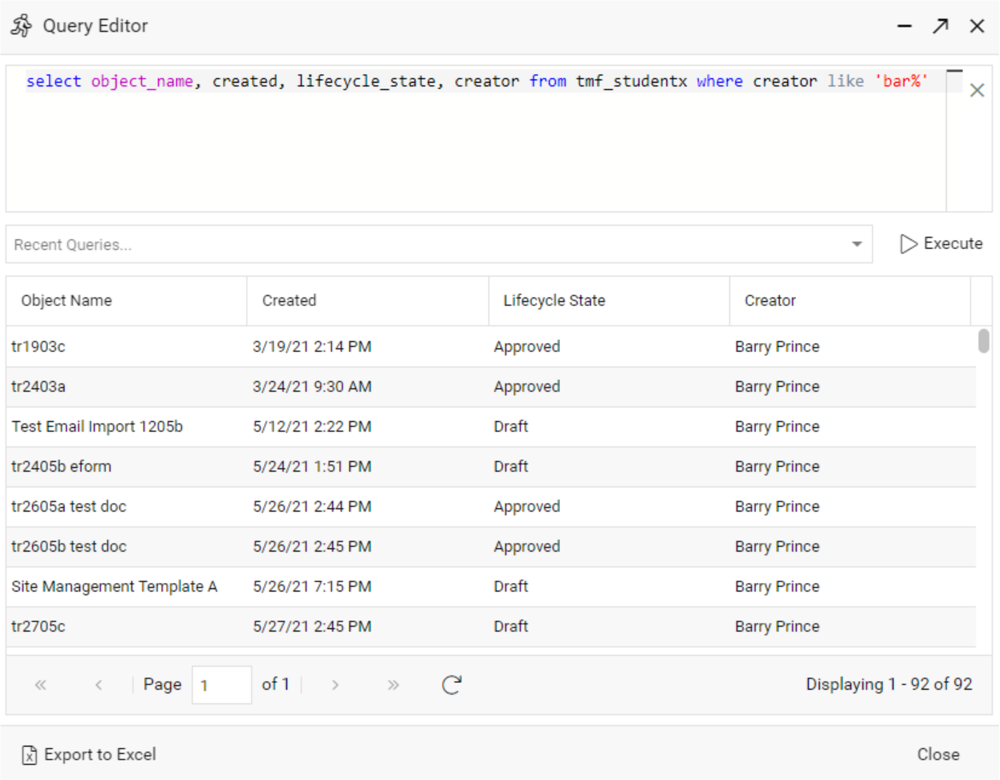
CQL CARA Query Language

- **CQL** (CARA Query Language) is a simple query language that can be used to create **configuration conditions** within CARA, for example lifecycle_state = Approved.
- It is much simpler that SQL/DQL, it is only needed for defining conditions and reports.
- There is a dedicated CARA query editor available to administrators.
- Currently it supports **select** and **execute** statements.
- It will be familiar to anyone with any SQL or DQL knowledge
- **Recommendation**. Please refer to the CQL chapter in the configuration manual. There are comprehensive examples of using CQL.



Object Name	Created	Lifecycle State	Creator
tr1903c	3/19/21 2:14 PM	Approved	Barry Prince
tr2403a	3/24/21 9:30 AM	Approved	Barry Prince
Test Email Import 1205b	5/12/21 2:22 PM	Draft	Barry Prince
tr2405b eform	5/24/21 1:51 PM	Draft	Barry Prince
tr2605a test doc	5/26/21 2:44 PM	Approved	Barry Prince
tr2605b test doc	5/26/21 2:45 PM	Approved	Barry Prince
Site Management Template A	5/26/21 7:15 PM	Draft	Barry Prince
tr2705c	5/27/21 2:45 PM	Draft	Barry Prince

A basic query takes the form of **select** (attributes) **from** (type) **where** (some condition). Example:

select object_name, creator **from** sales_doc **where** lifecycle_status ='Approved'

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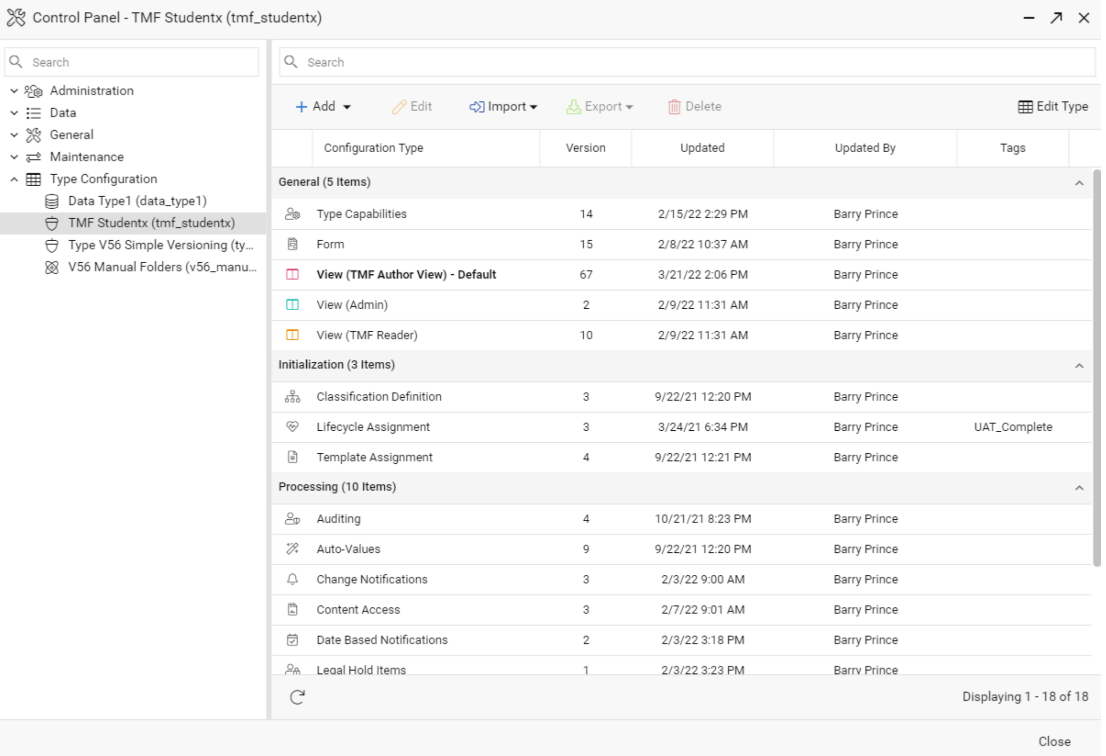
Type Configuration Overview

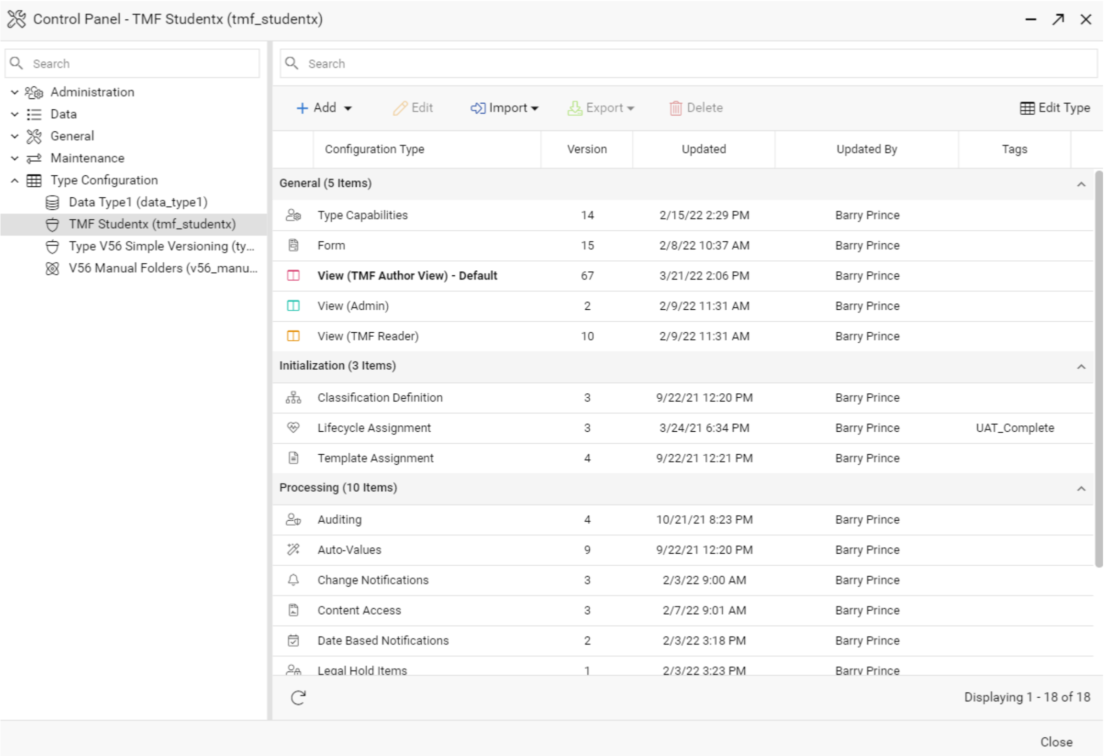
- A large proportion of the configuration within CARA is configured specifically for each type, for example GUI view layout, security, folders, property form, auto-values etc..
- Type configuration is divided into General, Initialization and Processing categories.
- There is a default View and default Type Capabilities config, other elements need to be created.
- Configuration elements are versioned when updated.



Type Configuration – Minimum Configuration

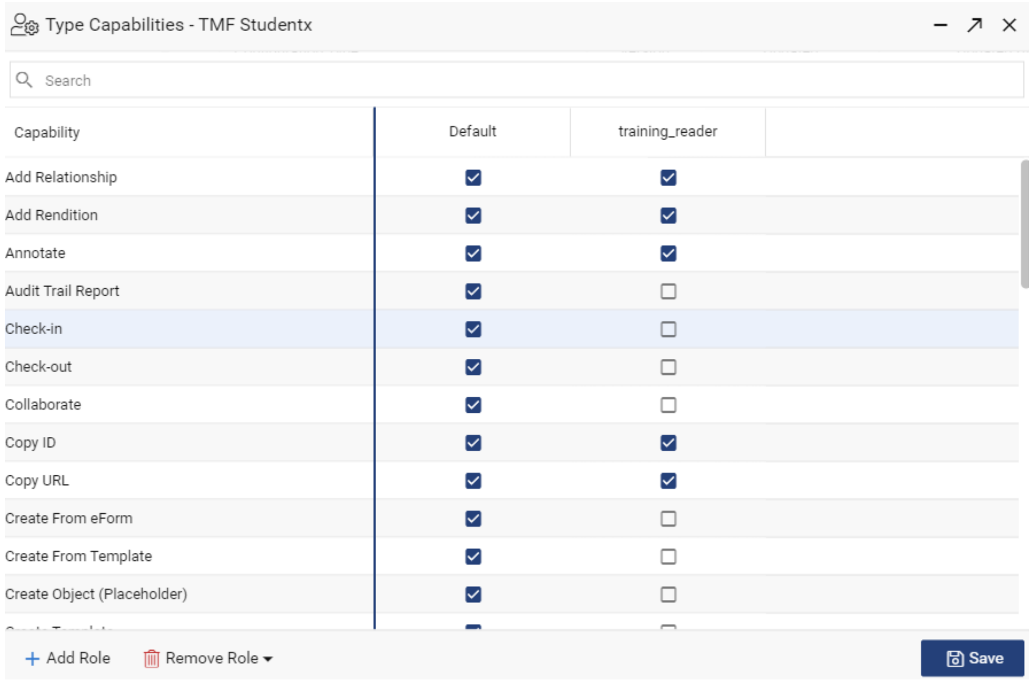
At minimum, once a type has been defined, the following are considered to be fundamental:

- **Type Capabilities**. This details the available document functions for users, such as create and view.
- **Form**. Design the properties form.
- **View**. Update the default GUI view and create additional views as needed.
- **Classification Definition**. Requires a taxonomy.
- **Template Assignment**. Without it no content templates are available.
- **Linking**. Place documents within a folder structure based on rules. Not needed if folder linking is manual
- **Security**. Link the type to an ACL template. ACL templates are created elsewhere.
- **Auditing**. There is a default audit trail.



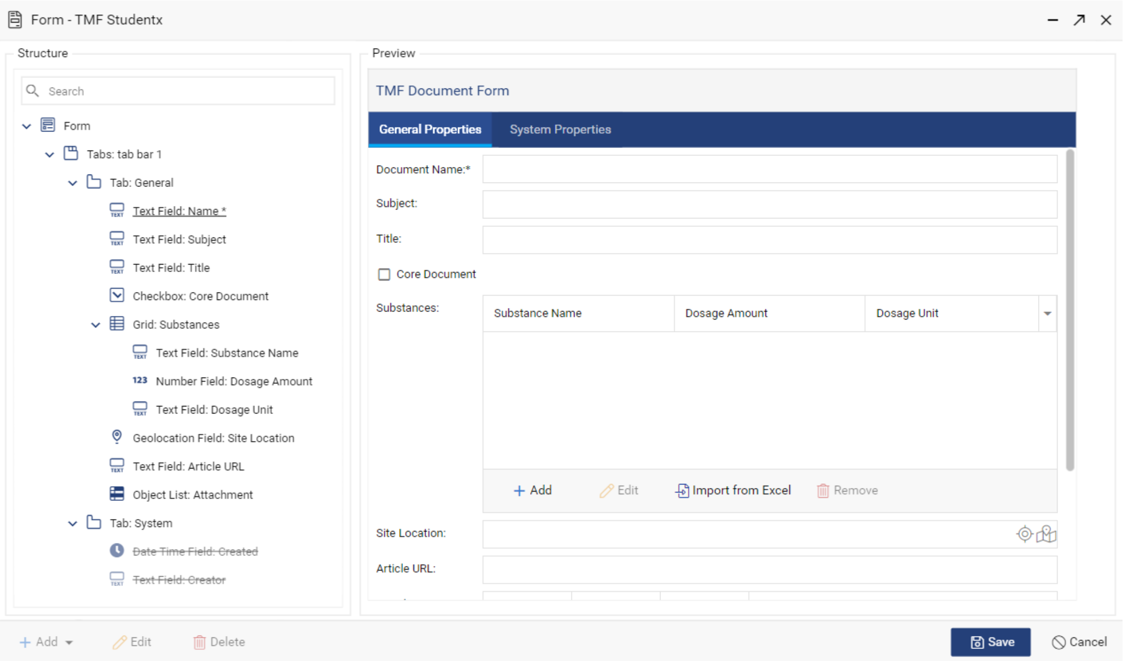
Type Capabilities for Users

- Type Capabilities determine what functions are available to groups (roles) of users.
- Documents - Create from Template, View, Edit, Export are examples of type capabilities.
- There is a Default type capability already created, add other groups (roles) as appropriate.
- Separate from the system wide Capabilities such as Control Panel access and Tasks Inbox detailed previously.



Form (Properties Form)

- Design the properties form that will be presented to users when they create new documents and look at the properties of existing documents.
- The form builder window is divided into **Structure** (left side) and **Preview** (right side) panels.
- One form per type, created automatically when the new type is created. Needs to be configured appropriately, adding fields and tab etc..
- Tabs and fields can be conditional, that is hidden when not appropriate.
- Typically start with a tab bar, then add tabs and place individual fields within. Field Sets and Columns can also be used to group together related fields.

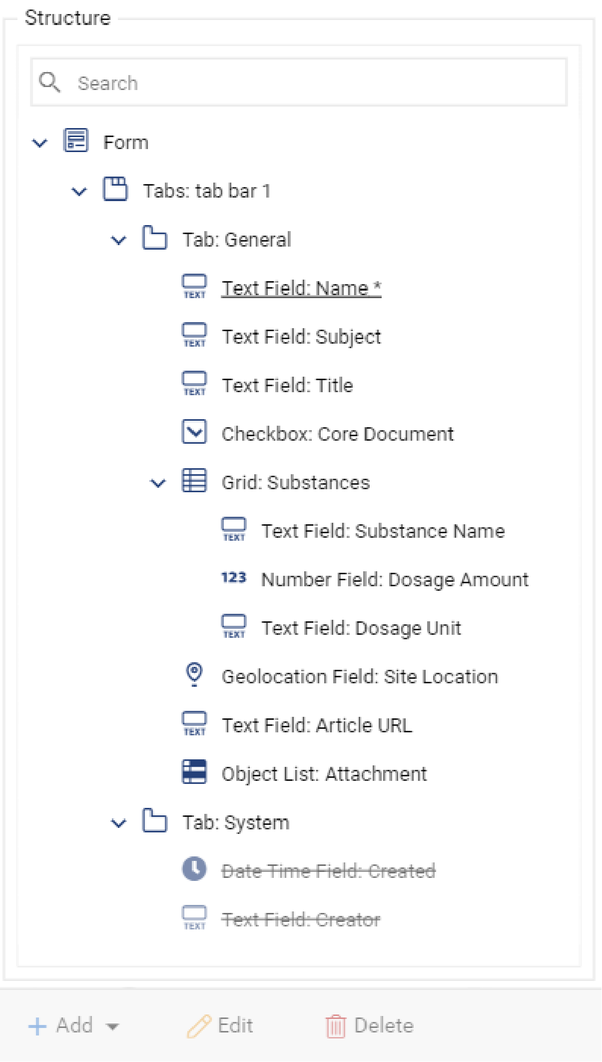


Form Control Types

Form controls are appropriate to the field type, for example checkboxes are only used for Boolean fields

- **Text** field for string attributes.
- **Multitext** field for repeating string attributes.
- **Number** fields can display integers or decimals.
- For **Objects**, add a **Grid**. The object is usually defined as a repeating attribute. Then add the sub-attributes to the Grid.
- **Combo boxes** are used for drop-down lists and other value assistance.
- **Object lists** allow a report to be run where another document can be selected and its properties copied/mapped to the current document. The report needs to be defined separately.

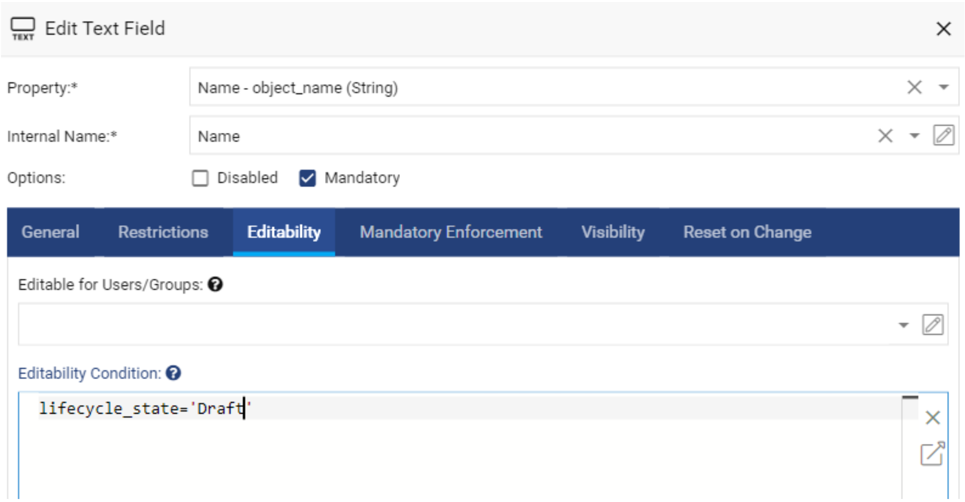
Each form control type has its own specific configuration options which are detailed in the configuration manual.

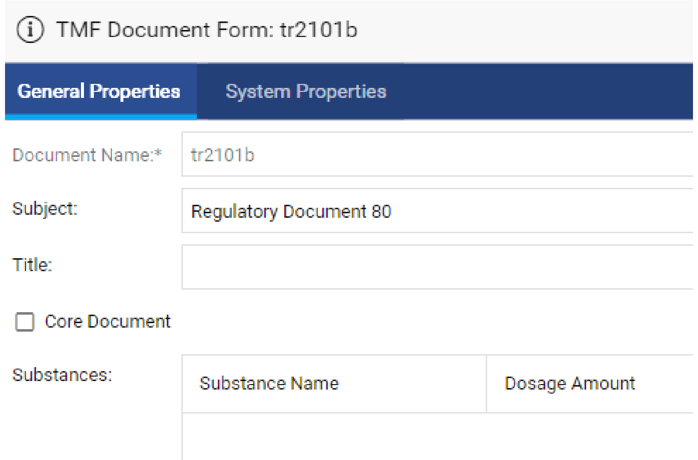


Form Control Conditions

Various aspects of a form control can be conditional including:

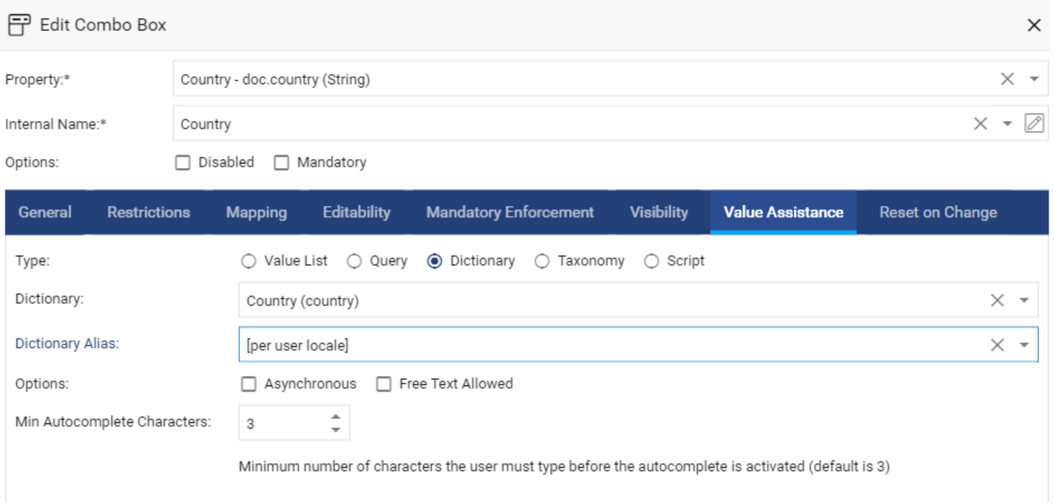
- **Visibility**.
- **Mandatory** (a required field).
- **Editability/Disabled** (is it read-only).
- Pattern matching via regular expressions such as for email addresses or phone numbers.
- Maximum length can be specified.
- Ranges for numeric and date fields.
- Reset on Change allows subsequent fields to be cleared.

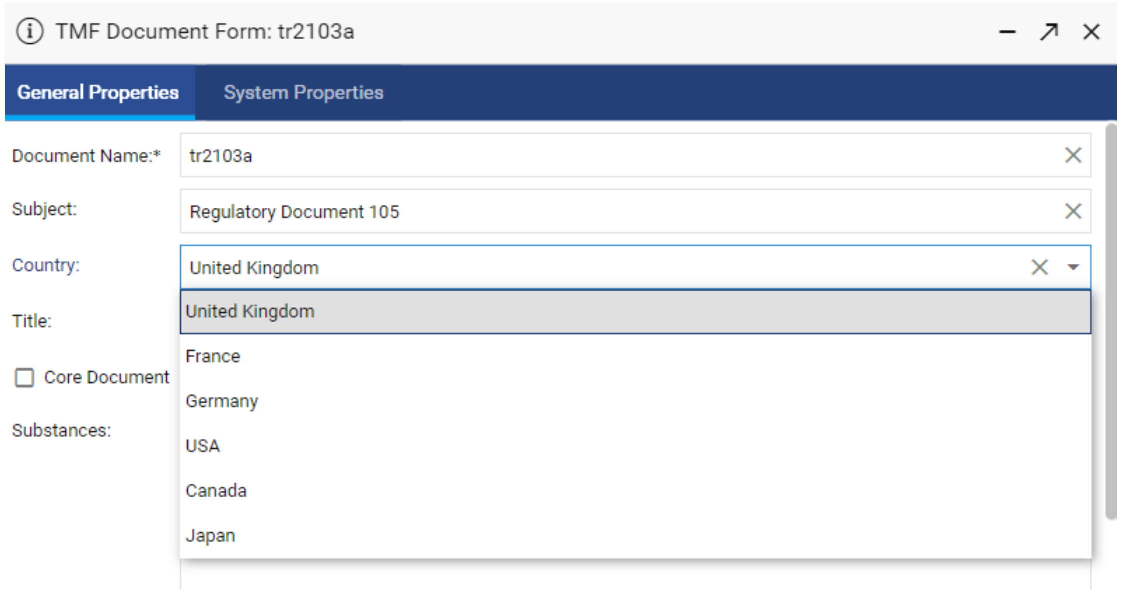




Combo Boxes and Value Assistance

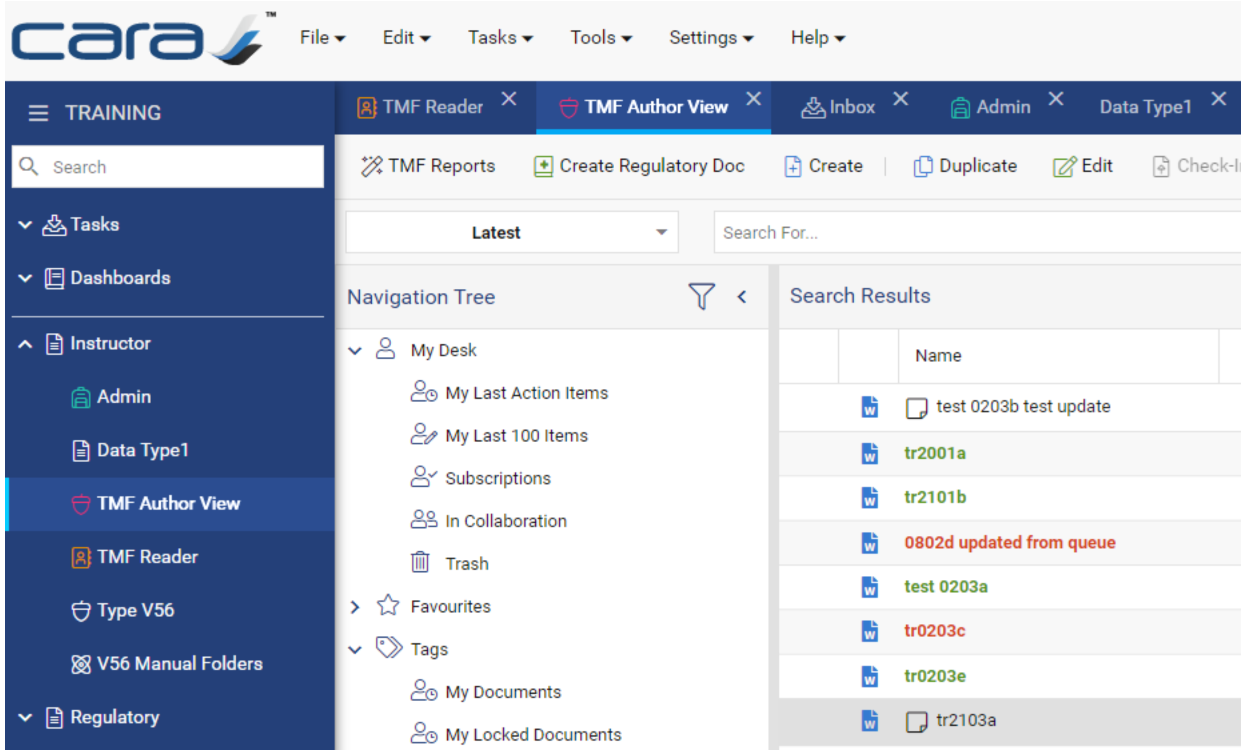
- Combo boxes can be used to provide a drop-down list for users to choose from.
- Value Assistance refers to where the drop-down list values are coming from, they could be from a Dictionary, Taxonomy, simple Value List defined for the field, a Query (CQL) or Script (Groovy style Java).





Views

- Views determine the layout and options available within the GUI.
- Views are type specific.
- Each type can have one or more views.
- A default view is automatically created when the type is defined.
- Multiple views are grouped together into a workspace.
- Each view is displayed as a tab.
- Different groups of users can have different workspaces available. Each view can appear in multiple workspaces.
- Users can close and reopen views as needed.



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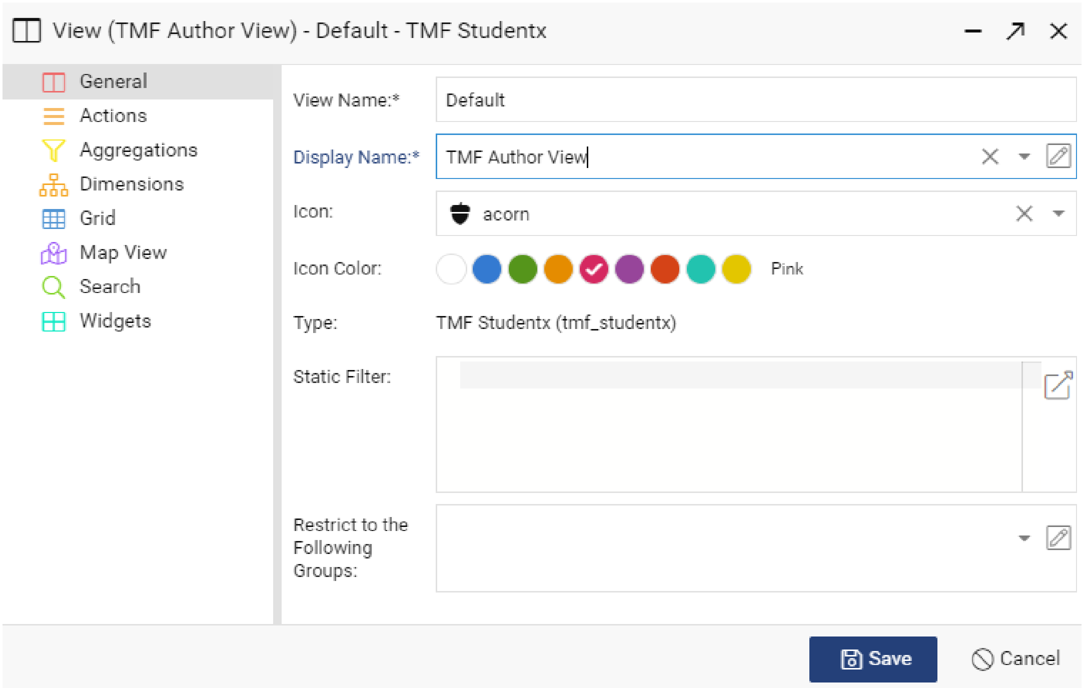
View Configuration Overview

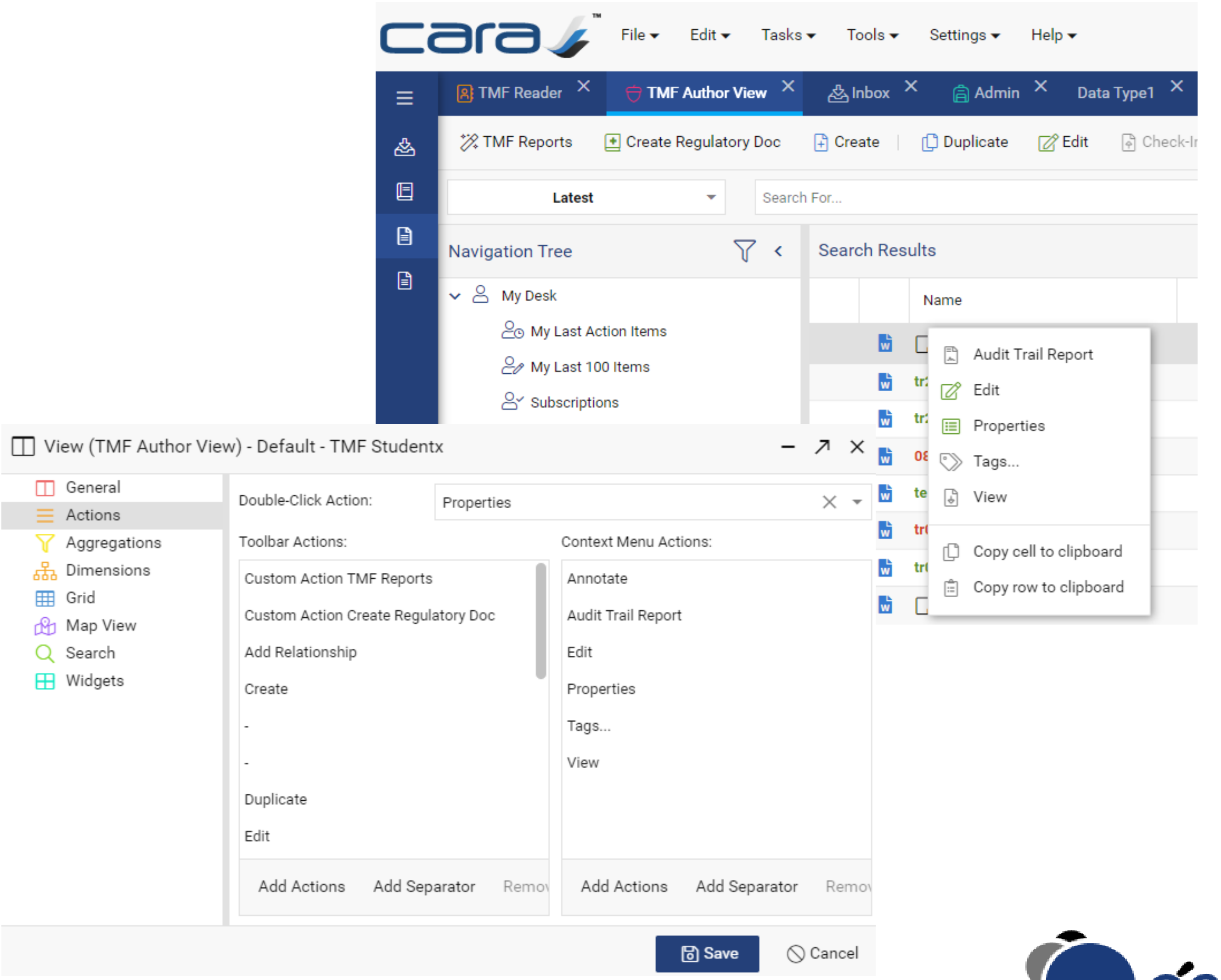
Views have multiple configuration options.

- **General.** Name, icon, static filters & view security. *Static filters* can be used to *only display documents matching a CQL query*.
- **Actions** = toolbar and menu buttons.
- **Aggregations** = attribute filters.
- **Dimensions** = alternative folder hierarchy.
- **Grid** = main column layout. Also row styles and row icons.
- **Map View**. Based on location attribute.
- **Search** = search fields and behaviour. Also version filters, tags, and maps.
- **Widgets** = information displayed in the right-hand panel.



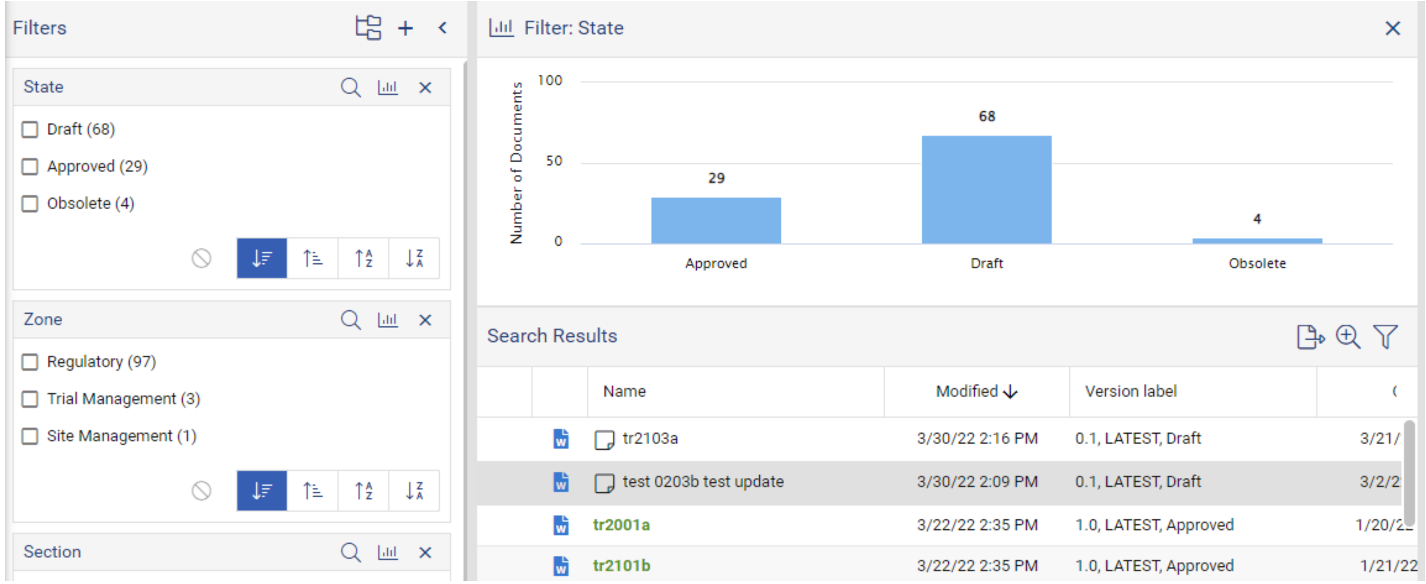
View Actions

- Select the **Toolbar** and **Context** menu (right-click) buttons.
- Choose the **Double-Click** Action.
- Can include **custom actions.** They are grouped together at the bottom of the actions list.
- **Separators** can be added.
- Change the order of actions via click and drag.



View Aggregations

- User selectable attribute filters which narrow down the list of documents in the main view panel.
- Select which attributes become filters/aggregations.
- CARA automatically groups and counts the displayed documents by filter.
- Aggregations can also display a graph of the selected filter



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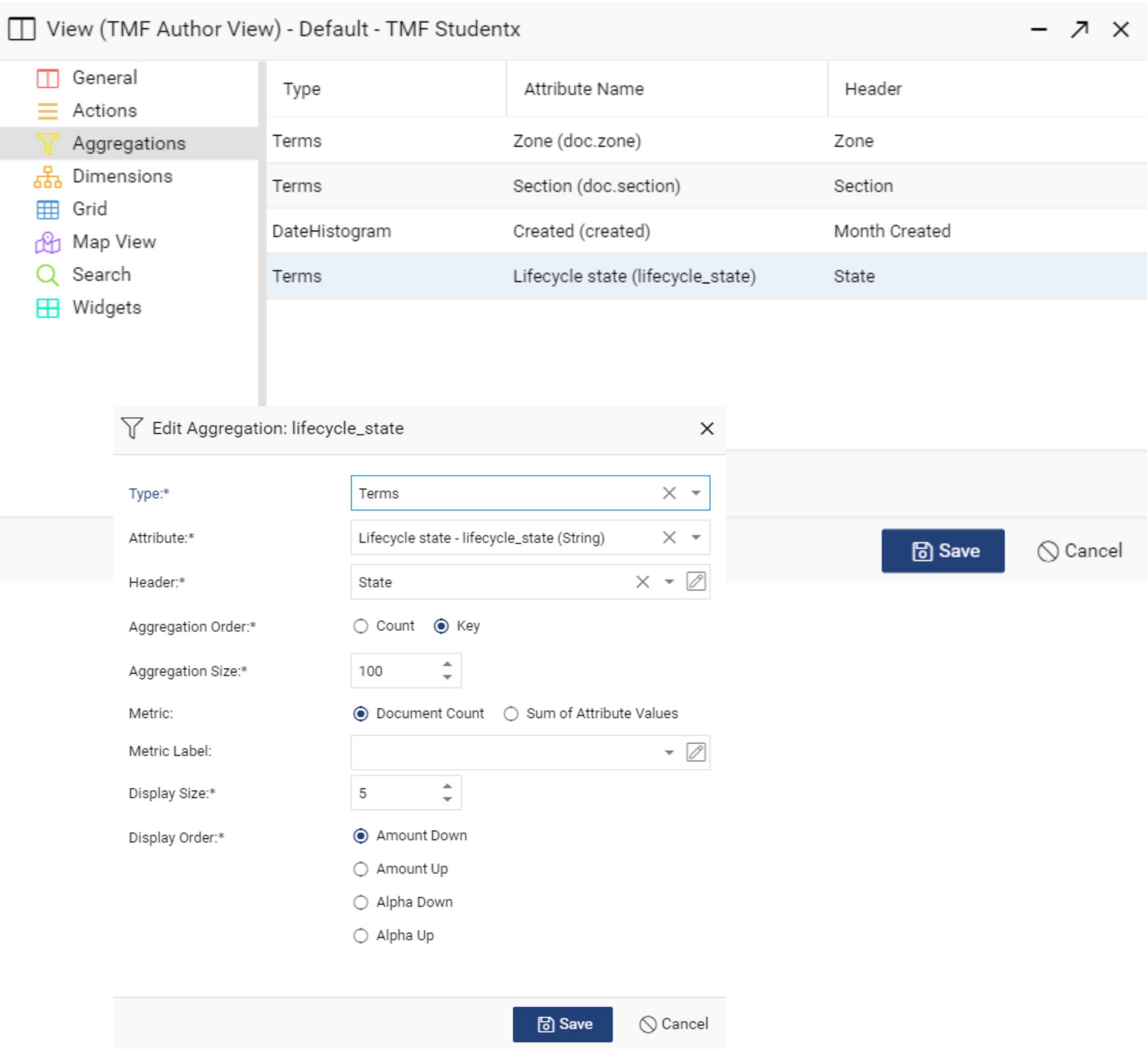
Creating Aggregation Filters

- **Type.** Select either Terms or Date Histogram.
- Select the **Attribute**.
- **Aggregation Order**. List values by Count (number of) or Key (alphabetically by value name).
- **Date Histogram** specify the Interval and Format, for example group created date by month and display as MM-yyyy (simple Java format).
- Add a user friendly **Header**.
- **Integer** fields have an additional option, **Metric** as either Document Count or Sum of Attribute Values.
- **The graph** option is automatically available and does not need to be configured.



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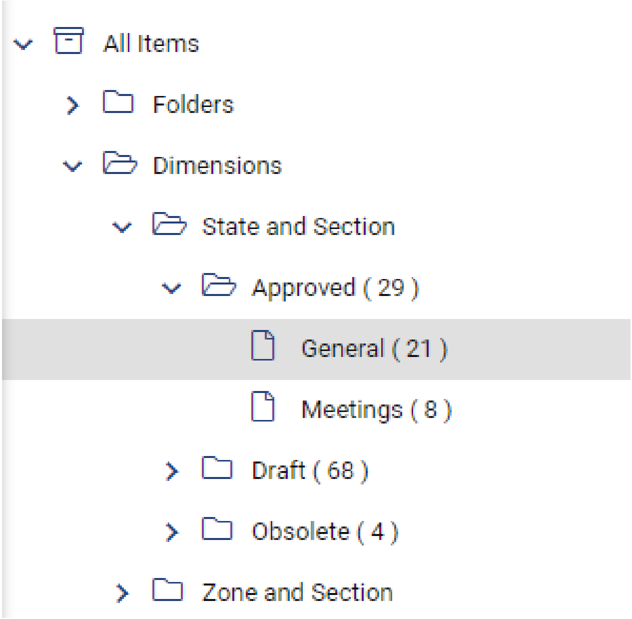
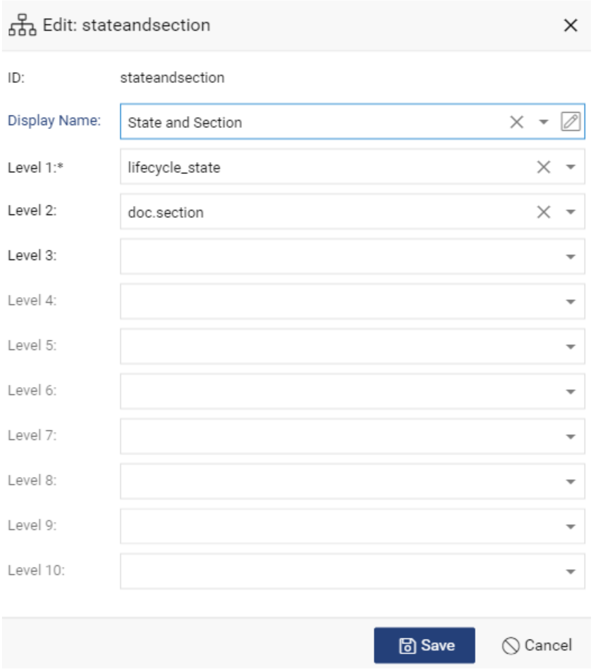
View Dimensions

- Regroup documents into folder hierarchies based on the attributes which are most useful for users to browse by.
- For example the folder structure might be based on region and country but users want to browse by product and status.
- Dimensions are displayed beneath the main folder hierarchy in the Navigation Tree
- The number in brackets is the number of documents within.
- **Unlike folder hierarchies, dimensions show all documents within and beneath when a folder is selected**





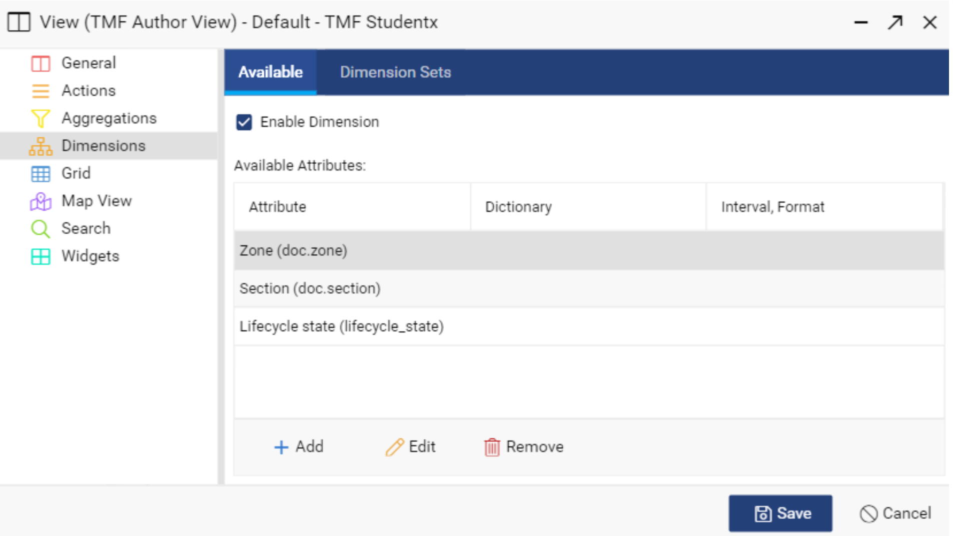
Creating View Dimensions

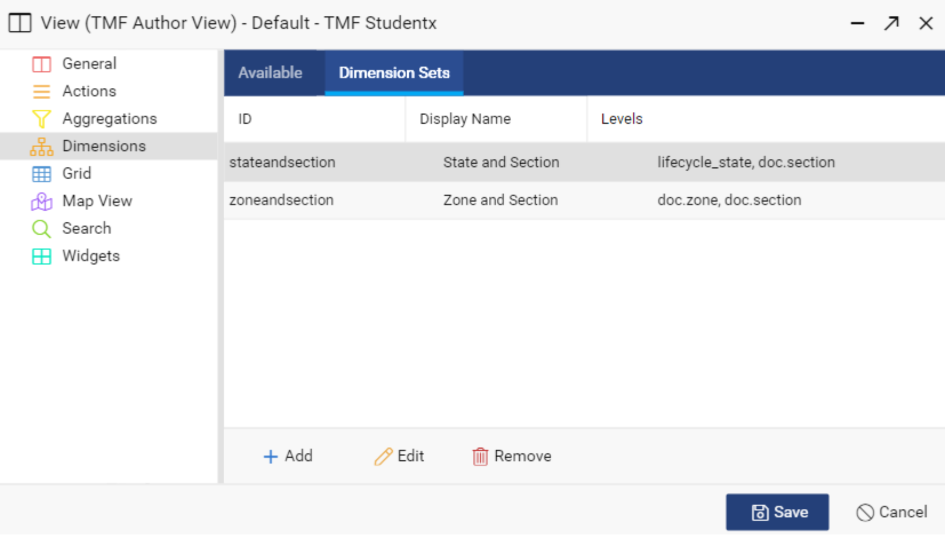
In the **Available** tab:

- **Enable Dimension** and select which attributes can be used.
- For date fields select the **Interval** and **Format**.

In the **Dimension Sets** tab:

- Provide an **ID** and **Display Name**
- Select the attributes for each level, up to 5 levels deep.

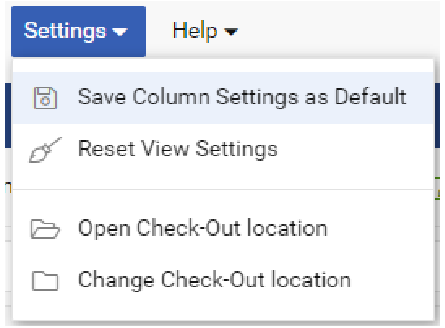


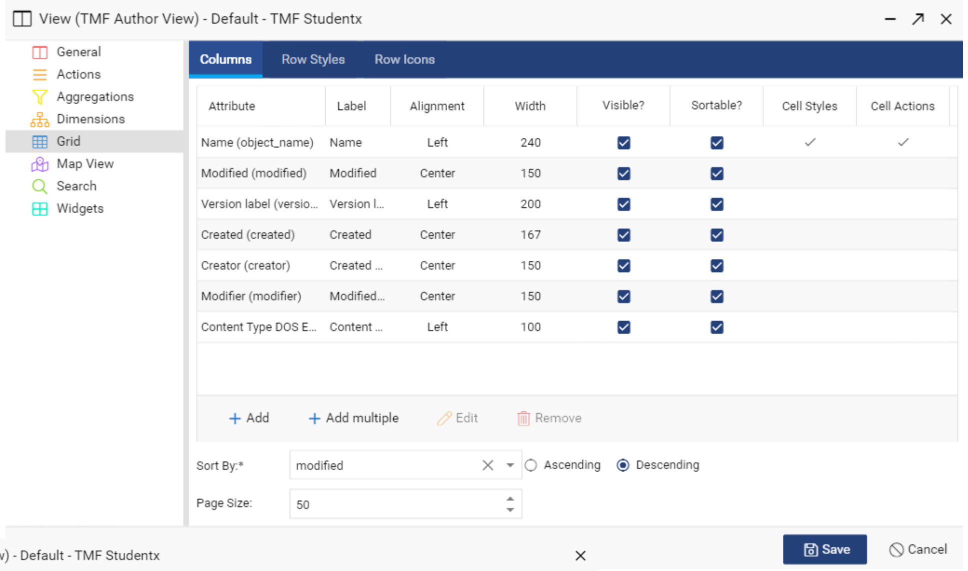


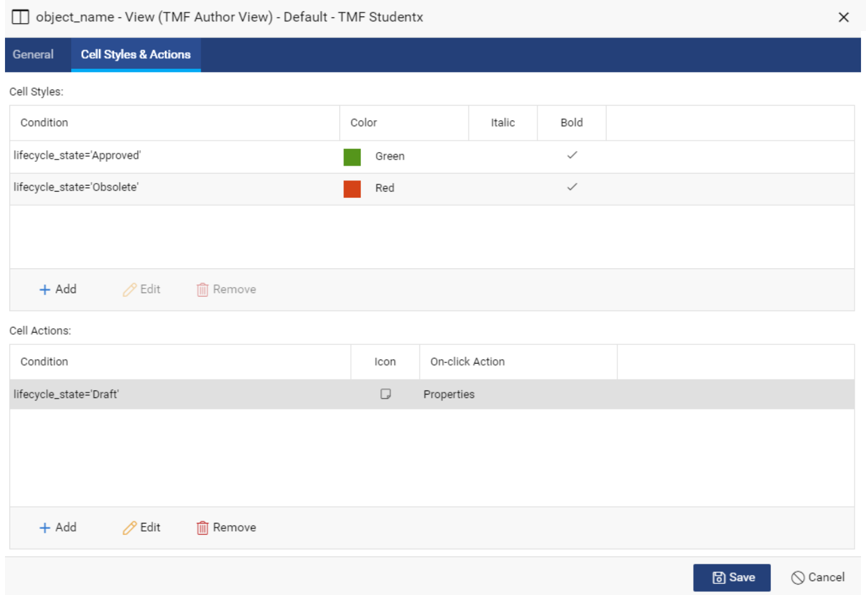
View Grid

- Decide which attributes will be displayed as columns in the main view panel.
- Multiple columns can be added in one action.
- Select the order, labels, sortable etc..
- Can customise the row and individual cell colours with a CQL condition. **Can also have per cell icons with custom actions** based on a CQL condition per cell.

- Settings > **Save Column Settings as Default** can be used by admins to quickly adjust the grid layout.

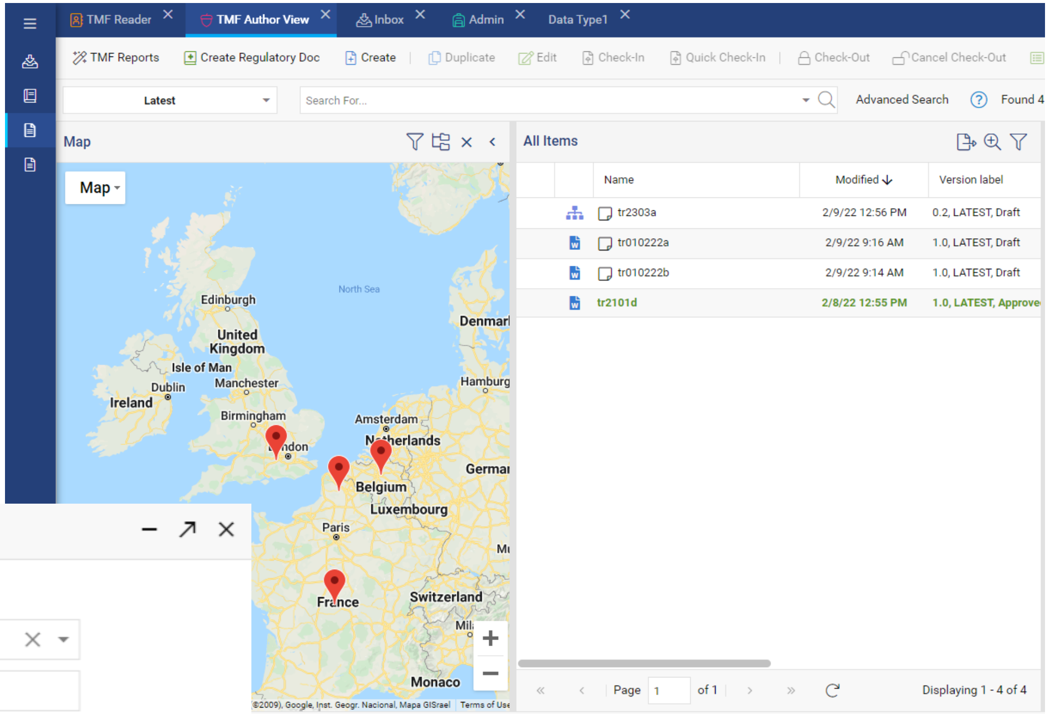


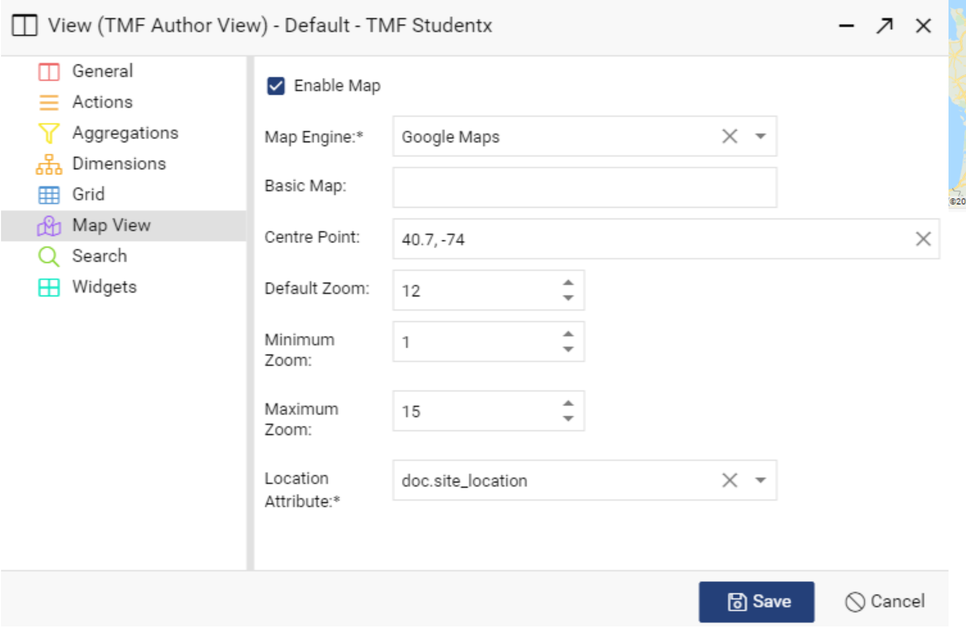




View - Map View

- Show the location of documents on a map filter.
- A Geolocation attribute provides the location, in the format of longitude and latitude.
- Map functionality can be provided by Google Maps or ArcGIS.
- Users have the option to select a click a location on a map to generate the geolocation value.





View - Search

- Several view options are grouped together under the View - Search heading:

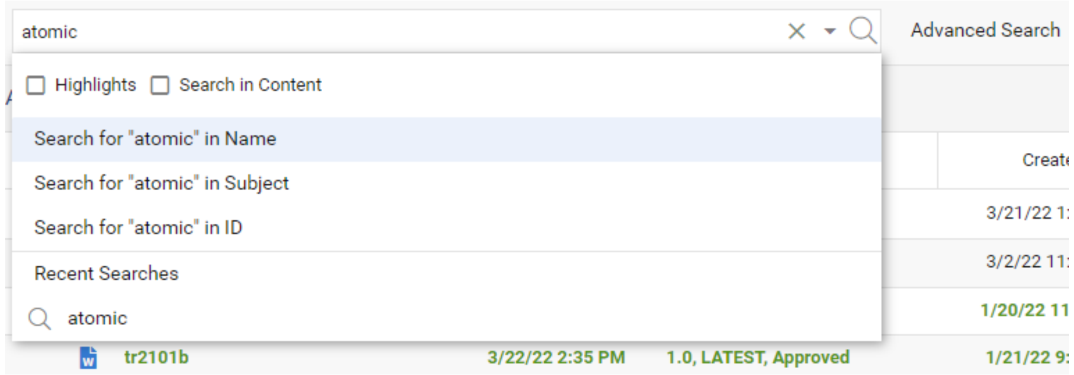
  Quick Search.

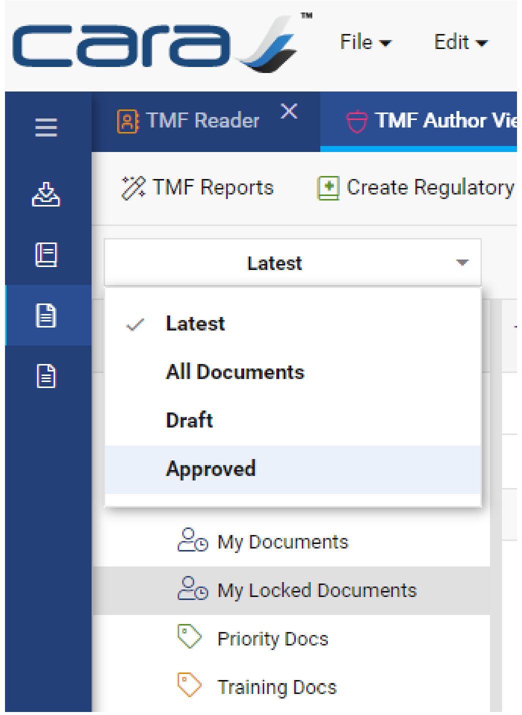
  Advanced Search.

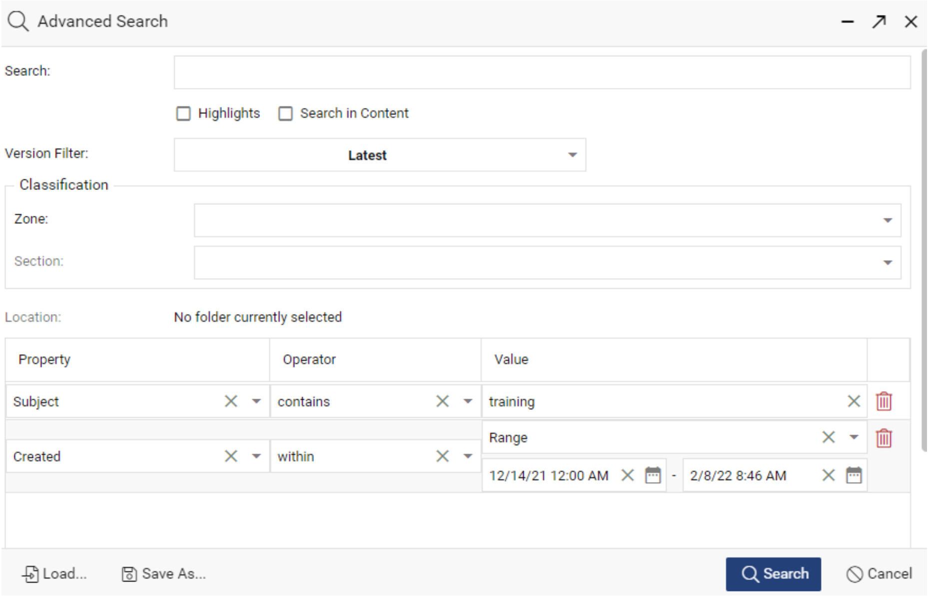
  Version Filters.

  Tags.

- These options are individually detailed in the following slides.

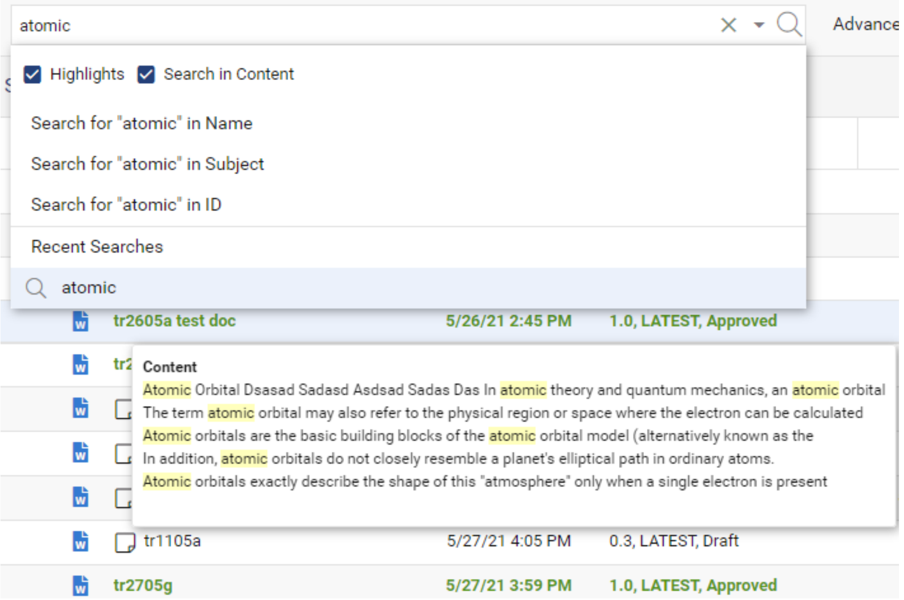


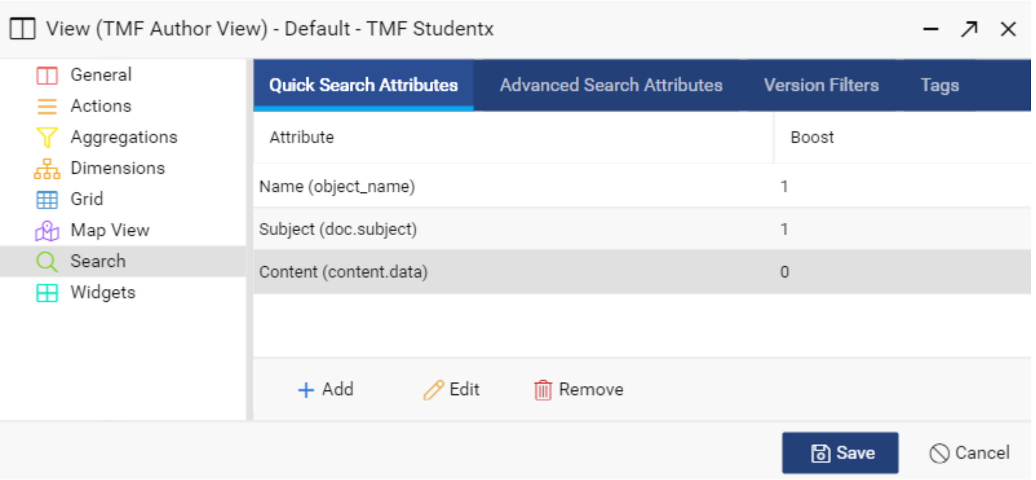




View - Search - Quick Search Attributes

- Select which attributes (system and type specific) are included in the quick search.
- By default object name and ID are included, add others as appropriate. Users can select a specific attribute from the drop-down list.
- In the Quick Search Attributes tab add the attributes to be included. Recall that type specific attributes are prefixed with .doc
- Name (object_name) is included in the default view
- **Important: add content.data for full text searching**





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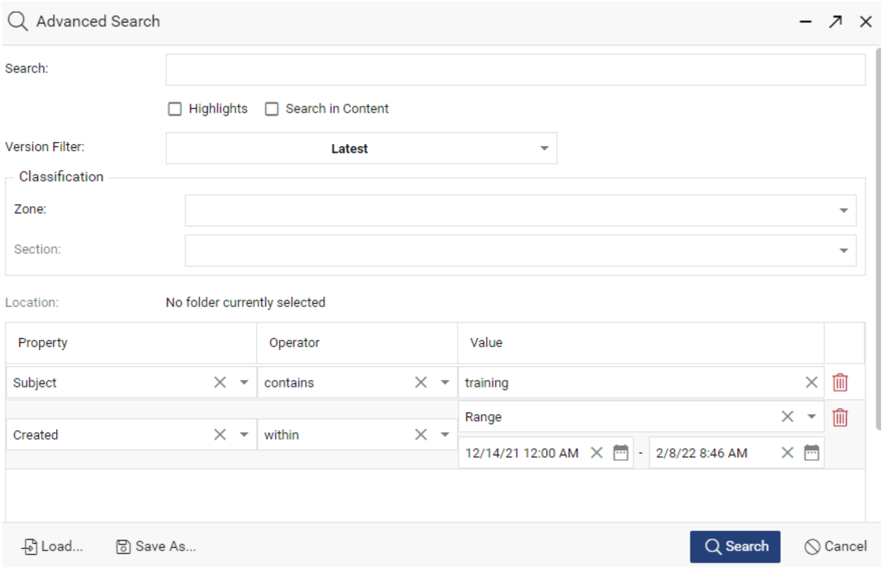
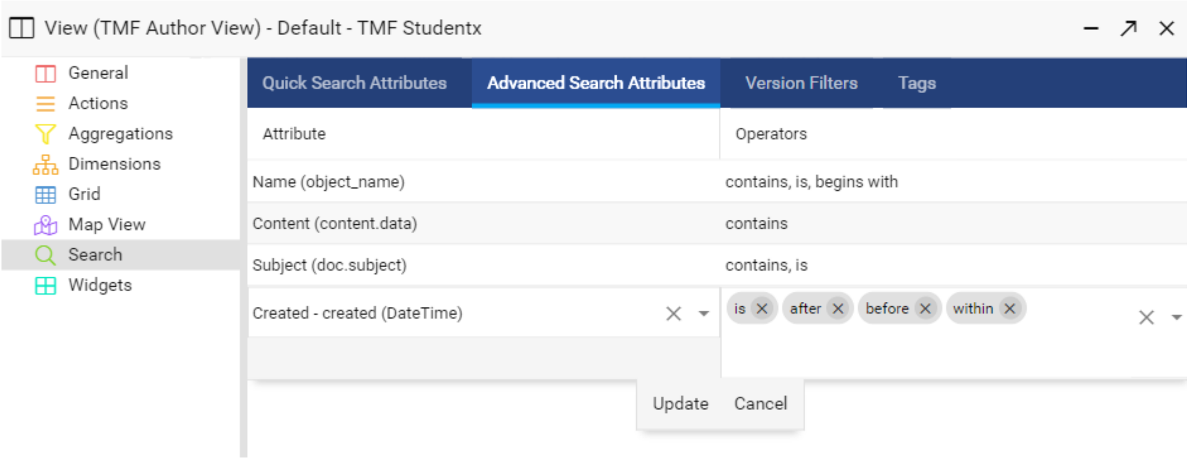
View - Search - Advanced Search

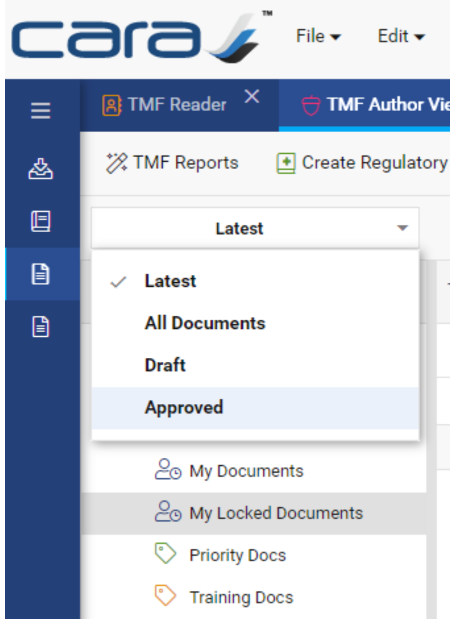
- Select which attributes and their operators are available in the advanced search.
- None are included by default.
- Select each attribute and the operator, there can be multiple operators for 1 attribute.
- As for quick search, add content.data for full text searching.
- Note folders can be searched by default, provided a folder is selected when the user opens advanced search.

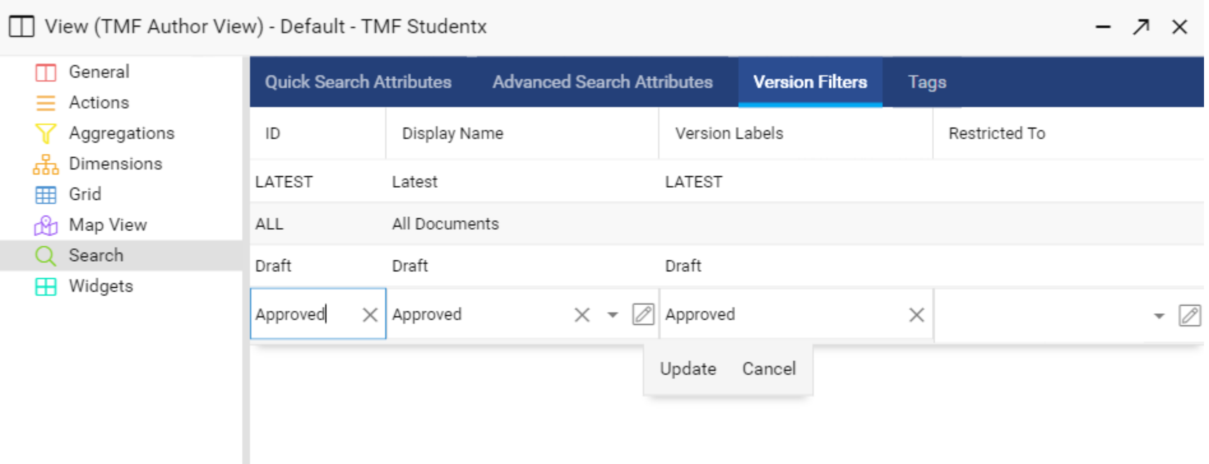




View - Search - Version Filters

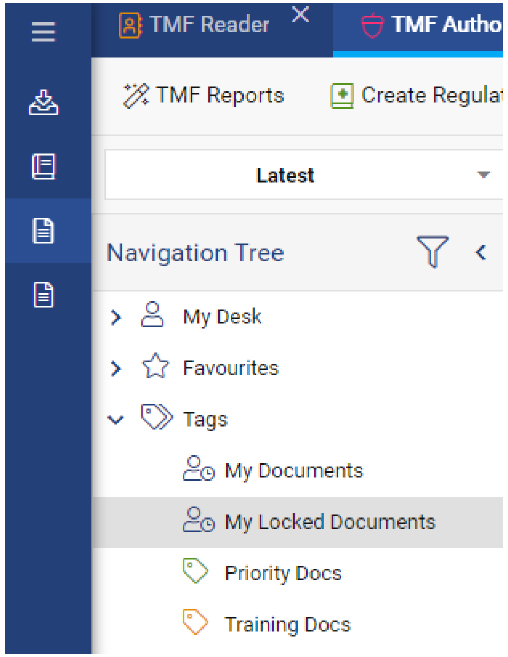
- Only applies to the version label attribute, which is a repeating value attribute and often includes descriptive labels such as Draft, Approved, Obsolete.
- Latest and All version filters are present by default. Add other **version label** filters as appropriate.
- For each version filter specify the **ID**, **Display Name**, **Version Labels** and optionally **Restricted To** group.
- Place filters in the order they should be listed in for users.

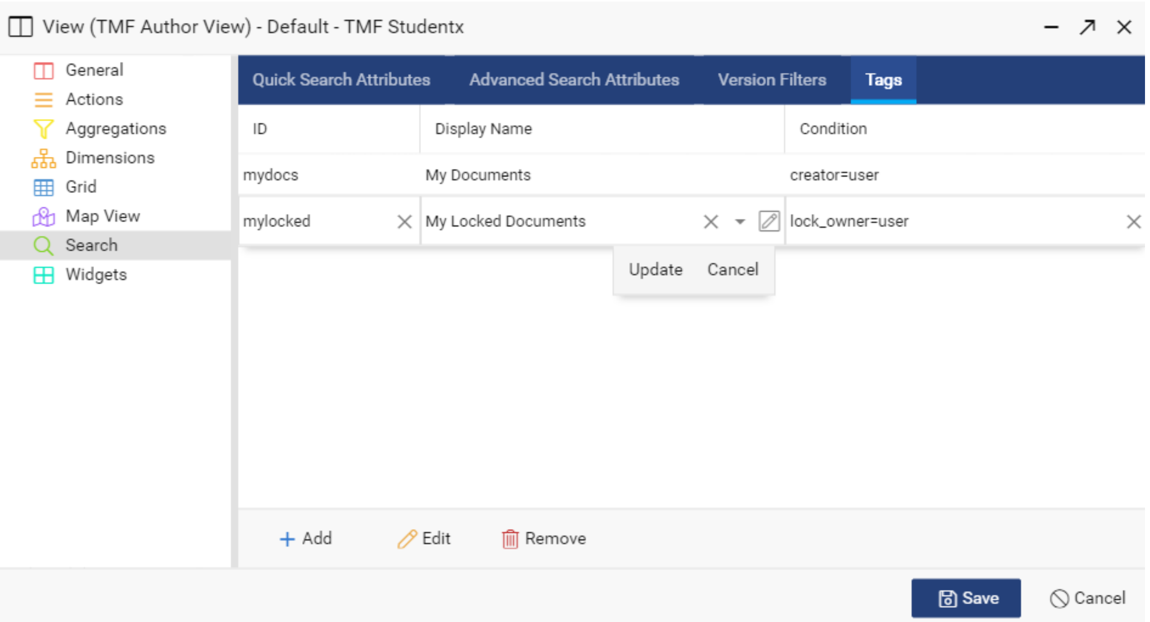




View - Search - Tags

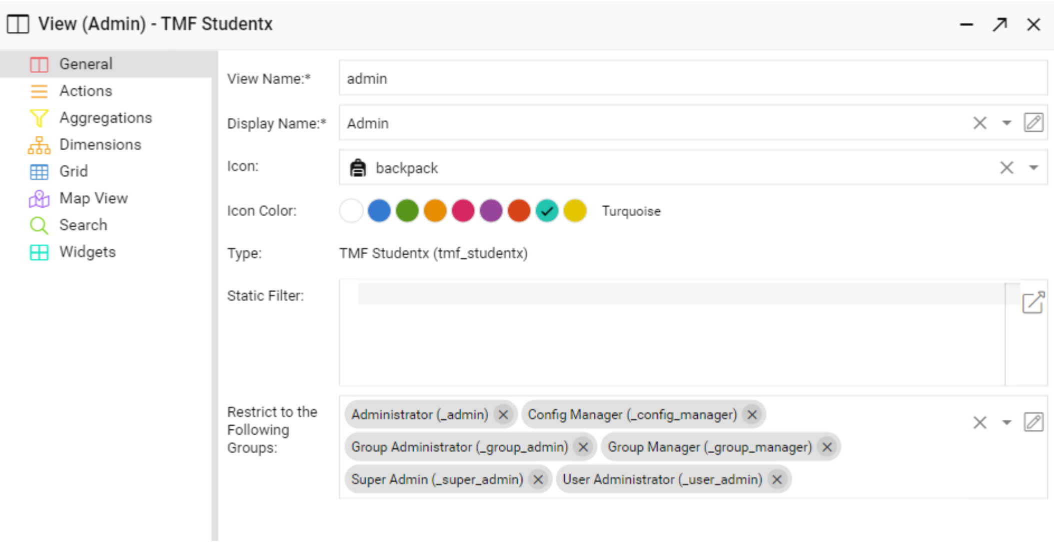
- Tags are predefined filters, providing users with a quick selection of frequently accessed documents. Users can also create their own tags.
- Tags are displayed in a dedicated node in the navigation panel.
- To create a Tag, enter an **ID**, **Display Name** and **CQL Condition**.
- No tags are present by default.

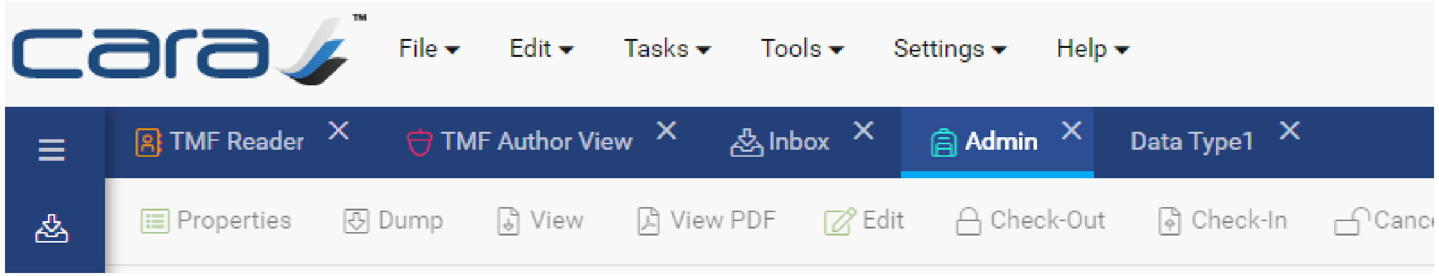




View - Security

- Select the users and groups who will have access to the view
- By default all users have access to the view, the **Restrict to** field is blank initially. Once a group has been added, only the listed groups will have access.
- The view still needs to be added to a workspace which the users have access to. Workspaces are also restricted to specific users and groups.





View - Widgets

- Display additional information about the currently selected document
- Users can close and re-add the widgets available to them. They can also resize and reorder.
- Standard widgets:

  Attributes

  Bar Code

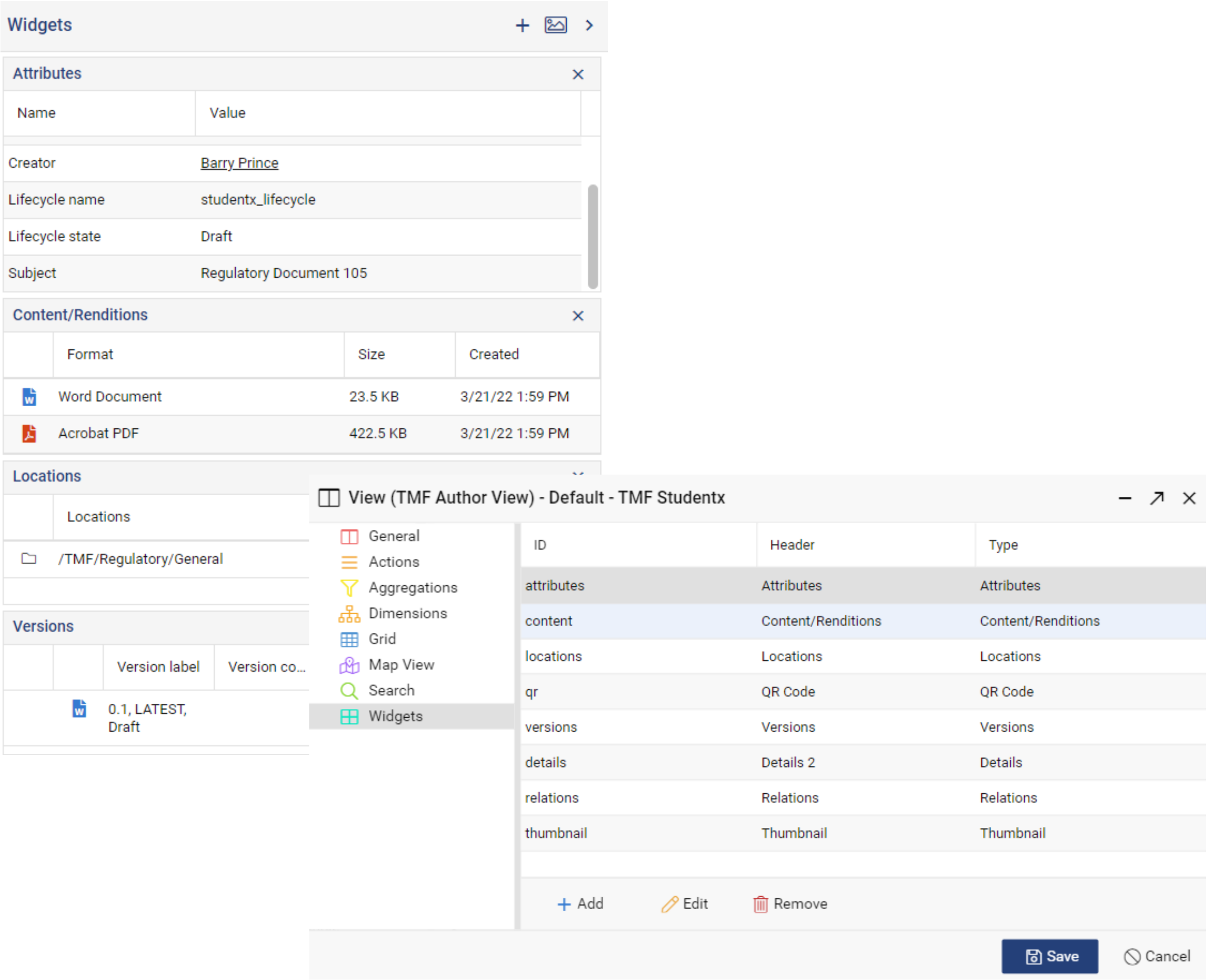
  Content/Renditions

  Details

  QR Code

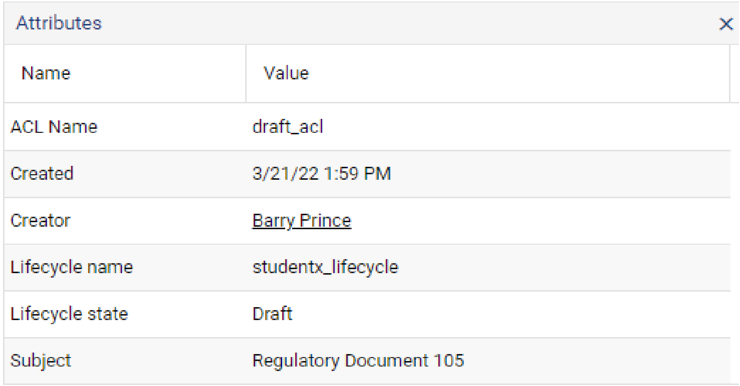
  Thumbnail

  Versions
- Some widgets have config options, others are just enabled or disabled for a view
- The Details widget can be used as a custom widget, it accepts HTML X-templates. It can also make use of variables

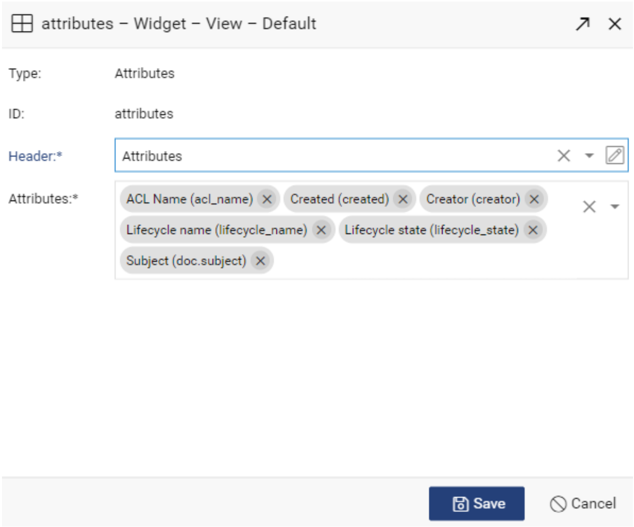


Attributes Widget

- Attributes widget - choose the attributes to be displayed
- Enter a user friendly **Header** label.
- Add system and type specific **Attributes**
- Arrange them in the order they are to be displayed.

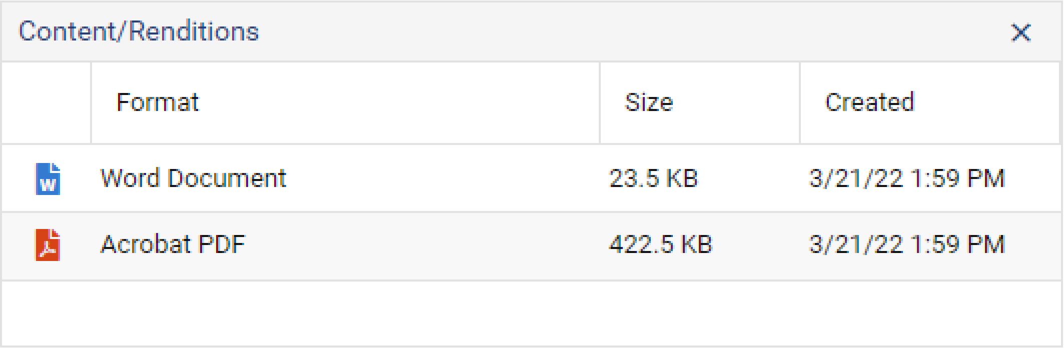

Attributes

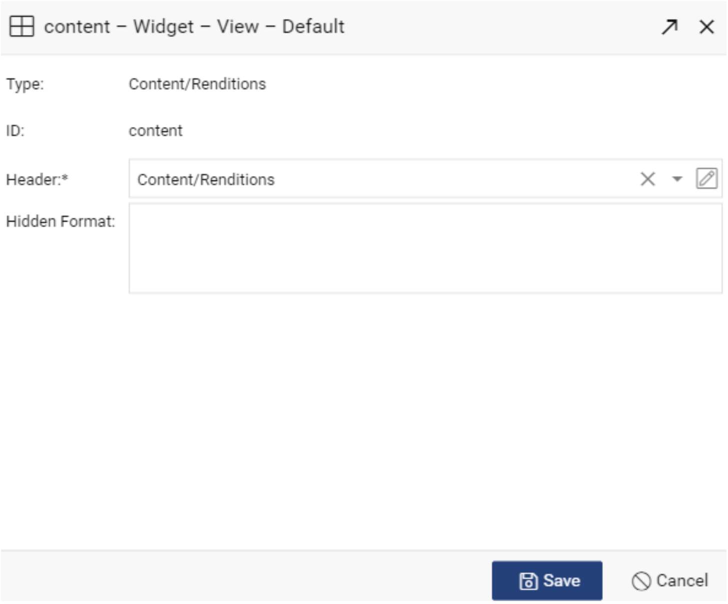
Name	Value
ACL Name	draft_acl
Created	3/21/22 1:59 PM
Creator	Barry Prince
Lifecycle name	studentx_lifecycle
Lifecycle state	Draft
Subject	Regulatory Document 105



Content/Renditions Widget

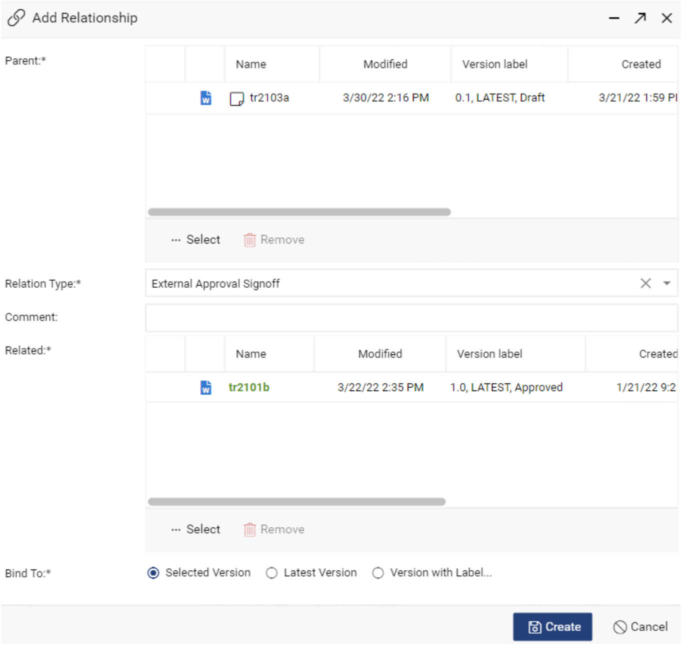
- Content/Renditions widget. Optionally enter a **Hidden Format**, that is formats which will not be displayed to users within the widget. This is useful if there are rendition formats being generated automatically via rendition services which are not intended to be viewed by end users.

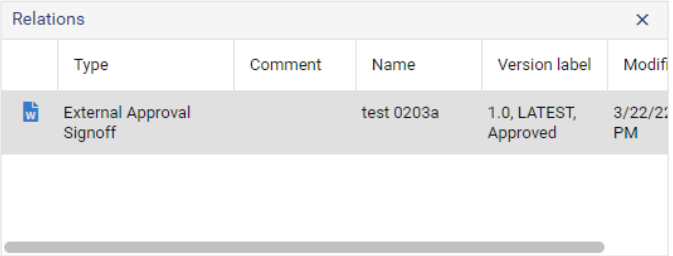


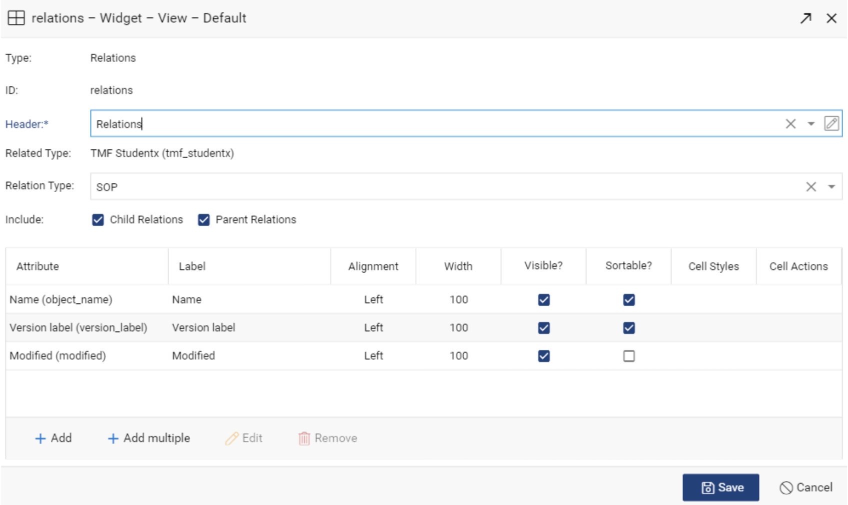


Relations Widget

- Relations widget. Select which attributes are displayed and whether **Child** and **Parent** relations are shown. Cell styles & actions can be customised.
- Can be restricted to specific **Types** and **Relations**, but this is not required. Leave blank to make all relationships visible.
- Attributes which are added but not **Visible** can be manually selected by users, in the same way as for the main view grid.
- A good example of a relationship is when emails and their attachments are imported.
- Remember to check the ACL permissions on both documents, relate is an extended permission.

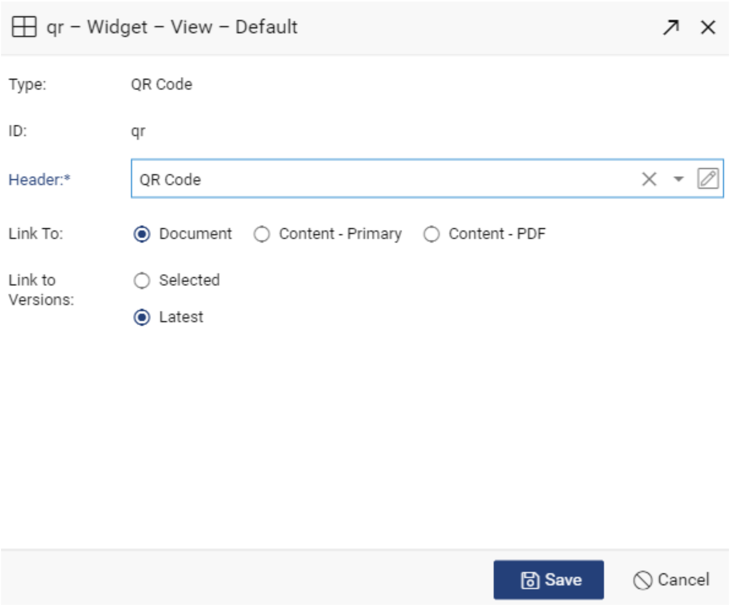






QR Code Widget

- Generate and display a QR code.
- New options were added in v5.4, the QR code can link to the document object or directly to the content. The version directed to can also be chosen.
- Displays the unique ID (combination of type and unique identifier) and name.



Details Widget

- The Details widget acts as a custom widget.
- HTML X-Template format.
- Can use variables such as attributes of the currently selected document.
- **Example 1** - Link to a video showing instructions for an SOP:

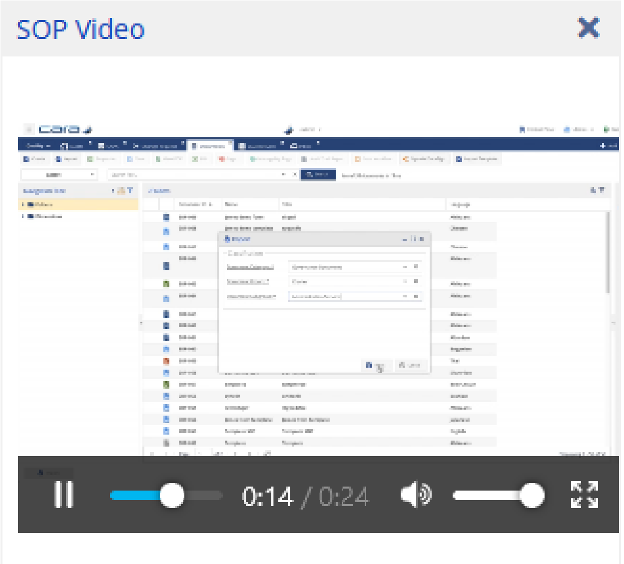
<video width="320" height="240" controls="">

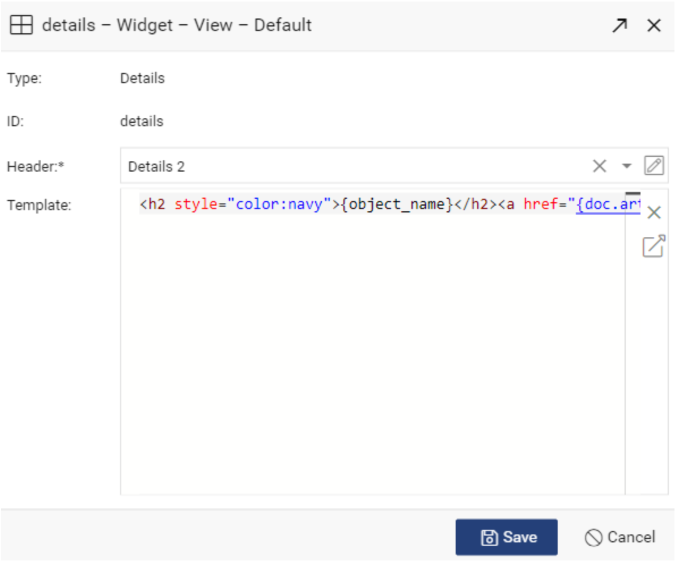
<source src="https://www.dropbox.com/s/s883vlkuvwoixjb/ScreenRecorderProject5.mp4?raw=1" type="video/mp4">

</video>

- **Example 2** – Link to external document using variables:

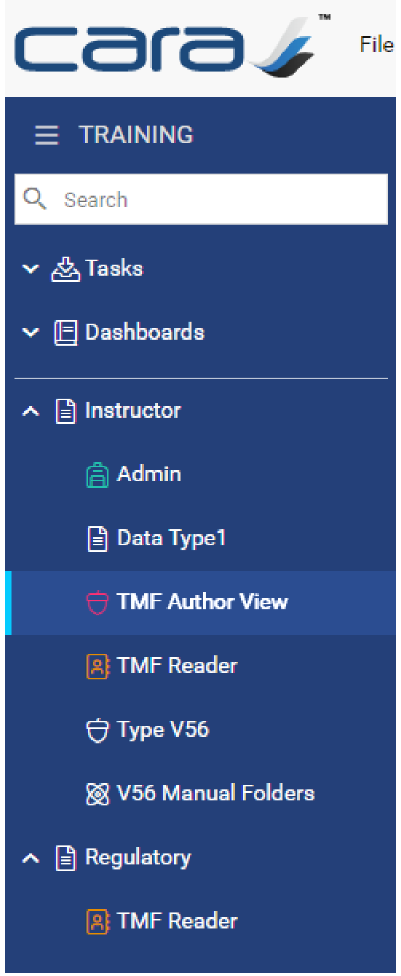
<h2 style="color:navy">{object_name}</h2>Download original from here

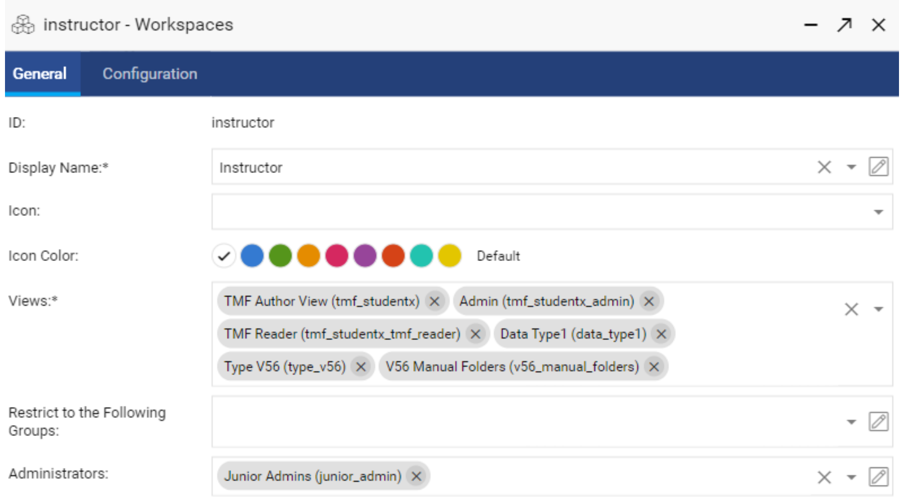




Workspaces

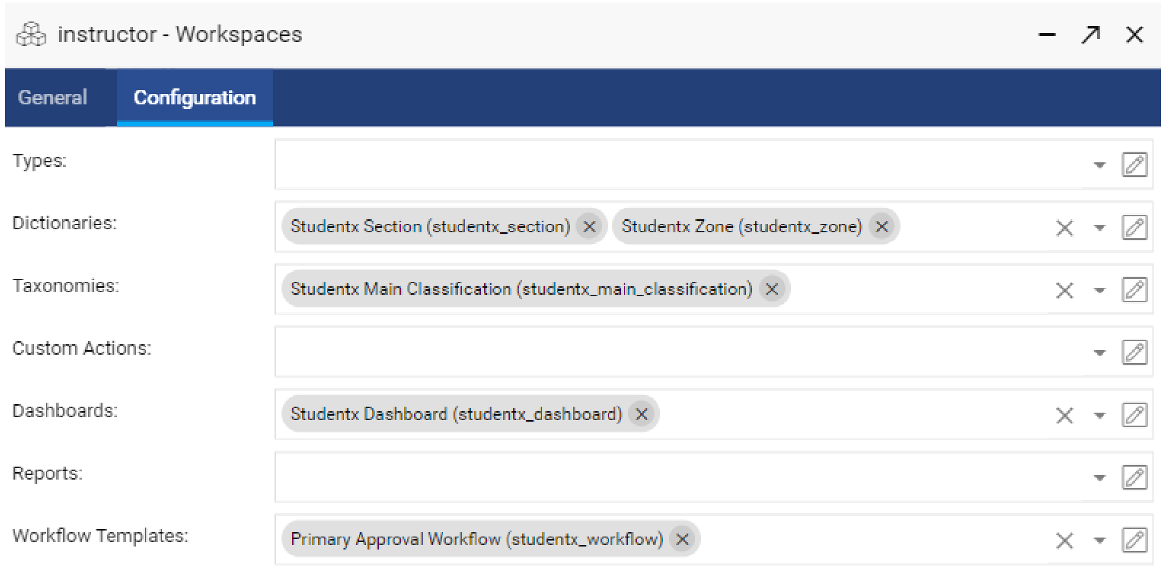
- A workspace is a collection of views. They determine the views (and therefore types) available to different groups of users. Users may have access to multiple views or just one.
- A view can belong to multiple workspaces.
- Select which groups have access to which workspace. If left blank all users have access.
- Users can have access to multiple workspaces.
- Workspaces are selectable from the left-hand side menu. The tasks inbox and dashboards are also located within this menu.





Workspaces Configuration

- The workspace configuration tab is used to select which configuration elements can be updated by administrators of the workspace, as specified in the Administrators field on the General tab.
- It can be used to create junior administrators who have access to selected configuration elements within the control panel. For example, a user could be allowed to update only the dictionaries, reports or workflow templates associated with the workspace they are responsible for.



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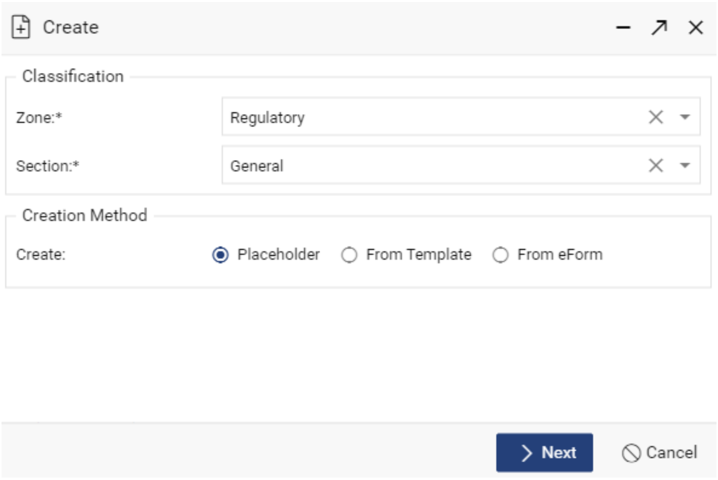
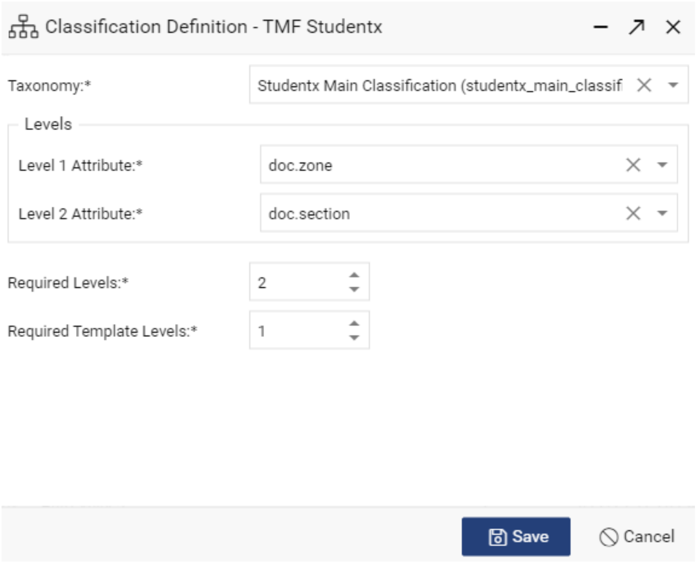
Classification Definition

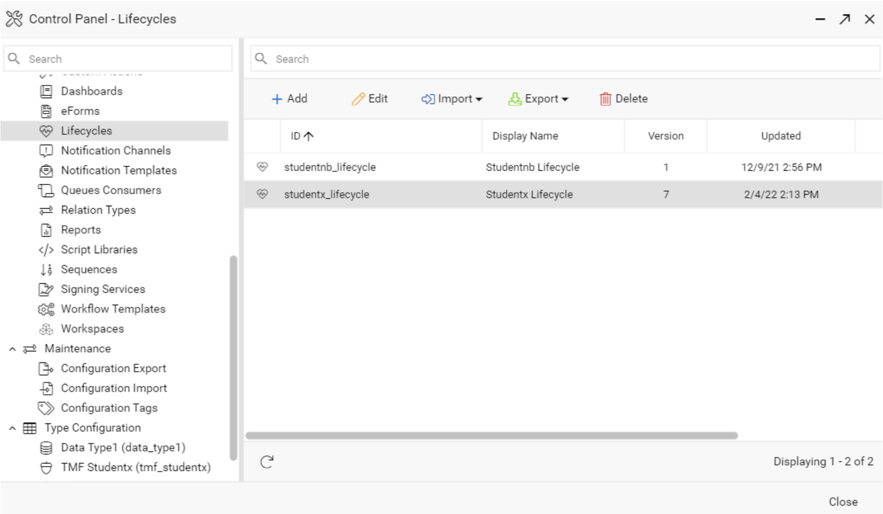
- Based on a taxonomy, determines the document choices presented to users when creating new documents.
- A large amount of the configuration applied to a document is determined by the classification selected.
- Levels can be required or optional.
- Choose the taxonomy.
- Choose an attribute for each level.
- Choose how many levels are required for documents and templates.
- **Recommendation**. Create specific attributes for storing the classification choices when defining the type.

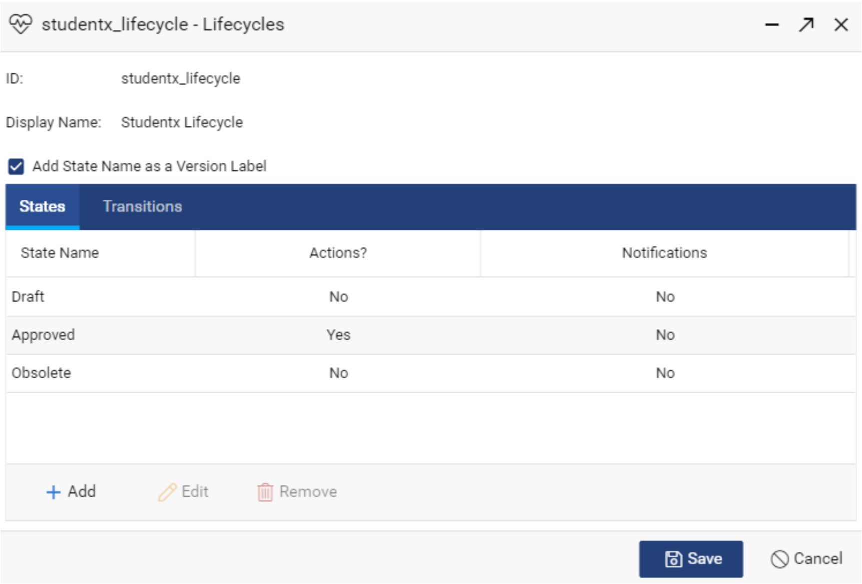




Lifecycles - Introduction

- A lifecycle describes a series of states which a document may pass through such as draft, reviewed, approved.
- Each state of a lifecycle can modify properties of the document attached to it, for example the document security might be changed to read-only when approved.
- Lifecycles are applied to documents automatically at the time they are created and moved between lifecycle states either manually by users or automatically by a workflow.





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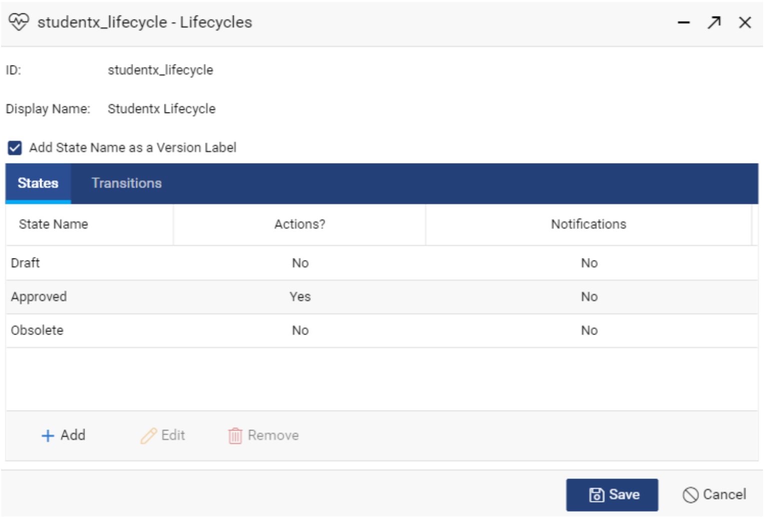
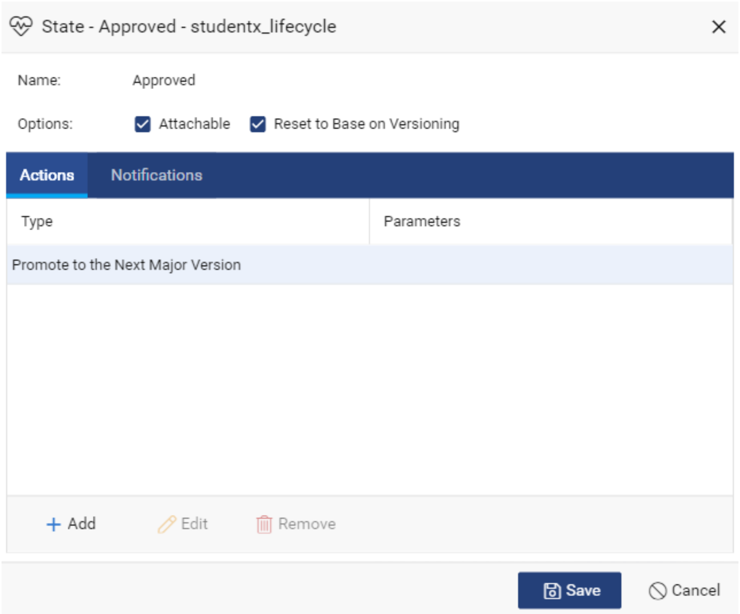
Lifecycles – Creation Overview

- Define the states of the lifecycle, for example Draft, Reviewed, Approved.
- For each state, define Actions and who should be notified when a document enters that state.
- Define the Transitions, that is which state can follow which. Transitions do not need to be linear.
- Select Add State Name as Version Label to automatically update the version label, otherwise define it as an action.





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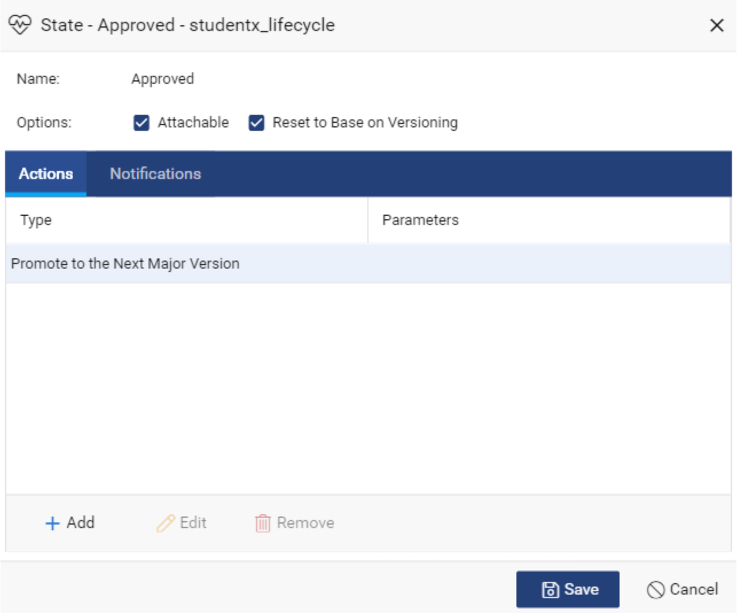
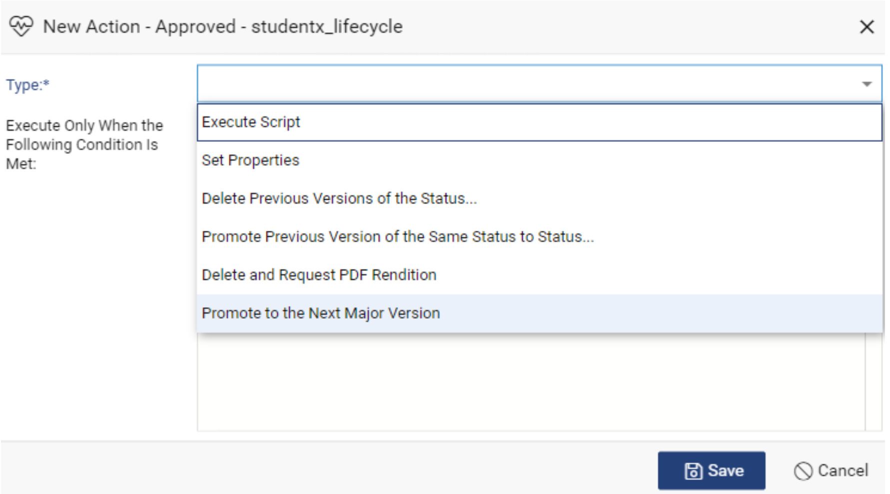
Lifecycles - States

- **Name** each state.
- **Attachable**. Can a document begin in this state? Multiple states could be attachable, for example if some documents being imported are already approved.
- **Reset to Base on Versioning**. For example if an approved document is versioned then send it back to draft.
- **Actions**. Include Set Properties and Promote to the Next Major Version.
- Other actions can be defined as a script.
- Actions can be conditional.
- **Recommendation**. Typically draft documents (minor versions) are promoted to major versions when approved using the "Promote to Next Major Version" action.





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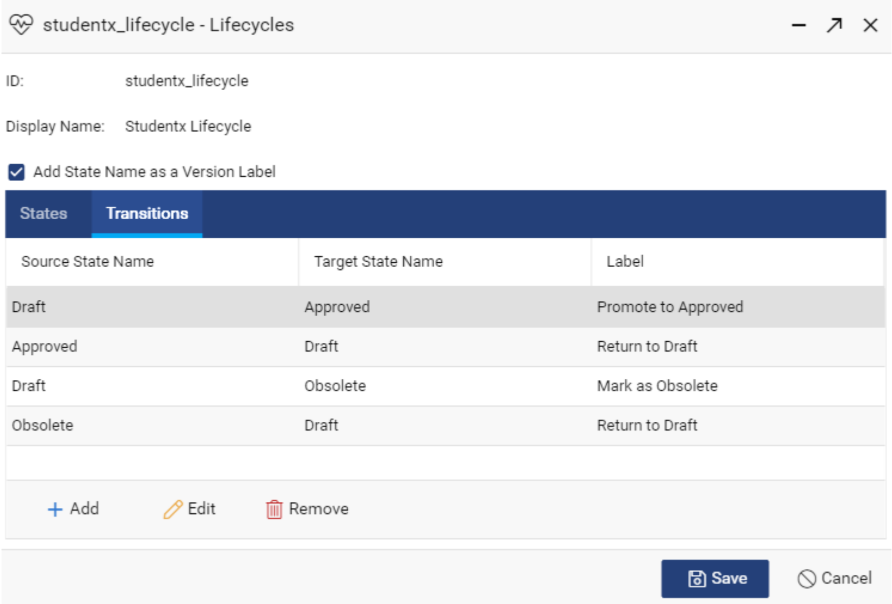
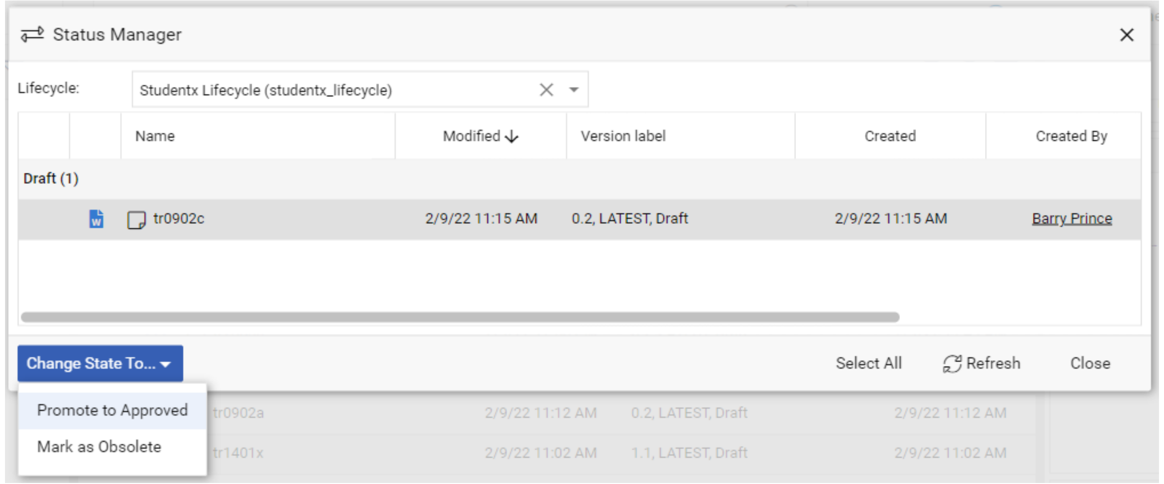
Lifecycles - Transitions

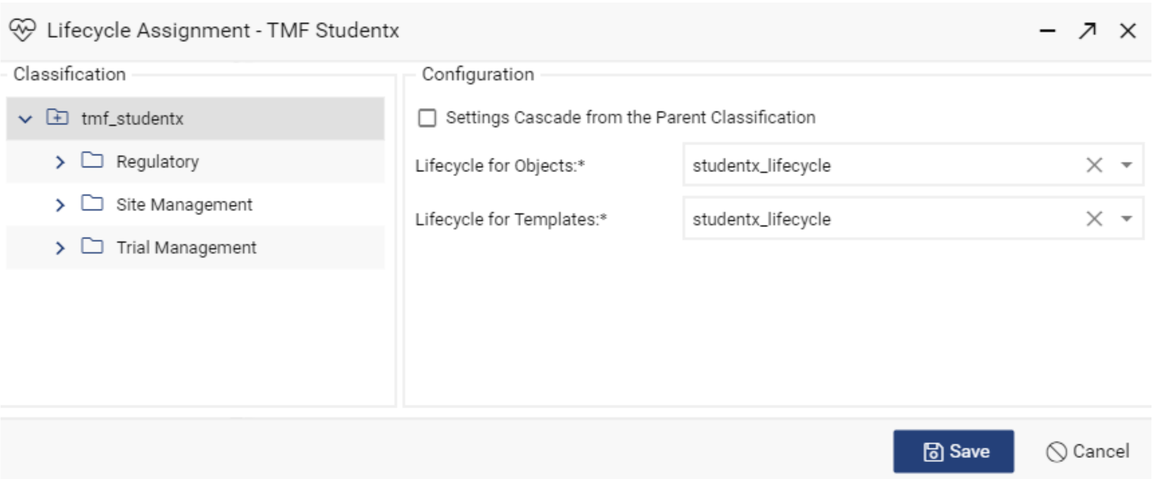
- For each transition specify the **Source State** and **Target State**, as well as a user friendly label (displayed within Status Manager).
- Allow **Manual Transition** via Status Manager if appropriate.
- Optionally restrict which groups are allowed to perform the manual transition.
- Transitions can be conditional on a script.

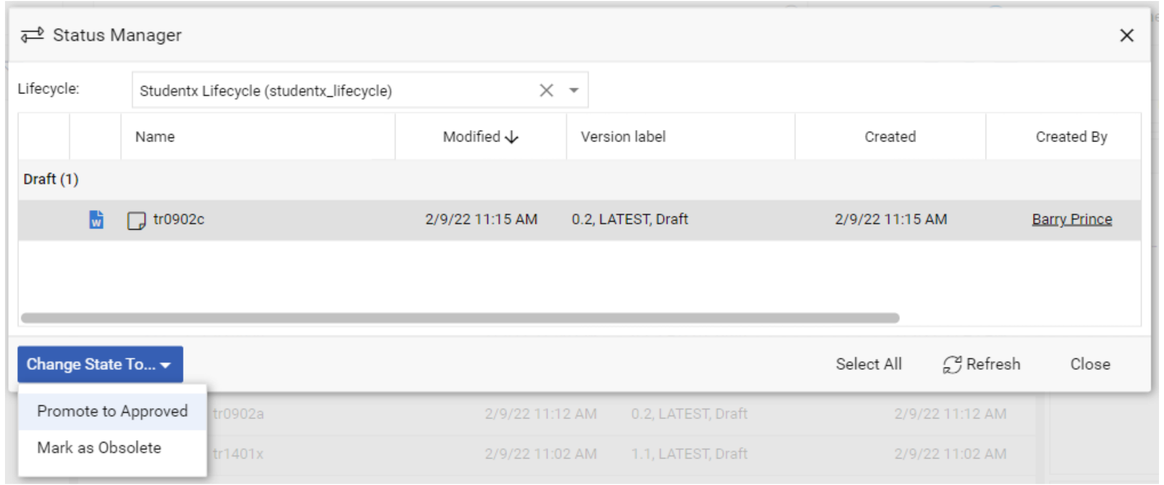




Lifecycle Assignment

- Assign a lifecycle to be applied to a document when created.
- Like many other configuration elements, each node of the classification taxonomy can have its own setting or inherit from its parent. You could just have one lifecycle used by all documents.
- Document Templates can have a different lifecycle selected.
- Users can manually move documents through a lifecycle via Status Manager, or a workflow can move the document between lifecycle states.





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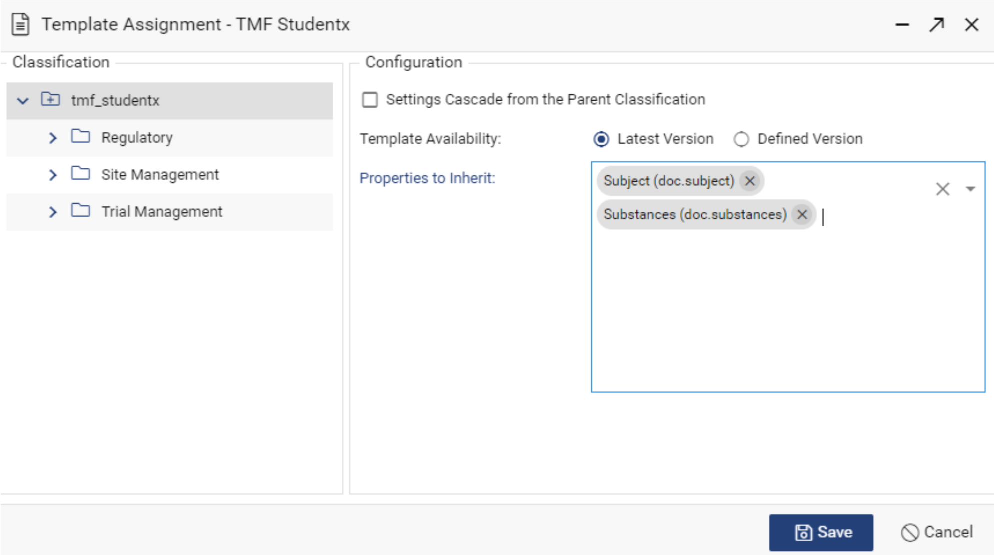
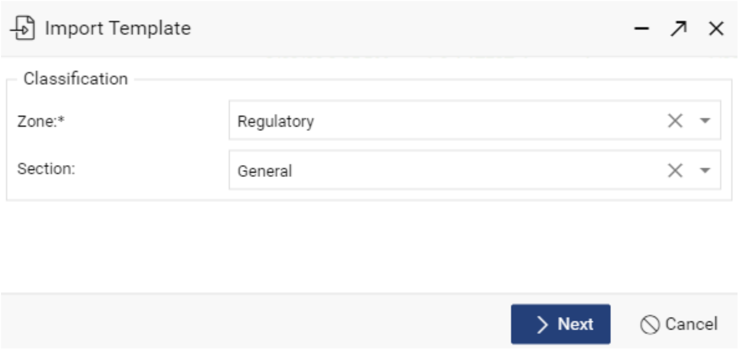
Template Assignment (Content Templates)

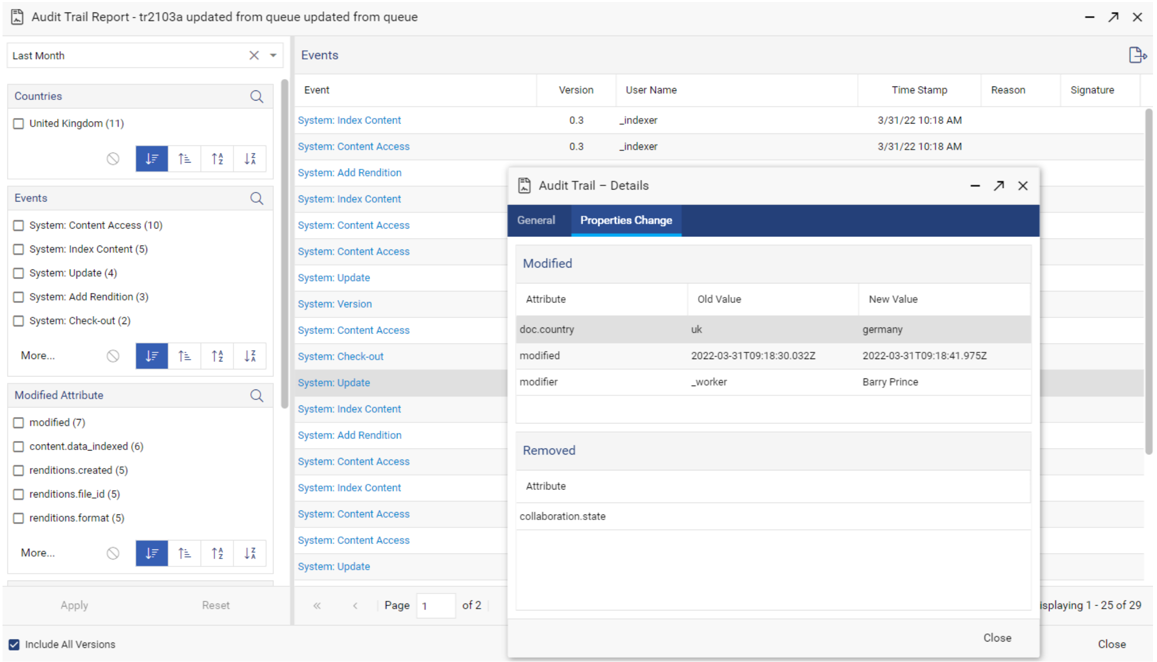
- **Configuring Template Assignment is required before any templates become user selectable**, regardless of templates having already been imported.
- Select which versions of content templates (MS Word or Excel etc..) will be provided to users, either the Latest Version or a Defined Version such as Approved.
- Optionally select which (if any) properties will be inherited from the template. Template attribute values can be set when importing a content template.
- Please note, when templates are imported their classification is chosen, this determines which content templates are available for which classification of documents.
- **Recommendation**: Have specific linking rules for templates, this point will be emphasised in the Linking section.





Auditing - Overview

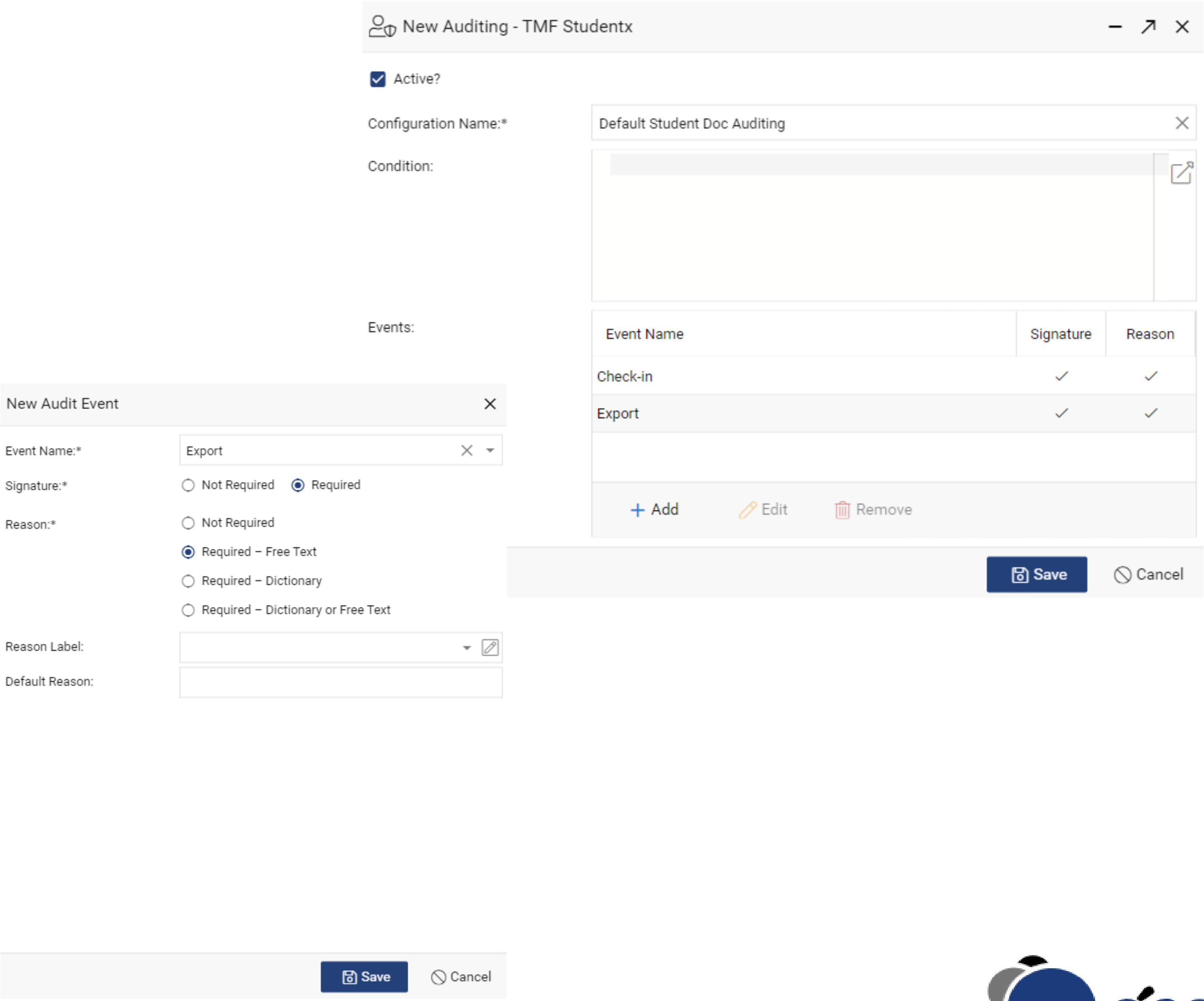
- Auditing creates a history of events such as creation, editing, viewing and task completion.
- The audit history is displayed to users as an audit trail report.
- There is a default set of events recorded in the audit trail automatically. These events are listed in the **_audit_events** dictionary and include system events. It may not be necessary to configure type specific auditing.



- The audit events to be recorded for a type can be selected, with conditions.
- Each audit event can require a signature and reason. The reason can be free text or dictionary based.
- Property changes (old and new values) are recorded and are displayed in the report.
- **Recommendation**. Typically leave the default audit config as is but add those events which need a signature. Also remember to add auditing to individual workflow templates.

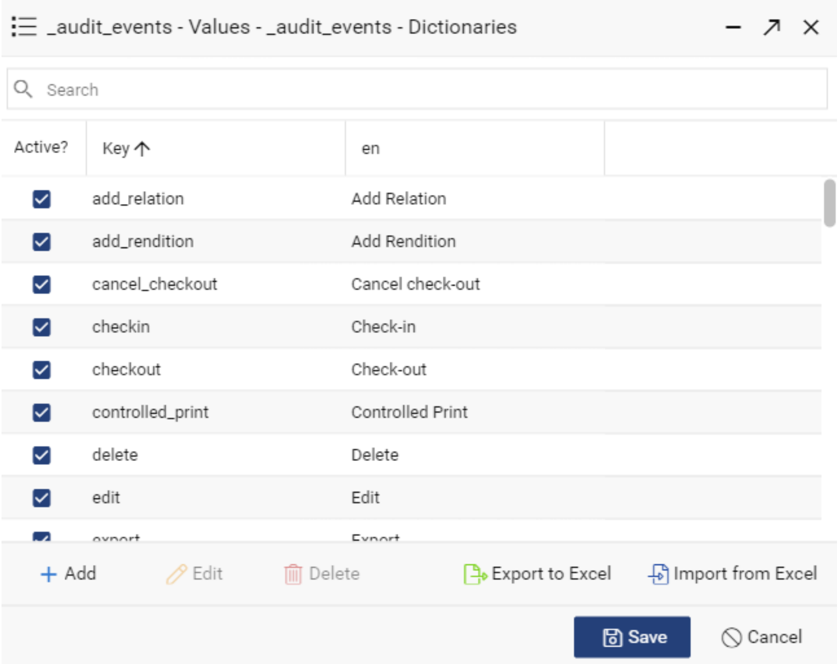
Audit – Adding a Configuration

- Add a new audit configuration, per type.
- Make **Active** and optionally add conditions.
- Multiple audit configurations with different conditions can be created, for example, draft vs approved documents.
- Add **Events**. Task related events are available once configured.
- Signatures can be required. Reasons can be required or optional.
- A **Default Reason** can be provided.



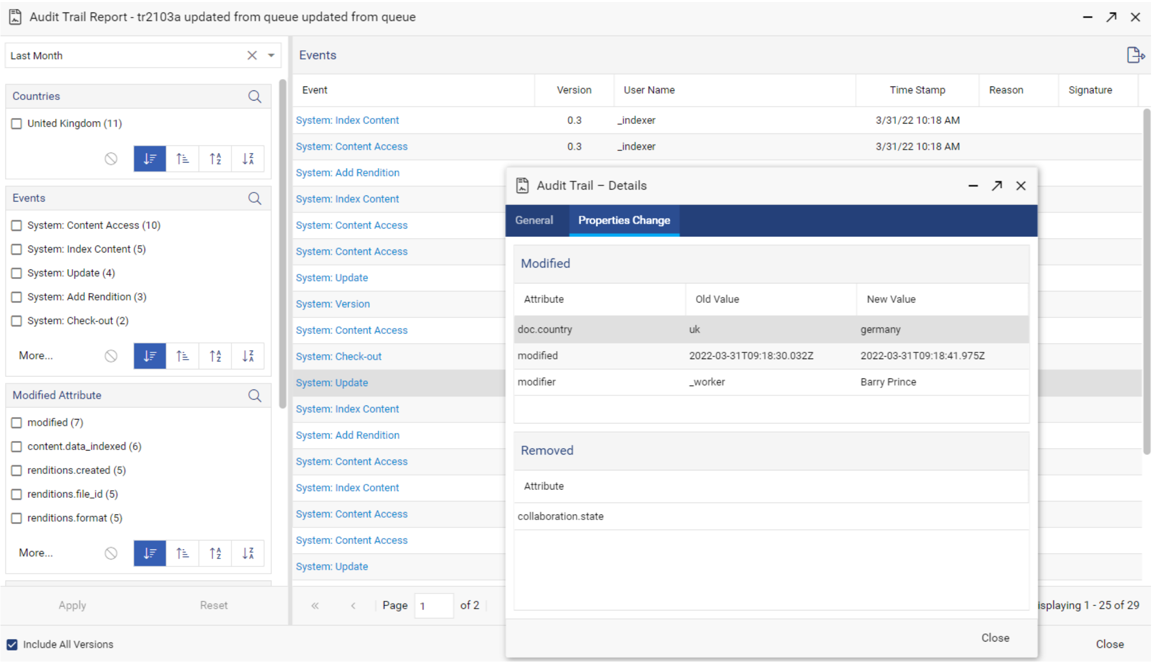
Audit Events Dictionary

- _audit_events dictionary lists the auditable events, which are active (recorded) and their user friendly display labels.
- User friendly display labels can be updated as required.
- Make an event **inactive** to remove it from the default audit events, don't delete them.
- **Recommendation**. The _audit_events dictionary includes system events such as content being indexed and renditions being added. These can be inactivated if required, however it is preferable to leave the defaults, users can easily filter between user and system events in the audit report.



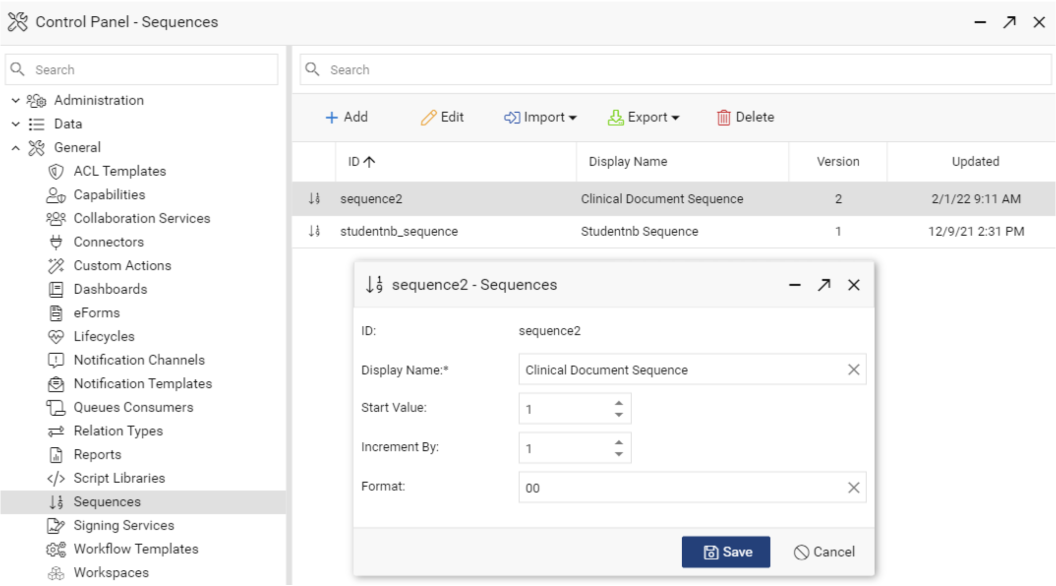
Audit Trail Report

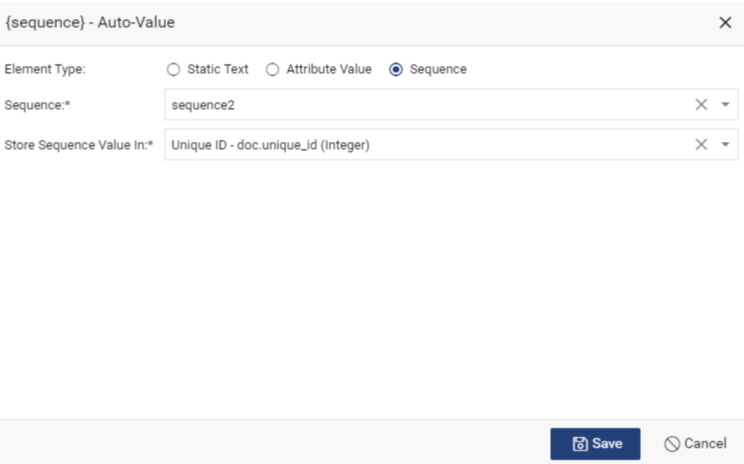
- Add as a View Action; toolbar button, menu button or both.
- Various filters are available to fine tune the report.
- View only the selected version's events or all versions. **Include All Versions** is a tick box in the bottom right corner.
- **System Update** events show where attributes were individually changed. Double-click to see old and new property values.
- **Export to Excel** icon is located in the top-right corner. Since v5.4 the export matches the column layout and therefore can be customised.



Sequences

- A sequence is an automatically incremented numeric value **used within auto-values**. Can be used to uniquely number documents.
- Specify an **ID** and **Description**.
- Enter the **Start Value** and **Increment** (usually 1)
- Choose a **Format** such as 0000, in which case the first document would be 0001.
- When sequences are used within an auto-value rule the sequence value must be stored in an integer attribute, this can be a **custom attribute** or the system attribute **sequence_no**.
- **Recommendation.** Multiple sequences can be created, so each type of document can have its own unique numbering via a dedicated auto-value.





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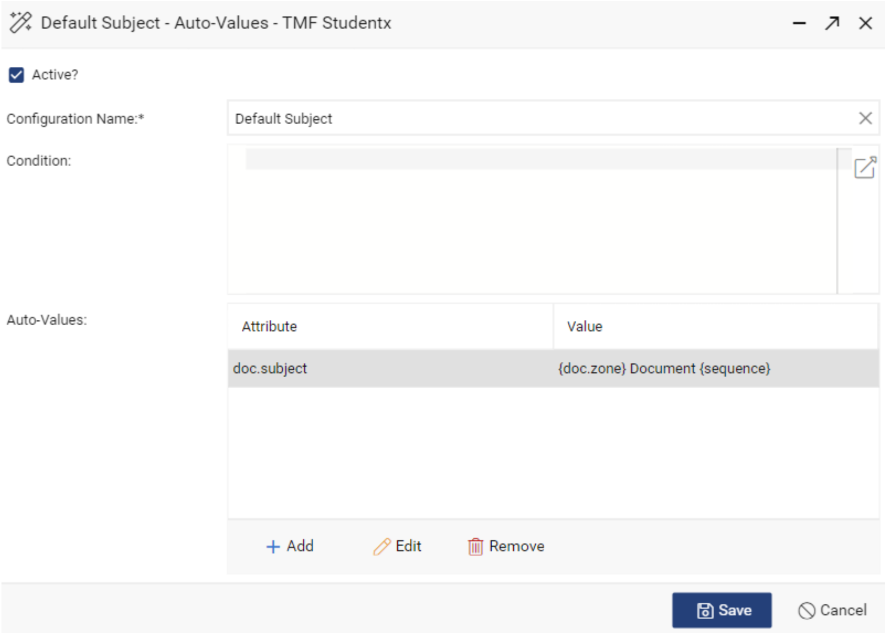
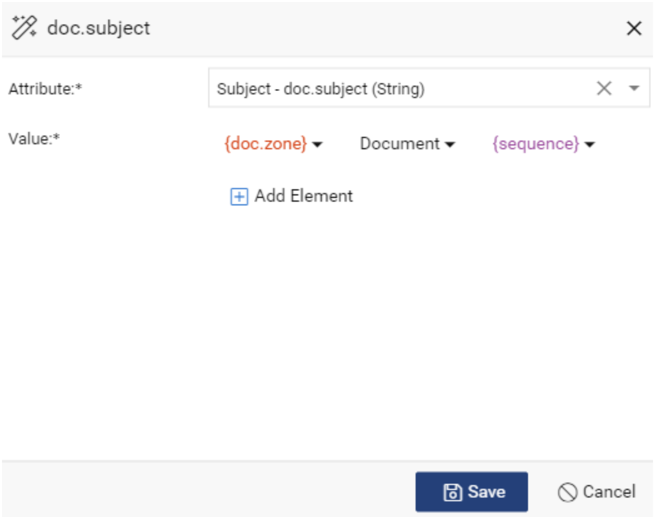
Auto-Values

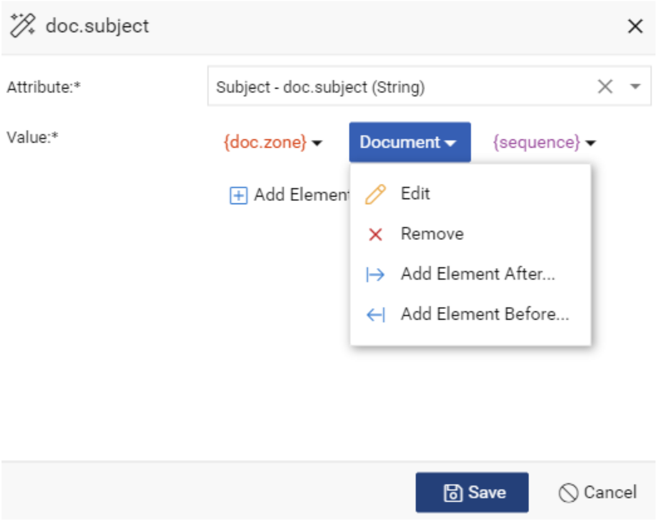
- Set property values automatically each time a document is **versioned**.
- Separate from Properties Initialization.
- Auto-value rules can insert a combination of static text and other attribute values. Sequences can also be included.
- Each auto-value rule can apply multiple properties and be conditional (CQL condition).
- Auto-values do not apply to multi-value attributes.

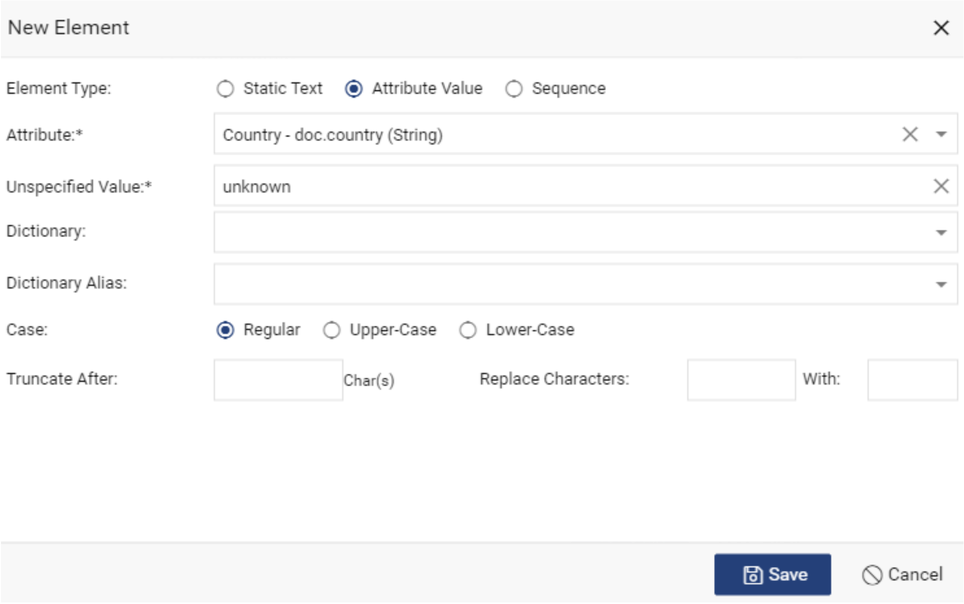




Auto-Values - Elements

- An auto-value attribute could be static text, it could also be a combination of **static text**, other **attribute values** and **sequences**.
- Select the Attribute and then **Add Element** After or Before.
- For Attribute Values, an **Unspecified Value** is required in-case there is no value for the current document.
- Values can use dictionary aliases, have their case changed and be truncated, useful if attributes can be very long.
- Remember to **add spaces between elements**. Usually add a space at the end or the beginning of a static text string.





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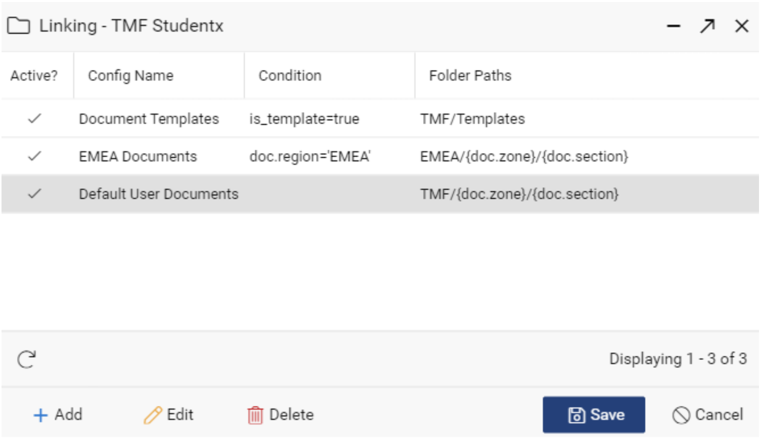
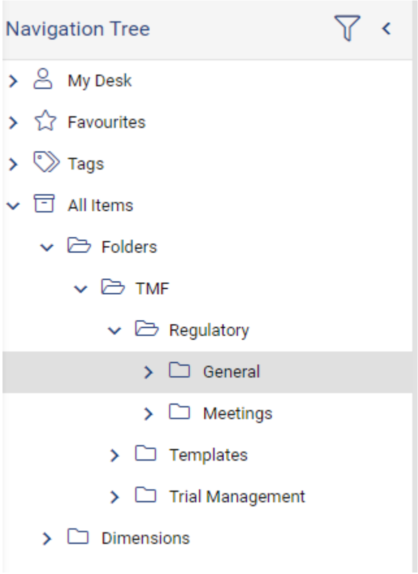
Linking

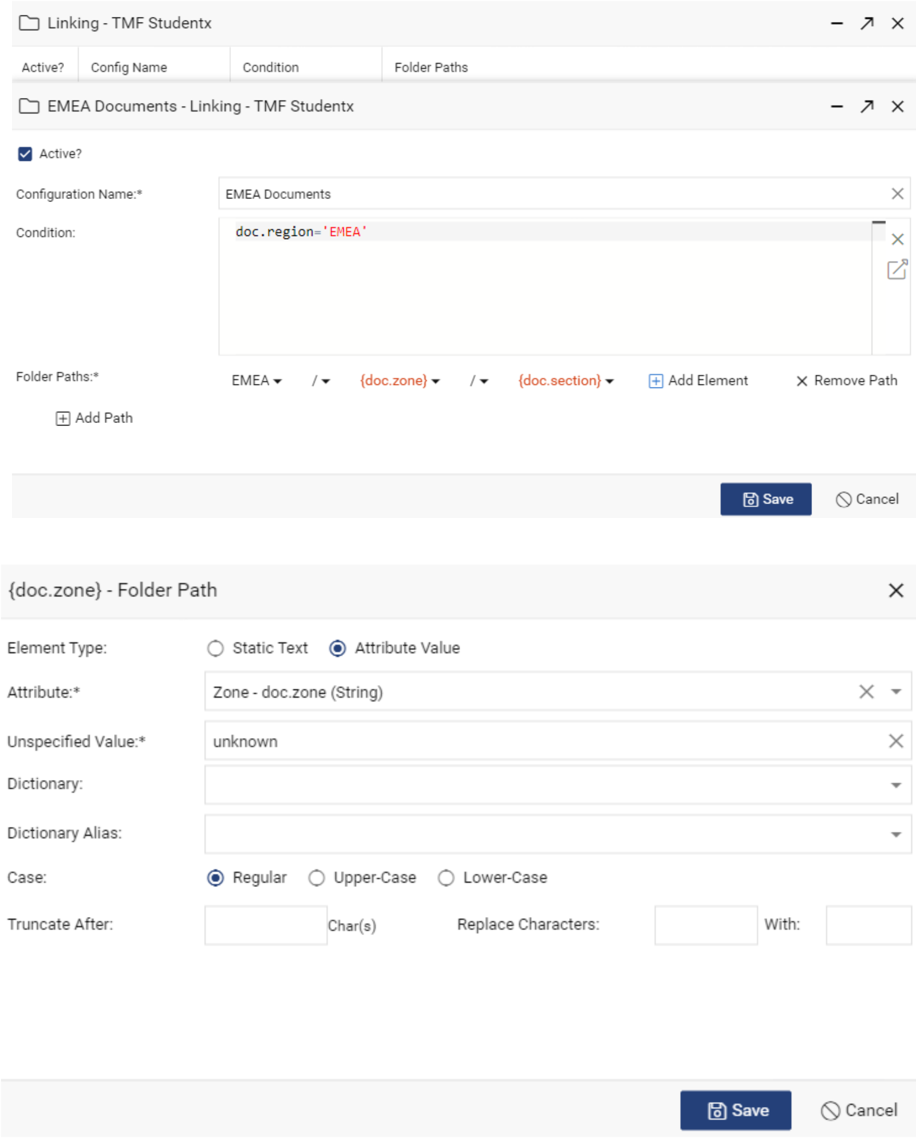
- Rules defining which **folders** documents are placed into automatically. Folders are created automatically as needed.
- The option for users to create and delete folders **manually** is also available. It is per type and must be selected at the **type definition**.
- Having folders is not compulsory, they are not fundamental to object definition and dimensions are available separately.
- Each document can be linked to multiple folders if desired.
- Where there are multiple linking rules they must be placed in an appropriate order, with more specific rules at the top. The first matching rule triggers.
- If a document's property value is changed it will be relocated to the new folder path. Different versions of a document can have different folder locations.
- **Recommendations**. Having folders created and populated automatically reduces scope for human error. The option to have manual folders was added for specific scenarios.





Linking – Adding Path Elements

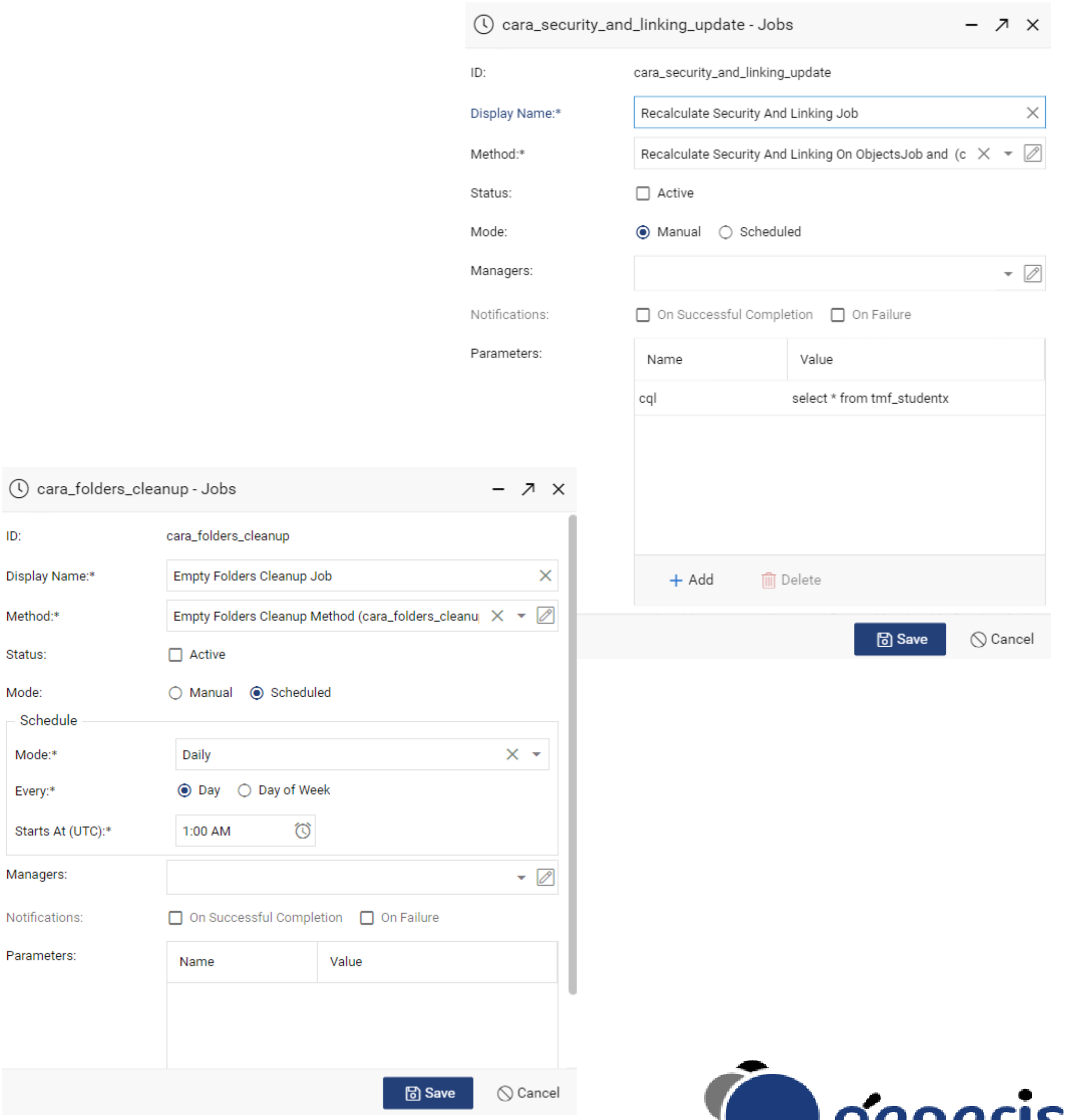
- Linking rules can be conditional.
- Each folder path can be made up of multiple elements, a combination of static text and attribute values.
- **Important**: add a forward slash between folders, but not at the beginning or end of the path.
- An **Unspecified** value for attribute elements is required, in case the attribute is blank.
- Dictionary aliases can be used.
- Elements can have their case changed and be truncated as needed.
- **Recommendation**. Create a separate path for content templates, using is_template=true as a condition.



Testing Linking Rules

- Ordinarily, to test linking rules, a document needs to be resaved to prompt the application of the linking rules. If you want to change the folders for multiple documents they would all need to be updated in some way.
- The **cara_security_and_linking_update** job was added for testing linking rules without individually resaving documents. It also reapplies security rules to the selected documents.
- The job requires a complete CQL **select** statement to identify which objects/documents to reapply rules to. What the **select** part returns is irrelevant, use the **from** to select the object type.

  Example: select * from tmf_studentx
- Empty folders, which may happen if you move documents to a new folder based on linking rules, can also be removed automatically. Use the **cara_folders_cleanup job**.



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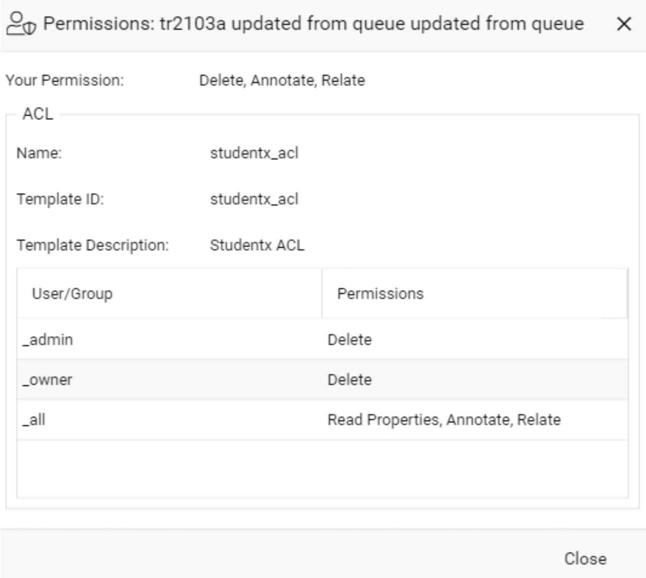
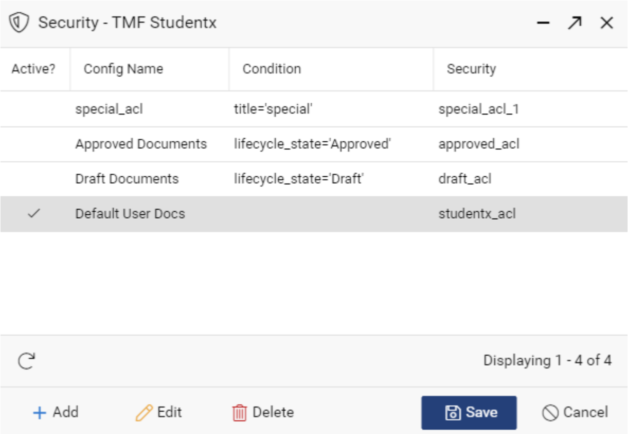
Document & Object Security Overview

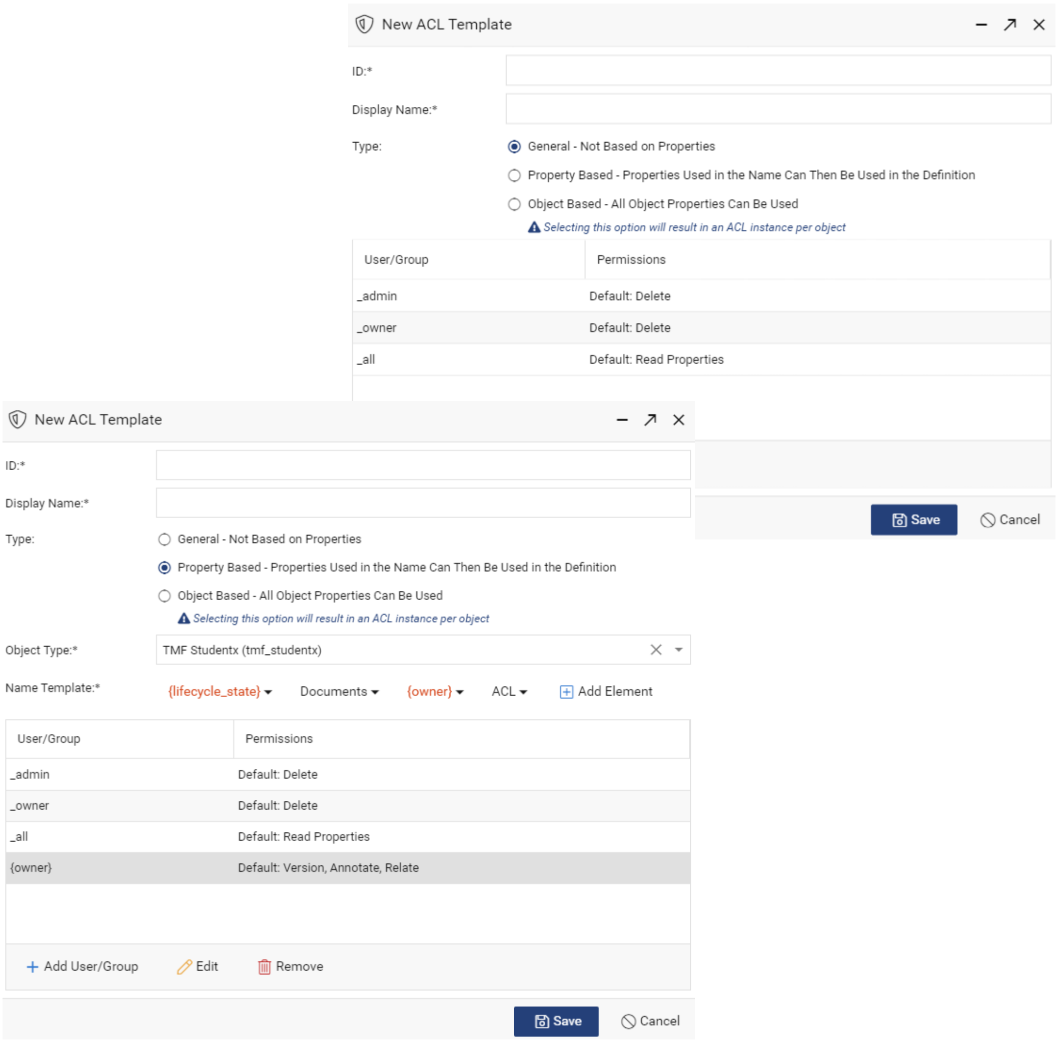
- **Set which ACL will be applied to which documents.**
- Each document has 1 ACL at a time, not multiple.
- You could have 1 security rule and ACL template per type. Alternatively multiple security rules with different conditions can be active at the same time.
- Security rules are placed in a hierarchy. The order of rules is important as the first rule to match wins. They are reordered via click and drag.
- The ACL templates need to be created in advance of writing the security rule.
- There is a Default ACL that is assigned if no security config has been created. The Default ACL template can be modified.
- Current ACL and permissions granted for a document, including the current user's, can be viewed by selecting Permissions within a View.





ACL Templates

- An ACL Template specifies users/groups and their respective permissions.
- **3 types of ACL** can be created: General, Property Based and Object Based.
- **General** are the most common, a single simple static ACL shared by any number of documents. General ACL templates do not need to be tied to a type, the others do.
- **Property Based** can use properties in a condition, for example: authors = read permission unless state = approved. Can be shared by multiple objects.
- **Object Based**. Can also use properties in a condition. Creates an ACL per object.
- The Name Template refers to the name of the ACL which will be generated and can be simple static text or can use attribute values.



ACL Templates – Setting Permissions

- Add users or groups. Can be **dynamic** (e.g. ‘creator’ rather than a named user or group)
- Set a **Default** Permission. These permissions are in a **hierarchy**:

  None.

  Read Properties.

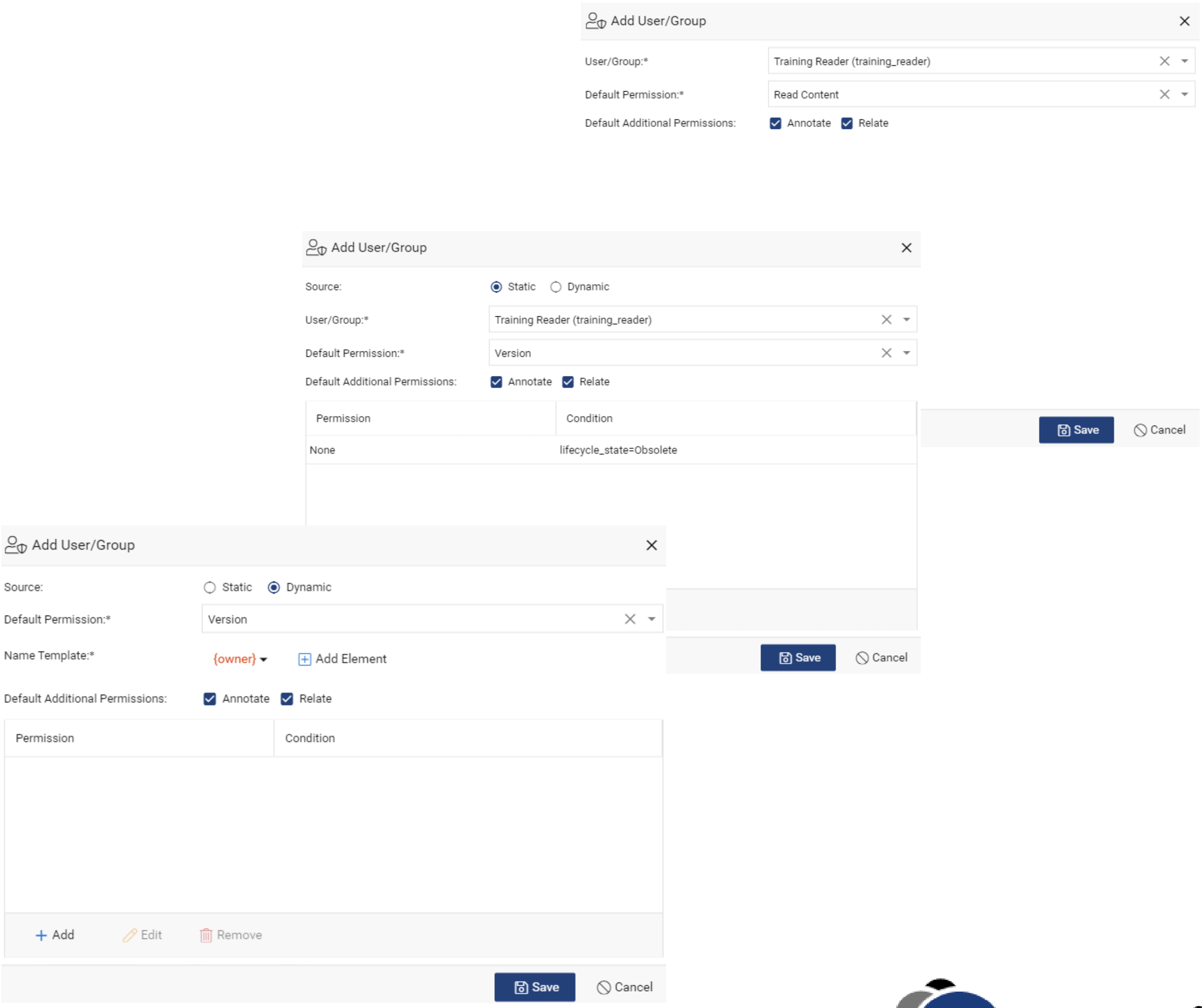
  Read Content.

  Version.

  Save Properties.

  Save Content.

  Delete.
- Permissions **Annotate** and **Relate** can also be granted, these are not hierarchical.
- Permission **conditions** can be added, based on attributes used in the naming field. For example: admin = delete. If state = approved, then admin = version.



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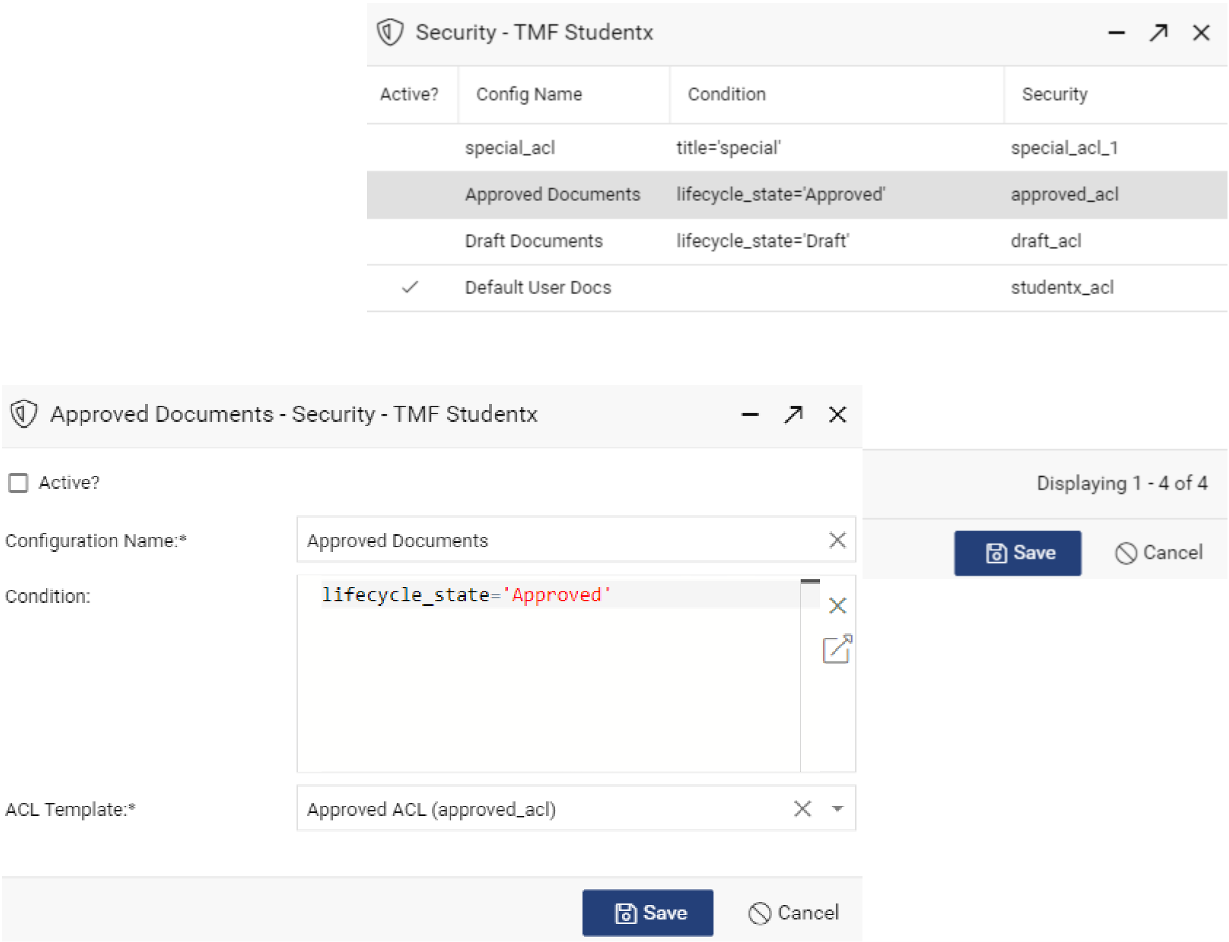
Creating & Applying Security Rules

- Security rules are type specific. They can be active or inactive.
- The condition is optional and based on CQL.
- Select an existing ACL template from the drop down list to apply the rule to.
- When a document is saved or checked-in, that is when the ACL security rules are applied. Previous versions retain their old ACL unless saved/checked-in.
- Updates to the Template ACL immediately apply to all documents using the ACL.
- **Recommendation**. Use the security and linking update job when testing security rules.



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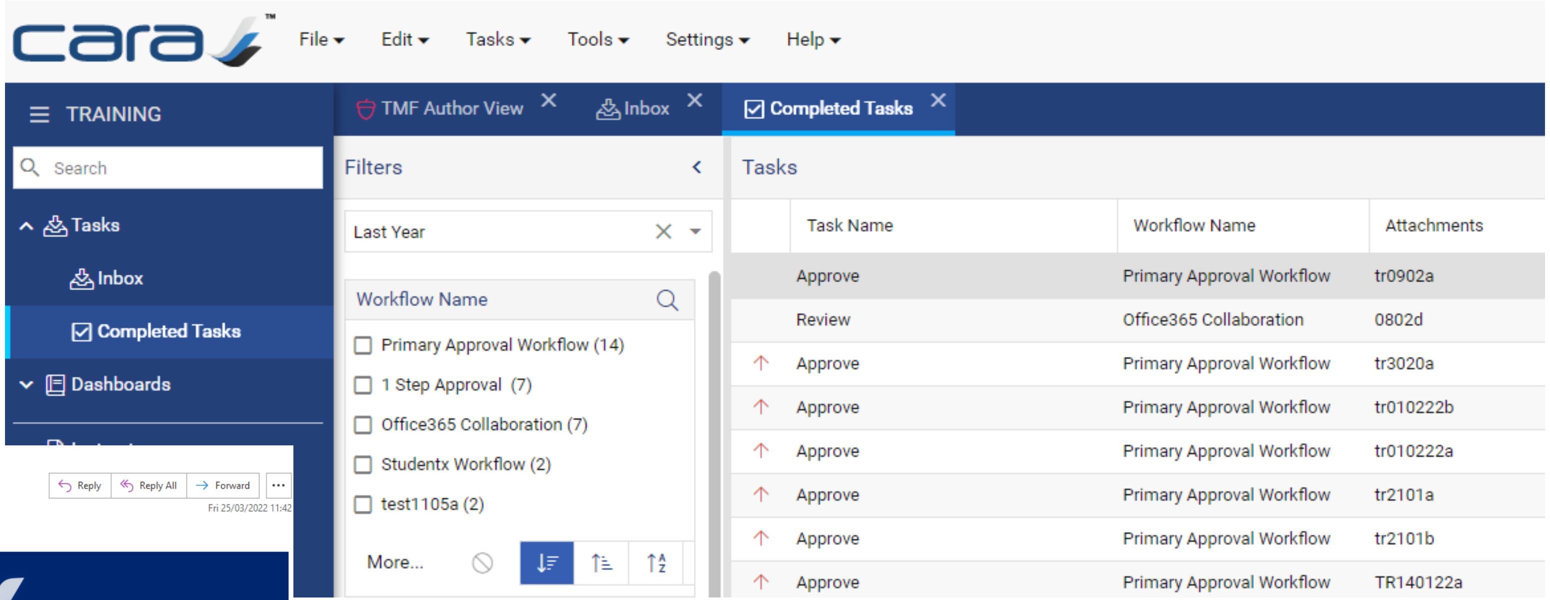
End of Core Configuration.

Additional Configuration Options Follow.

Workflow



Task overdue

GT Generis Task Do Not Ignore
To Barry Prince

Reply | Reply All | Forward | ...

Fri 25/03/2022 11:42

If there are problems with how this message is displayed, click here to view it in a web browser.

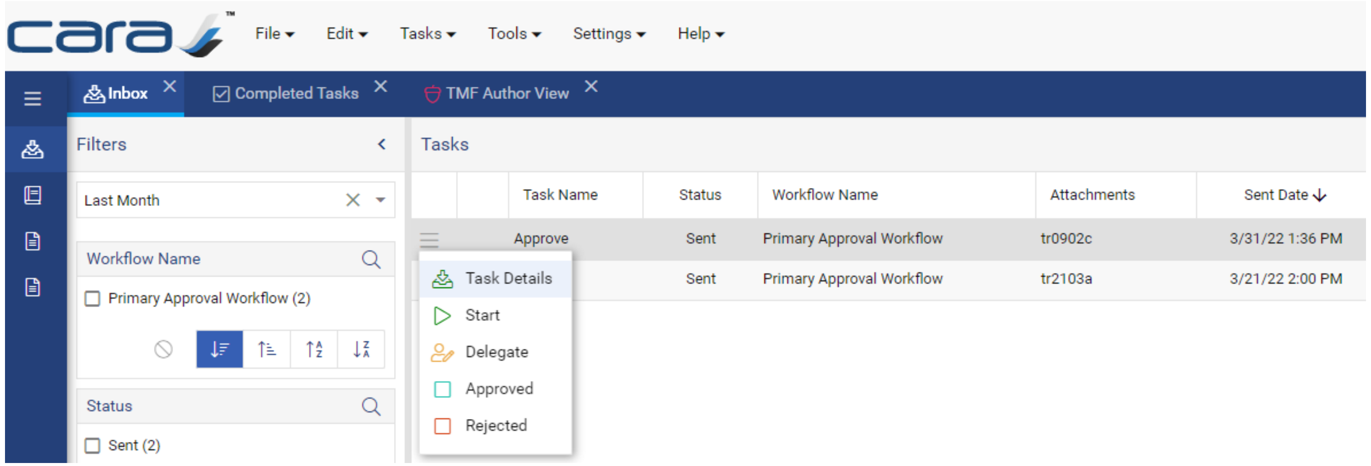
Hello Barry Prince,
Your task is now overdue.
Please access CARA as soon as possible to complete, reject or delegate the task. The details of this task are below.

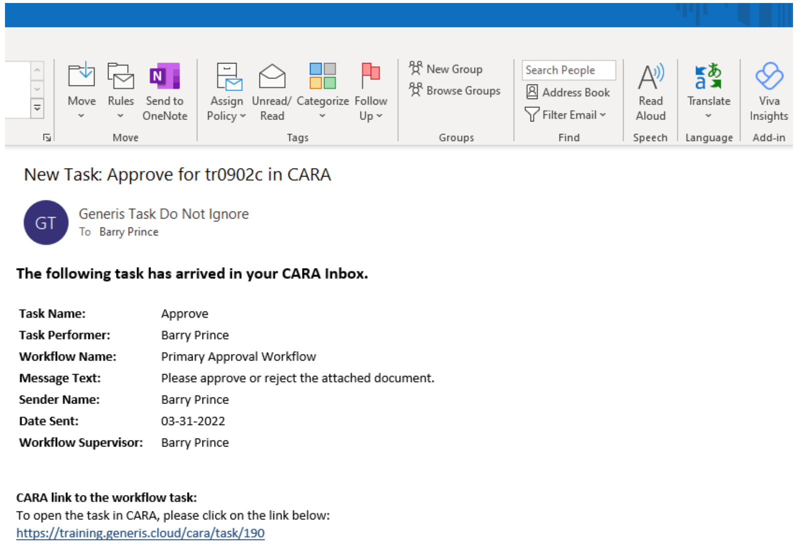
Ref:	APQR - 10-03-2022
Version:	0.1, LATEST, Collaboration
Task name:	Collaborate
Workflow initiator:	George Waidell

You can open the document(s) in CARA by clicking on the following link(s):
https://cls-demo.generis.cloud/cara/task/2193

Workflow Overview

- A workflow is a task or series of tasks.
- Users initiate a workflow, selecting recipients and options such as when the workflow is overdue.
- Workflows carry out actions on documents such as changing properties.
- Workflows can combine with lifecycles, moving the document between lifecycle states.
- Task recipients have an inbox within CARA. Email notifications with links are sent out automatically.
- Workflow activities are included within the audit trail.
- Workflow reports provide detailed information about tasks, active and completed.
- Workflow can include collaboration; Office365 or Google Docs





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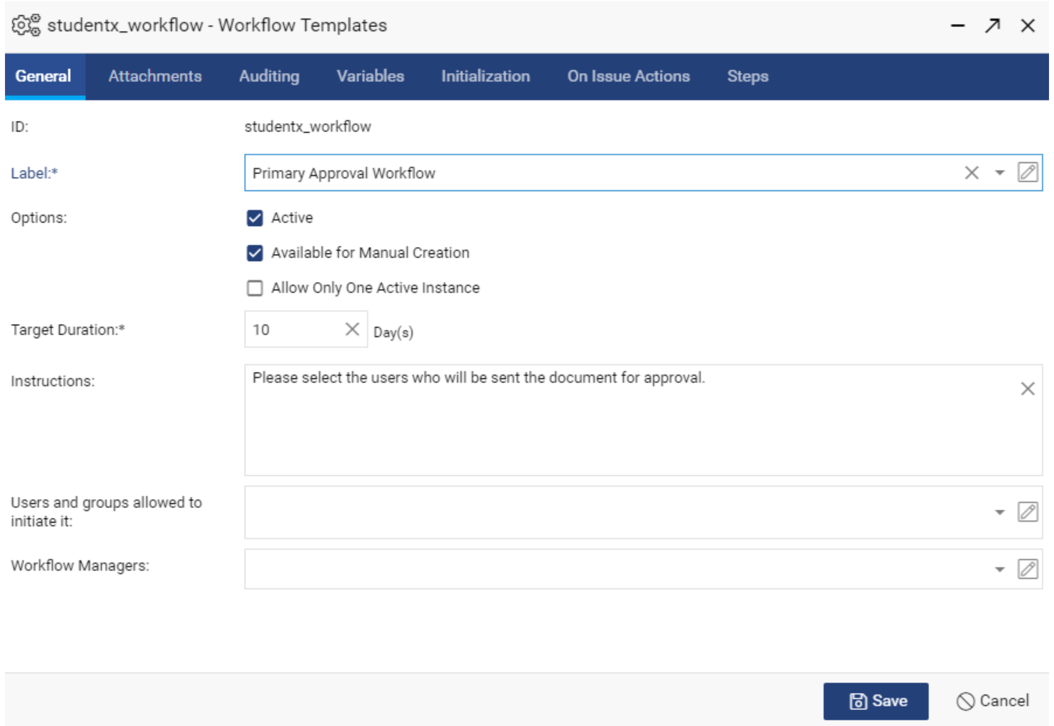
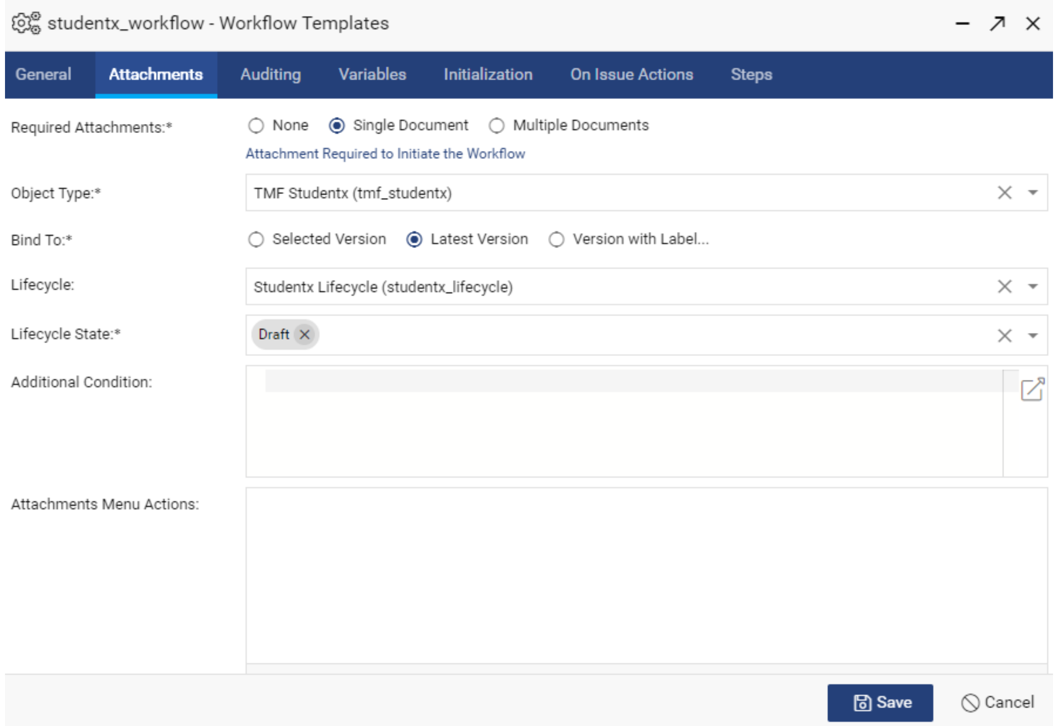
Creating Workflow Templates - General

- Enter an **ID** and **Label**.
- Select **Active** and **Available for Manual Creation**.
- **Only One Active Instance**. Can the workflow run multiple times simultaneously on the same document?
- **Target Duration.** Number of days before reminder emails are sent.
- Add **Instructions** for the **Initiator**.
- Select which users/groups can **Initiate**. If blank then all users can.
- **Workflow Managers** can modify active instances – they can change recipients or cancel.
- **Recommendation**. If a min/max number of recipients are required, make this clear in the instructions.



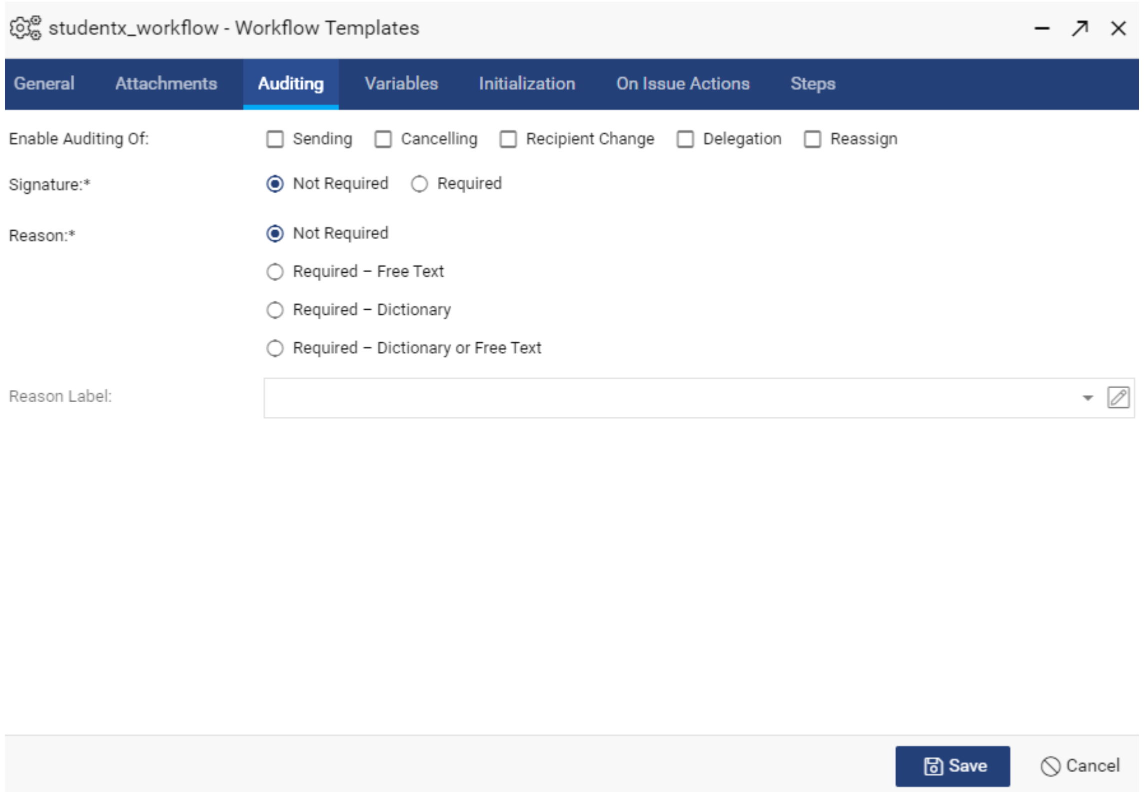
Workflow Templates – Attachments

- **Required Attachments**. Workflows usually involve a document, but don't have to. Select how many the initiator must select. If **None**, documents can still be attached but are optional.
- **Object Type**. Associate an object type, required for attributes to be updated.
- **Bind To**. Which document version will recipients receive. Usually the Latest, but other options are available.
- **Lifecycle**. Optionally require a document to be in a specified lifecycle and lifecycle state. The workflow can then move the document between states.
- **Additional Condition**. CQL condition limiting which documents the workflow can apply to e.g. department x or region z.



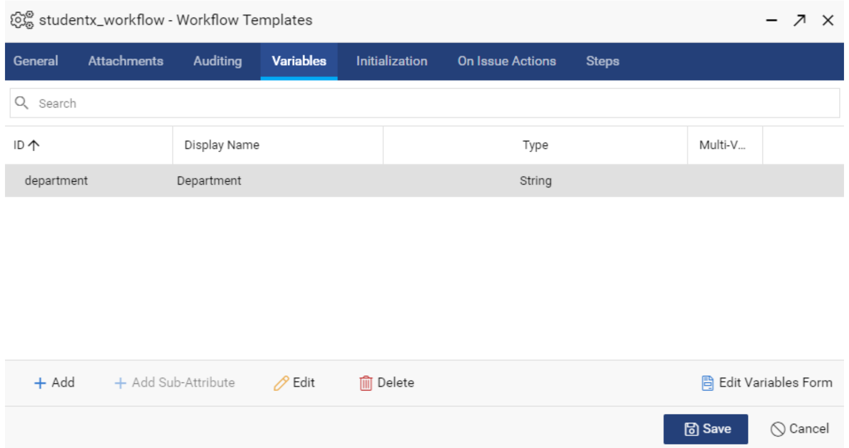
Workflow Templates - Auditing

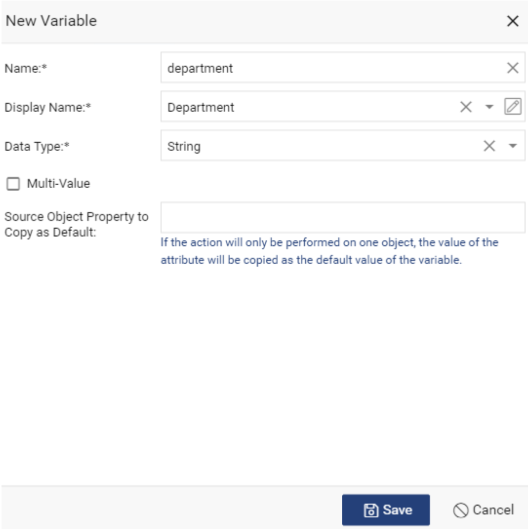
- Which task related **events** will be included in the audit trail. These are in addition to the usual document events such as check-out/in.
- **Signatures** (password) can be required and included, with or without a reason to be selected or manually entered.
- A list of **Reasons** can be provided from a dictionary.
- A **Default Reason** can be selected.

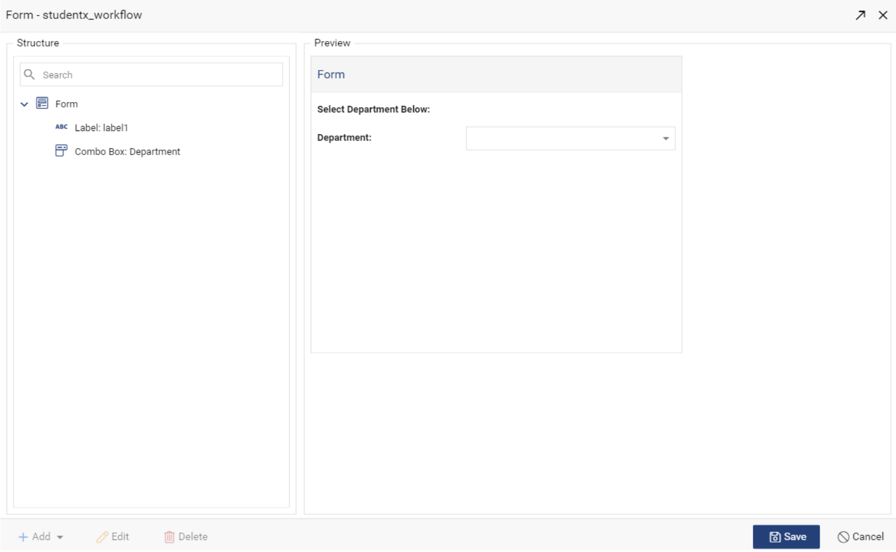


Workflow Templates - Variables

- Optional. Workflow initiators can be prompted to enter additional information (variables) on a form to be used within the workflow when selecting recipients.
- Define variables and place them on a properties form, using the same form builder tools as for document properties.
- This is not usually needed, there is a separate window for configuring recipients.

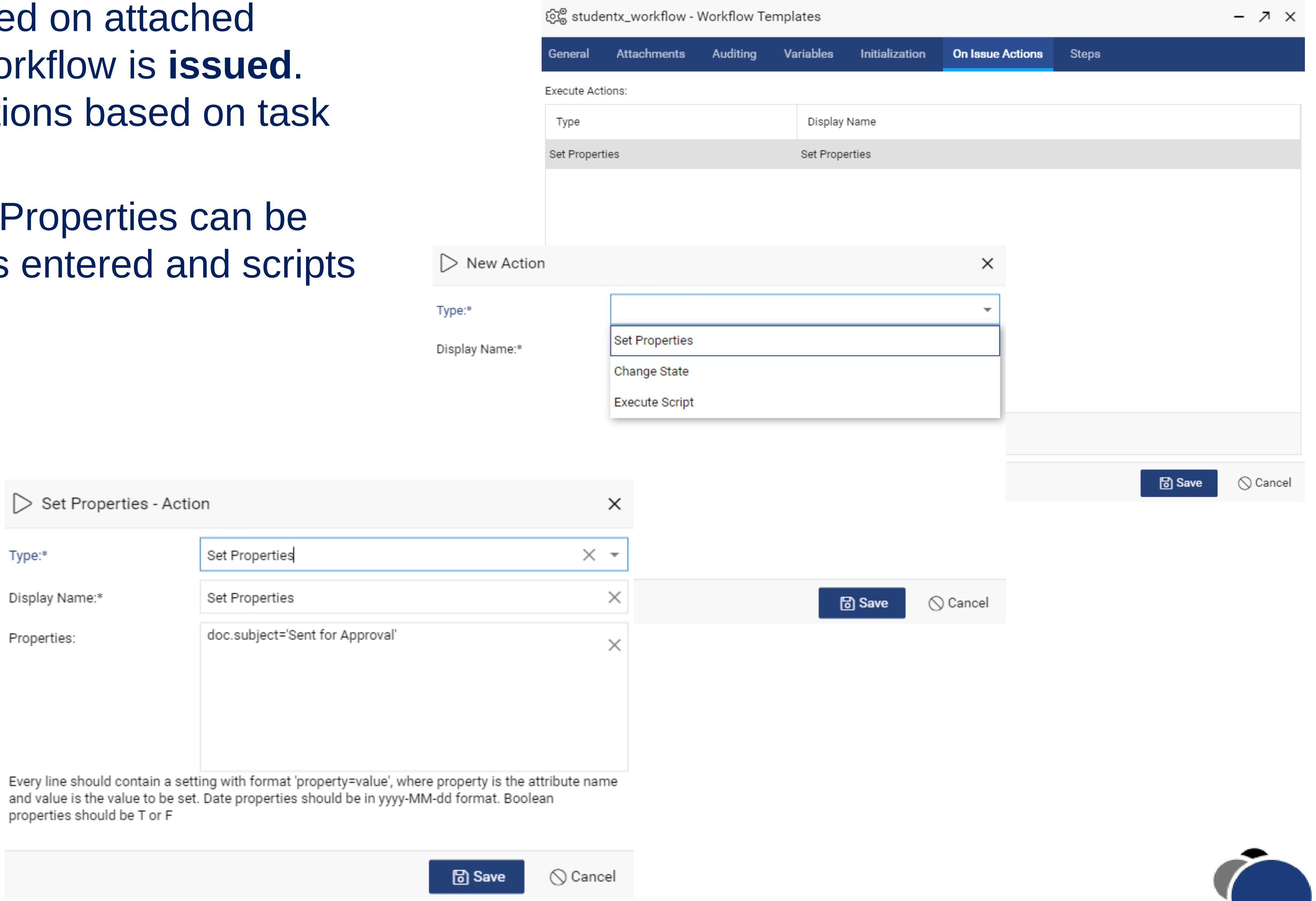






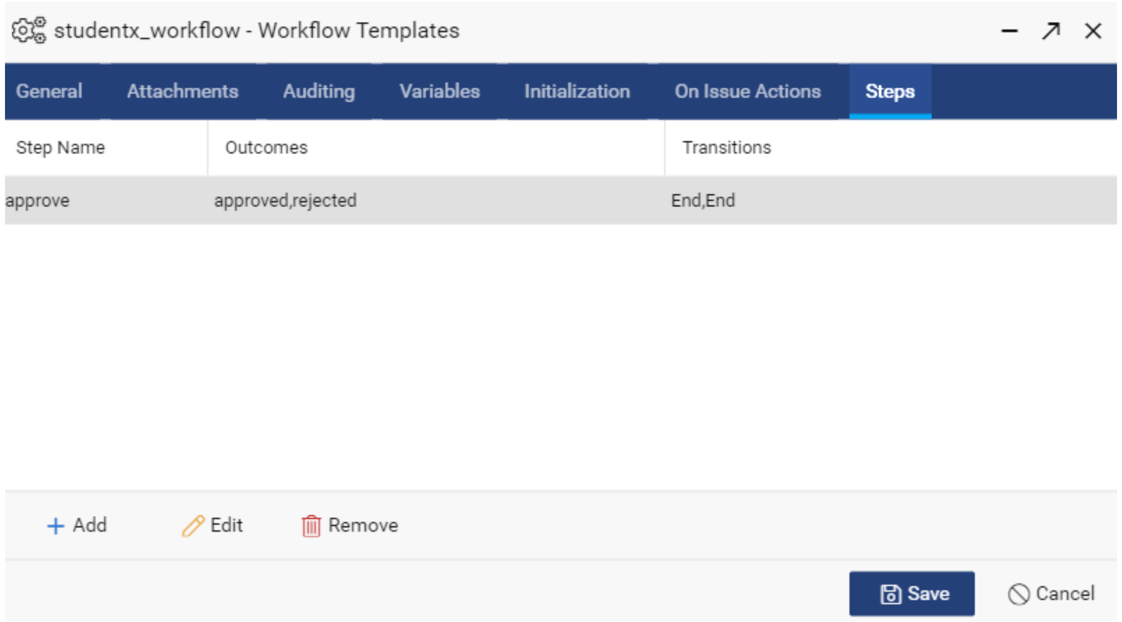
Workflow Templates – On Issue Actions

- Actions can be performed on attached documents when the workflow is **issued**. This is in addition to actions based on task outcomes.
- Select a type of action. Properties can be updated, lifecycle states entered and scripts executed.



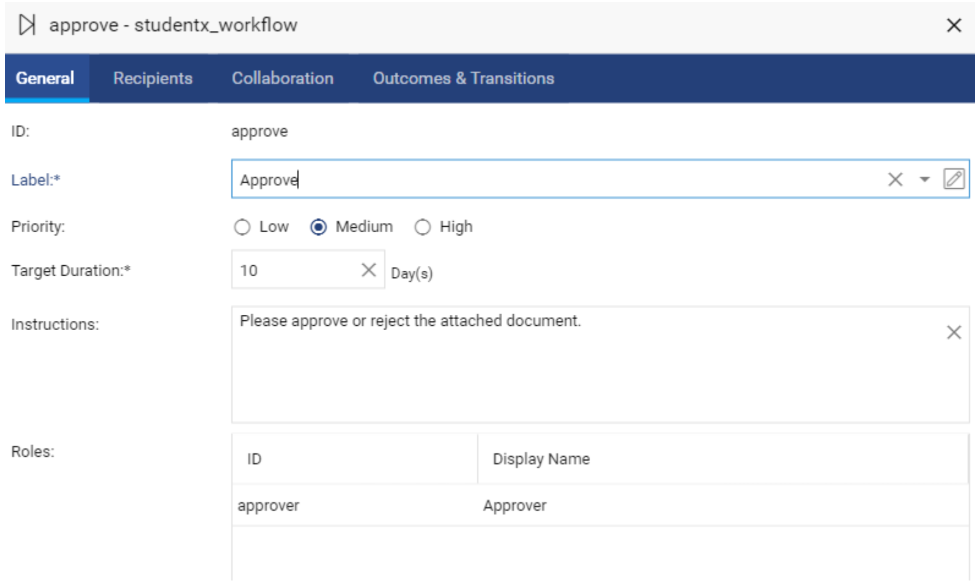
Workflow Templates – Steps Overview

- Define the **individual steps** or tasks within the workflow. A workflow can consist of one or more steps. Many workflows are just a single step, for example to approve a document.
- Each step requires **recipients** to be selected either manually or automatically. Provide instructions for recipients.
- Each step needs all possible **outcomes** and **transitions** (next steps) defined. All steps must lead to an End step.
- Define **actions** based on outcomes, for example document approved = change state to Approved, document not approved change state to Draft.



Workflow Templates – Defining Steps - General

- Define how the step looks to users.
- Add an **ID** and **Label**.
- **Priority** is a coloured arrow icon within the Inbox.
- Enter **Target Duration**.
- Add **Instructions** for recipients.
- Optionally add **Roles**. Recipients can be allocated a role within the workflow, for example author approval or manager approval. Audit requirements can be role specific. When selecting recipients, the issuer chooses the role:



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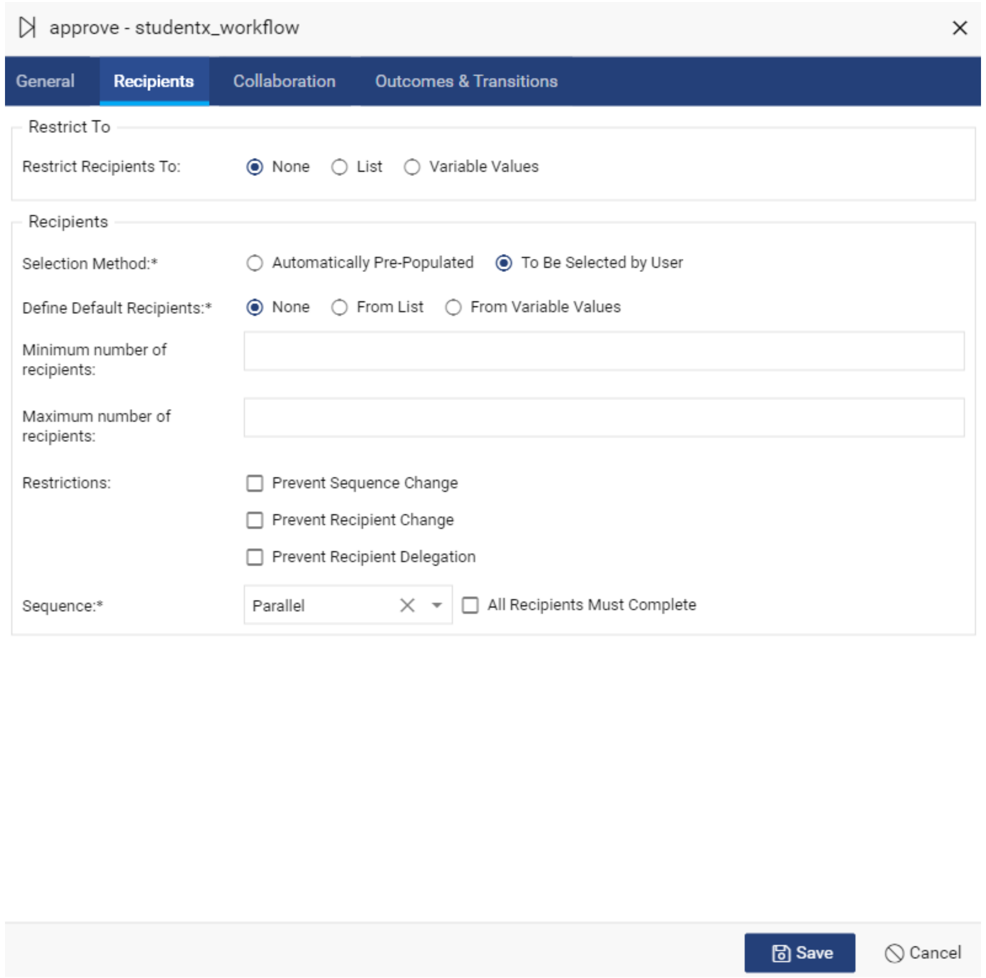
Workflow Templates – Defining Steps - Recipients

- **Restrict Recipients To**. Which users/groups the initiator can choose from. Usually use a List of users/groups. If **None** is selected, then anyone can be chosen. Variables defined previously can also be used.

  If a group is selected, all members of the group become recipients.
- **Selection Method**. Recipients can be **Automatically Pre-Populated** or **Selected By the User** (workflow initiator).
- A **Minimum** and **Maximum** number of recipients can be set. If set then ensure the instructions for the issuer are clear, that they know how many are required before they can issue the task.



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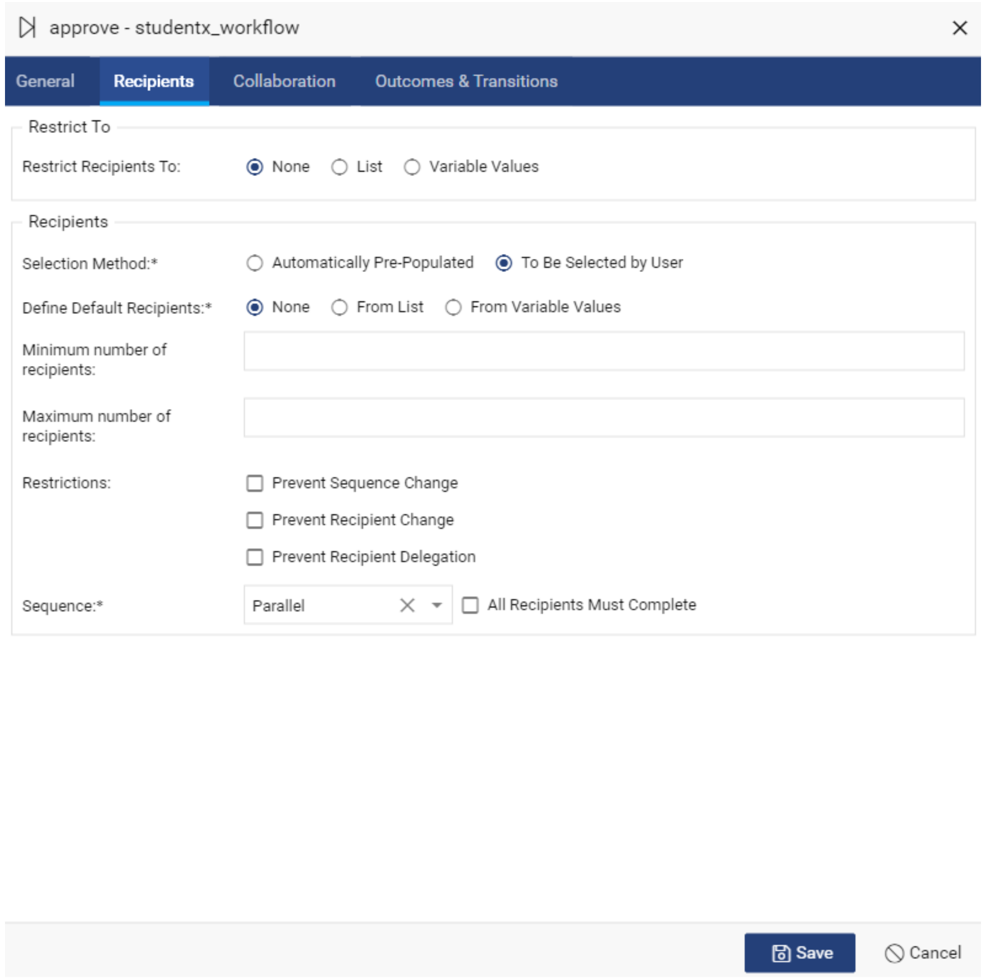
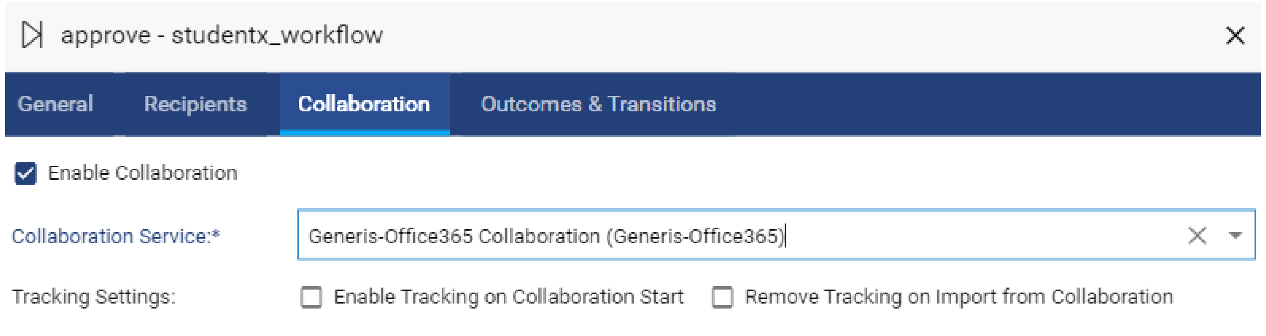
Workflow Templates – Defining Steps - Recipients

- **Prevent Sequence Change**. If unselected, workflow initiators will be allowed to change the order of task steps.
- **Prevent Recipient Change**. If unselected, workflow managers will be allowed to change recipients for future tasks.
- **Prevent Recipient Delegation**. If unselected, recipients will be allowed to delegate their task to another user. Recipients cannot delegate if they have already marked their task as started.
- **Sequence**. Set if the sequence will be parallel or serial. Not relevant where tasks only go to a single recipient.
- Additional select if **All Recipients Must Complete** the task. If not ticked, then any one recipient can complete the task.



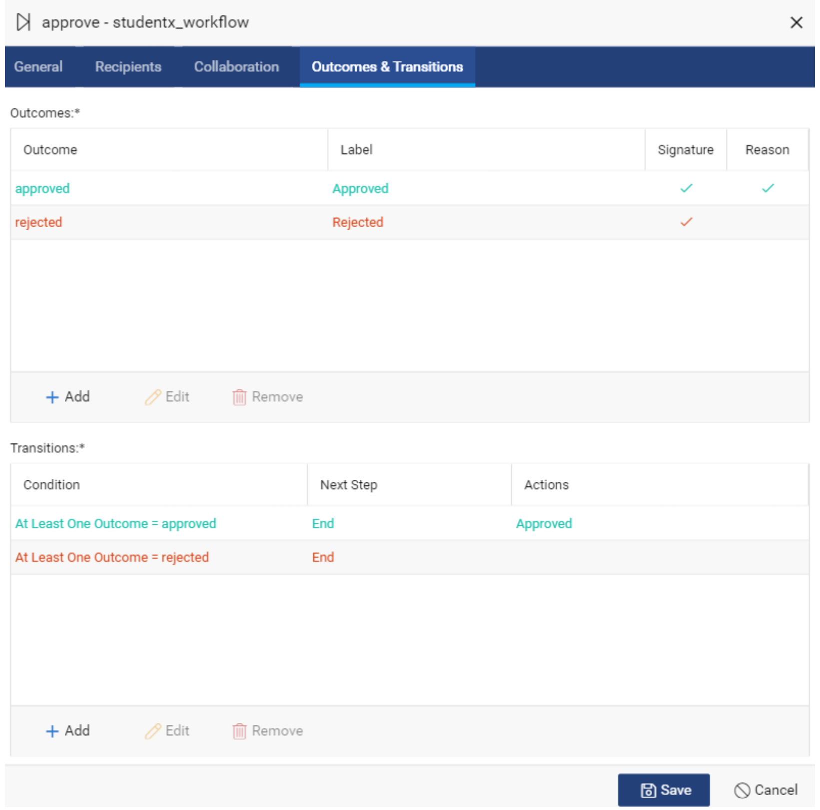
Workflow Templates - Collaboration

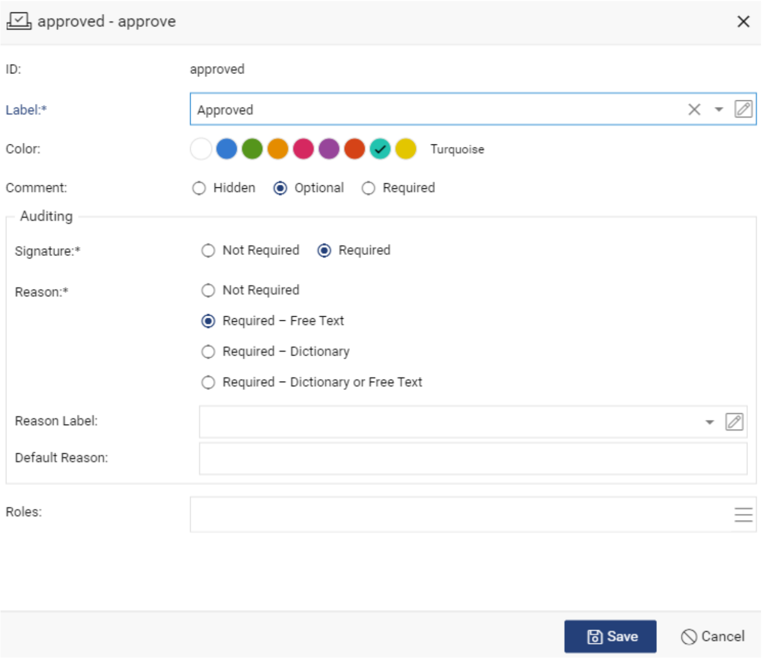
- If the workflow template will use collaboration, the service to be used (Office365 or Google Docs) must be selected here. The service must have already been configured in the control panel.
- Document change tracking can be turned on automatically when the task is started, in which case provide the password specified in Collaboration Configuration.
- Tracking can also be turned off automatically once the task completes.
- Enabling collaboration here makes new actions available in the steps (see later slides).



Workflow Templates - Outcomes

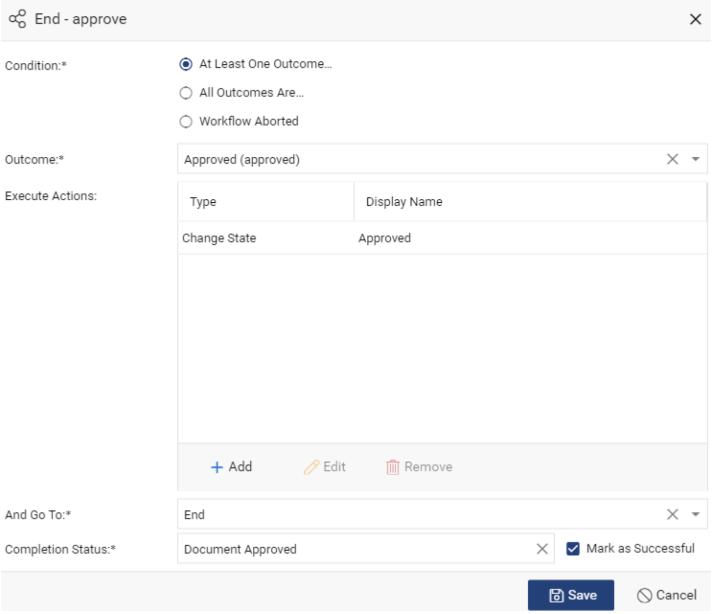
- Define the possible outcomes of the step, for example an Approval step outcome could be approved or rejected. Colour code the visible choices in the recipient's inbox.
- Decide if user needs to add comments.
- **Auditing**. Each outcome can be configured differently, for example rejection may need a reason but approval might not. Auditing can be role specific as well, click the menu icon to open a role-specific audit sub-menu.

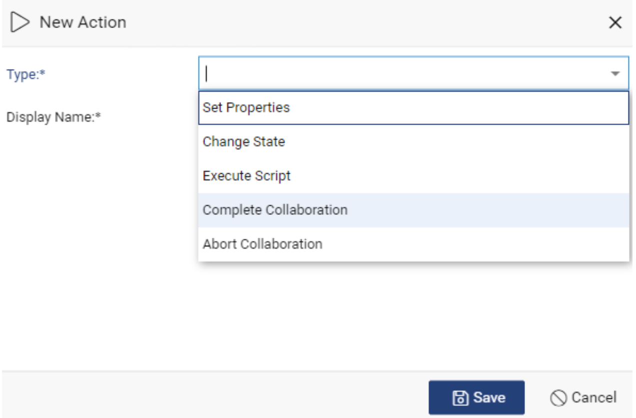


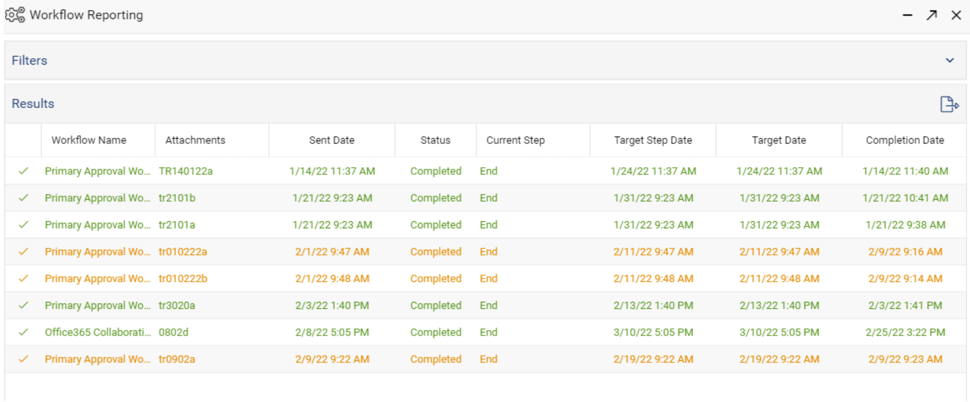


Workflow Templates - Transitions

- **Condition**. Select whether the transition is conditional on **At Least One Outcome** being true or **All Outcomes are true**.
- **Outcome**. Select which outcome the transition is based on.
- Define **Execute Actions**. Same options as On Issue Actions. Additional for collaborations.
- **And Go To**. Define what step will follow. End state is always available, it does not need to be defined. All workflows must reach an **End** step, including single step workflows.
- **Completion Status** and **Mark as Successful** are only available when **And Go To = End**.
- The Completion Status is shown in Workflow Reporting. Successful as green and unsuccessful as orange.






Workflow Reporting

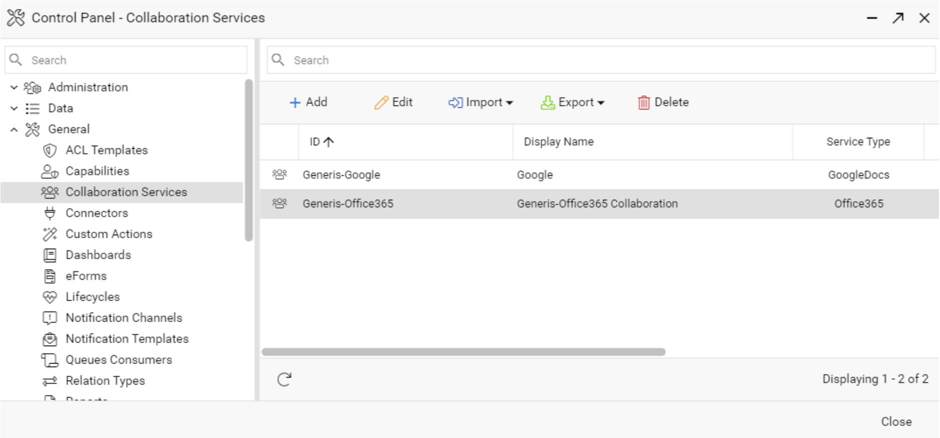
Filters

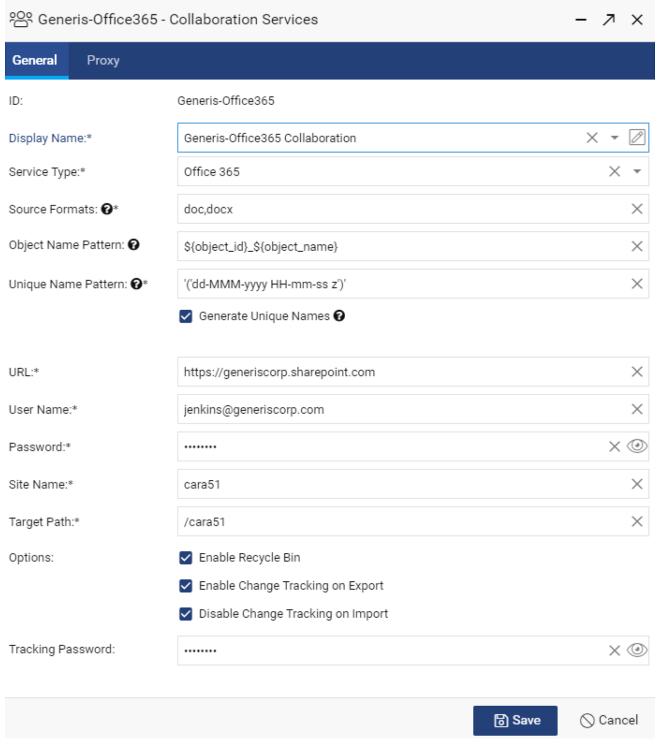
Results

	Workflow Name	Attachments	Sent Date	Status	Current Step	Target Step Date	Target Date	Completion Date
✓	Primary Approval Wo...	TR140122a	1/14/22 11:37 AM	Completed	End	1/24/22 11:37 AM	1/24/22 11:37 AM	1/14/22 11:40 AM
✓	Primary Approval Wo...	tr2101b	1/21/22 9:23 AM	Completed	End	1/31/22 9:23 AM	1/31/22 9:23 AM	1/21/22 10:41 AM
✓	Primary Approval Wo...	tr2101a	1/21/22 9:23 AM	Completed	End	1/31/22 9:23 AM	1/31/22 9:23 AM	1/21/22 9:38 AM
✓	Primary Approval Wo...	tr010222a	2/1/22 9:47 AM	Completed	End	2/11/22 9:47 AM	2/11/22 9:47 AM	2/9/22 9:16 AM
✓	Primary Approval Wo...	tr010222b	2/1/22 9:48 AM	Completed	End	2/11/22 9:48 AM	2/11/22 9:48 AM	2/9/22 9:14 AM
✓	Primary Approval Wo...	tr3020a	2/3/22 1:40 PM	Completed	End	2/13/22 1:40 PM	2/13/22 1:40 PM	2/3/22 1:41 PM
✓	Office365 Collaborati...	0802d	2/8/22 5:05 PM	Completed	End	3/10/22 5:05 PM	3/10/22 5:05 PM	2/25/22 3:22 PM
✓	Primary Approval Wo...	tr0902a	2/9/22 9:22 AM	Completed	End	2/19/22 9:22 AM	2/19/22 9:22 AM	2/9/22 9:23 AM

Collaboration Services

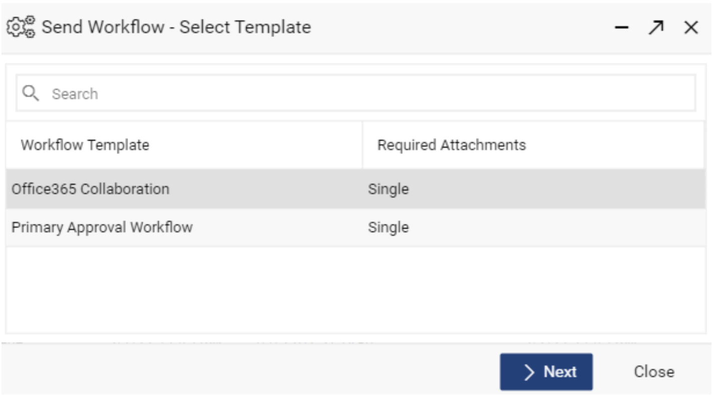
- CARA supports SharePoint/Office365 and Google Docs collaboration services, allowing multiple users to simultaneously update a document.
- The collaboration service must be configured with the connection details to be used for either service.
- For **Office365** the configuration is set via the GUI. For **Google Docs** some settings are in a JSON file directly on the CARA server, as required by Google.
- Object Name Pattern & Unique Name Pattern ensure docs have unique names when exported to the collaboration service.
- Users must have a corresponding user account in the collaboration site specified with email address that matches that in CARA. This can be simpler if using LDAP with Office365.

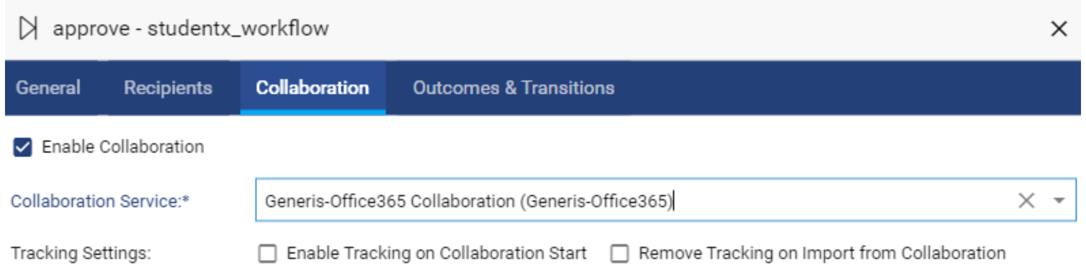


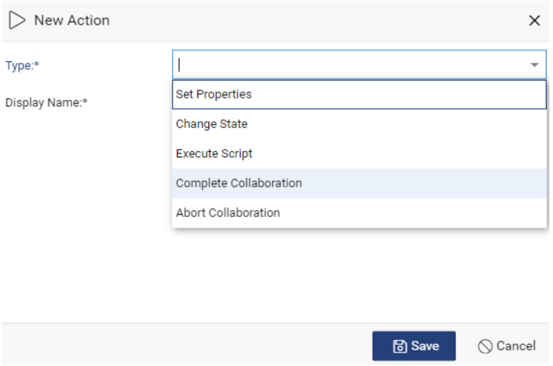


Collaboration Services & Workflow Tasks

- It is primarily intended for use within workflow tasks, though separate custom actions can be added.
- The workflow template must have collaboration enabled, including actions to end the collaboration once the task completes.
- Add the Edit in SharePoint/Google Docs action to the workflow template.
- Sequence must be set to parallel when selecting recipients.
- Once the workflow task completes, the document remains in Sharepoint due to SharePoint temporarily maintaining a lock. The cara_sharepoint_cleanup job is used to clear out such documents periodically.







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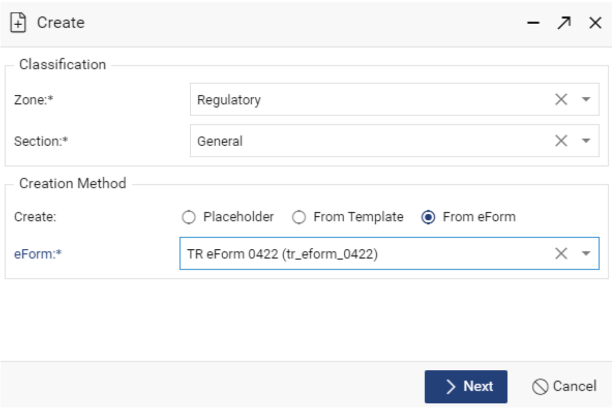
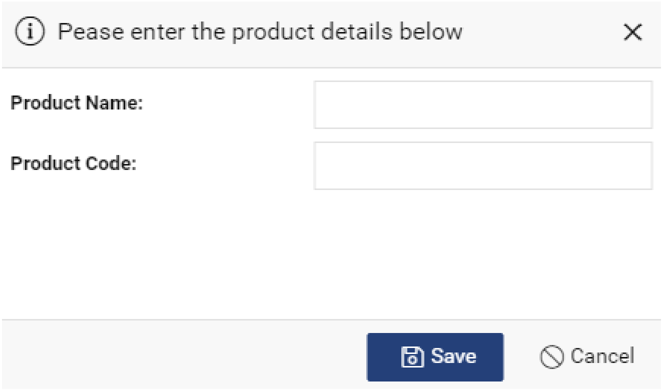
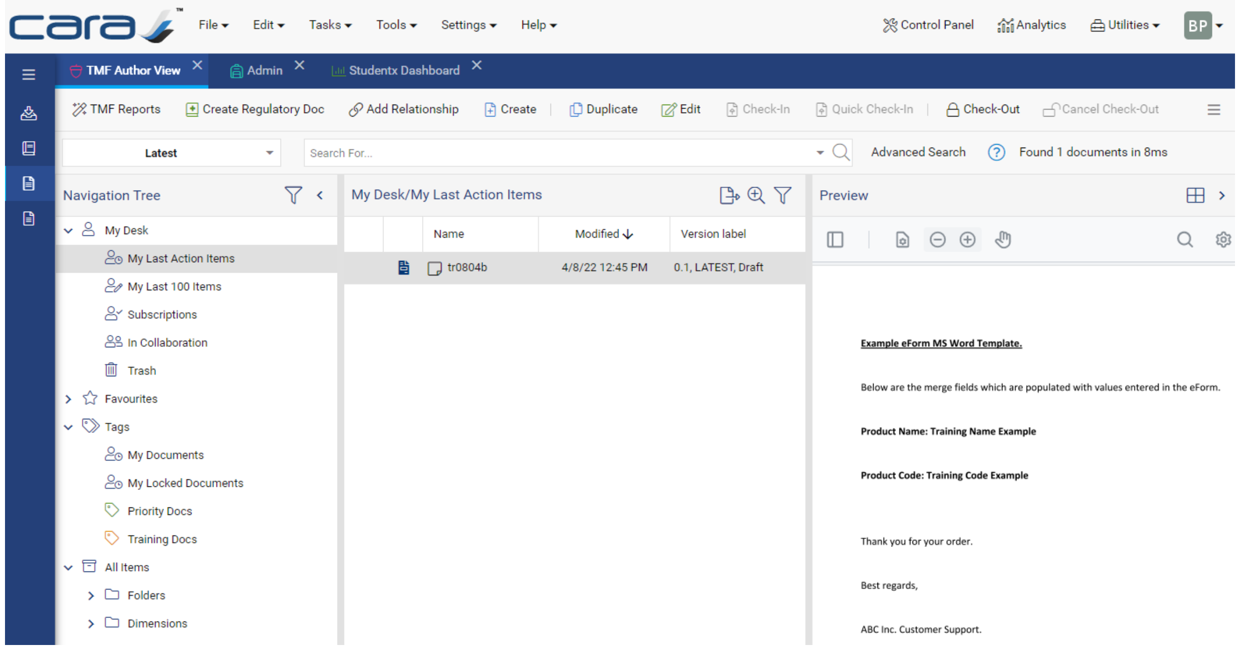
eForms - Overview

- eForms provide structured document content.
- An eform can be provided for users to fill out additional attributes (non-type related) which are then merged into an MS Word template and rendered as a .pdf file.
- eForms use the same form builder tools as document property forms. Variables are placed on the form. **The variables on the eForm need to be added as merge fields in the MS Word document.**
- When the user creates a new document with an eform, they complete the eform, which is merged into the MS Word doc and the .pdf rendered.

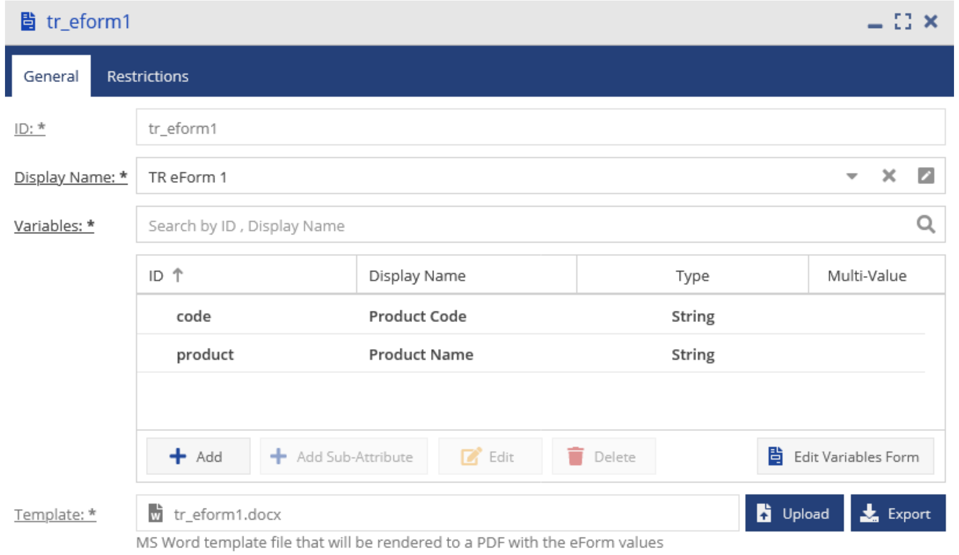


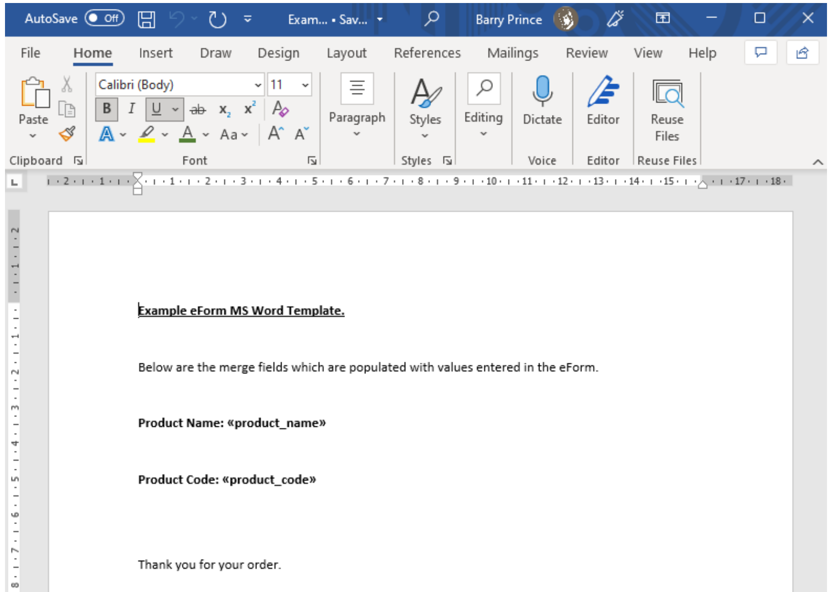


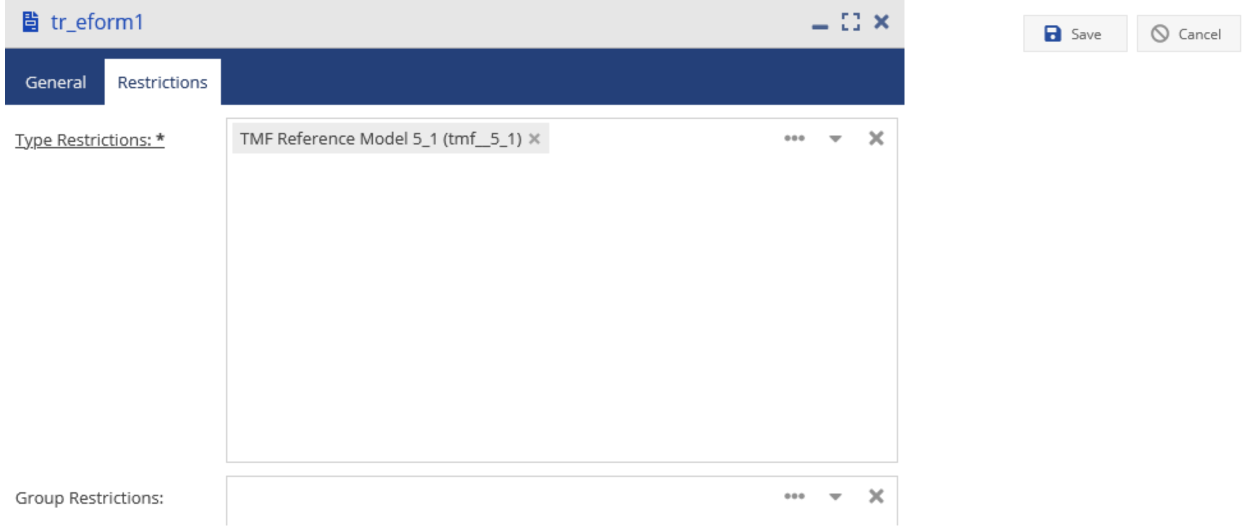


eForms - Creating

- Define the **Variables**. These are separate from type attributes.
- Edit the **Variables Form** and add the variables to it.
- Upload an MS Word document as a **Template**. The document should contain merge fields for the variables.
- Creating new documents from eForm is a type capability.
- eForms must have a type specified under Restrictions.

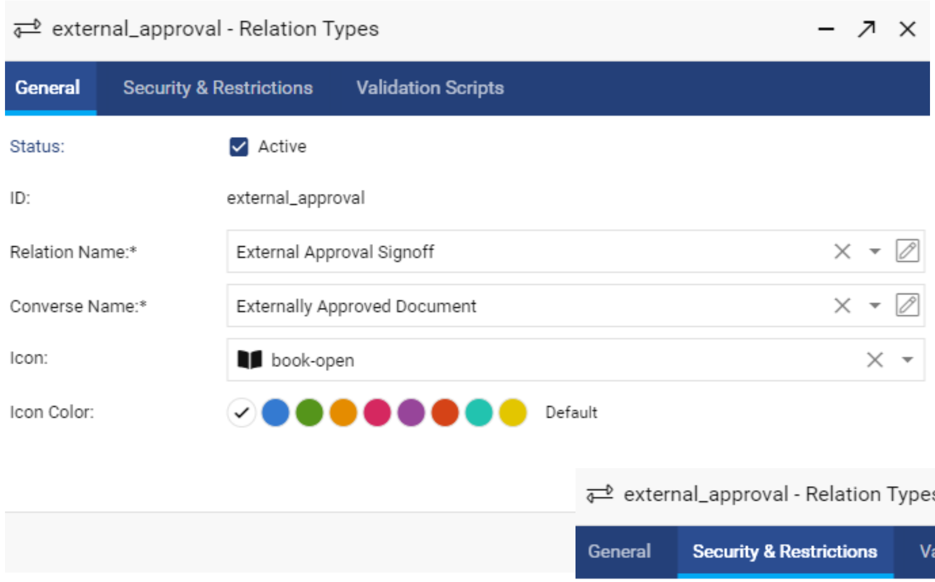


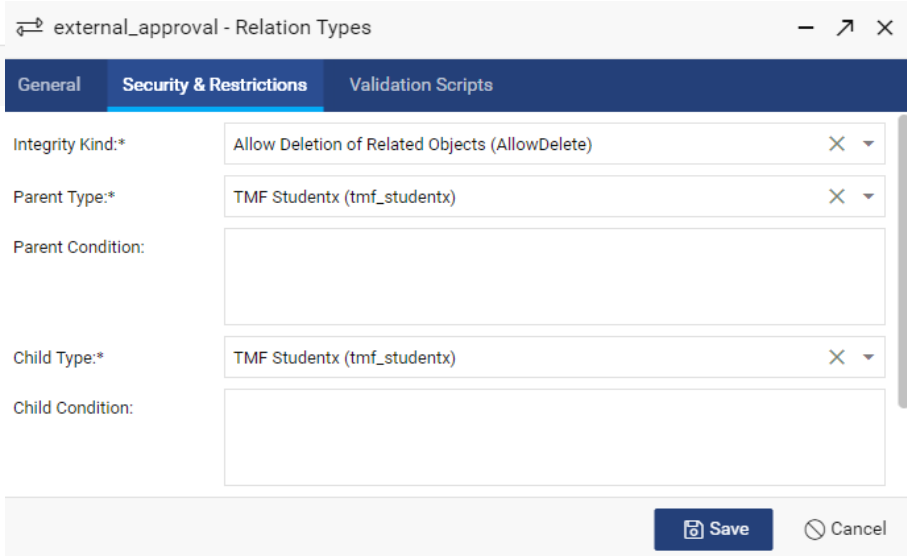




Relation Types

- Relationships provide a quick method of connecting and locating documents. Administrators define the relationships available.
- Define the **Relation Names**.
- **Integrity**, usually documents in a relationship are independent of each other, but the relationship can restrict deletion.
- Define the **Parent** and **Child** object **Types**.
- Define **Conditions** and who can apply the relationship (**Restricted Accessors**).
- Examples of relationships include emails and their attachments, which would be imported separately. Also a SOP document and a corresponding work instructions document.





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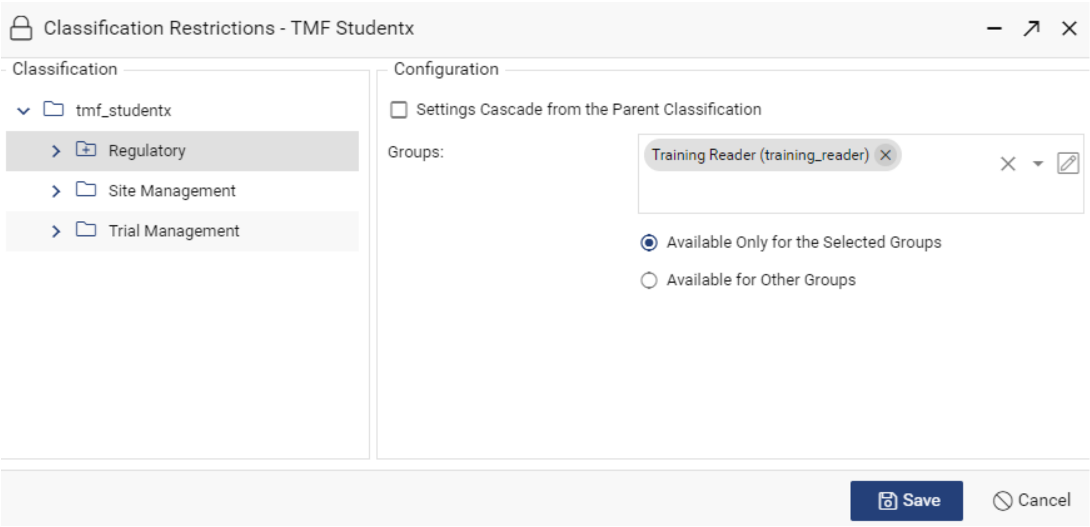
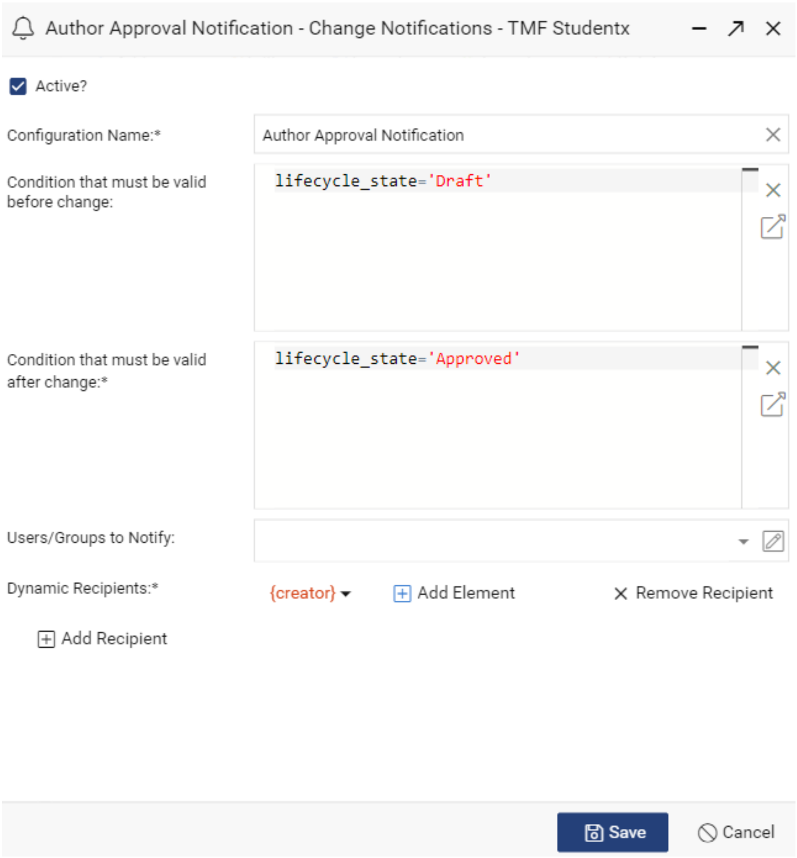
Classification Restrictions

- **Select which groups are allowed (or not) to create documents of the specified classification.**
- **If not configured, all users are allowed to create documents with any available classification.**
- Keep in mind users would still need access to type’s view and the capability to create new documents.
- The Classification panel (left side) is automatically populated with the classification taxonomy.
- Each level of the taxonomy can have different restrictions or inherit from the parent (which is the default). Note levels with their own restrictions set have a different icon (folder with a + icon).
- Specified groups can either be included or excluded, based on the radio button choice.



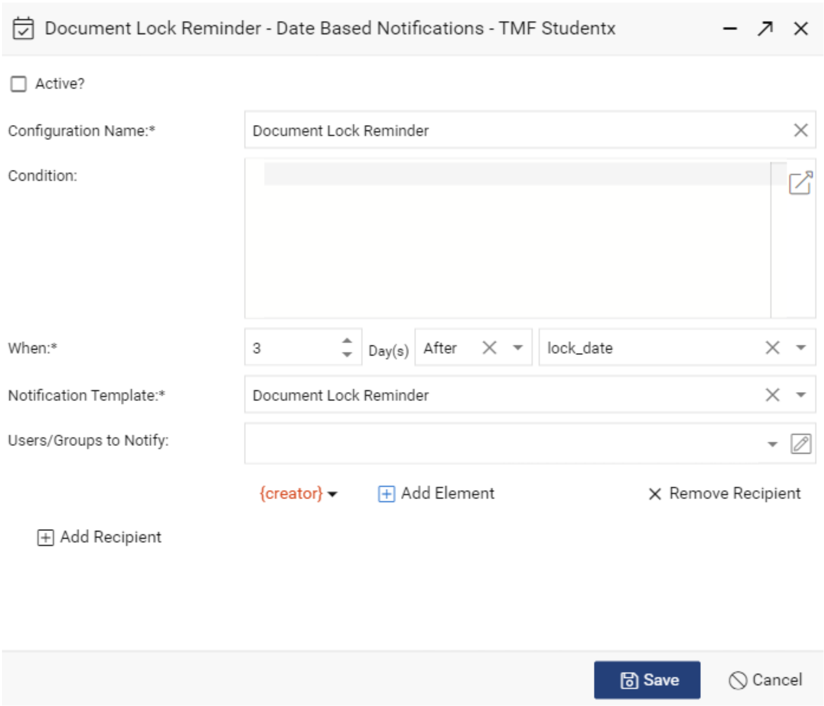
Change Notifications

- Configure condition based change notifications to be sent to groups of users automatically. These are in addition to users manually opting for change notifications.
- The primary trigger is “**Condition that must be valid after change**”, expressed as a CQL condition. However the notification can be further fine tuned by adding a “Condition that must be valid **before** change”.
- Recipients can be users, groups or dynamic, such as the document’s authors.



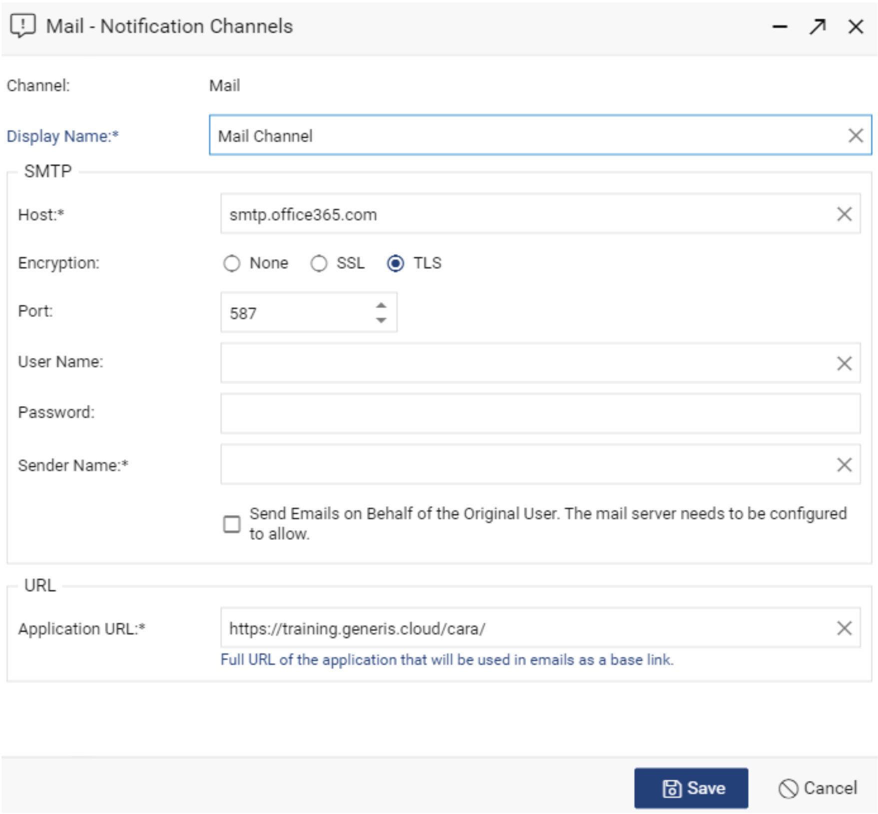
Date Based Notifications

- **Date based notifications are also custom notifications, but based on a date**
- They can also use CQL conditions. They use custom notification templates.
- The recipients can be simply selected (users and groups) or dynamically selected based on an attribute such as author or creator.
- A date-based condition is required. Either a default date attribute can be used or a type specific date-based attribute.
- **The custom notification template needs to be created in advance.**



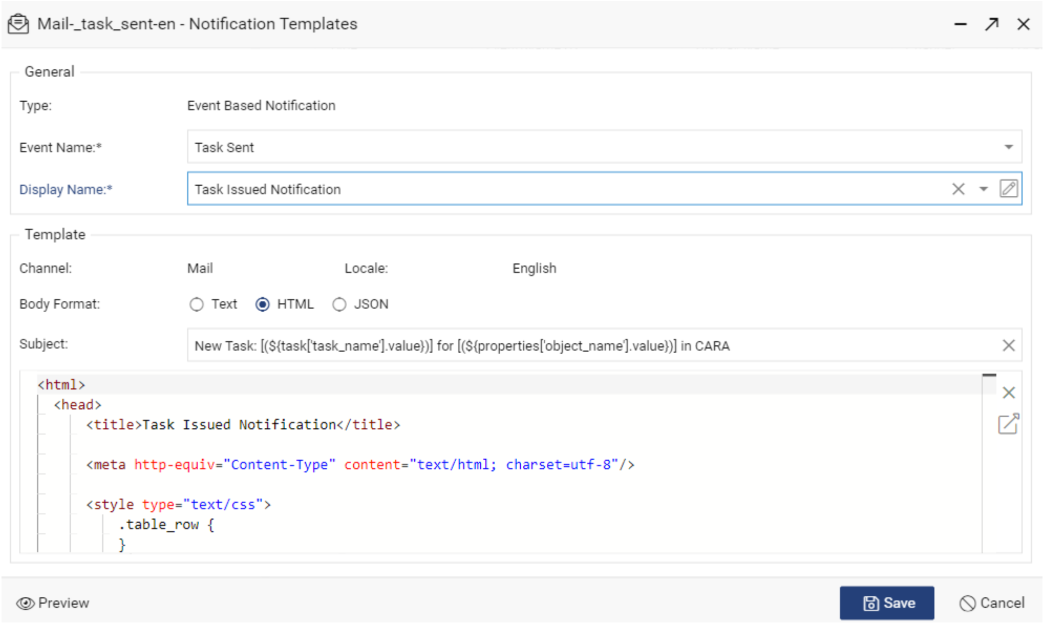
Notification Channels

- Notification channels are the methods used to pass notifications to users, such as when a document has been updated.
- Notification templates are configured for each event and then a notification channel is selected.
- The most common notification channel is Mail, where users receive an external email via their email client such as MS Outlook. Others are Slack channel and Internal CARA pop-up.
- More than 1 notification channel can be configured of each channel type, for example if 2 or more SMTP servers are available or a different sender name is to be used.
- Each notification template is tied to a specific notification channel instance.



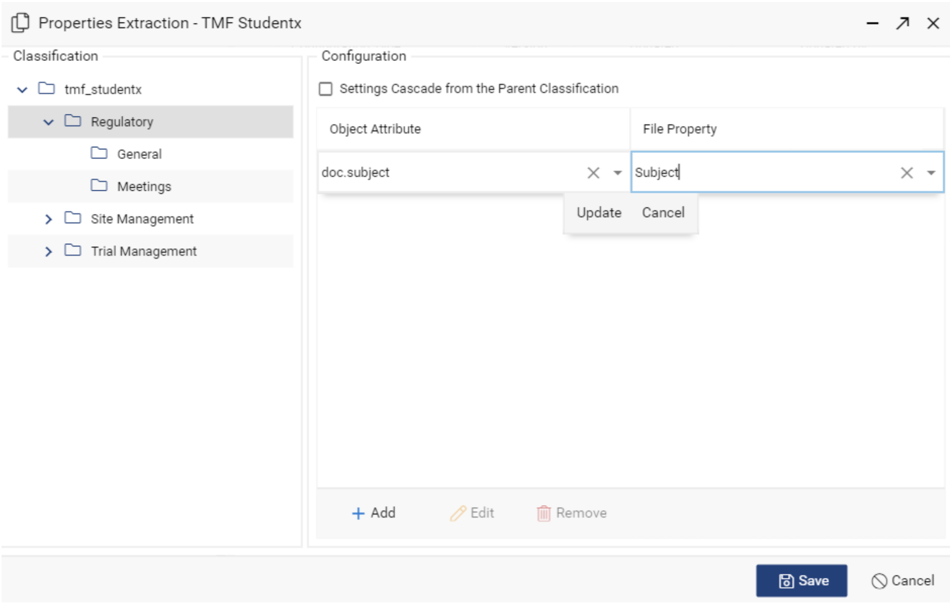
Notification Templates

- Notification templates are the basis of email and other notifications, which are automatically sent to users based on trigger events such as a document being versioned.
- Notification templates consist of a subject line and body of text created in either a plain text, HTML or JSON format. The syntax is validated when saved. Preview is available.
- Standard notification templates have a trigger event, selected from the _notification_events dictionary.
- Variables such as the user’s name or the document’s name can be included using ${variable_name}.
- Notification templates can be language specific.
- Custom notification templates can be created for type specific date-based notifications.



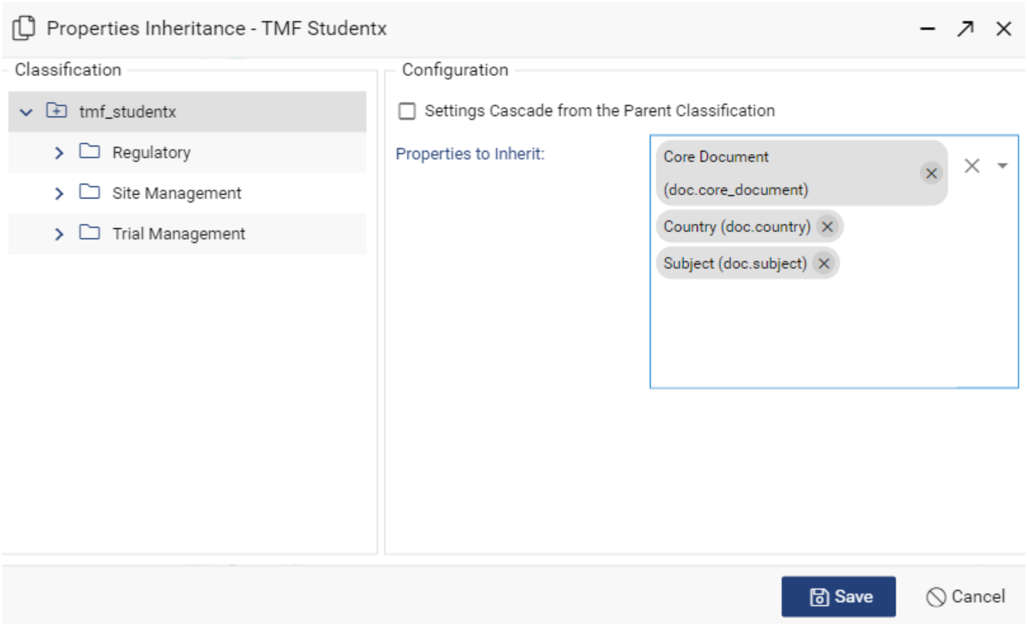
Properties Extraction

- **Applies to import only**. New document creation has other initialization options.
- Copy **file** properties such as Title or Subject from an imported document to the document within CARA.
- As well as file properties, can also include email Subject, From and Message Date.
- Select the imported **File Property** and map to the **Object Attribute.**
- When documents are imported, users will see the imported values on the property form and have an opportunity to check and correct as needed.



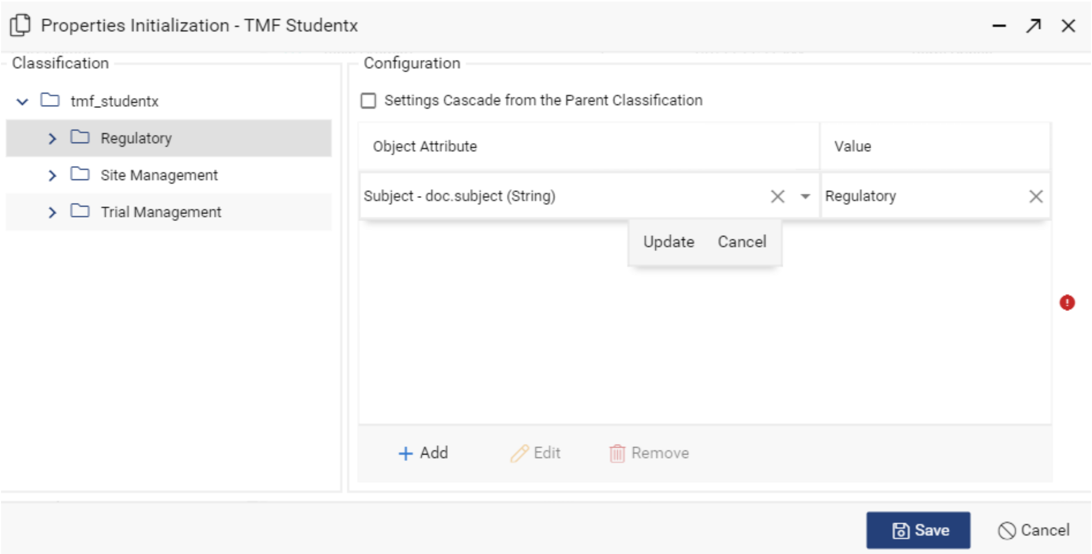
Properties Inheritance

- If a user highlights a document prior to selecting **Create**, the new document will copy the classification **and selected attributes.**
- Can save users significant time when documents have a large number of attributes to be filled out.
- In the **Properties Inheritance** window, untick **Settings Cascade from the Parent Classification** for the root and other nodes to be configured.
- For each node within the classification select which attributes will be copied from the **Attributes Selection** window.



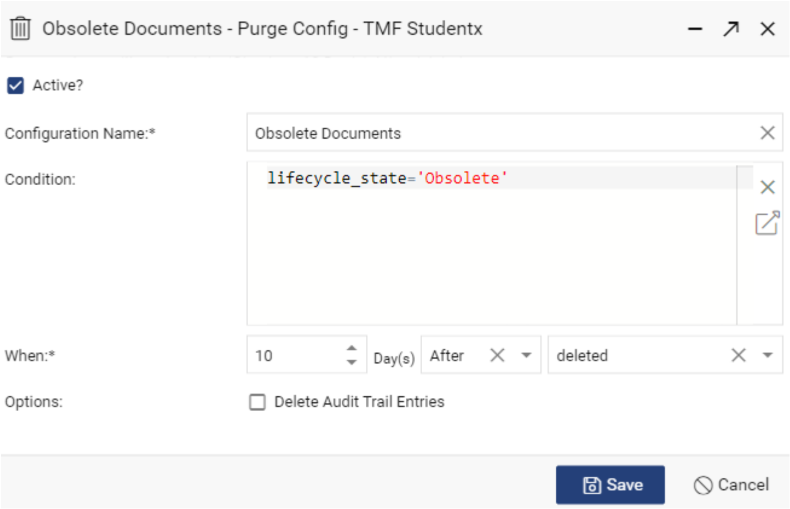
Properties Initialization

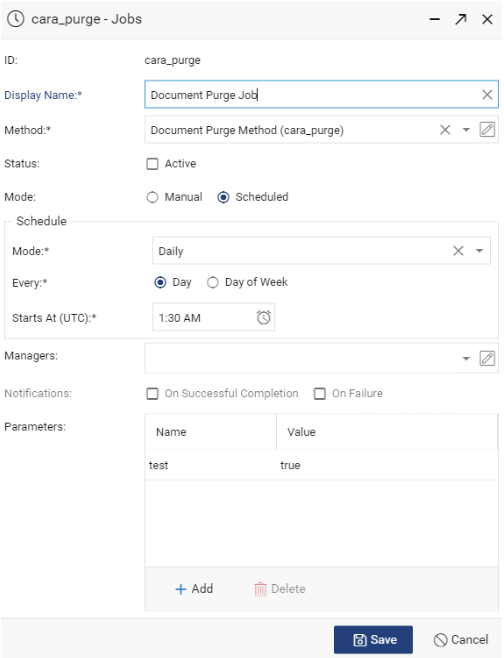
- Set initial property values for new documents.
- Can save users time and ensure consistent data.
- Like other initialization options, this configuration is applied only to the **initial version**,. This is **different from Auto-Values** which are applied for each version.
- For each node within the classification select initial attribute values.
- Can use codes such as CURRENT_DATETIME and USER.



Purge Config

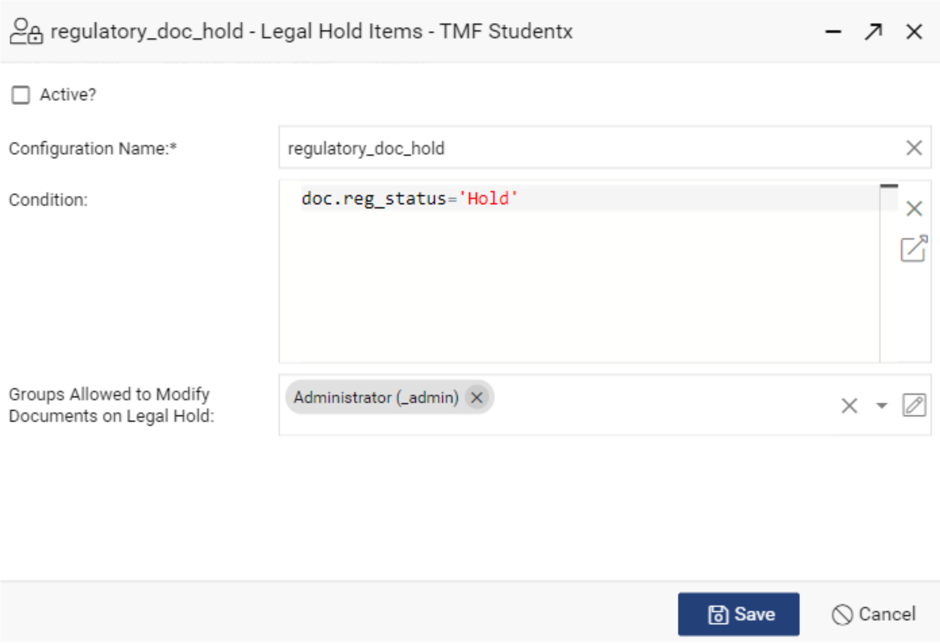
- Delete documents automatically after a period of time
- Set a number of days and an attribute to trigger from, this could be a custom attribute created specifically for the purpose such as doc.expiration_date.
- Optionally add a condition, for example version_label='Obsolete'.
- Select option to additionally delete Audit Trail Entries.
- **Works in combination with the cara_purge job**. It is this job that does the purge operation, based on the purge configuration. As is standard for CARA jobs, the job could be scheduled to run regularly or run on demand.





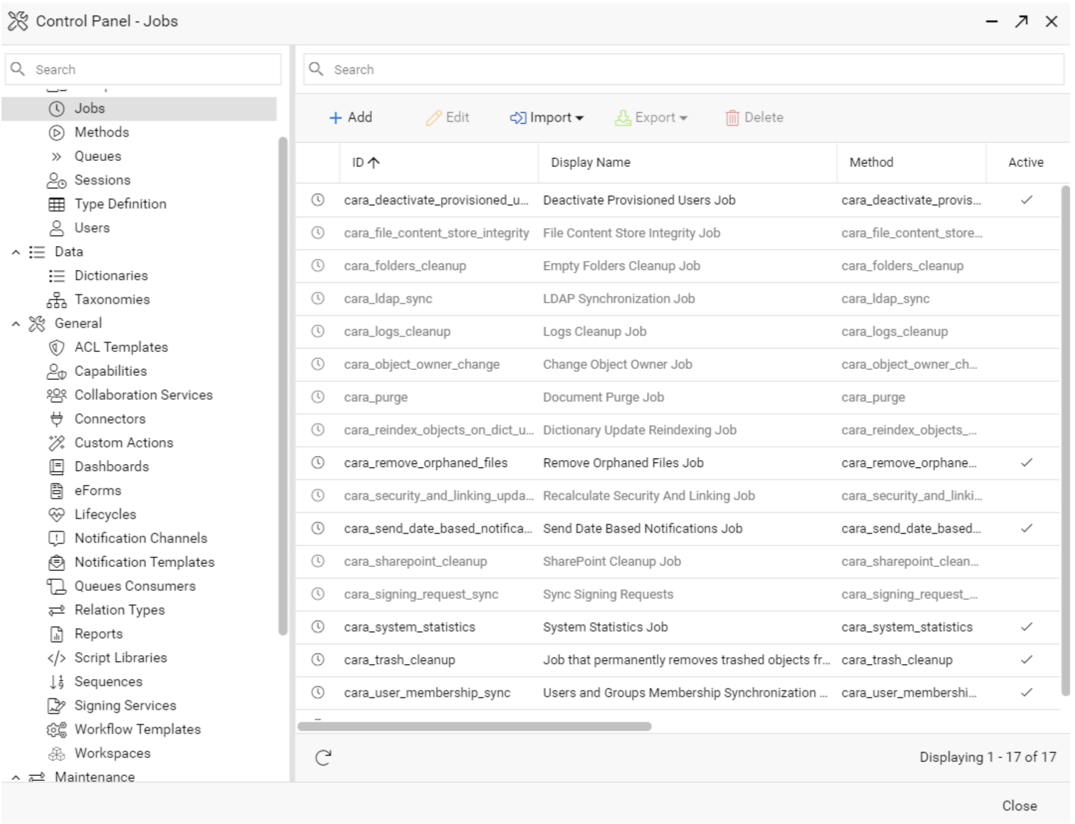
Legal Hold

- Prevent the changing of documents.
- Overrides ACL permissions.
- Can be based on a condition and therefore does not have to apply to every instance of a specific document type, for example could have legal hold on approved but not draft documents.
- Can allow some named groups to continue to modify the documents, such as administrators.



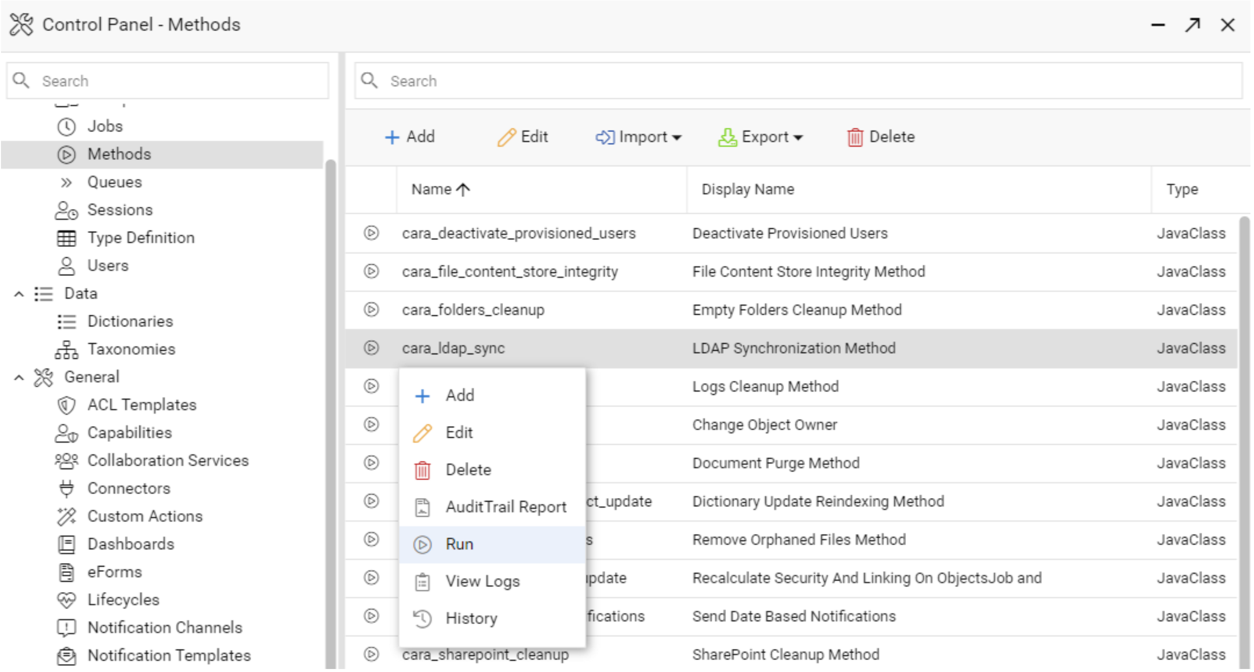
Methods and Jobs Overview

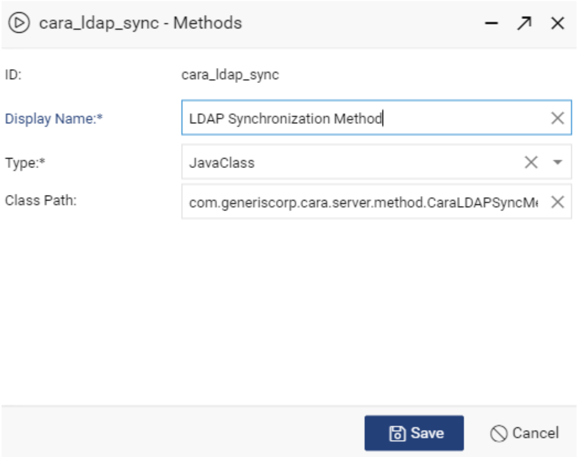
- A method is a Java class or script which performs a function, for example a method is used to synchronise user details via LDAP. Others are used to send notifications or run maintenance tasks. Several methods are installed by default and should not be removed.
- Methods can be run manually or scheduled as a job.
- New methods can be written and added to extend CARA functionality.



Running Methods

- The system methods do not need to be run manually. However any method can be run manually from the right click menu.
- Selecting to run a method queues the method for execution and provides a link to the Method's run log.
- Double-click an individual log entry to view details. The details displayed are specific to the method.





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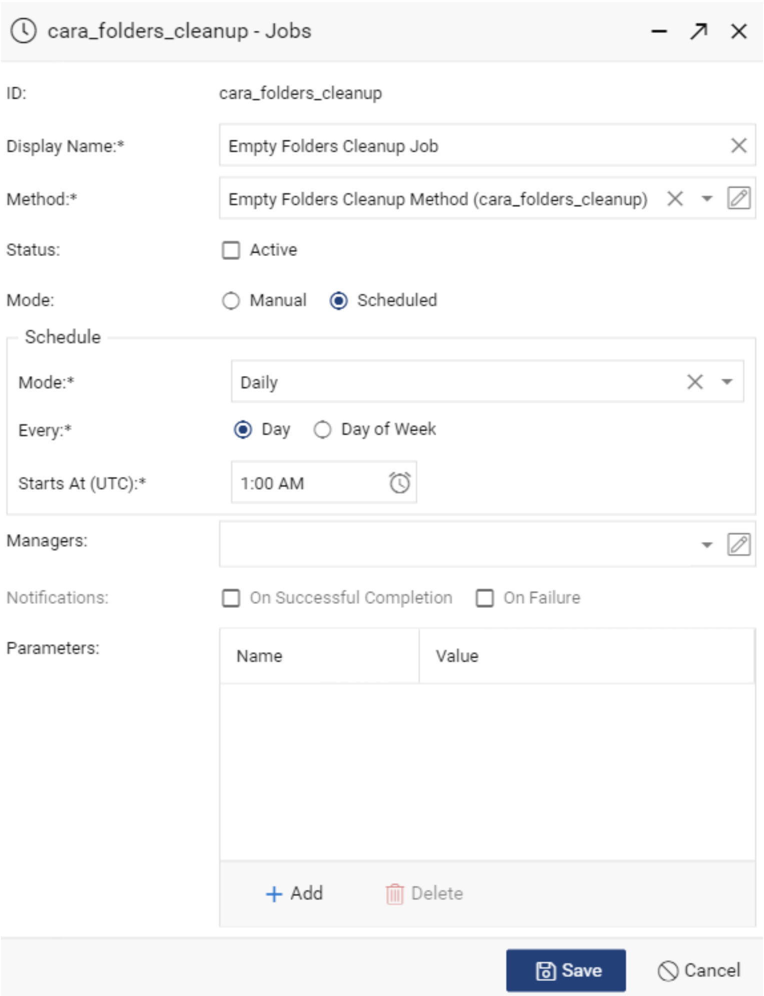
Jobs

- **A job is a method which has been scheduled** to run automatically.
- Jobs which are not active will not run automatically and are greyed out in the Jobs window, but can still be run manually.
- The Jobs window lists which jobs are active, when each job last ran, and when they are next scheduled to be run.
- Jobs can have parameters, which are determined by the method. Parameters are job specific.
- As with methods, job logs are available.
- Managers (a named group) can be automatically notified when a job runs, either on success or failure.
- **Recommendation**. Refer to the configuration manual for descriptions of the system jobs, along with their parameters.



Queues

- Queues pass requests to services. A request is generated when an action is performed on an object and then placed in a queue. For example, checking in a document sends queue requests for renditions and full text indexing.
- Default system queues do not need to be created or configured but can be monitored. Queues for 3rd party services can be created.
- Default system queues:

  _docsecure. DocSecure queue.

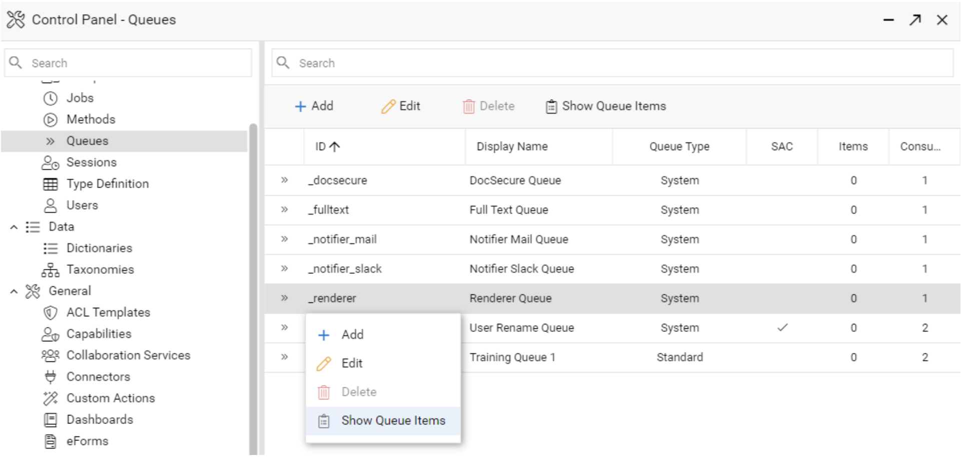
  _fulltext. Full Text queue.

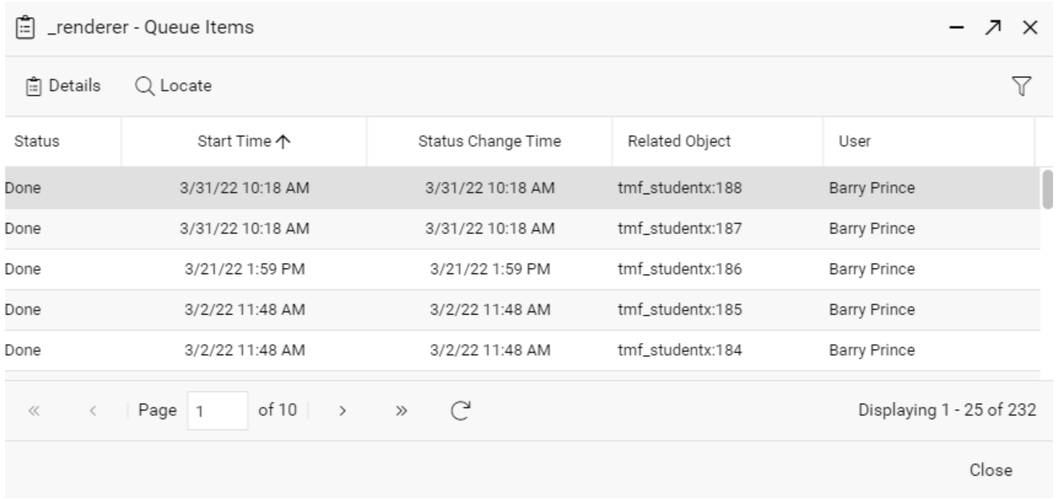
  _notifier_mail. Email queue.

  _notifier_slack. Slack channel queue.

  _renderer. Renderer queue.

  _user_rename. Rename user queue.
- Trigger events are configured per type.
- **Mailer and Slack queue items can be re-queued**.





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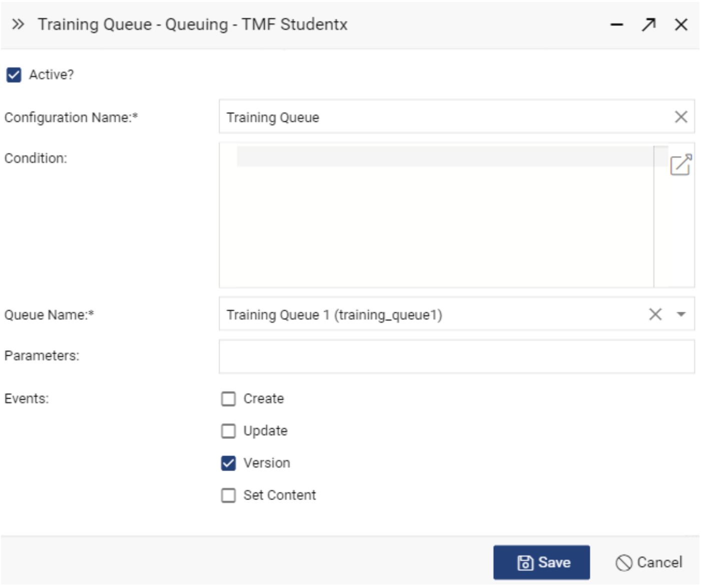
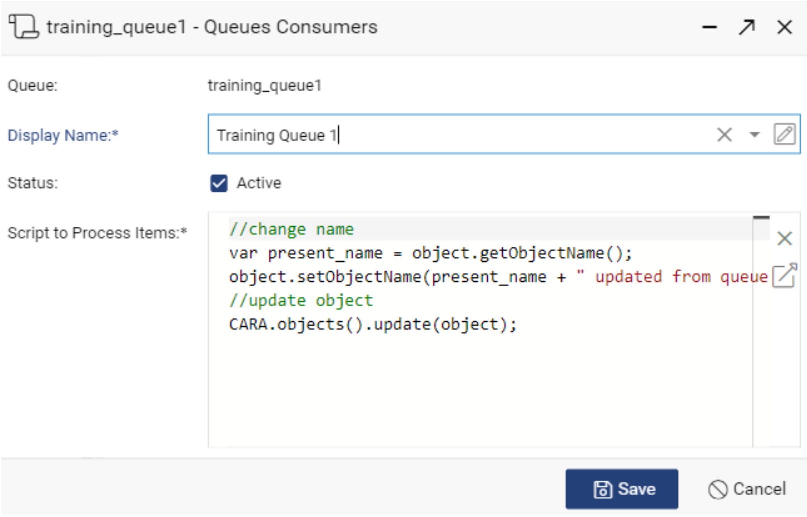
Queuing Config & Queue Consumers

- **Queuing Configuration**. Each type can have its own Queuing configuration for when to make a request to such a service, such as which events trigger a rendition request and any parameters that need to be passed. Parameters are determined by the specific service, for example a rendition server may expect to be passed a format such as pdf or jpg.
- **Recall that in type definition fulltext and renderer are set to automatic, therefore there's no need to setup queuing for _fulltext and _renderer**. The same goes for DocSecure, no queuing config is needed.

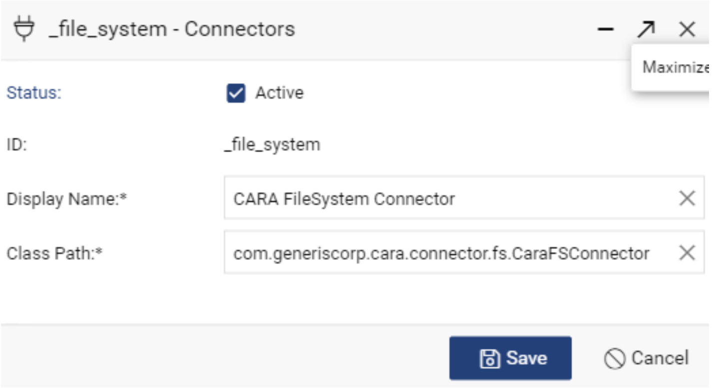
- **Queue Consumers** allow a script to be run against objects in a custom queue. The name of the queue consumer must match the name of the custom queue. Objects within a queue are processed in series in date and time order.

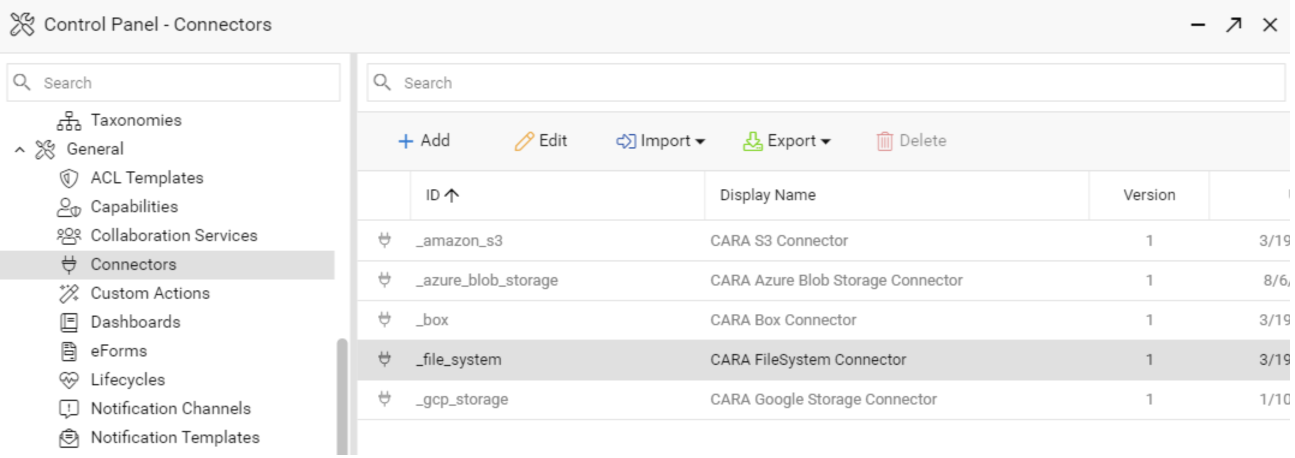


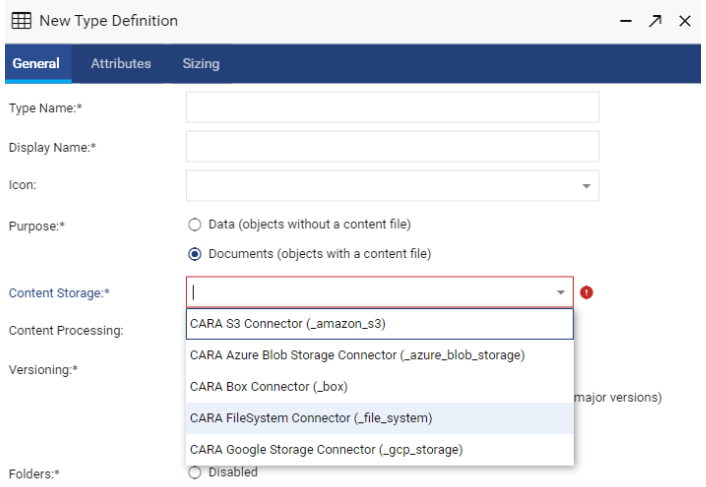


Connectors

- CARA supports multiple services and locations for **content storage**, for example Amazon S3 cloud services, Box, Azure Blob storage or simple file shares.
- Each connector represents a storage service and/or device.
- Each type points to a specific connector.







Connector Configuration

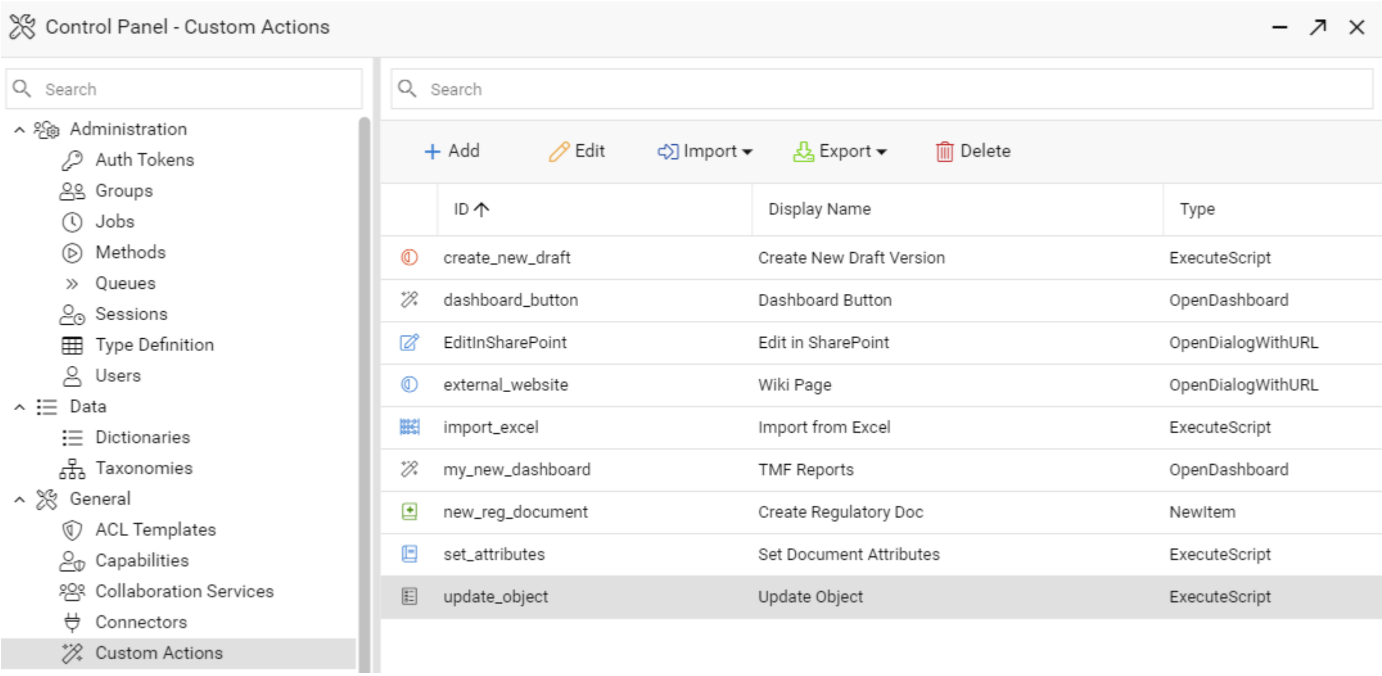
- Each connector implementation has its own configuration files which are deployed on the server. For example details of the network path and encryption used for a File System connector or the login details for Amazon S3.
- File System connector is built-in, cara_connector-fs.yml.
- Amazon S3 is also built-in, cara_connector-s3.yml
- Examples of these configuration files are included in the configuration manual.

```
#Defaulf content store path
path: /Users/olo/Desktop/ES
#Whether to encode file content, if true, the keystore must be provided
encryptionEnabled: true
#Algorithm: AES/DES/DESede
encryptionAlhorithm: AES
#Mode: CTR/CBC/GCM
encryptionMode: CBC
#Padding: NO_PADDING, PKCS5_PADDING
encryptionPadding: PKCS5_PADDING
encryptionPassword: UXztG+qPZpsHW02NEE/HV2CxQkfRirH1sWCO2c25XdSn2j1iH/RQ
```

```
# Default content store path
bucketName: cara-s3.cara.cloud
# AWS region name
regionName: eu-central-1
# Whether to encode file content, will utilize server-side S3 encryption
encryptionEnabled: false
```

Custom Actions - Overview

- Custom actions are a method of extending the functionality of CARA.
- Custom actions can:
  - Run a script (Groovy style Java)
  - Open reports in a dashboard
  - Open a dialog with a URL
  - Group menu buttons together
  - Provide a new document shortcut
- Custom actions can include variables, either entered manually by the user in a custom form or taken from the currently selected document.
- Custom actions are provided to users as toolbar buttons and menu bar actions.



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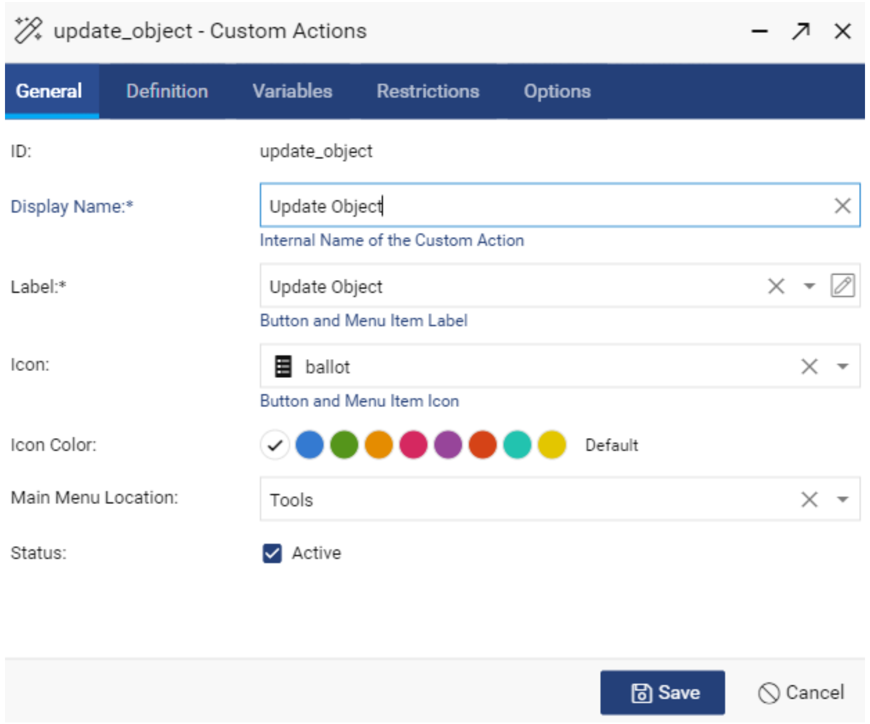
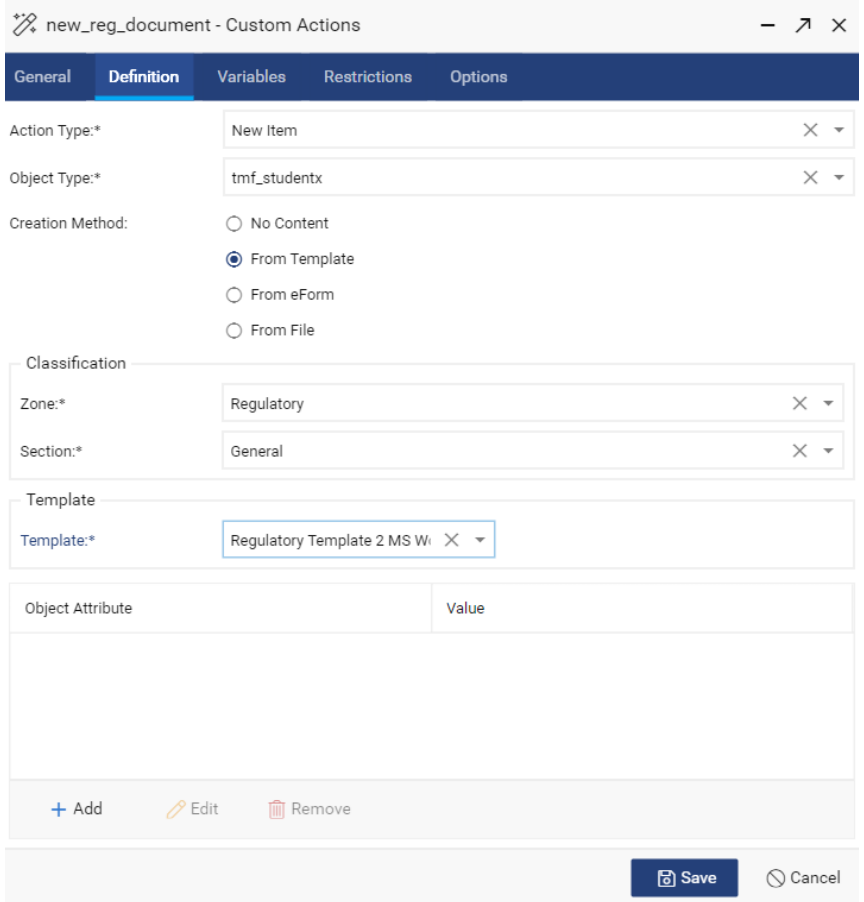
Custom Actions – General & Definition Tab

- Provide an **ID** and **Display Name.**
- Enter a user friendly **Label**.
- Select an **Icon**.
- Select a **Main Menu Location:** Tools, Settings or Help.
- On the **Definition** tab select the custom **Action Type**. Subsequent options are action type specific.



Custom Actions – New Item

- Provide a convenient shortcut for users who often create documents with a specific classification or from a particular template.
- Can also be used to limit the choices available to users, for example if a group of users are only allowed to create a specific document/template combination.
- Can be used to create new placeholders and eForms as well as traditional documents from templates.
- Initial property values can also be set.
- **Recommendation**. Ask users if there are specific documents they create frequently and add the custom action as a View action.



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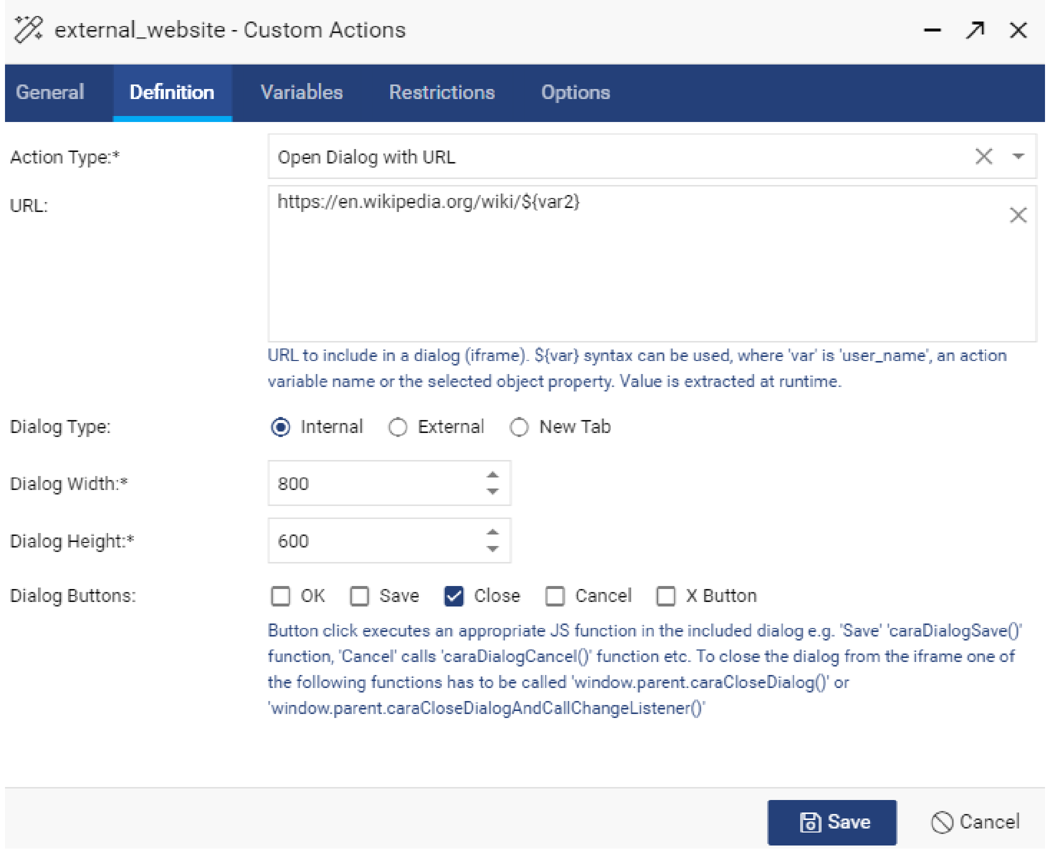
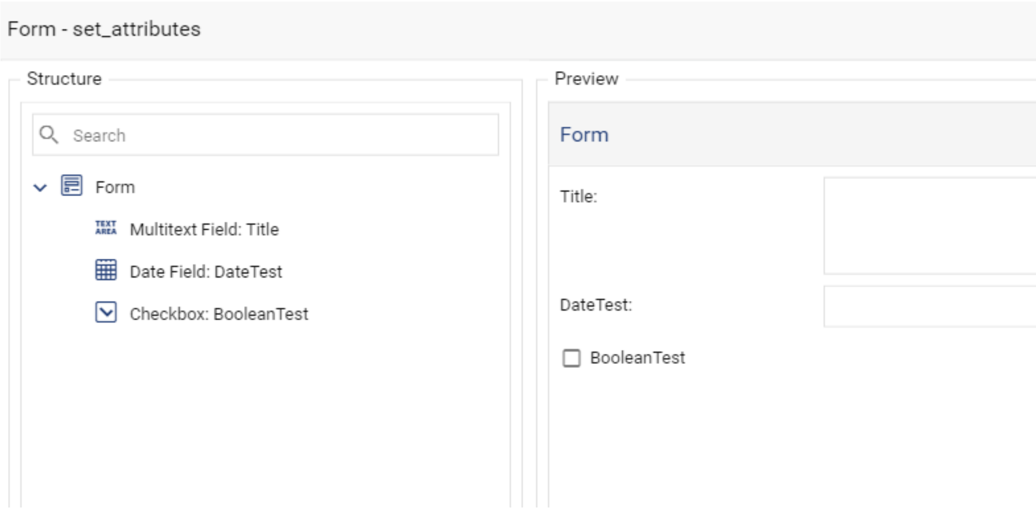
Custom Actions – Open Dialog with URL

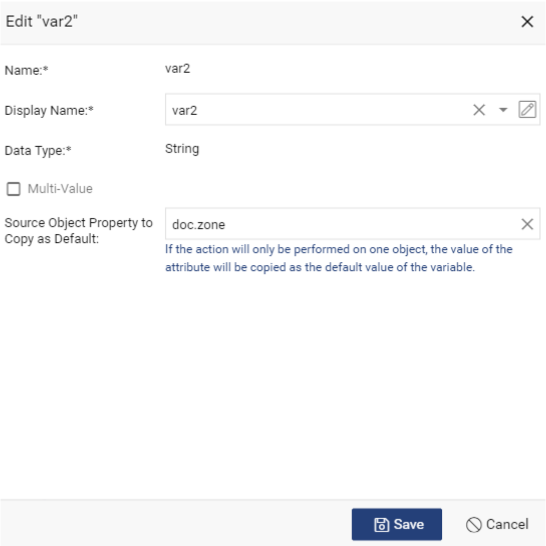
- Similar to the details widget, but with more options and without the same screen space limits.
- Open a new dialog with a URL specified, either within the CARA GUI (internal) or as a new page (external).
- The URL can include variables such as object_name.
- Use ${variable_name} syntax.
- Define variables within the following tab (next slide).
- The dialog size, buttons and other options such as fullscreen or toolbar can be selected.



Custom Actions - Variables

- Variables can be defined, which can be passed to a script, dialog URL or dashboard.
- The variable can use an attribute of the currently selected document
- Variables can be placed on a property form for the user to manually enter before running the custom action.
- For dashboards, the variable has usually been defined within the report and does not need to be configured separately for the dashboard.





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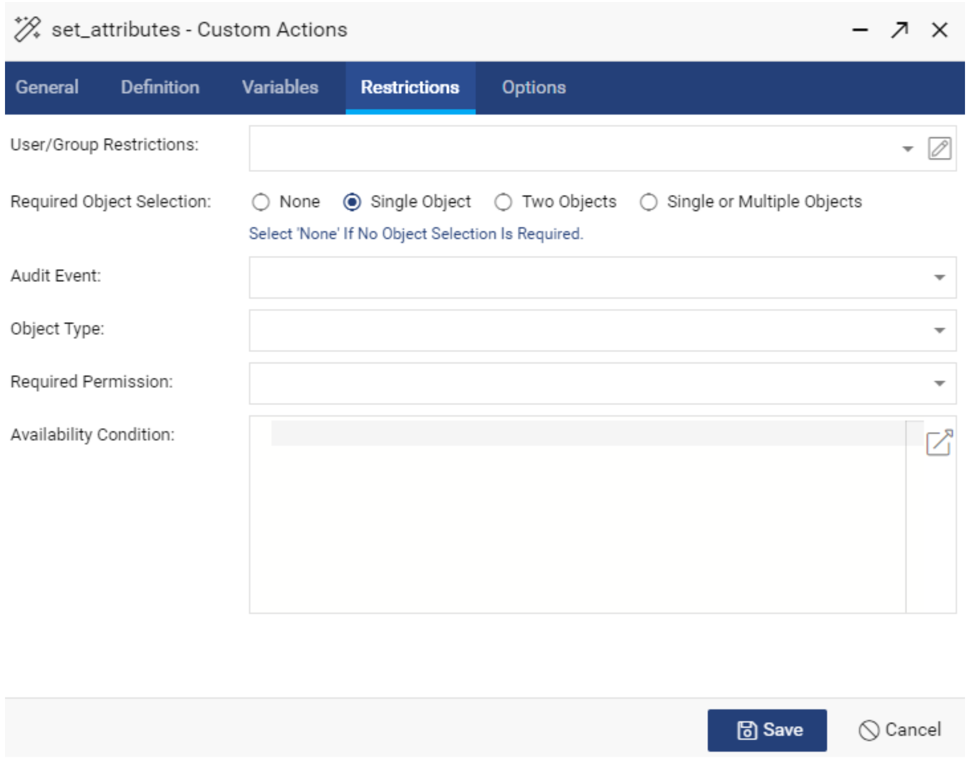
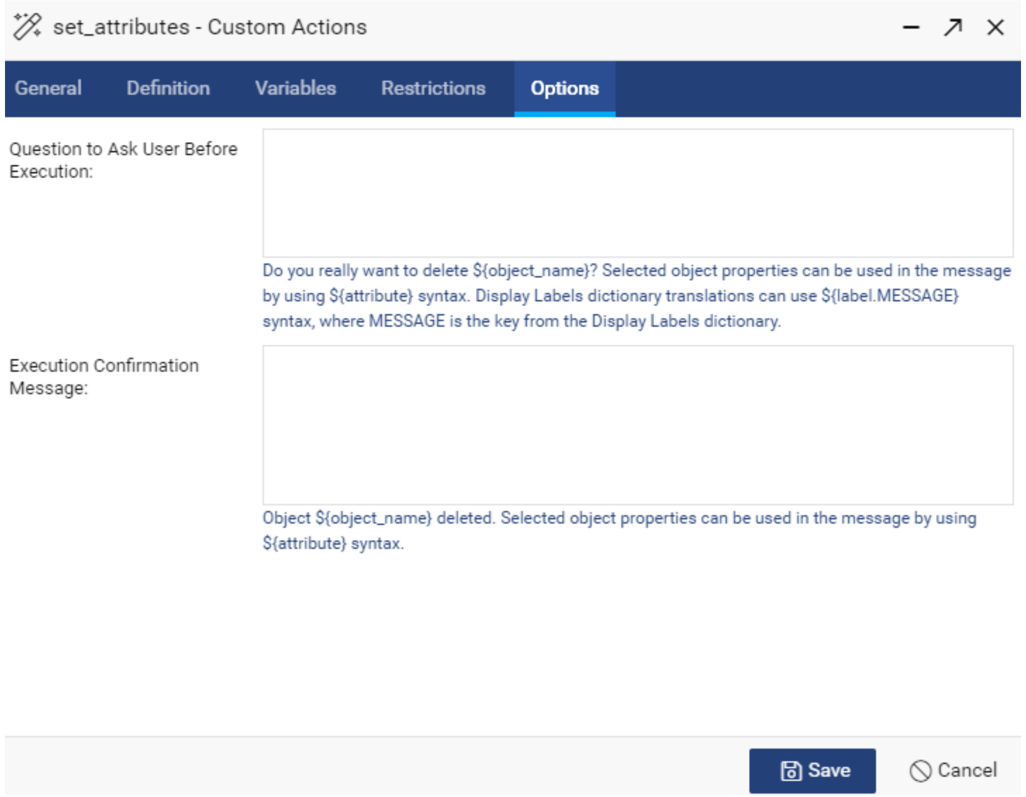
Custom Actions – Setting Restrictions

- **User/Group Restrictions**. Custom actions can be restricted to only being run by specified groups of users, however remember the associated view will already be restricted by group.
- **Required Object Selection** is usually necessary, we need the user to select the (correct type of) document the action will be applied to .
- An **Audit Event** can be added upon execution.
- **Required Permission**. Users may be required to have a specified permission (on the selected object) to run the action.
- **Availability Conditions** based on CQL can be added.



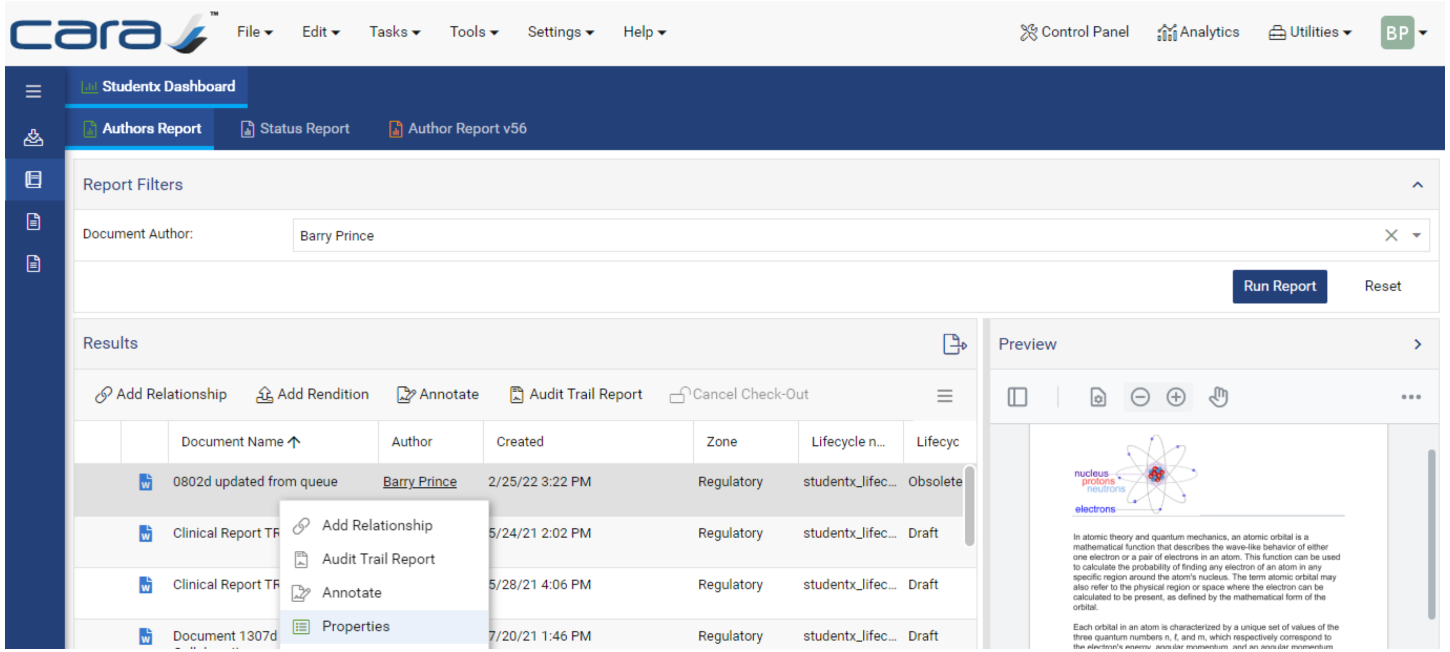
Custom Action – Further Options

- **Question Before Execution**. Users can be asked a confirmation question before the action is executed.
- **Execution Confirmation**. A confirmation message can be displayed on completion.
- **Recommendation**. Both the question to ask before and the confirmation message can include variables, see screenshot example.



Reports and Dashboards

- Reports return detailed information about documents and other objects.
- Reports are based on a CQL query or script and can include variables as filters. Variables are placed on a form.
- Reports can also include full document management functions with a dedicated toolbar.
- A dashboard is a collection of reports. Each report becomes a tab within the dashboard.
- Dashboards become custom actions, which are added to views as actions (buttons on the toolbar).



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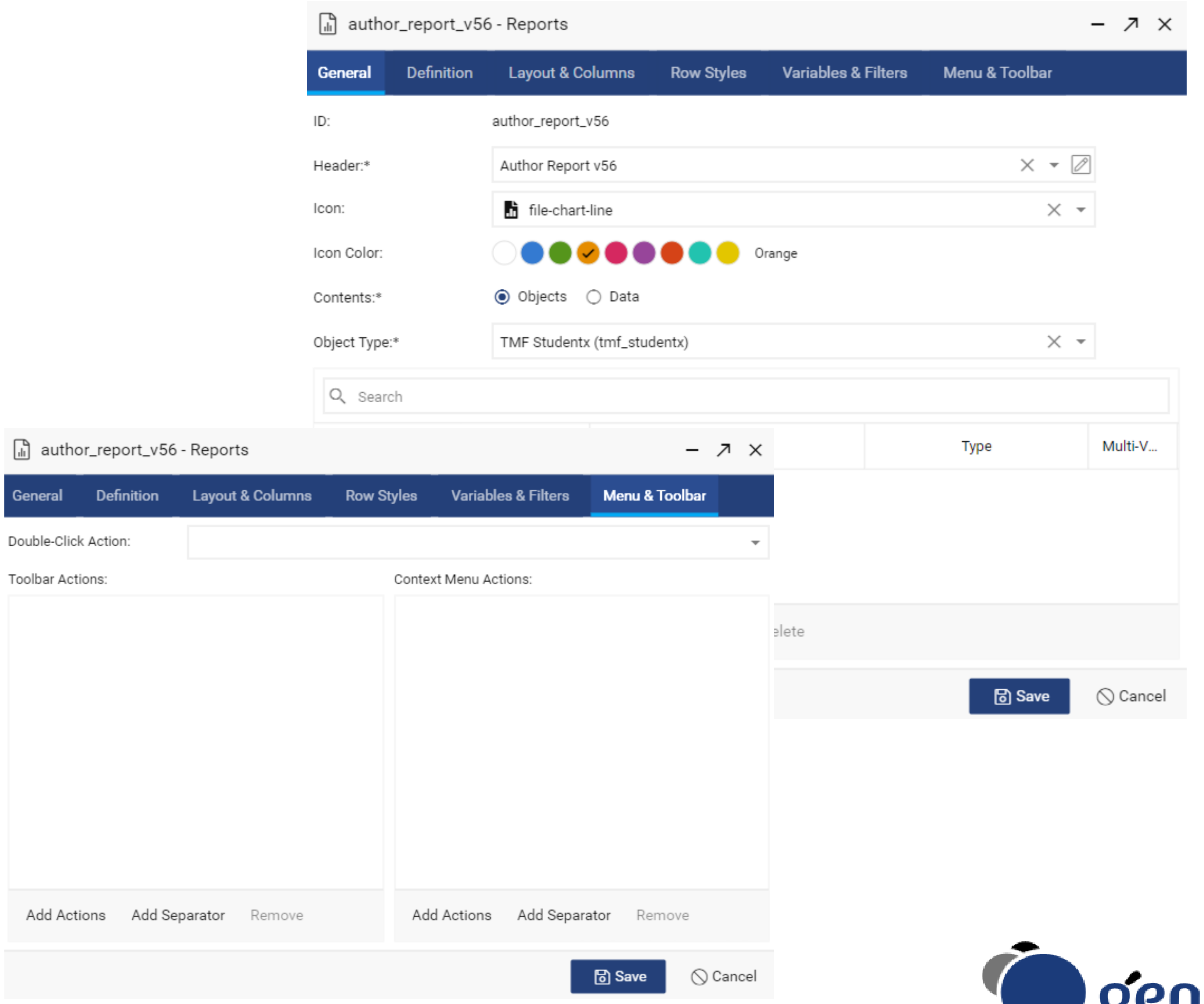
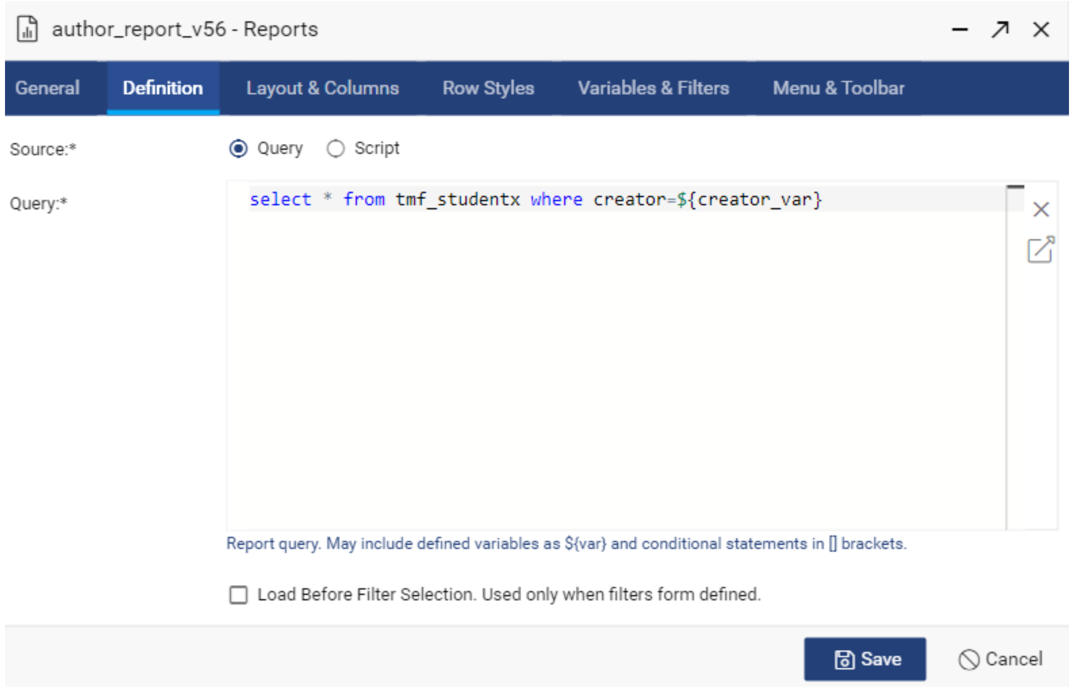
Reports – General Options

- Enter an **ID** and **Description**
- Select and Icon and icon colour
- **Content**. Select if the report will return **Objects** (including documents) or **Data.**
- For objects, select the object type. Not required for data reports.
- **Recommendation**. If in doubt, select objects. Document specific icons (such as the lock icons) will be displayed and document management toolbar options and buttons can be included.



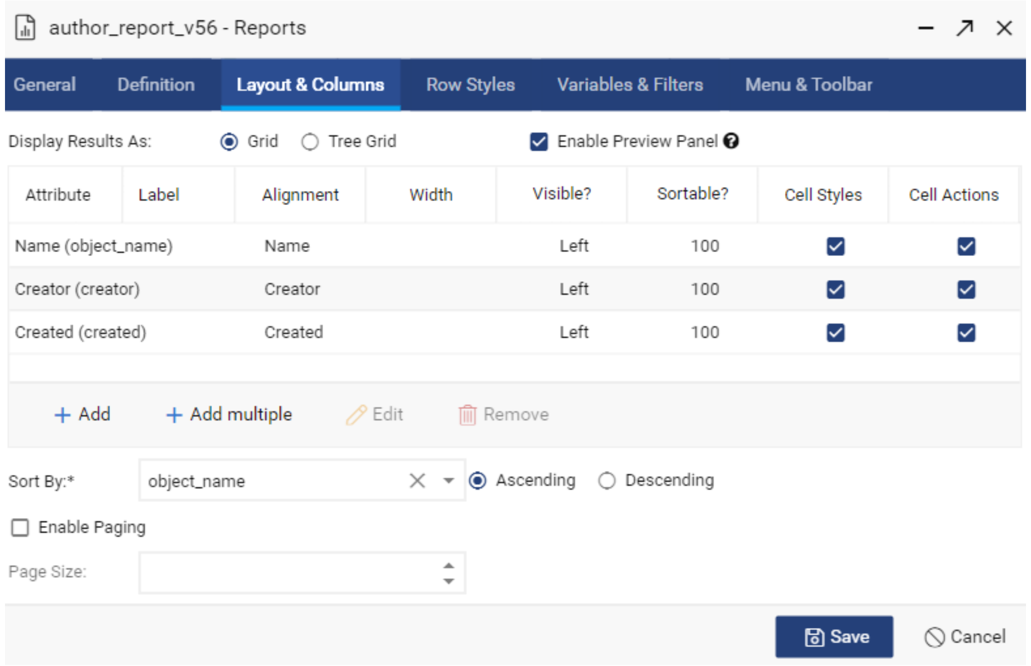
Reports - Definition

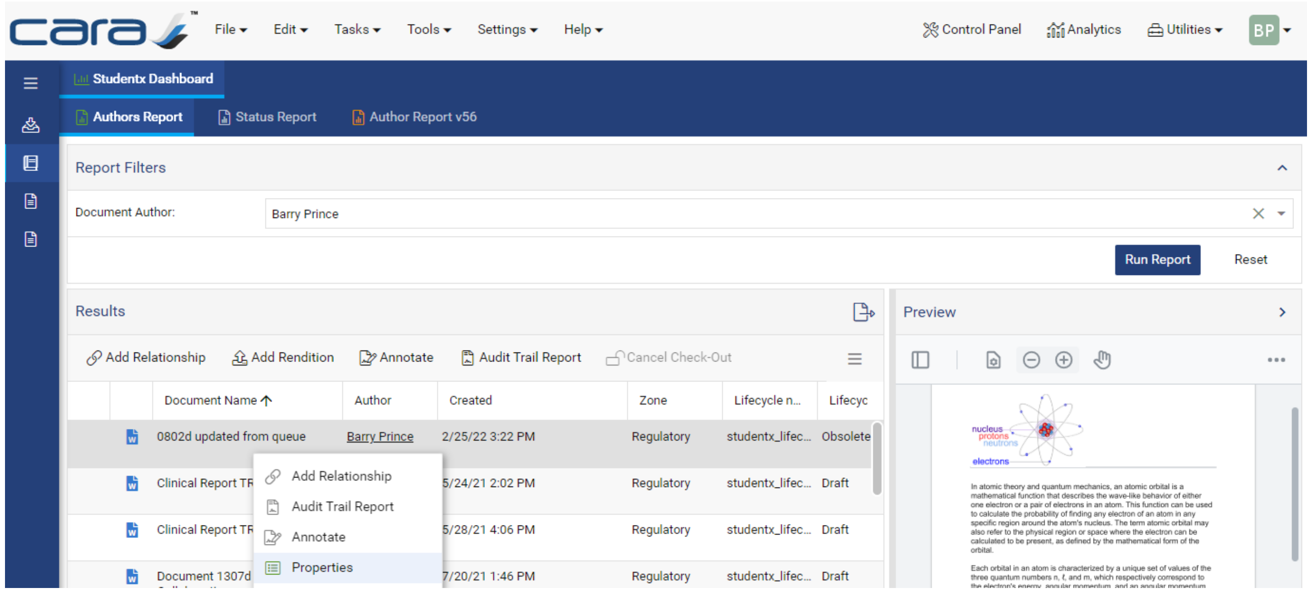
- Reports can be **CQL** (CARA Query Language) or **Script** based.
- **Variables** can be included, use ${variable_name} or @variable_name.
- **Load Before Selection** means that users will see results as soon as the report has been opened, they do not have to first make a selection and then click run.



Reports - Columns

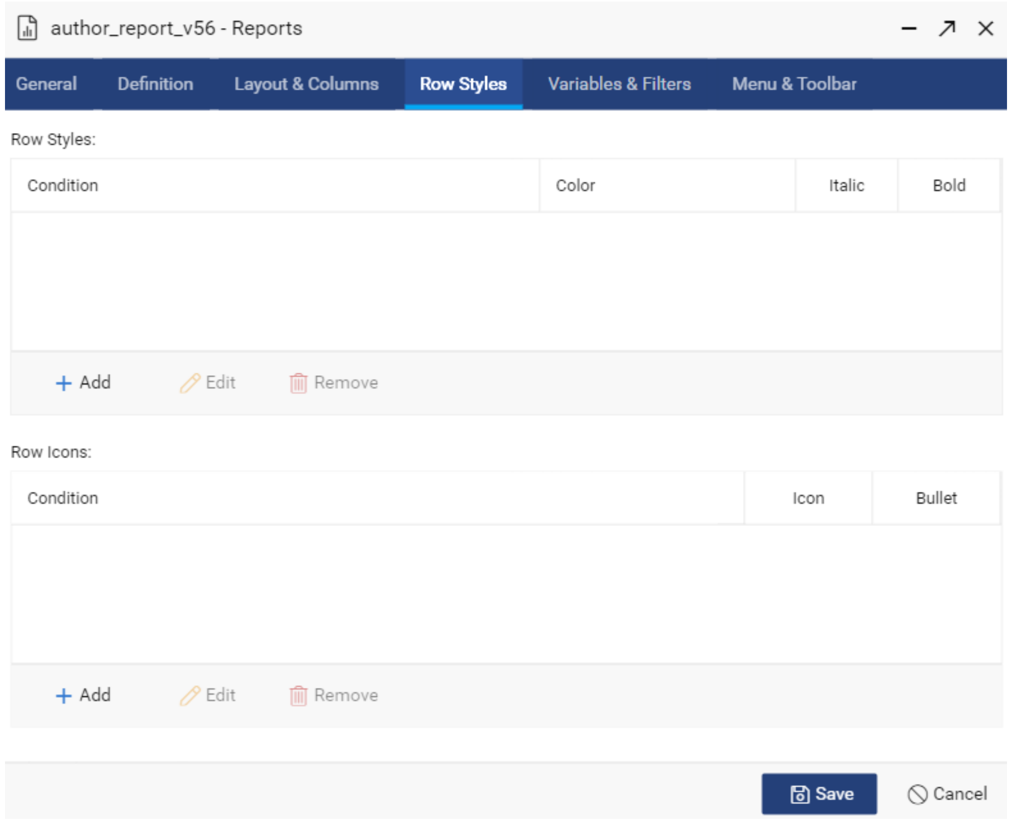
- Add the attributes which will be displayed as **Columns** in the report results.
- The same options as when configuring the view grid.
- For each column a user friendly label can be added, these can be selected from the _display_labels dictionary.
- Choose a default column to **Sort By**.
- Select pagination options.
- Optionally enable the preview panel





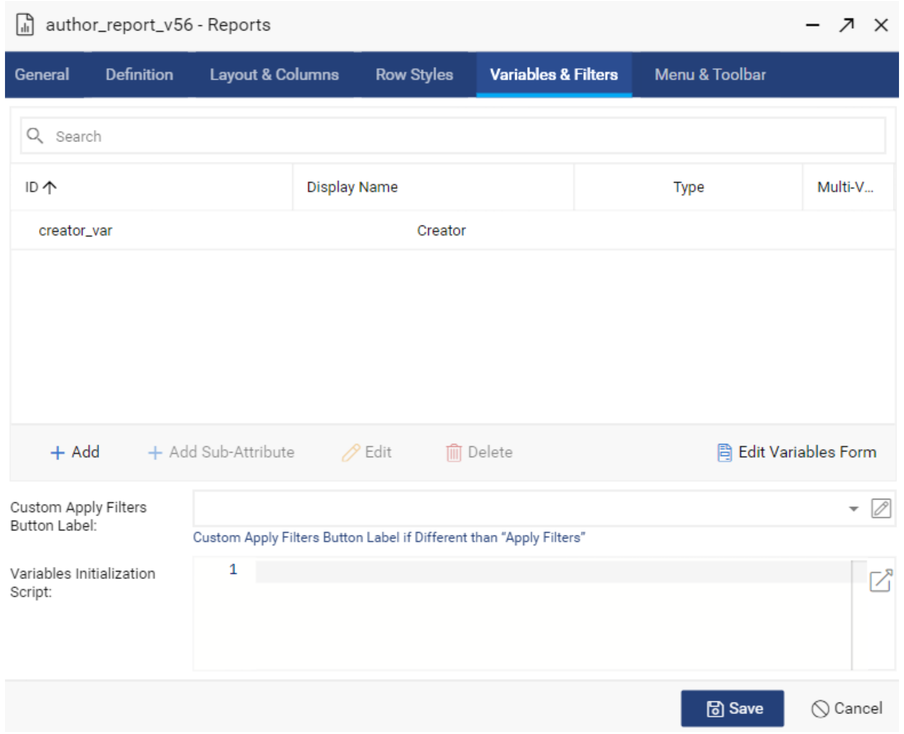
Reports - Row Styles

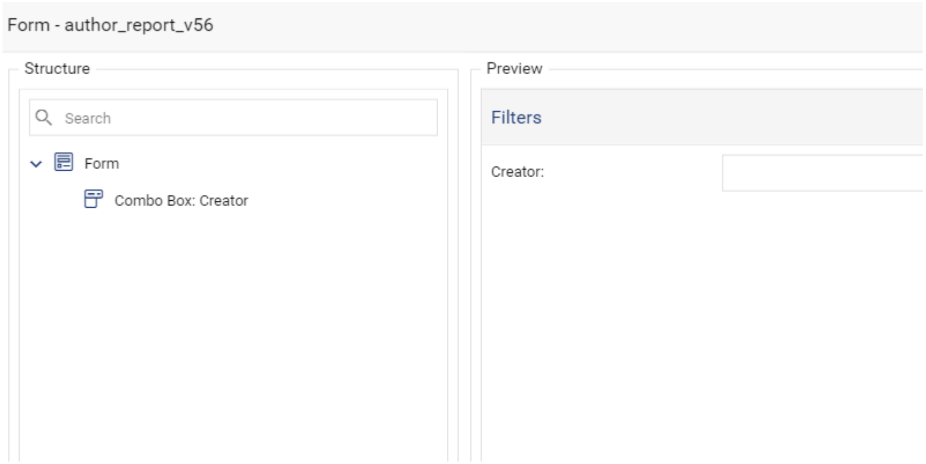
- Row Styles - select a style based on a CQL condition.
- Row Icons - select icons based on a CQL condition. Each icon also has a colour selected.
- Bullets can also be selected.



Report Variables and Filters

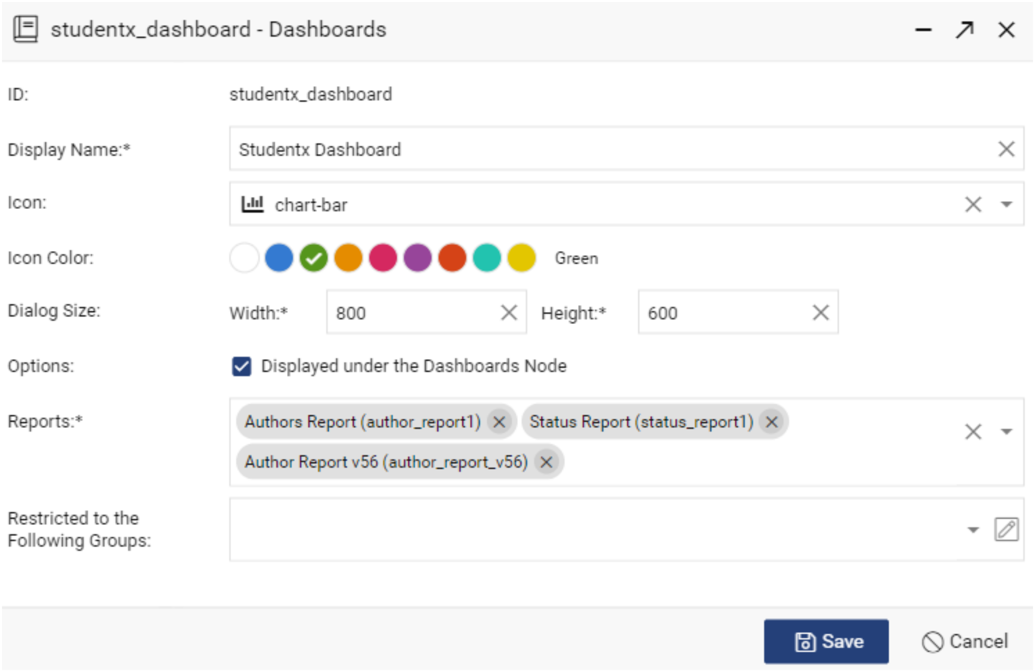
- Variables can be used as report filters.
- Place filters on a form, the form appears at the top of the dashboard window. Recommend reducing the default form window size as otherwise there will be little room for the report results.
- The Apply/Run button can be customised.





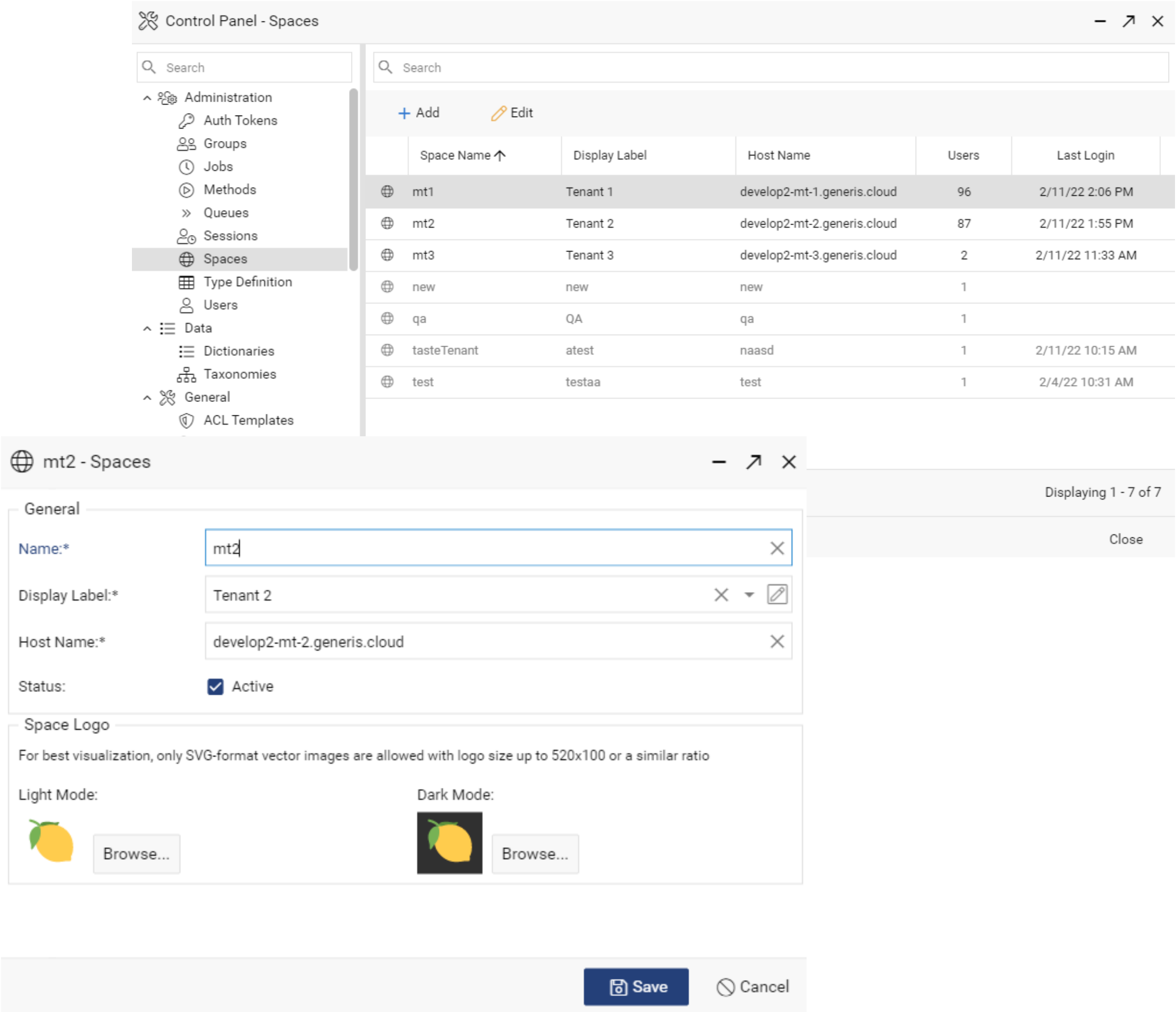
Dashboards

- Dashboards group reports together.
- Enter an **ID** and **Description**.
- Select an **Icon** and colour.
- Choose which **Reports** will be included, each report will become a tab
- Optionally restrict to specified groups of users. Recall that the view will be restricted by group anyway.
- Add the dashboard to a custom action and add the custom action to a view.
- Each report can be used in multiple dashboards.



Multi-Tenancy & Spaces Management

- Multi-tenancy enables the creation of multiple tenants, called spaces. Every space within a multi-tenancy environment has its own domain and visibility only of its own data. Spaces within a multi-tenancy environment share the underlying Elasticsearch platform.
- Multi-tenant environments must be enabled at installation time. A root space is used to manage other tenants/spaces and is not used to store data.
- Only the root space has the Spaces management option within the control panel. Must be a SuperAdmin to manage.



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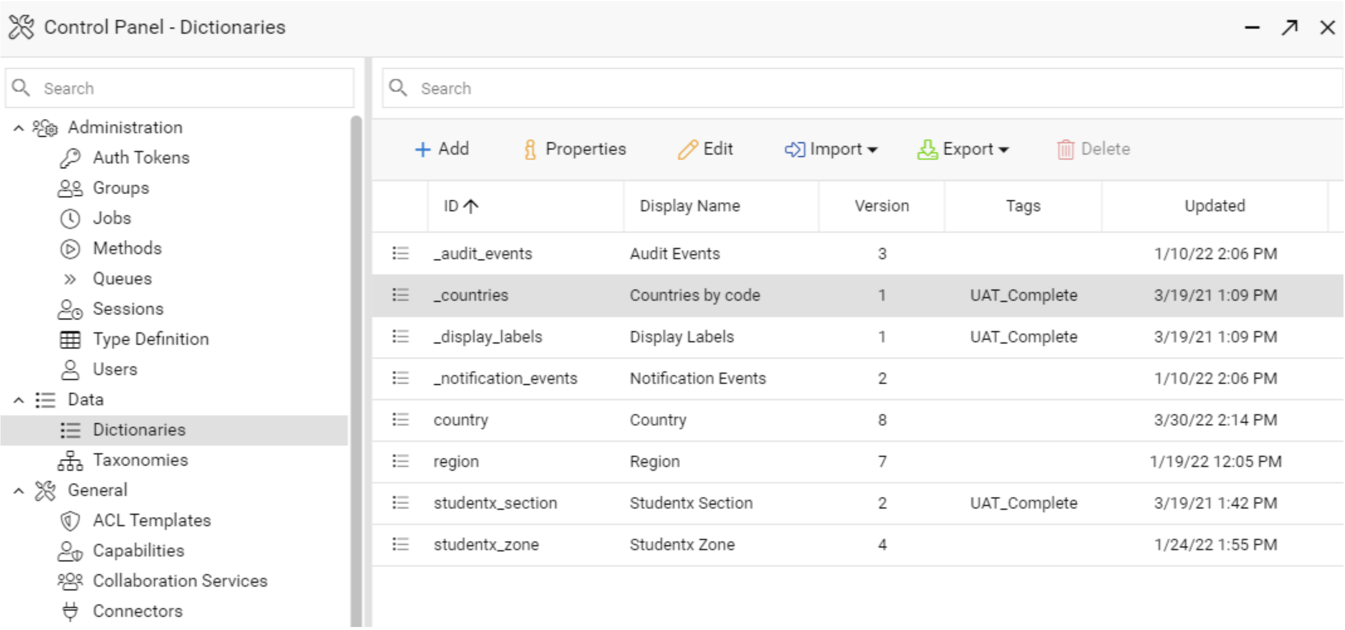
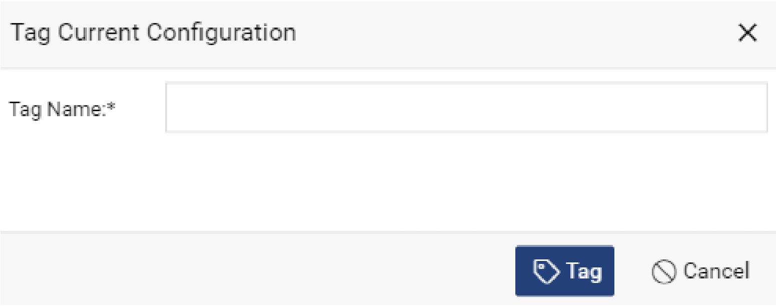
Configuration Export & Import

- Configuration Tags
- Configuration Export
- Type Definition Export
- Configuration Import

Configuration Tags

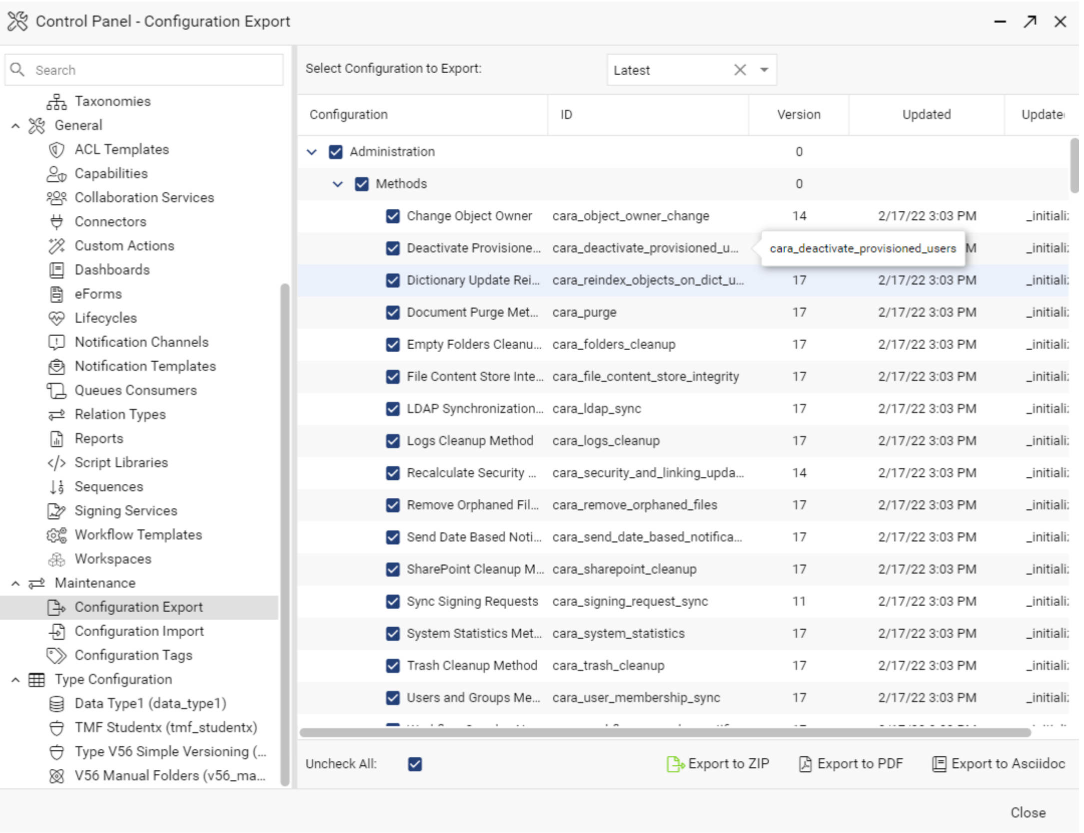
- Tags are descriptive labels applied to sets of configuration. They are used when exporting and importing configuration.
- When exporting configuration, the choice is provided to export the configuration as it currently is (Latest), or as it was when a specified tag was applied.
- Tags are displayed in many of the configuration windows within the CARA Control Panel. Hover over the icon to see the tags applied.
- When a tag is created it is applied only to the then current version configuration elements.
- There is no GUI option to remove tags.





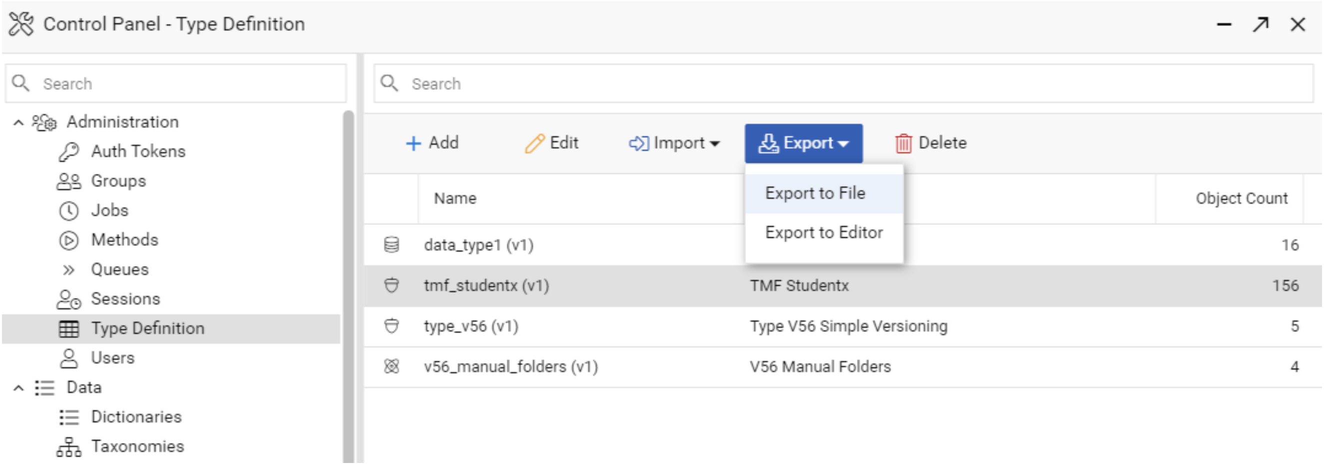
Configuration Export

- Export of CARA configuration in .yml format. The latest version of the configuration or specific tagged versions can be exported.
- Can be full or partial configuration export, for example could just export dictionaries.
- The exported zip file contains folders for each configuration type, with individual .yml files for each configuration element within.
- **Does not include type definition** (including attributes) but does include type configuration such as views. Type definition should be exported separately from the Type Definition window as individual .yml files.
- Does not include documents.
- Does not include users or groups.



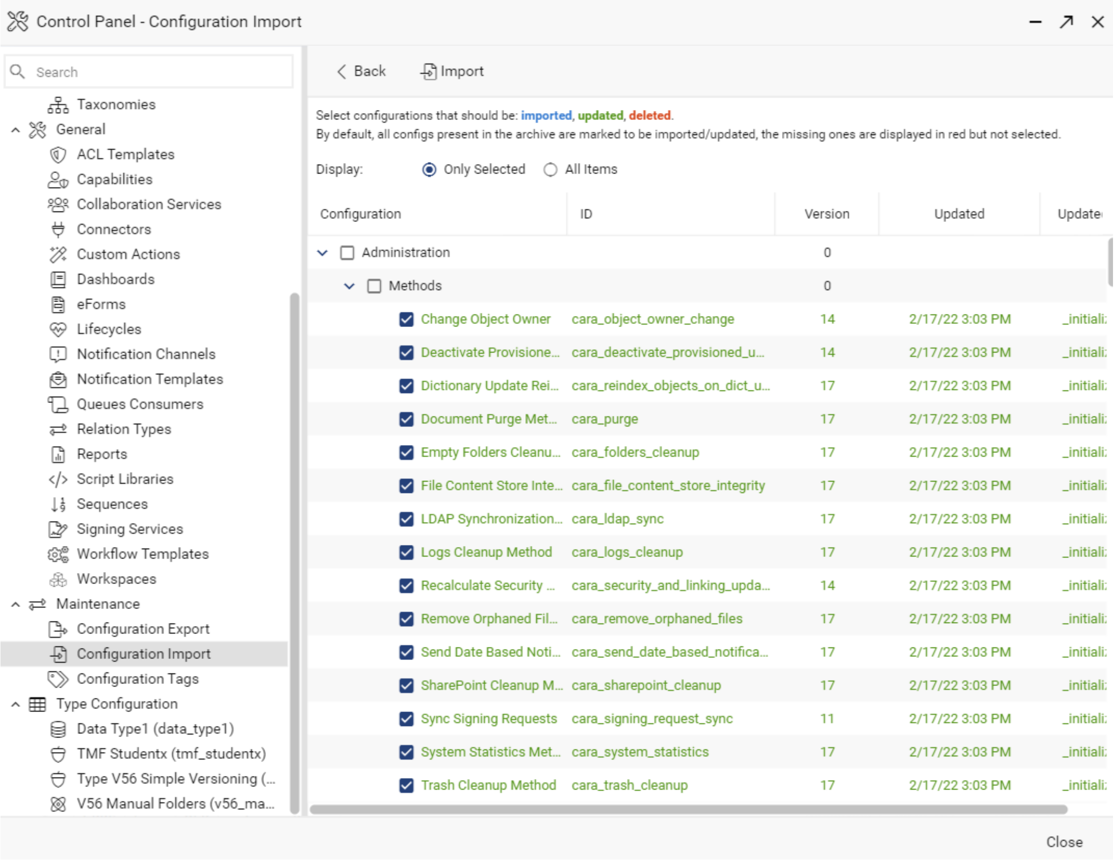
Type Definition Export

- Separate from the main configuration export.
- Includes the type definition with attributes.
- Export each type individually.
- From the Type Definition window select either Export to File or Export to Editor.
- When importing config, import the type definition beforehand.



Configuration Import

- Import of a previously exported CARA configuration.
- Configuration import can be partial or complete.
- When importing, each configuration element from the archive zip file can be ignored, imported and updated or deleted.
- The configuration log details changes.



By default:

- Configuration elements present in the zip archive but not present in the destination will be marked to be Imported. They are listed in blue.
- Configuration elements in the zip archive and already in the destination will be updated. They are listed in green
- Configuration elements not present in the zip archive but present in the destination configuration are displayed in red but not selected, no action will be performed on these elements. If selected, they will be deleted.

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Lab Time

- Lab time. Please continue from where you finished yesterday.
- The lab includes testing the configuration you’ve created.
- Let me know if you have any issues.
- Remember to substitute “studentx” with your student number.

Further Information & Support

- http://my.generiscorp.com is the CARA knowledgebase and where support tickets can be logged. Access to the FTP site is also available there. You need to register for an account using your corporate email address.
- Standard CARA Configuration and End User manuals accompany each major release
- Online CARA training videos are available at http://generis.talentlms.com
- The main webpage http://generiscorp.com includes a resources section