

CaSS AUTHORIZING TOOLS

Administrator Guide (February 2021)



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The ADL Initiative

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1.0 SYSTEM REQUIREMENTS

- 4 GB of ram (can work with 2 GB with additional configuration)
 - Tomcat: 512 MB (can be reduced to 256 MB)
 - Elasticsearch: 2 GB (can be reduced to 1 GB)
- At least 8 GB of hard drive space

2.0 VERSION

Minimum CaSS version selection for inclusion of CaSS Authoring Tools (CAT) should be **Version 1.3**.

3.0 CAT/CASS INSTALLATION

3.1 Linux (Debian, Ubuntu, Amazon and other Fedora derivatives)

3.1.1 Install, Upgrade

```
wget
https://raw.githubusercontent.com/cassproject/CASS/master/scripts/cassInstall.sh

chmod +x cassInstall.sh

sudo ./cassInstall.sh
```

3.2 Docker

Images for CaSS are kept in Docker Hub under [cassproject/cass](https://hub.docker.com/r/cassproject/cass).

The following command will run the CaSS Standalone server with an interactive prompt and expose it on port 80 on the local machine.

```
docker run -it -p80:80 cassproject/cass
```

Additionally, if you wish to use docker-compose or some other means of deploying CaSS in a constellation of servers, see this docker-compose file: <https://github.com/cassproject/CASS/blob/master/docker-compose.yml>.

Pull the GitHub repository using the `--recurse-submodules` flag on the Git PULL command. This pulls files that GitHub ignores by default. You may need to increase the amount of memory the container has (<https://stackoverflow.com/a/51448773/2630882>). Run the `mvn.install` and then `docker-compose up -d` to complete the installation of CaSS.

3.3 Windows

Windows installation uses “Chocolatey (<https://chocolatey.org/>)” as a package manager. Chocolatey will be used to install all required CaSS dependencies (Maven, Git, and Elasticsearch).

You may also install these packages by hand or using another tool.

CaSS Package on Chocolatey: <https://chocolatey.org/packages/cass>

From an elevated command line:

```
@powershell -NoProfile -ExecutionPolicy Bypass -Command "iex ((New-Object System.Net.WebClient).DownloadString('https://chocolatey.org/install.ps1'))" && SET "PATH=%PATH%;%ALLUSERSPROFILE%\chocolatey\bin"
refreshenv

choco install -y cass

refreshenv
```

Go to services, start *elasticsearch-service-x64* and set it to start automatically.

3.3.1 Install/Upgrade

From an elevated command line:

```
choco install -y cass
```

3.3.2 Setup

- Set up DNS endpoint
- Set up HTTPS certificate
- Set up IIS Reverse Proxy: <https://weblogs.asp.net/owscott/creating-a-reverse-proxy-with-url-rewrite-for-iis>
 - Reverse Proxy Endpoint: `https://<your cass domain>/ -> http://localhost:8080/cass/`
- In your firewall, deny access to ports 9200, 8080 to all machines except localhost

4.0 POST-INSTALLATION CHECKLIST

1. Ensure API is started and reachable through a desired endpoint
 - a. (ex: `http://cass.<your_organization>.org/api/custom/`)
 - b. Note that all objects created will use this endpoint in their permanent locator.
2. Ensure Website is reachable through a desired endpoint
 - a. (ex: `http://cass.<your_organization>.org/`)
 - b. CaSS attempts to auto-detect the endpoint for the Tomcat server automatically -- XSS or obscure endpoints may require additional configuration.
3. Check your character encoding
 - a. Look at the logfile (`<tomcat>/logs/*.log`) of when the server starts up, if the character set is not UTF-8, follow the FAQ instructions to force Tomcat/Java to use `file.encoding=UTF-8`.

5.0 TESTING, UPGRADE, AND INSTALLATION FAQ

1. Most errors will occur due to a lack of connectivity with the appropriate endpoint. Use the Browser Development Tools to ensure that requests are going to the correct location.
 - a. Check to ensure the environment variable `CASS_LOOPBACK` is set to the endpoint of the server.
2. Apache requires `proxy_http` to function. If Apache fails to start up, the `proxy_http` module may not be enabled. In HTTPD, this is called `mod_proxy_http`.

3. The installer will not modify a current install of the Apache/HTTPD Web Server if proxy settings are being used (even from a previous install).
4. When upgrading from 0.1.0 -- If you get the error `HTTP Status 404 - /cass-0.0.1/`
 - a. Alter the apache conf files to use ProxyPass / http://localhost:8080/cass/, not ProxyPass / http://localhost:8080/cass-0.0.1/
5. On windows machines, or machines where the default character encoding is not UTF-8, you will need to set a Tomcat Java parameter: -Dfile.encoding=UTF-8 to avoid character encoding errors when dealing with unicode characters.
6. After an upgrade, database incompatibilities may occur. You may export and import data before upgrades using the following web services:
 - a. http://<endpoint>/skyrepo/util/backup?secret=[contents of skyld.secret in tomcat folder]
 - b. http://<endpoint>/skyrepo/util/restore?secret=[contents of skyld.secret in tomcat folder]

6.0 CAT FRAMEWORK AND COMPETENCY CONFIGURATION

Configurations control the way frameworks and competencies appear in the editor, as well as which properties, relationships, and in some cases value types of properties and relationships can be added to frameworks and competencies.

Configurations are set at the framework object. If a framework does not have a configuration assigned, then the following priority is made to determine the correct configuration to apply to the display of the framework:

1. Browser default configuration
2. Instance default configuration
3. CaSS nomenclature fallback

Note: Only a single configuration can be set to the instance default at any given time. In order to change the instance default, the owner of the current instance default must toggle the default switch off. At that point, another configuration can be set as the instance default.

6.1 Accessing the CAT Configuration Manager

The CAT configuration manager can be accessed by selecting *configurations* on the lower end of the navigation menu (see Figure 1).

Upon entering the configuration manager, a list of all existing configurations in the current CAT instance are displayed (see Figure 2). Public configurations or configurations owned by the current logged-in user can be managed or deleted by selecting one of the actions icons to the right of the configuration item. Unowned configurations can be viewed by selecting the appropriate action icon.

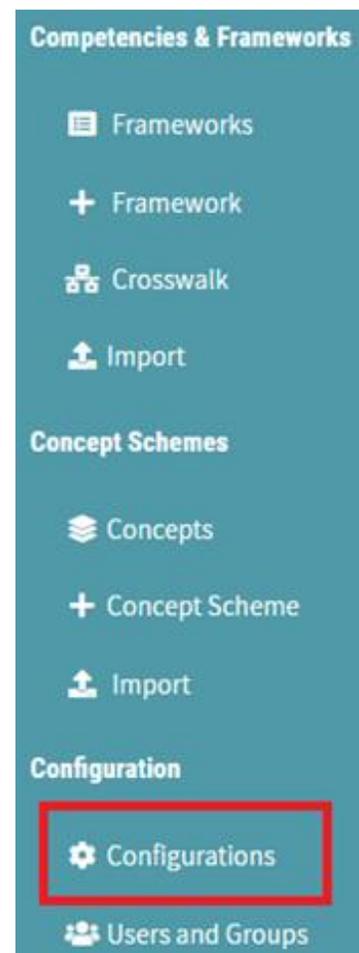


Figure 1 - CAT Configuration Manager - Navigation Menu - Configurations



Figure 2 - CAT Configuration Manager - Configuration Actions

It is also possible for users to set their browser default configuration from this screen, as shown in Figure 3.

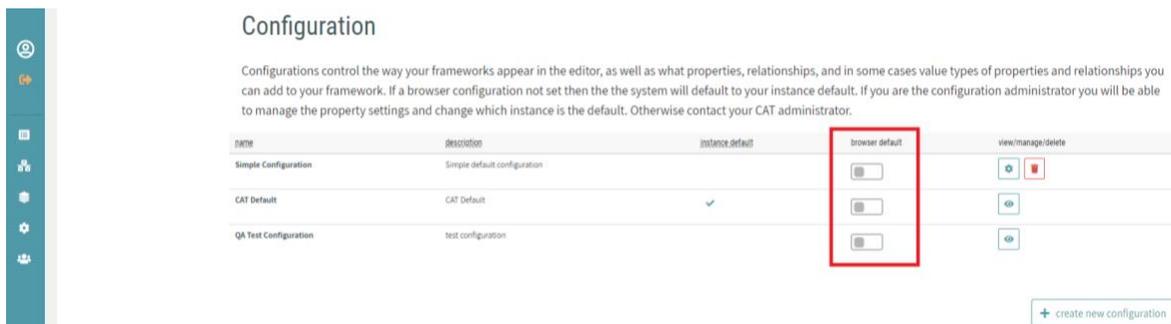


Figure 3 - CAT Configuration Manager - Browser Default

6.2 Creating a New Configuration

Configurations can be created by clicking the *create new configuration* button at the bottom right corner of the configuration management list screen, as shown in Figure 4. By default, all required fields are pre-populated with default CaSS terminology and settings.

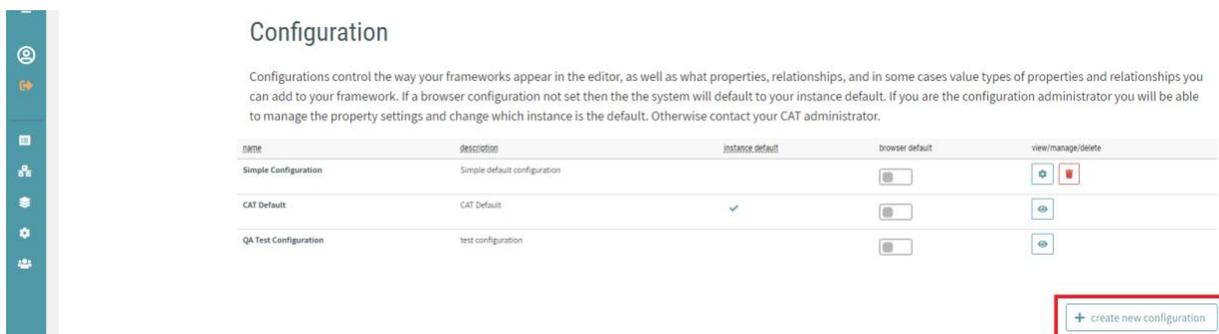


Figure 4 - CAT Configuration Manager - Create New Configuration

6.3 Managing a Configuration

After creating a new configuration or selecting the *manage* action on an existing configuration, the *configuration details* screen is displayed. This screen is divided into several sections, as shown in Figure 5.

6.3.1 General Details

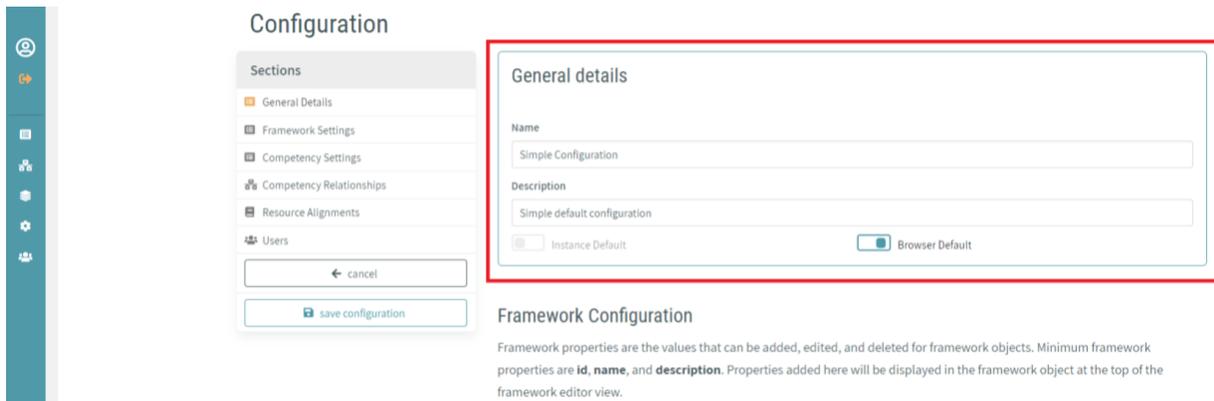


Figure 5 - CAT Configuration Details - General Details

The general details configuration settings provide fields for editing the **name** and **description** of the configuration. From this section you can toggle the *instance default* switch and set your browser default.

Note: Only a single configuration can be set to the instance default at any given time. In order to change the instance default, the owner of the current instance default must toggle the default switch off. At that point, another configuration can be set as the instance default.

6.3.2 Framework Property Configuration

Framework properties are the values that can be added, edited, and deleted for framework objects. Minimal framework properties are **id**, **name**, and **description**, as shown in Figure 6. Properties added here will be displayed in the framework object at the top of the framework editor view.

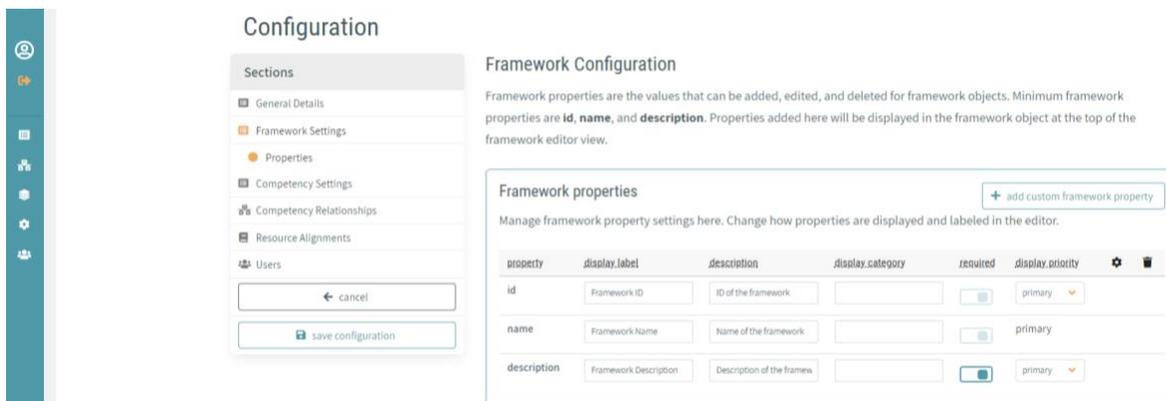


Figure 6 - CAT Configuration Details - Framework Configuration

6.3.2.1 Property Fields

Certain property fields can be modified directly from the property list:

- **display label** - label to be displayed in form inputs for that property
- **description** - description of this property
- **display category** - category (if any) under which the property is displayed in form inputs
- **required** - property required toggle
- **display priority** - priority in which the property is displayed in form inputs (primary, secondary, or tertiary)

At the framework level the following static rules apply:

- The **id** property is *required*
- The **name** property is *required* and has a display priority of *primary*

6.3.2.2 Custom Framework Properties

Custom properties can be added to a framework by clicking the *add custom framework property* button, as shown in Figure 7.

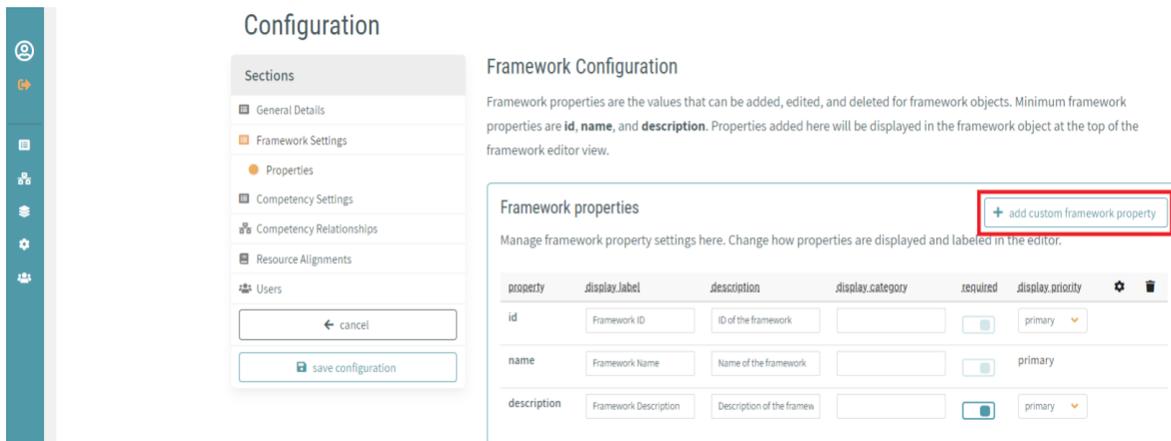


Figure 7 - CAT Configuration Details - Add Custom Framework Property

Once clicked, the *New Framework Property* dialogue window is displayed, as shown in Figure 8.

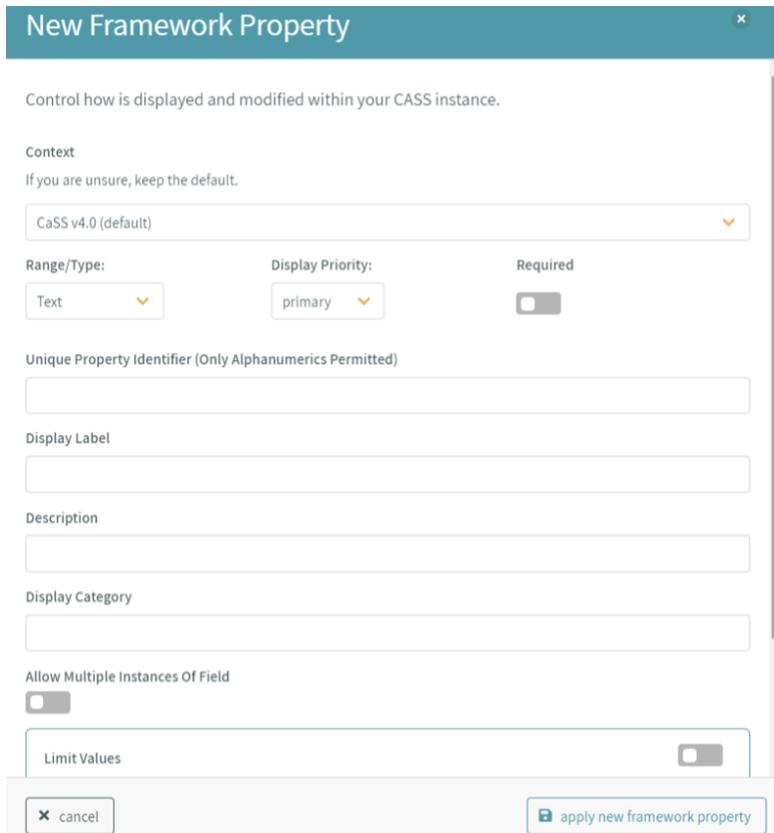


Figure 8 - CAT Configuration Details - New Framework Property Creation

6.3.2.3 Custom Framework Property Fields

Several fields must be completed in order to add the new property. Some field options (such as *range/type: Text*) allow further customization of the property.

6.3.2.4 Context (only editable at the time of property creation)

Custom properties in CaSS are stored as namespaced linked JSON-LD records. Because of this, all new properties must have a context. By default, all custom properties have the **CaSS v4.0** (<https://schema.cassproject.org/0.4/>) context. However, it is also possible to modify this field to the following values:

- **CTDL-ASN** - <https://purl.org/ctdlasn/terms/>
- **RDF Semantic Web Standards 1999** - <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
- **RDF Semantic Web Standards 2000** - <http://www.w3.org/2000/01/rdf-schema#>
- **Key Based Authorization and Control** - <https://schema.cassproject.org/kbac/0.4/>
- **Eduworks v3.0** - <http://schema.eduworks.com/general/0.3/>
- **Schema.org** - <http://schema.org/>
- **Achievements Standard Network** - <http://purl.org/ASN/schema/core/>
- **DCMI Elements v1.1** - <http://purl.org/dc/elements/1.1/>
- **DCMI Terms** - <http://purl.org/dc/terms/>
- **Gem v2.0** - <http://purl.org/gem/qualifiers/>
- **Relators Scheme** - <http://www.loc.gov/loc/terms/relators/>
- **Simple Knowledge Organization System** - <http://www.w3.org/2004/02/skos/core#>

It is highly recommended to accept the default for this field unless there is an actionable reason for not doing so.

6.3.2.5 Range/Type (only editable at the time of property creation)

The *range/type* field defines the property type. Certain range/types allow for further customization of the property. The following values are available for this field:

- **Lang-String** - An RDF schema lang string as defined by <http://www.w3.org/2000/01/rdf-schema#langString>.
 - Selecting this value opens the *One Entry Per Language* property field
- **URL** - A schema.org URL as defined by <http://schema.org/URL>
- **Text** - A schema.org Text (plain string) value as defined by <http://schema.org/Text>
 - Selecting this value opens the *Limit Values* property field
- **Date-Time** - A w3.org dateTime value as defined by <http://www.w3.org/2001/XMLSchema#dateTime>
- **Date** - A dublin core date value as defined by <http://purl.org/dc/terms/date>
- **SKOS Concept** - A CaSS concept value as defined by <https://schema.cassproject.org/0.4/skos/Concept>

6.3.2.6 Display Priority

The priority in which the property is displayed in form inputs (*primary, secondary, or tertiary*).

6.3.2.7 Required

The property is *required* toggle.

6.3.2.8 Unique Property Identifier (only editable at the time of property creation)

The name of the property in the data record. Only alphanumerics are allowed.

6.3.2.9 Display Label

The label to be displayed in form inputs for the property.

6.3.2.10 Description

The description of the property.

6.3.2.11 Display Category

The category (if any) under which the property is displayed in form inputs.

6.3.2.12 One Entry Per Language (only available for range/type Lang-String)

The screenshot shows a form titled "New Framework Property" with a close button (x) in the top right corner. Below the title, there is a "Context" section with a dropdown menu currently set to "CaSS v4.0 (default)". Below this are three fields: "Range/Type:" with a dropdown set to "Lang-String", "Display Priority:" with a dropdown set to "primary", and a "Required" toggle switch which is currently off. Below these are four text input fields labeled "Unique Property Identifier (Only Alphanumerics Permitted)", "Display Label", "Description", and "Display Category". At the bottom of the form, there are two toggle switches: "Allow Multiple Instances Of Field" (which is off) and "One Entry Per Language" (which is on and highlighted with a red rectangular box). At the very bottom of the form, there are two buttons: "cancel" and "apply new framework property".

Figure 9 - CAT Configuration Details - One Entry Per Language

By toggling this field on (as shown in Figure 9), custom properties of the *range/type Lang-String* can be limited so that only a single entry can be made per language chosen.

6.3.2.13 Limit Values (only available for range/type Text)

When creating a custom property of *range/type Text*, you can limit the values allowed to the property, as shown in Figure 10. To do this, toggle the *Limit Values* field on and click the *add* button to begin managing the list of allowable values.

Figure 10 - CAT Configuration Details - Limit Values

For each entry in the limit values table, a *display label* and *field value* must be entered, as seen in Figure 11.

- **display label** - the label displayed to the user when selecting the value
- **field value** - the recorded value when the value is selected by the user

Figure 11 - CAT Configuration Details - Limit Values Entries

6.3.2.14 Applying the Custom Framework Property

Once complete, the new property can be applied to the framework by clicking *apply new property* in the lower right corner of the dialogue window.

6.3.2.15 Editing/Deleting Custom Framework Properties

Custom properties can be edited and deleted by selecting the appropriate action buttons to the right of the corresponding property entry in the Framework Properties list, as shown in Figure 12.

Figure 12 - CAT Configuration Details - Edit/Delete Custom Properties

6.3.3 Competency Property Configuration

Competency properties are the values that can be added, edited, and deleted for competency objects. Default competency properties are **id**, **name**, **description**, and **type**. Properties added here will be displayed when editing competency level objects in the framework editor, as shown in Figure 13.

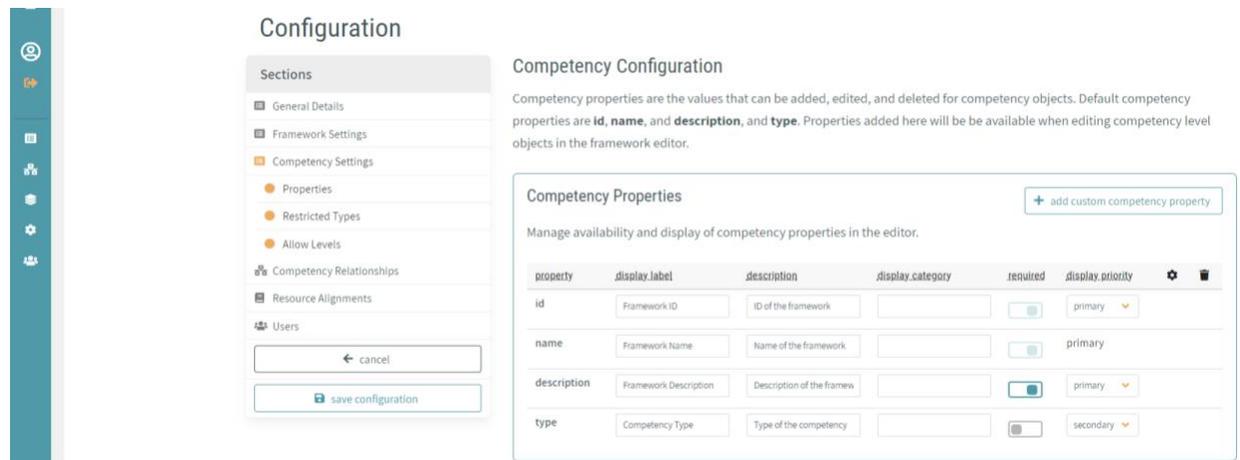


Figure 13 – Property Configuration

6.3.3.1 Property Fields

Certain property fields can be modified directly from the property list:

- **display label** - label to be displayed in form inputs for that property
- **description** - description of this property
- **display category** - category (if any) under which the property is displayed in form inputs
- **required** - property required toggle
- **display priority** - priority in which the property is displayed in form inputs (primary, secondary, or tertiary)

At the competency level the following static rules apply:

- The **id** property is *required*
- The **name** property is *required* and has a display priority of *primary*

6.3.3.2 Custom Competency Properties

Custom properties can be added to a competency by clicking the *add custom competency property* button, as shown in Figure 14.

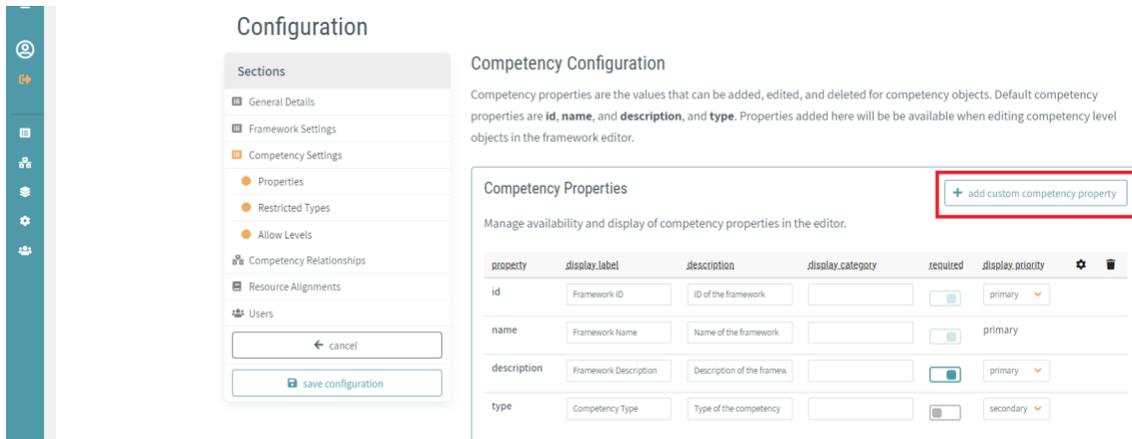


Figure 14 - CAT Configuration Details - Add Custom Competency Property

Once clicked, the *New Competency Property* dialogue window is displayed, as shown in Figure 15.

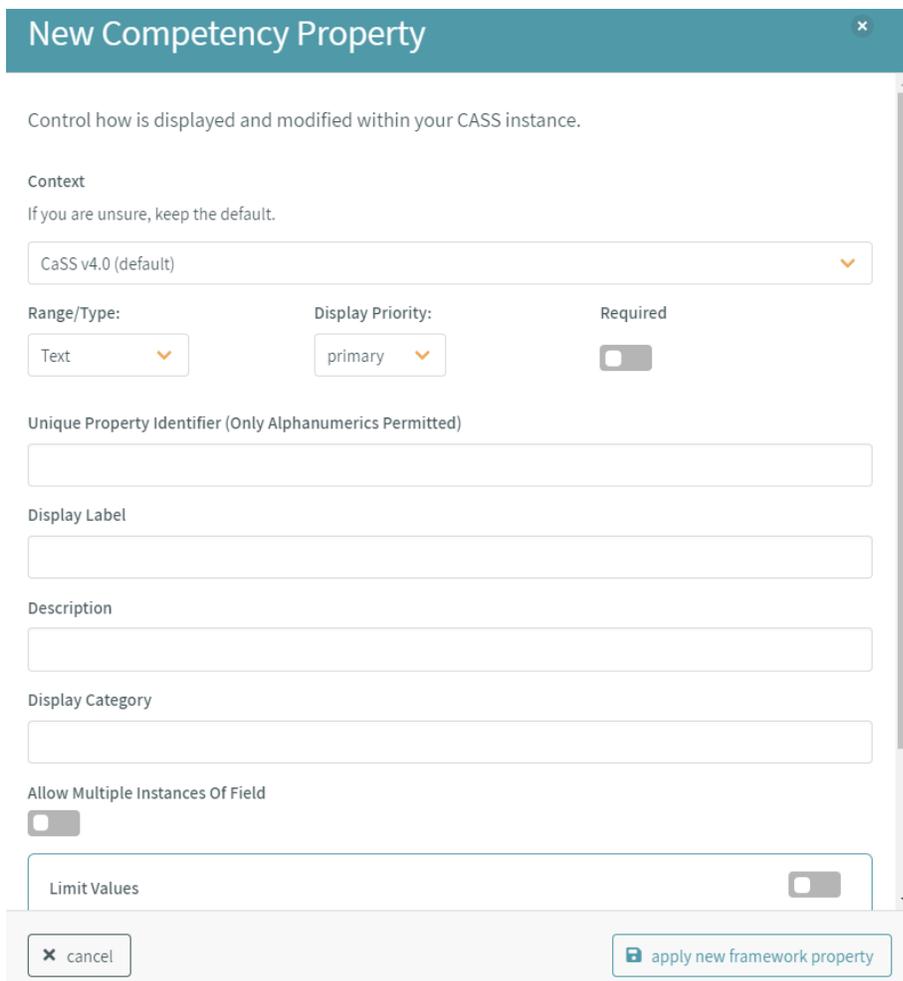


Figure 15 - CAT Configuration Details - New Competency Property Creation

6.3.3.3 Custom Competency Property Fields

Several fields must be completed in order to add the new property. Some field options (such as *range/type: Text*) allow further customization of the property.

6.3.3.4 Context (only editable at the time of property creation)

Custom properties in CaSS are stored as namespaced linked JSON-LD records. Because of this, all new properties must have a context. By default, all custom properties have the **CaSS v4.0** (<https://schema.cassproject.org/0.4/>) context. However, it is also possible to modify this field to the following values:

- **CTDL-ASN** - <https://purl.org/ctdlasn/terms/>
- **RDF Semantic Web Standards 1999** - <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
- **RDF Semantic Web Standards 2000** - <http://www.w3.org/2000/01/rdf-schema#>
- **Key Based Authorization and Control** - <https://schema.cassproject.org/kbac/0.4/>
- **Eduworks v3.0** - <http://schema.eduworks.com/general/0.3/>
- **Schema.org** - <http://schema.org/>
- **Achievements Standard Network** - <http://purl.org/ASN/schema/core/>
- **DCMI Elements v1.1** - <http://purl.org/dc/elements/1.1/>
- **DCMI Terms** - <http://purl.org/dc/terms/>
- **Gem v2.0** - <http://purl.org/gem/qualifiers/>
- **Relators Scheme** - <http://www.loc.gov/loc/terms/relators/>
- **Simple Knowledge Organization System** - <http://www.w3.org/2004/02/skos/core#>

It is highly recommended to accept the default for this field unless there is an actionable reason for not doing so.

6.3.3.5 Range/Type (only editable at the time of property creation)

The *range/type* field defines the property type. Certain range/types allow for further customization of the property. The following values are available for this field:

- **Lang-String** - An RDF schema lang string as defined by <http://www.w3.org/2000/01/rdf-schema#langString>.
 - Selecting this value opens the *One Entry Per Language* property field
- **URL** - A schema.org URL as defined by <http://schema.org/URL>
- **Text** - A schema.org Text (plain string) value as defined by <http://schema.org/Text>
 - Selecting this value opens the *Limit Values* property field
- **Date-Time** - A w3.org dateTime value as defined by <http://www.w3.org/2001/XMLSchema#dateTime>
- **Date** - A dublin core date value as defined by <http://purl.org/dc/terms/date>
- **SKOS Concept** - A CaSS concept value as defined by <https://schema.cassproject.org/0.4/skos/Concept>

6.3.3.6 Display Priority

The priority in which the property is displayed in form inputs (*primary*, *secondary*, or *tertiary*).

6.3.3.7 Required

The property is *required* toggle.

6.3.3.8 Unique Property Identifier (only editable at the time of property creation)

The name of the property in the data record. Only alphanumerics are allowed.

6.3.3.9 Display Label

The label to be displayed in form inputs for the property.

6.3.3.10 Description

The description of the property.

6.3.3.11 Display Category

The category (if any) under which the property is displayed in form inputs.

6.3.3.12 One Entry Per Language (only editable at the time of property creation)

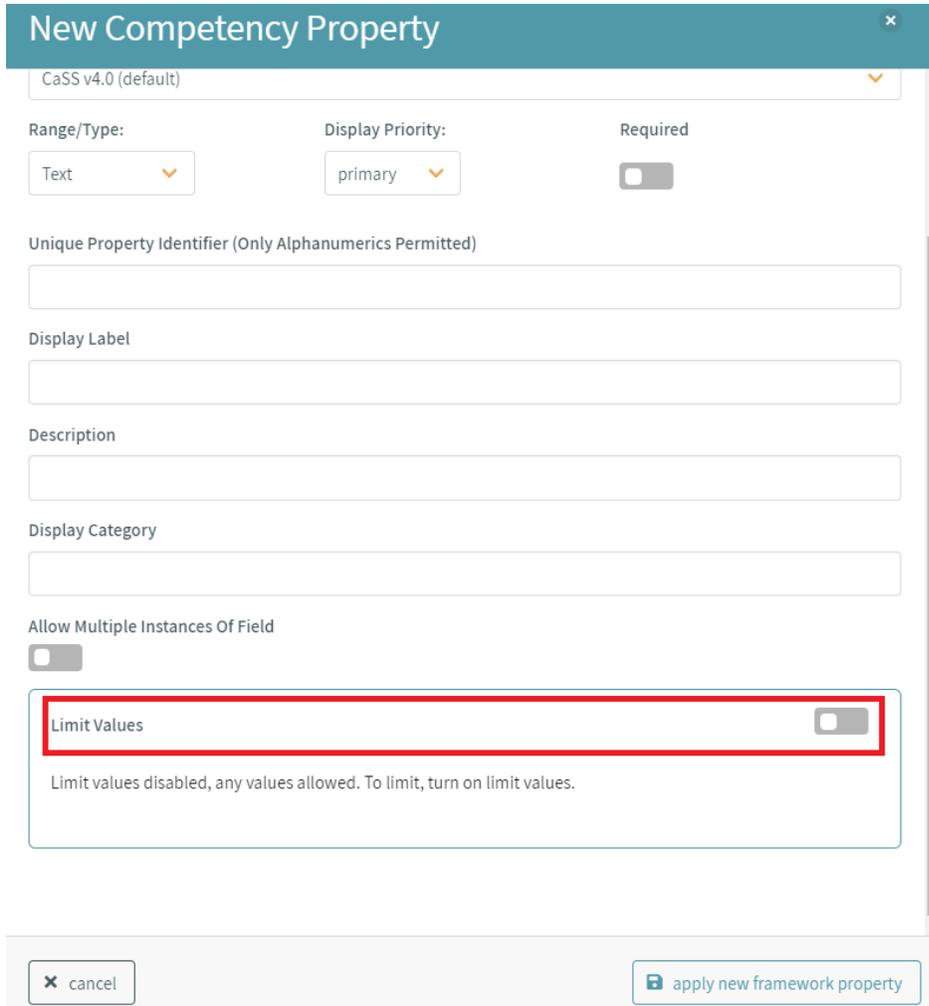
The screenshot shows a 'New Competency Property' form. At the top, there is a teal header with the title and a close button. Below the header, the form is organized into sections. The 'Context' section has a dropdown menu set to 'CaSS v4.0 (default)'. The 'Range/Type' section has a dropdown set to 'Lang-String'. The 'Display Priority' section has a dropdown set to 'primary'. The 'Required' section has a toggle switch that is currently off. The 'Unique Property Identifier (Only Alphanumerics Permitted)' section has an empty text input field. The 'Display Label' section has an empty text input field. The 'Description' section has an empty text input field. The 'Display Category' section has an empty text input field. Below these sections, there is a section for 'Allow Multiple Instances Of Field' with a toggle switch that is off. The 'One Entry Per Language' toggle switch is checked and is highlighted with a red rectangular box. At the bottom of the form, there are two buttons: 'cancel' and 'apply new framework property'.

Figure 16 - CAT Configuration Details - One Entry Per Language

By toggling the *One Entry Per Language* field on (see Figure 16), custom properties of the *range/type Lang-String* can be limited so that only a single entry can be made per language chosen.

6.3.3.13 Limit Values (only available for range/type Text)

When creating a custom property of *range/type Text*, you can limit the values allowed to the property. To do this, toggle the *Limit Values* field on and click the *add* button to begin managing the list of allowable values, as shown in Figure 17.



The screenshot shows a 'New Competency Property' dialog box. At the top, there is a dropdown menu set to 'CaSS v4.0 (default)'. Below this are three fields: 'Range/Type' with a dropdown set to 'Text', 'Display Priority' with a dropdown set to 'primary', and a 'Required' toggle switch that is currently off. There are four text input fields for 'Unique Property Identifier (Only Alphanumerics Permitted)', 'Display Label', 'Description', and 'Display Category'. Below these is another 'Allow Multiple Instances Of Field' toggle switch, also off. The 'Limit Values' section is highlighted with a red border and contains a toggle switch that is currently off. Below the toggle is the text: 'Limit values disabled, any values allowed. To limit, turn on limit values.' At the bottom of the dialog, there are two buttons: 'cancel' and 'apply new framework property'.

Figure 17 - CAT Configuration Details - Limit Values

For each entry in the limit values table, a *display label* and *field value* must be entered, as shown in Figure 18.

- **display label** - the label displayed to the user when selecting the value
- **field value** - the recorded value when the value is selected by the user
 - Only alphanumerics are allowed for field values

New Competency Property

testCompTextField

Display Label
Test Text Field

Description
Test Text Field for competency

Display Category

Allow Multiple Instances Of Field

Limit Values

Values limited to only those listed below. To allow any, turn off limit values.

display label	field value	
Label LV1	ftv1	
Label LV2	ftv2	

+ add

Figure 18 - CAT Configuration Details - Limit Values Entries

6.3.3.14 Applying the Custom Competency Property

Once complete, the new property can be applied to the framework by clicking the *apply new framework property* in the lower right corner of the dialogue window, as shown in Figure 18.

6.3.3.15 Editing/Deleting Custom Competency Properties

Custom properties can be edited and deleted by selecting the appropriate action buttons to the right of the corresponding property entry in the *Competency Properties* list, as shown in Figure 19.

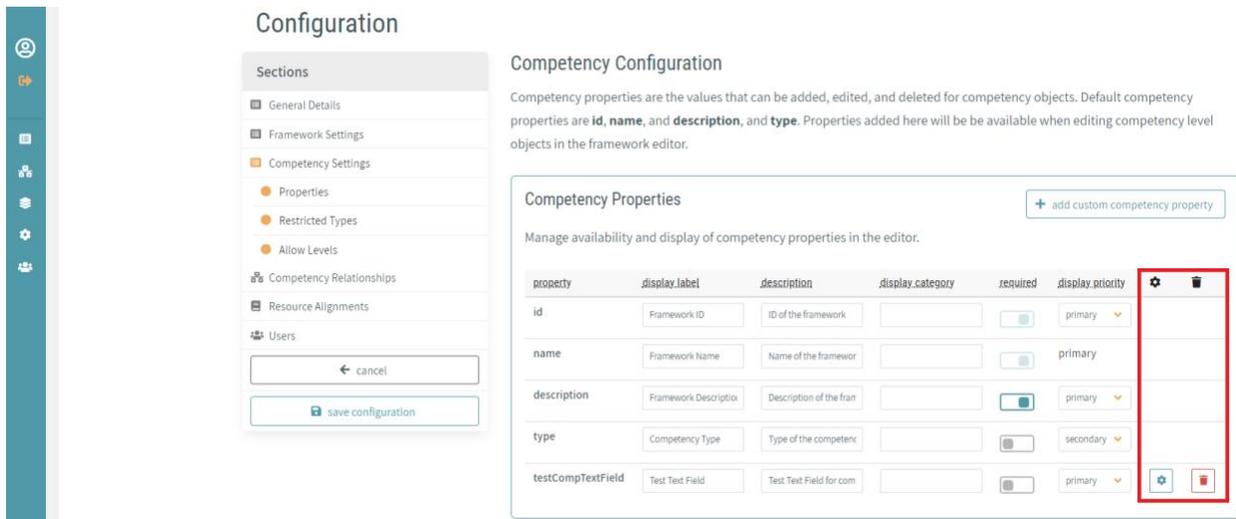


Figure 19 - CAT Configuration Details - Edit/Delete Custom Properties

6.3.3.16 Restrict Competency Types

By default, values for the competency *type* property are not limited. By toggling this setting (see Figure 20), competency types can be restricted to a list of predetermined values.

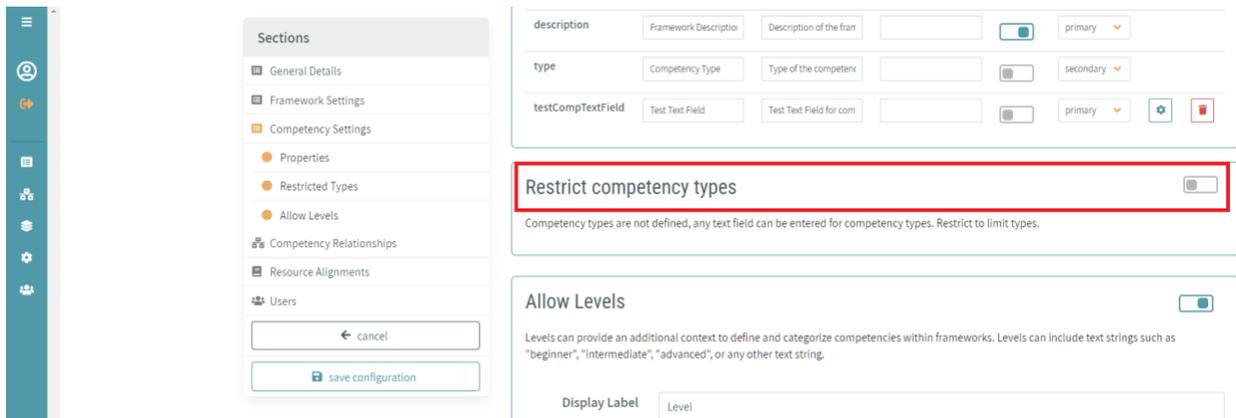


Figure 20 - CAT Configuration Details - Restrict Competency Types

For each entry in the permitted values table, a *display label* and *field value* must be entered (see Figure 21).

- **display label** - the label displayed to the user when selecting the type value
- **field value** - the recorded value when the type is selected by the user
 - Only alphanumeric characters are allowed for field values

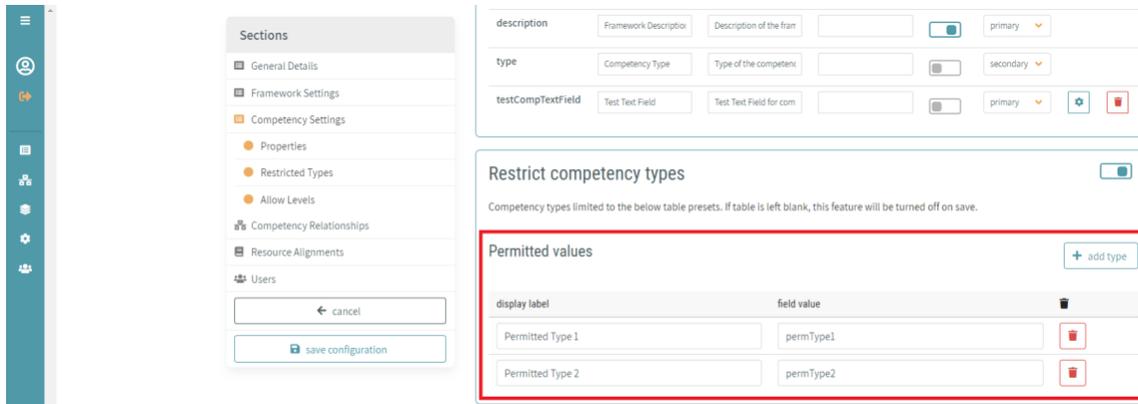


Figure 21 - CAT Configuration Details - Types Permitted Values Table

6.3.3.17 Competency Levels

By default, the level property is enabled for competency objects created in the CAT. Levels can be disabled by toggling the *Allow Levels* switch, as shown in Figure 22.

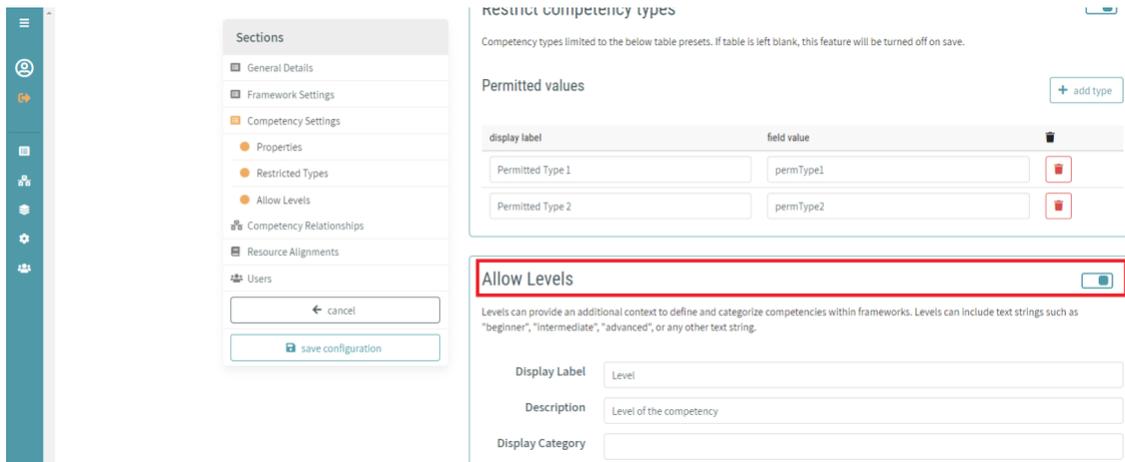


Figure 22 - CAT Configuration Details - Allow Levels Switch

6.3.3.18 Level Property Fields

Level property fields can be modified from the *Allow Levels* section of the competency configuration settings:

- **display label** - label to be displayed in form inputs for levels
- **description** - description of a level's property
- **display category** - category (if any) under which levels are displayed in form inputs
- **level display priority** - priority in which levels are displayed in form inputs (primary, secondary, or tertiary)

6.3.3.19 Restrict Competency Levels

By default, levels in CaSS can be created during framework/competency editing. To restrict competencies that allow levels to a limited selection, toggle the *Restrict Level Values* switch and click the *manage levels* button, as shown in Figure 23.

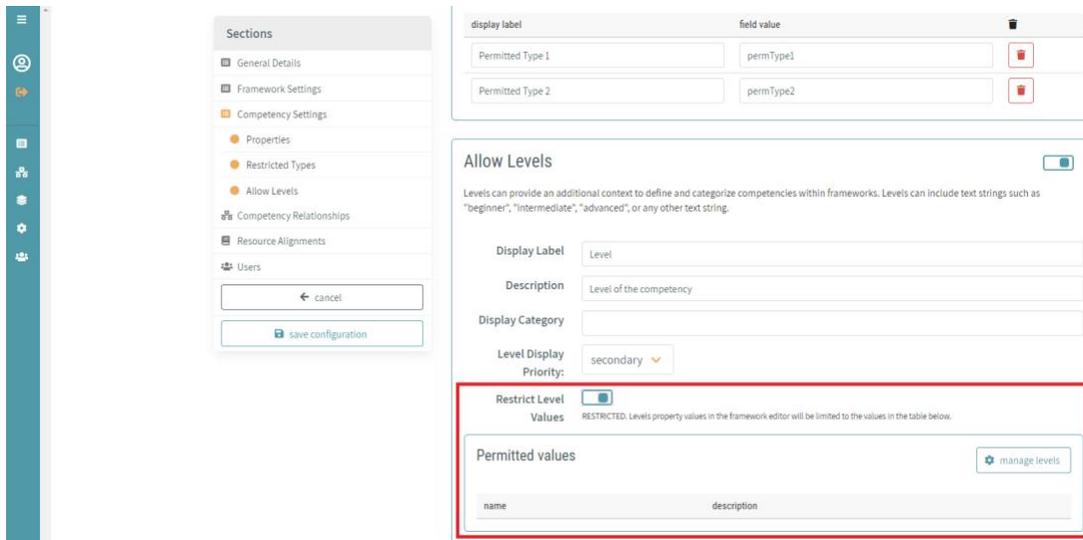


Figure 23 - CAT Configuration Details - Restrict Level Values

6.3.3.20 Manage Competency Levels

Clicking the *manage levels* button displays the *select enforced levels* dialogue screen, as shown in Figure 24. From here, you can select from all existing levels in CaSS or create more appropriate levels. Any previously selected levels will already be checked and can be removed from the enforced levels list by unchecking the appropriate item.

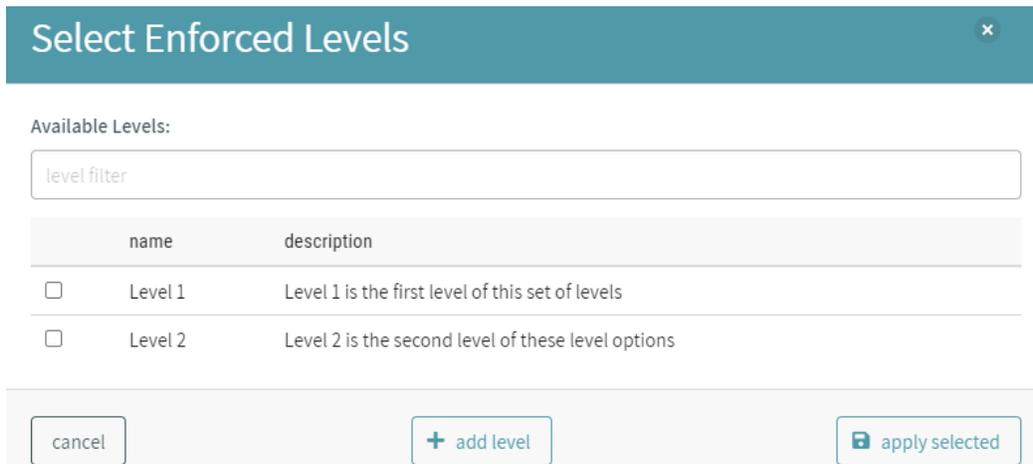


Figure 24 - CAT Configuration Details - Select Enforced Levels Dialogue

6.3.3.21 Add Competency Levels

To add a new level to the available level list, click on the *add level* button in the *select enforced levels* dialogue window, as shown in Figure 25.

Select Enforced Levels ✕

Available Levels:

level filter

	name	description
<input type="checkbox"/>	Level 1	Level 1 is the first level of this set of levels
<input type="checkbox"/>	Level 2	Level 2 is the second level of these level options

cancel + add level 🔒 apply selected

Figure 25 - CAT Configuration Details - Add Level

Once clicked, the *add new level* dialogue is open, as shown in Figure 26. Enter the new level **name** (and optionally the new level **description**). Clicking the *save new level* button on the bottom right corner of the dialogue will create this level in CaSS and return you to the *select enforced levels* dialogue.

Add New Level ✕

Add Level

Name:

Test Level

Description:

Test competency level

🔒 cancel 🔒 save new level

Figure 26 - CAT Configuration Details - Add New Level Dialogue

6.3.3.22 Apply Selected Competency Levels

Upon selecting the desired enforced levels, click the *apply selected* button at the bottom right of the *select enforced levels* dialog window to apply the enforced levels to competencies, as shown in Figure 27.

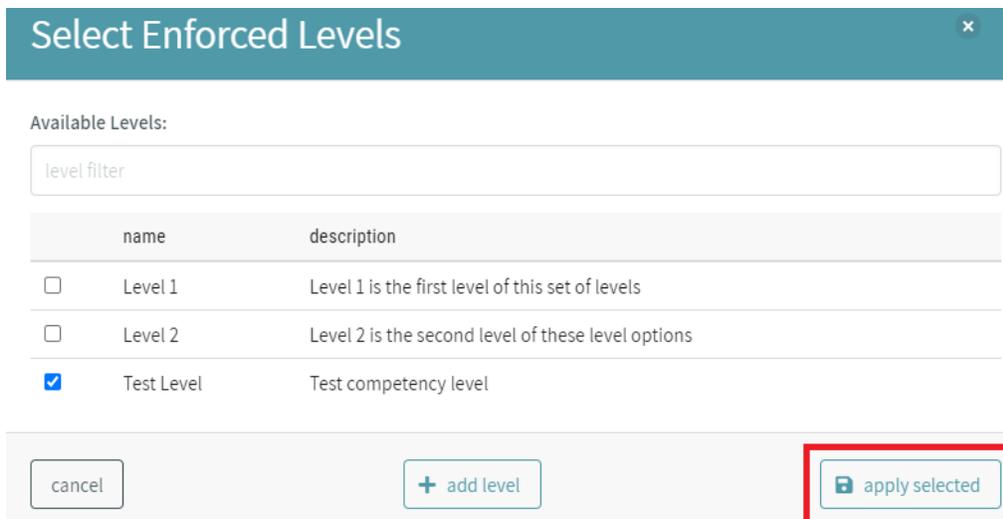


Figure 27 - CAT Configuration Details - Apply Selected Enforced Levels

6.3.4 Competency Relationships Configuration

Relationships can be added as properties on competencies to define how competencies within a framework relate to each other. Enabled relationships will be available in the property drop down when editing competencies in the framework editor, as shown in Figure 28.

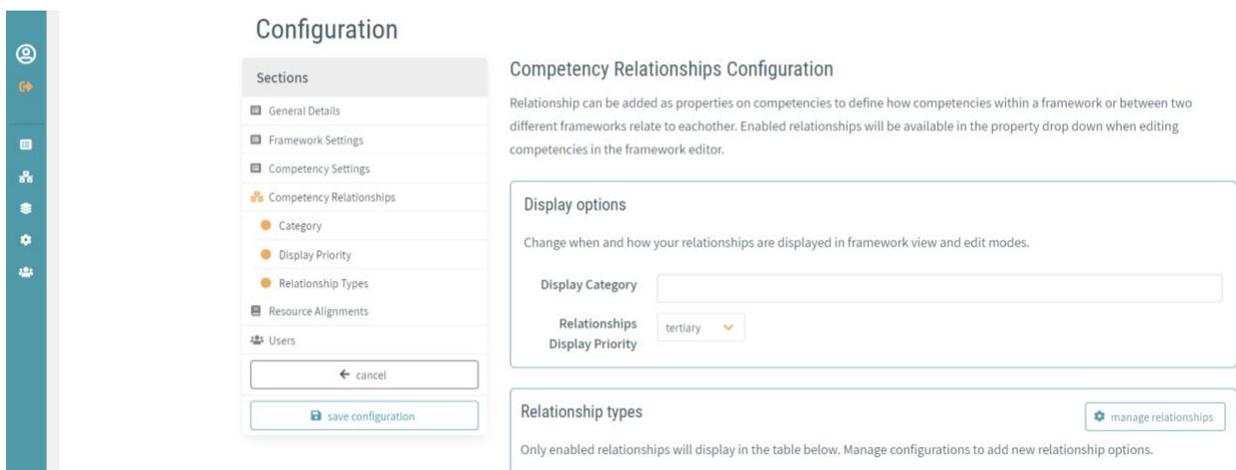


Figure 28 - CAT Configuration Details - Competency Relationships Configuration

6.3.4.1 Relationship Display Options

General relationship display options can be configured from the *display options* section, as shown in Figure 29. These include:

- **display category** - category (if any) under which relationships are displayed in form inputs
- **relationships display priority** - priority in which relationships are displayed in form inputs (primary, secondary, or tertiary)

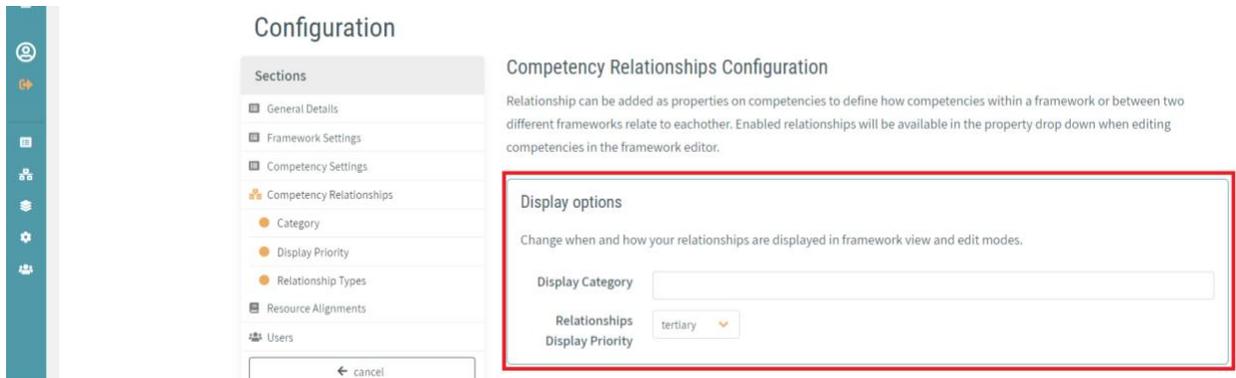


Figure 29 - CAT Configuration Details - Competency Relationships Display Options

6.3.4.2 Relationship Type Management

The types of relationships available to competencies using the configuration can be managed under the *relationship types* section, as shown in Figure 30. Relationship types can be enabled, disabled and relabeled.

By default, the following relationship types are enabled:

- **isEnabledBy**
- **requires**
- **desires**
- **narrows**
- **isRelatedTo**
- **isEquivalentTo**

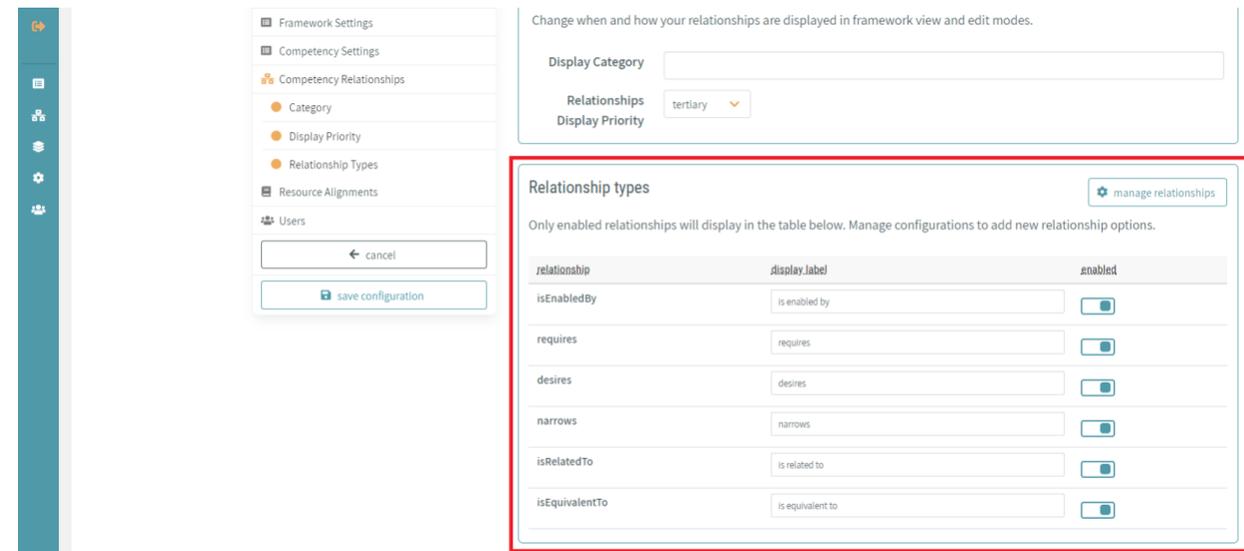


Figure 30 - CAT Configuration Details - Competency Relationships Type Management

To reduce screen clutter, the *relationship types* section only displays enabled relationship types. Currently enabled relationships can be disabled using the corresponding *enabled* switch to the right of the relationship entry, as shown in Figure 31.

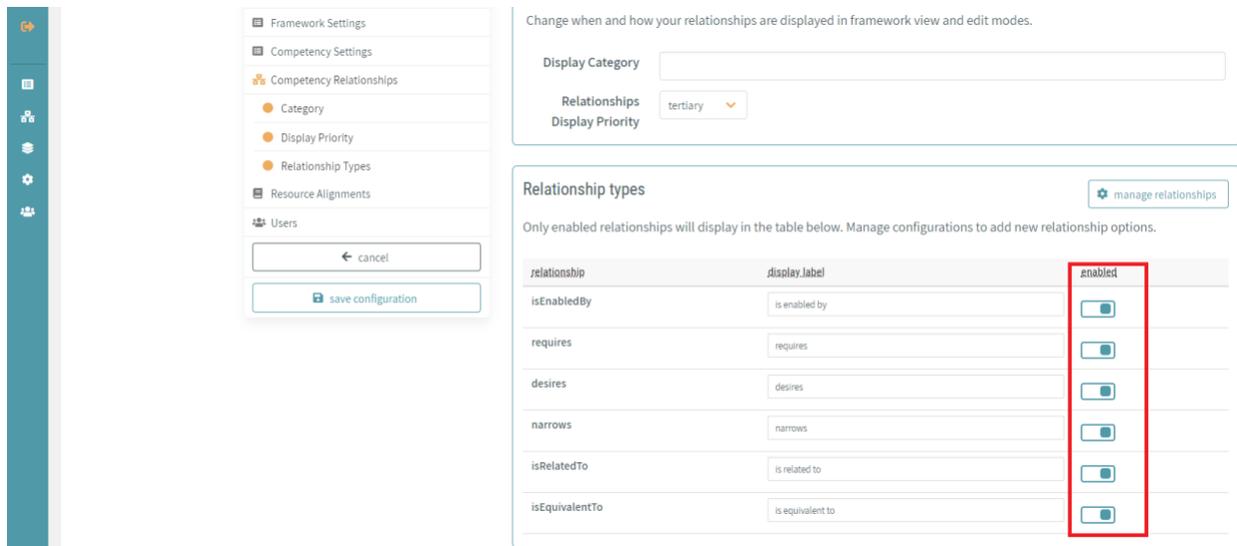


Figure 31 - CAT Configuration Details - Competency Relationships Type Enable Toggle

To add other relationship types to a configuration, click on the *manage relationships* button on the upper right of the *relationship types* section, as shown in Figure 32.

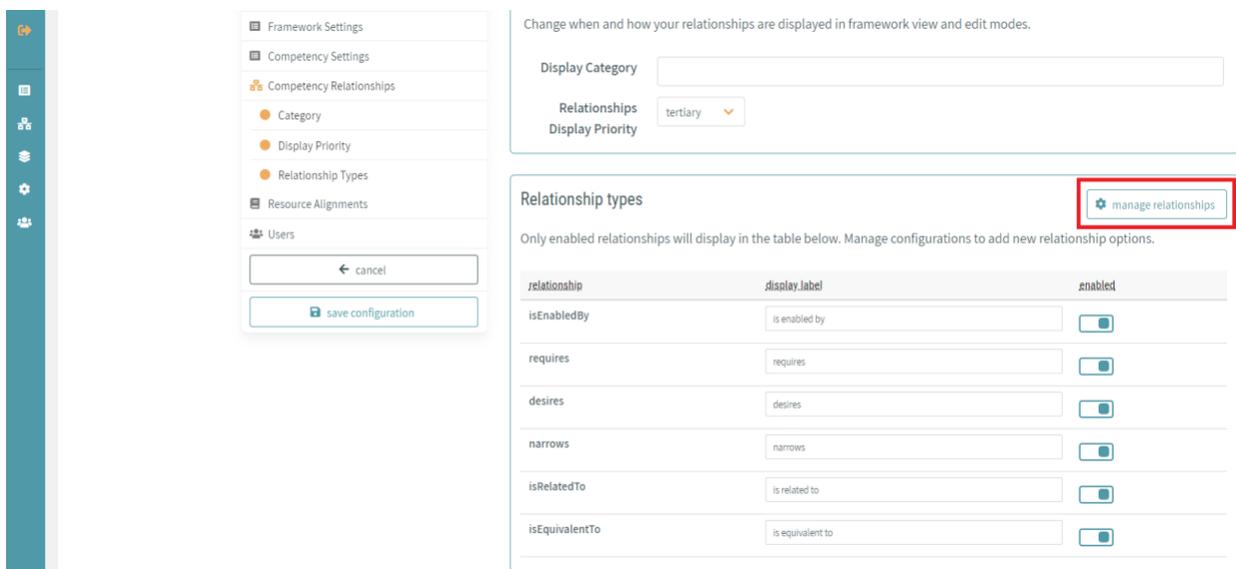


Figure 32 - CAT Configuration Details - Competency Relationships Type - Manage Relationships

Once clicked, the *manage relationship types* dialogue window is open, as shown in Figure 33. From this screen, all relationships type currently available in CaSS are categorized and displayed.

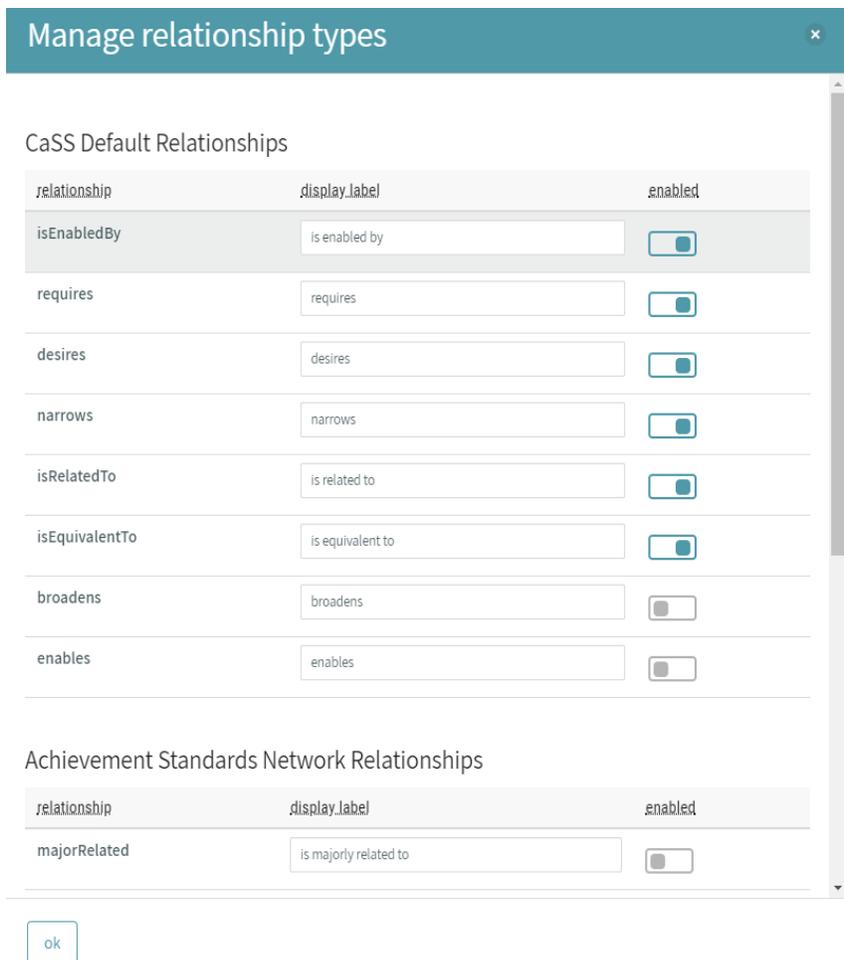


Figure 33 - CAT Configuration Details - Manage Relationship Types Dialogue

The available relationship types are as follows:

- **CaSS Default Relationships**
 - isEnabledBy
 - requires
 - desires
 - narrows
 - isRelatedTo
 - isEquivalentTo
 - broadens
 - enables
- **Achievement Standards Network Relationships**
 - majorRelated
 - minorRelated
- **GEMQ**
 - hasChild
 - isChildOf

- **Other**
 - isSimilarTo
 - isPartiallySameAs

To enable or disable a relationship type for the configuration, toggle the *enabled* switch to the right of the corresponding type and click the *ok* button.

6.3.5 Resource Alignment Configuration

Resource alignment terms are used to map resources such as learning material, courses, and other content to competencies in CAT. If enabled, the *alignment type* property will show up in the framework editor when aligning competencies to resources, as shown in Figure 34.

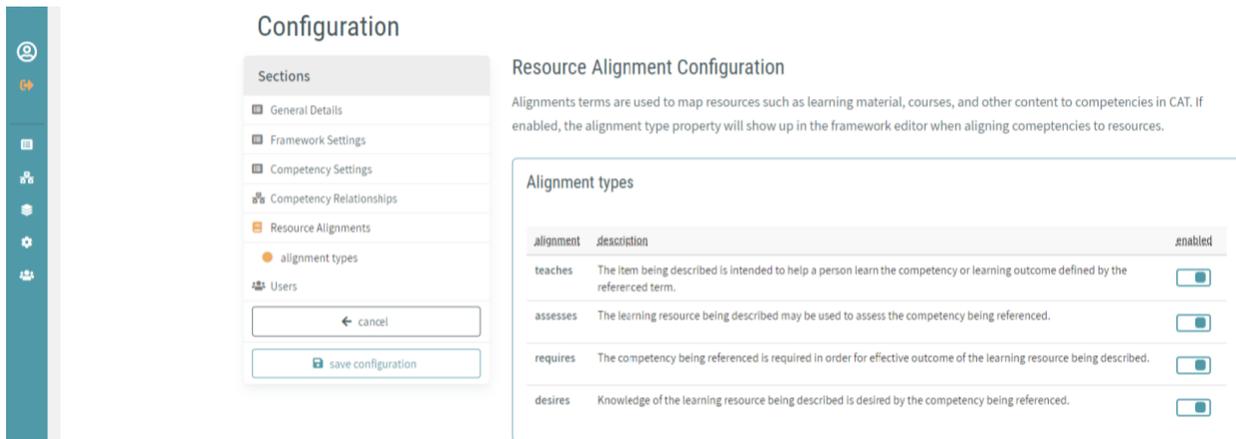


Figure 34 - CAT Configuration Details - Resource Alignment Configuration

Currently, the CAT supports four types of resource alignments:

- **teaches** - The item being described is intended to help a person learn the competency or learning outcome defined by the referenced term
- **assesses** - The learning resource being described may be used to assess the competency being referenced
- **requires** - The competency being referenced is required in order for effective outcome of the learning resource being described
- **desires** - Knowledge of the learning resource being described is desired by the competency being referenced

Each alignment type can be enabled and disabled by toggling the *enabled* switch to the right of each corresponding item.

6.3.6 Default User Configuration

By default, the creator of a CaSS framework, competency, or other object is assigned as the sole owner of that record. By using the *user configuration* section of the configuration (shown in Figure 35), other specified users and groups can be assigned as owners and readers to objects created in the framework/competency editor that use the configuration.

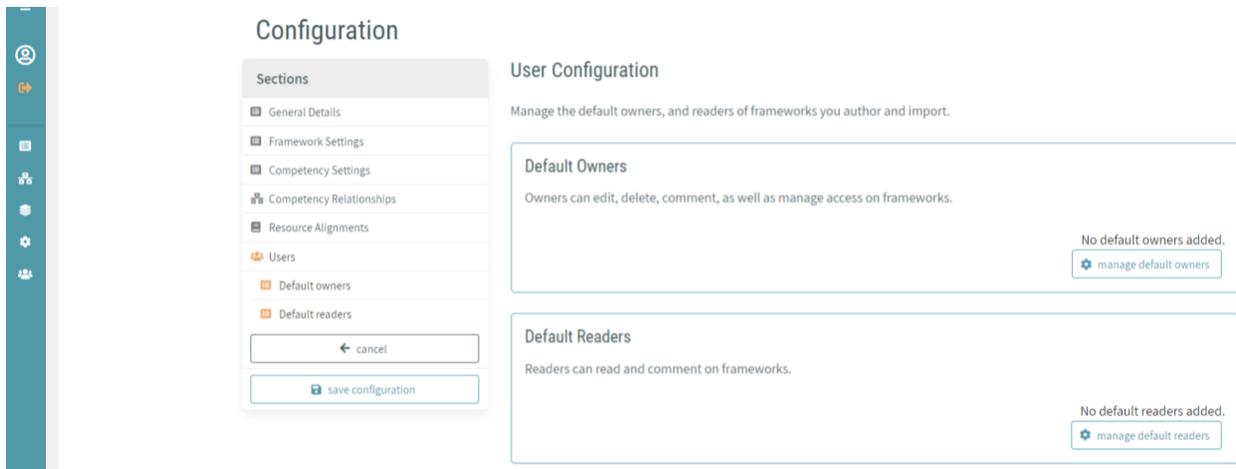


Figure 35 - CAT Configuration Details - User Configuration

6.3.6.1 Default Owners

Users and groups added to this section are automatically added to the owner list of any object created in the framework/competency editor that use this configuration. To manage the list of default owners, click the *manage default owners* button in the *default owners* section, as shown in Figure 36.

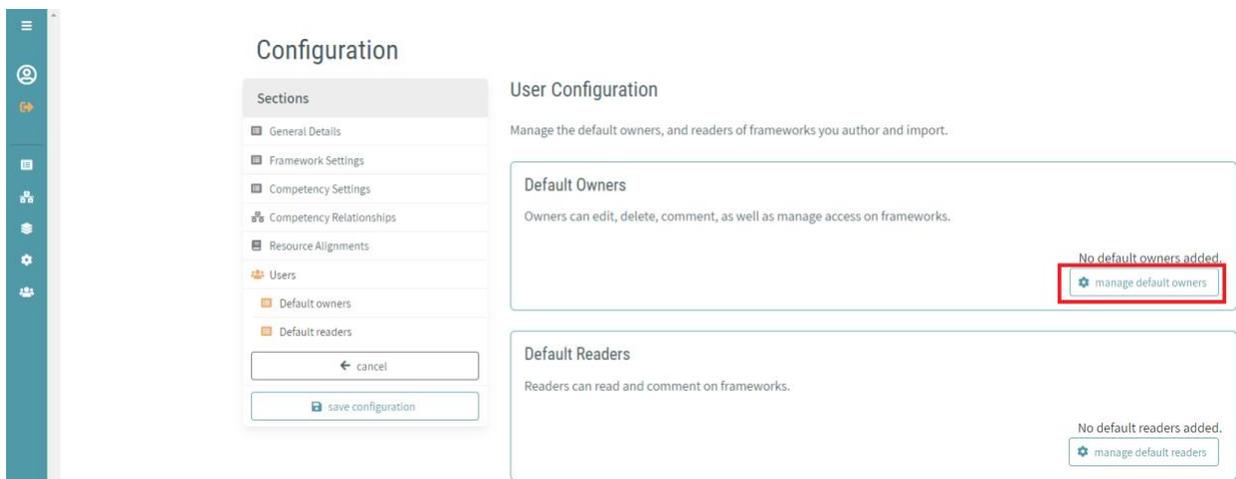


Figure 36 - CAT Configuration Details - User Configuration - Manage Default Owners

Once clicked, the *select default owners* dialogue window is displayed, as shown in Figure 37. Select the desired default owner entries and click the *apply* button in the bottom right of the dialogue window.

Note: Default owners can also be removed in a similar fashion.

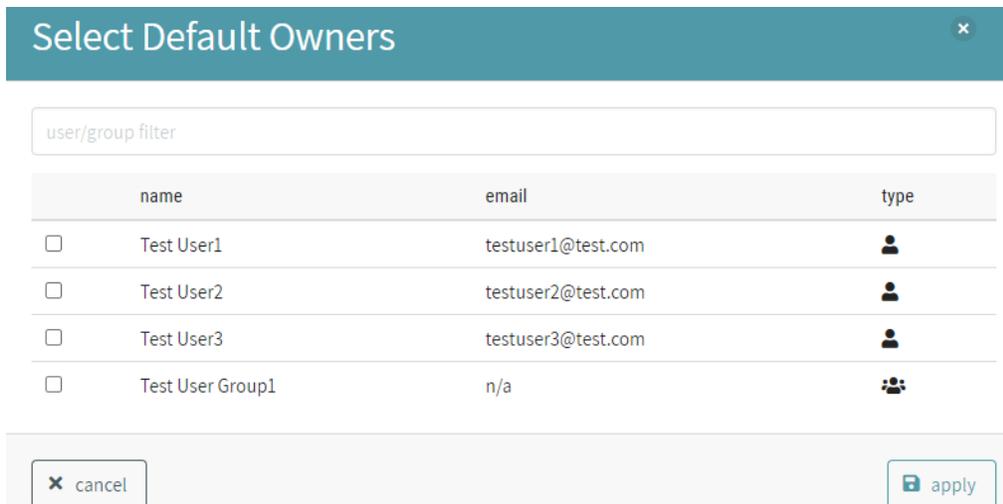


Figure 37 - CAT Configuration Details - Select Default Owners

Note: Users and groups can be differentiated by the type column icon and email address. All assignable users will have an email address and single person icon. All group-assignable groups will display 'n/a' for an email address and a multi person icon.

6.3.6.2 Default Readers

Users and groups added to this section are automatically added to the reader list of any object created in the framework/competency editor that use this configuration. To manage the list of default owners, click the *manage default owners* button in the *default owners* section, as shown in Figure 38.

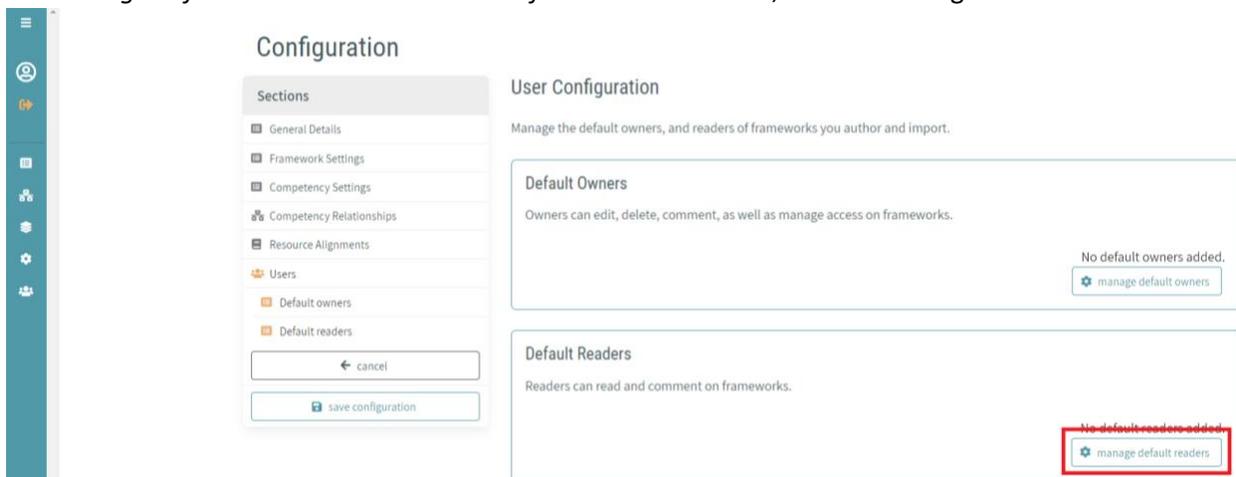


Figure 38 - CAT Configuration Details - User Configuration - Manage Default Readers

Once clicked, the *select default readers* dialogue window is displayed, as shown in Figure 39. Select the desired default reader entries and click the *apply* button in the bottom right of the dialogue window.

Note: Default readers can also be removed in a similar fashion.

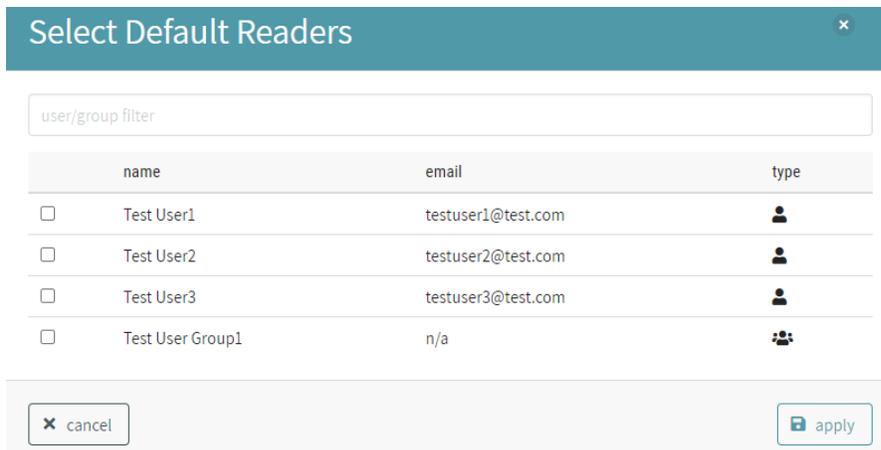


Figure 39 - CAT Configuration Details - Select Default Readers

Note: Users and groups can be differentiated by the type column icon and email address. All assignable users will have an email address and single person icon. All group-assignable groups will display 'n/a' for an email address and a multi person icon.

6.3.7 Saving the Configuration

Configurations can be saved by clicking on the *save configuration* button on the left side of the *configuration details* screen, as shown in Figure 40.

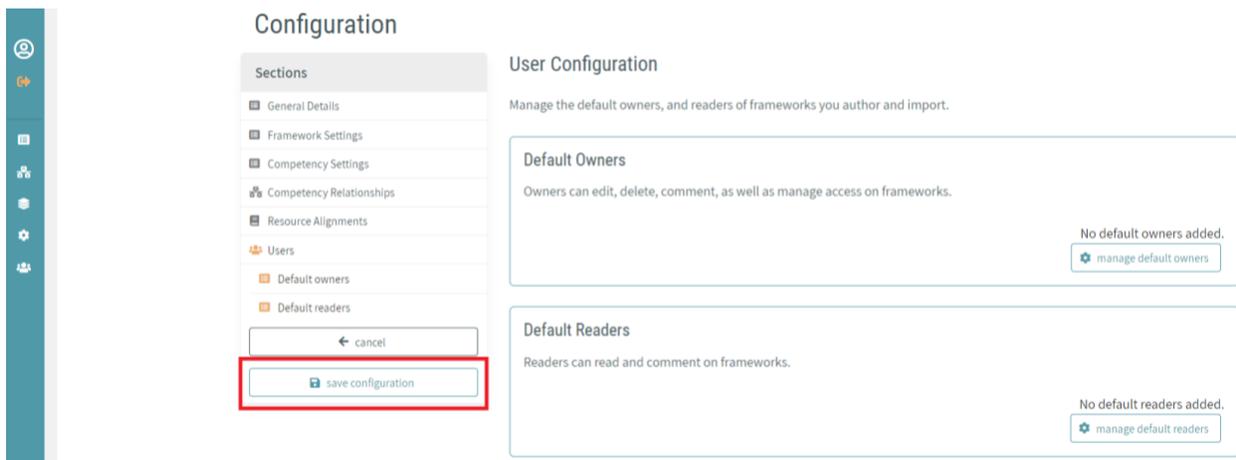


Figure 40 - CAT Configuration Details - Save Configuration

7.0 USER GROUP MANAGEMENT

In the CaSS authoring environment, user groups provide the capability to assign multiple users the ability to assume a single shared 'identity'. Members of a group are granted access to any CaSS object that the group has been explicitly assigned.

7.1 Accessing the CAT User Group Manager

(Important: To access the CAT user group manager, you must be logged into the CAT application.)

The CAT user group manager can be accessed at any time by selecting the *users and groups* icon on the lower left corner of the navigation menu, as shown in Figure 41.

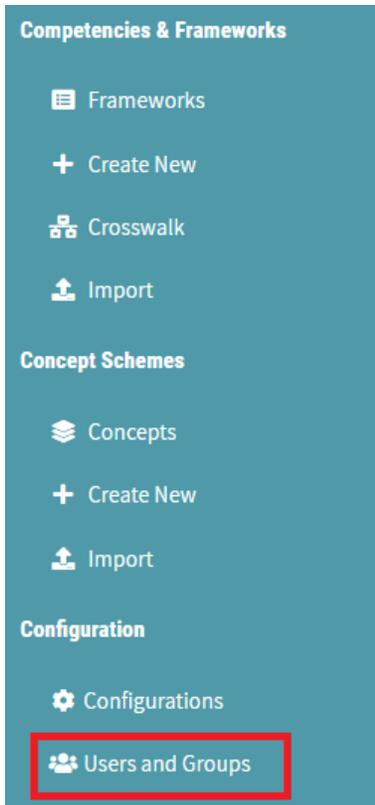


Figure 41 - CAT User Group Manager - Navigation Menu - Users and Groups

Upon entering the user group manager, a list of all existing user groups in the current CAT instance are displayed, as shown in Figure 42. User groups managed by the current logged in user can be managed by clicking the *manage* button to the right of the group entry.

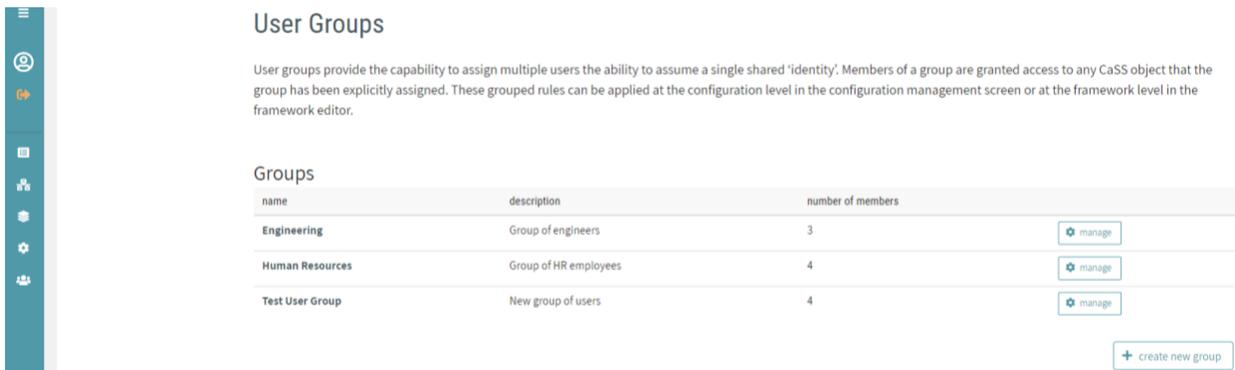


Figure 42 - CAT User Group Manager - User Group Selection

7.2 Creating a New User Group

User groups can be created by clicking the *create new group* button at the bottom right corner of the configuration management list screen, as shown in Figure 43.

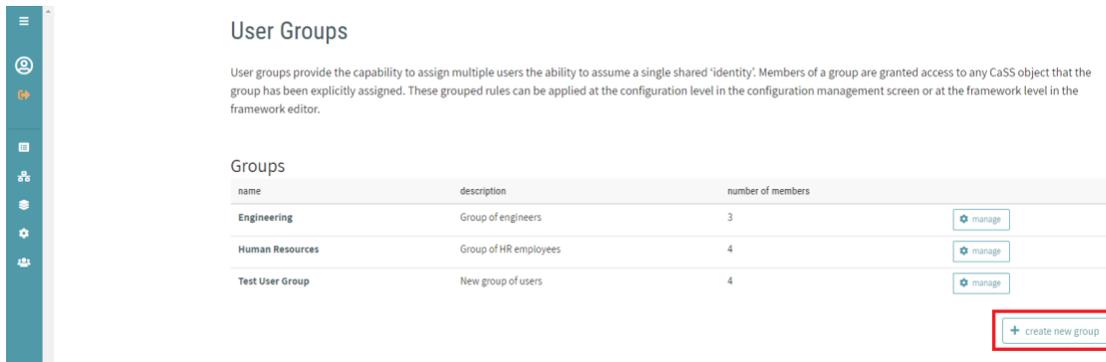


Figure 43 - CAT User Group Manager - Create New User Group

Note: There may be noticeable processing time when creating a new group. CAT user groups are assigned identity keys that must be generated at creation time. This process may take several seconds.

7.3 Managing a User Group

After creating a new user group or clicking the *manage* button on an existing user group, the user group details screen is displayed, as shown in Figure 44. This screen is divided into several sections.

7.3.1 General Details

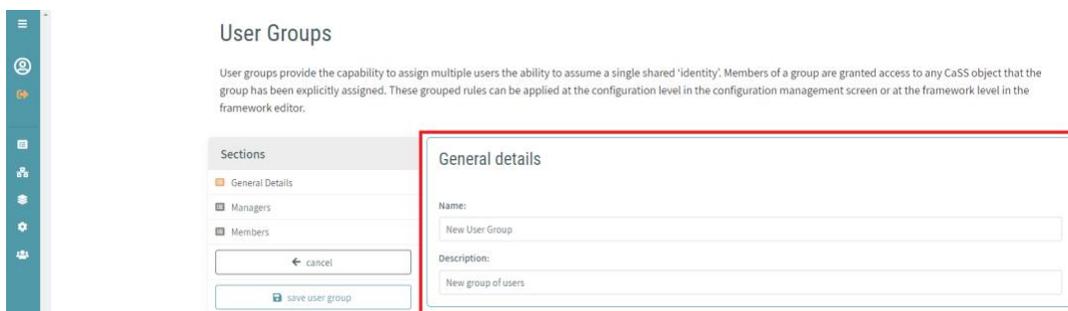


Figure 44 - CAT User Group Details - General Details

The general details configuration settings provide fields for editing the **name** and **description** of the user group.

7.3.2 Group Managers

Group managers can add and remove members and other managers to the group, as shown in Figure 45. Managers also share the owner and reader privileges assigned to the group.

Note: You cannot remove yourself as a manager from the current group.

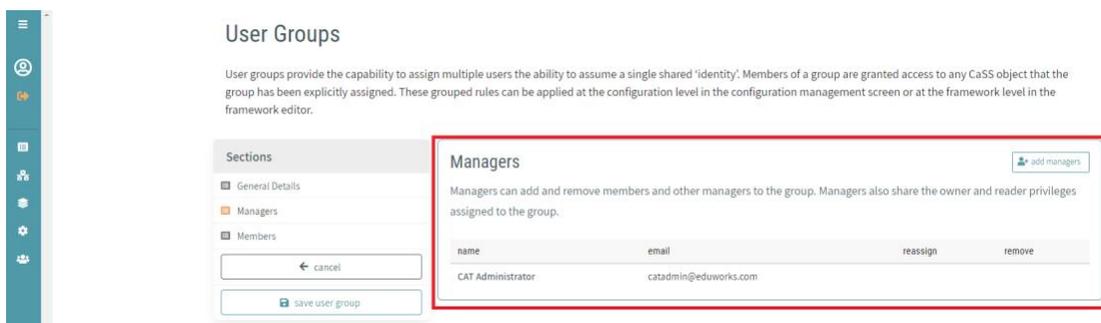


Figure 45 - CAT User Group Details - Group Managers

7.3.2.1 Add Managers

The group manager list can be managed by clicking the *add managers* button on the right side of the *managers* section, as shown in Figure 46.

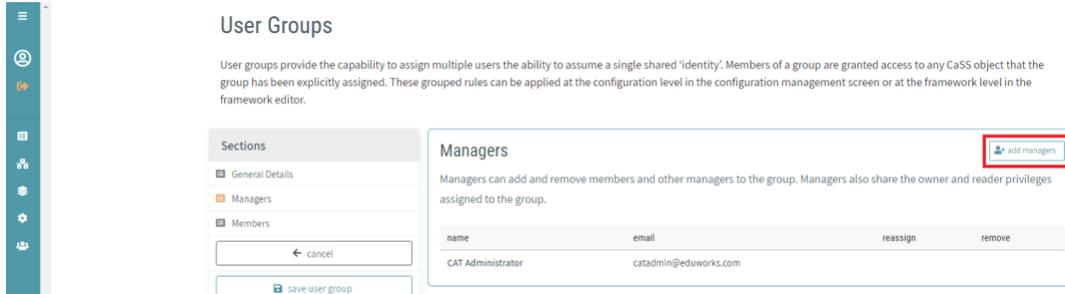


Figure 46 - CAT User Group Details - Add Managers

Once clicked, the *add managers* dialogue window is displayed, as shown in Figure 47. Select the desired managers and click the *apply* button in the bottom right of the dialogue window.

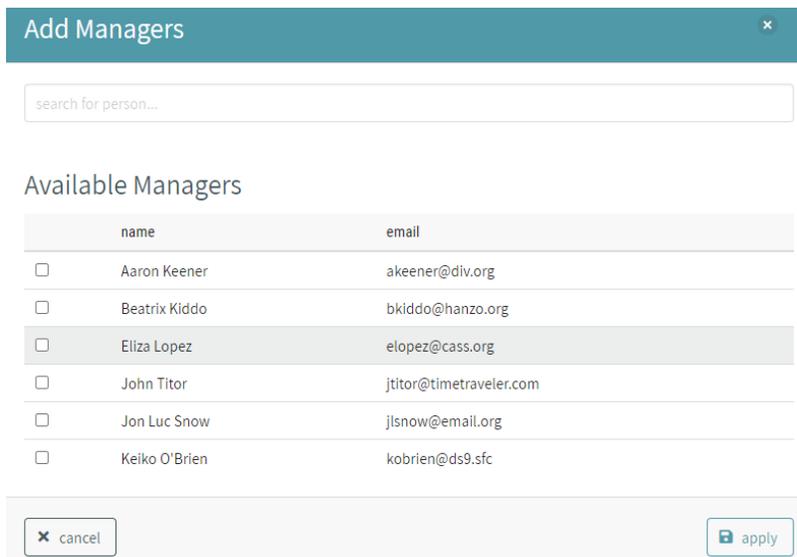


Figure 47 - CAT User Group Details - Add Managers Dialogue

7.3.2.2 Remove Managers

Group managers can be removed from the group by clicking the *remove* button, as shown in Figure 48.

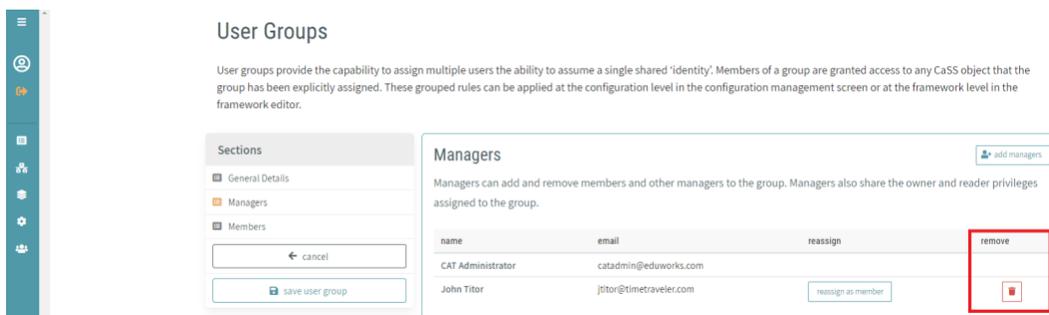


Figure 48 - CAT User Group Details - Remove Manager

Note: You cannot remove yourself as a manager from the current group.

7.3.2.3 Reassign Manager

Managers can be reassigned as a group member by clicking the *reassign as member* button, as shown in Figure 49.

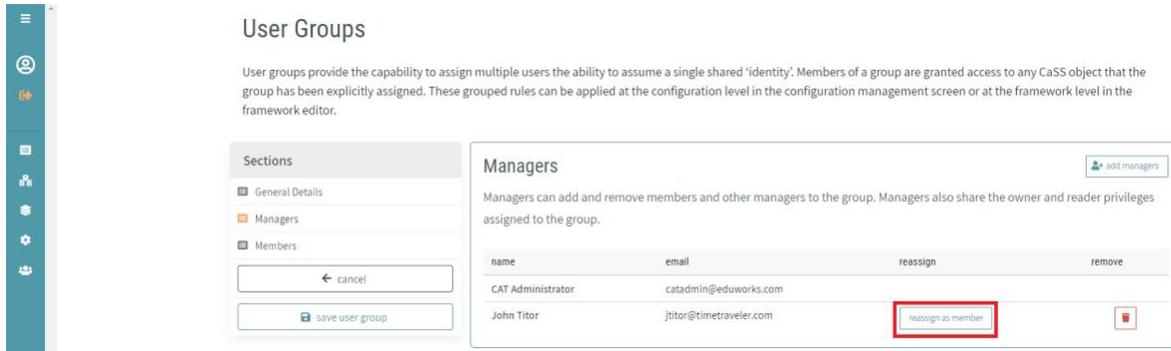


Figure 49 - CAT User Group Details - Reassign Manager

7.3.3 Group Members

Group members share the owner and reader privileges assigned to the group, as shown in Figure 50.

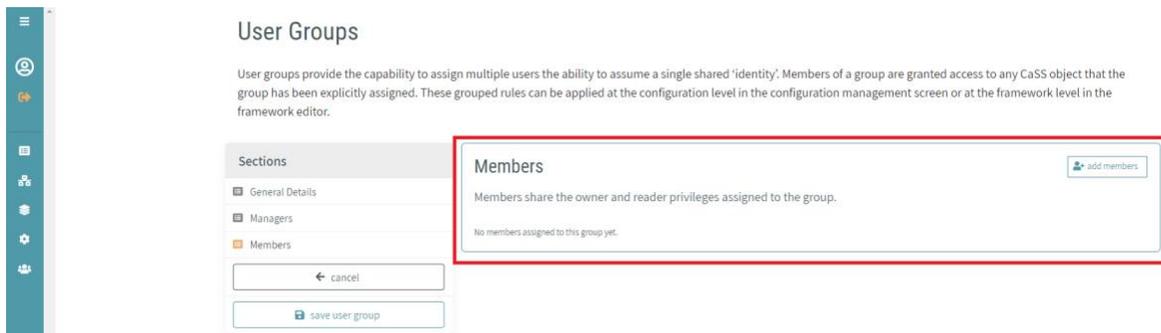


Figure 50 - CAT User Group Details - Group Members

7.3.3.1 Add Members

The group member list can be managed by clicking the *add members* button on the right side of the *members* section, as shown in Figure 51.

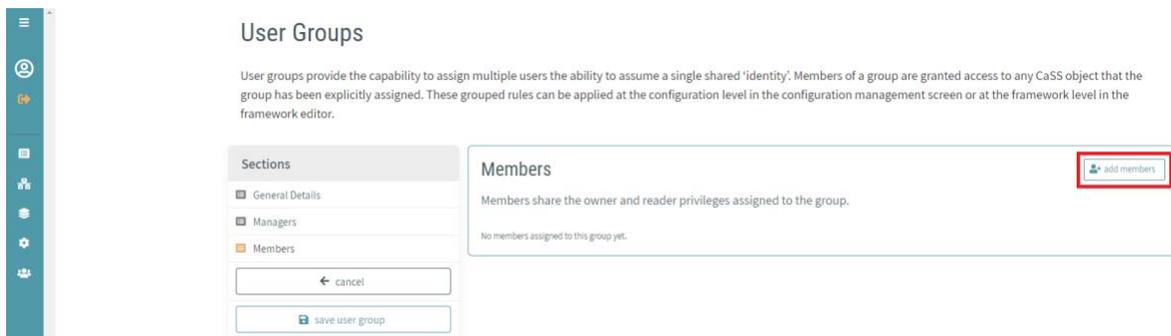


Figure 51 - CAT User Group Details - Add Members

Once clicked, the *add members* dialogue window is displayed, as shown in Figure 52. Select the desired group members and click the *apply* button in the bottom right of the dialogue window.

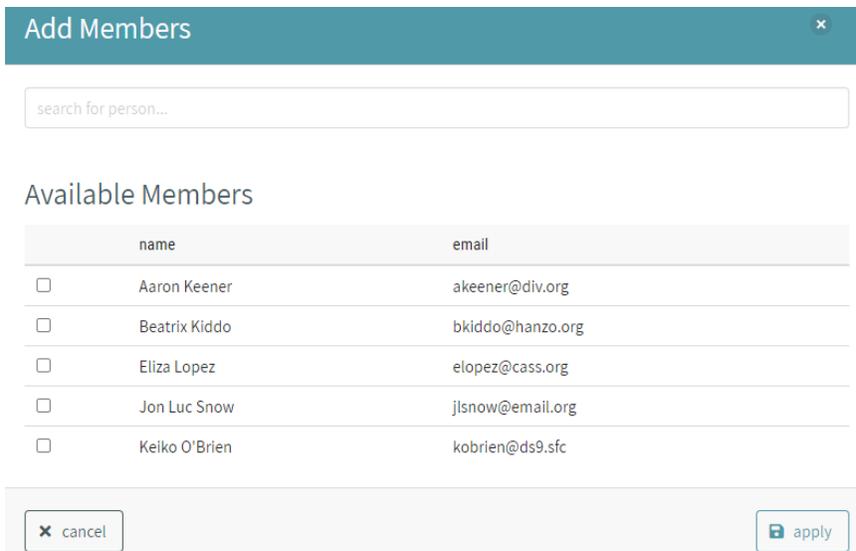


Figure 52 - CAT User Group Details - Add Members Dialogue

7.3.3.2 Remove Members

Group members can be removed from the group by clicking the *remove* button, as shown in Figure 53.

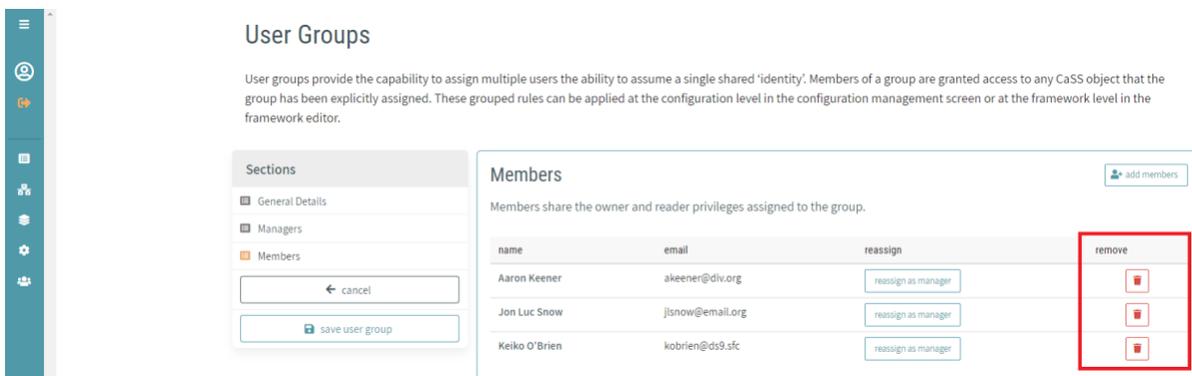


Figure 53 - CAT User Group Details - Remove Member

7.3.3.3 Reassign Member

Members can be reassigned as a group manager by clicking the *reassign as manager* button, as shown in Figure 54.

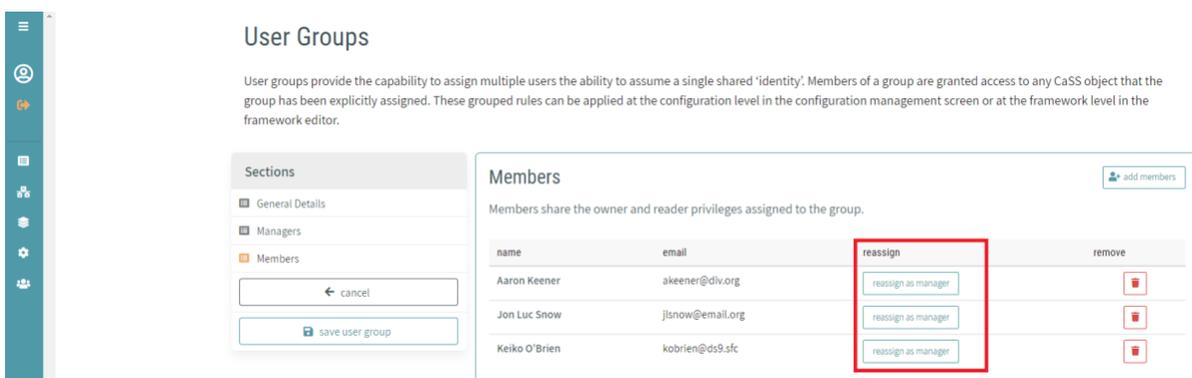


Figure 54 - CAT User Group Details - Reassign Member

7.3.4 Saving the User Group

User Groups can be saved by clicking on the *save user group* button on the left side of the *user group details* screen, as shown in Figure 55.

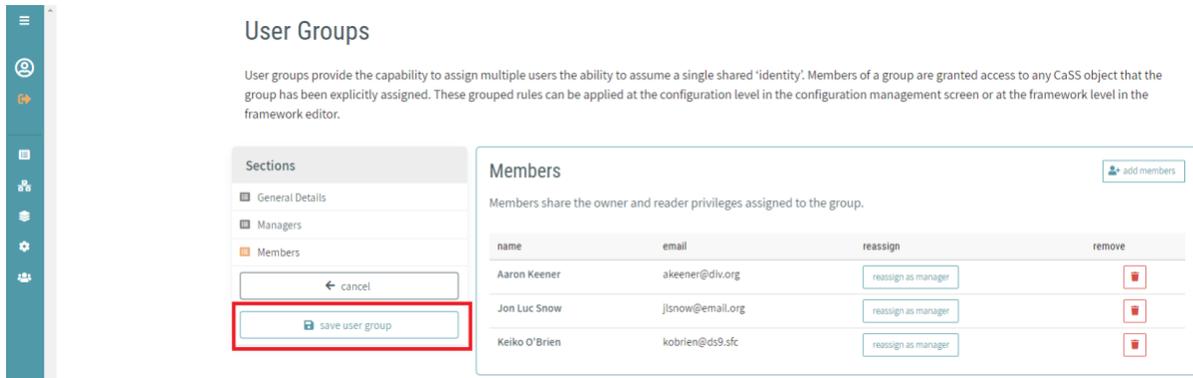


Figure 55 - CAT User Group Details - Save User Group