Jama Connect User Guide

Self-hosted 8.79

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Welcome to Jama Connect

Jama Connect is a centralized web application that helps you manage the development of new technology products. It manages all aspects of product requirements. Jama Connect also records test results and manages risk while maintaining regulatory compliance.

As a new user or trial user, read through this section to learn how Jama Connect can change the way you work and can enhance your product development process. We want to answer all your *"What do I need to get started?"* questions.

This information isn't linear — feel free to scan through and jump to the different areas that are most interesting to you.

The right tool at the right time

This guide contains information about a self-hosted release of Jama Connect. If you're a system administrator new to Jama Software you can skip straight to the system administrator section [482].

Get started

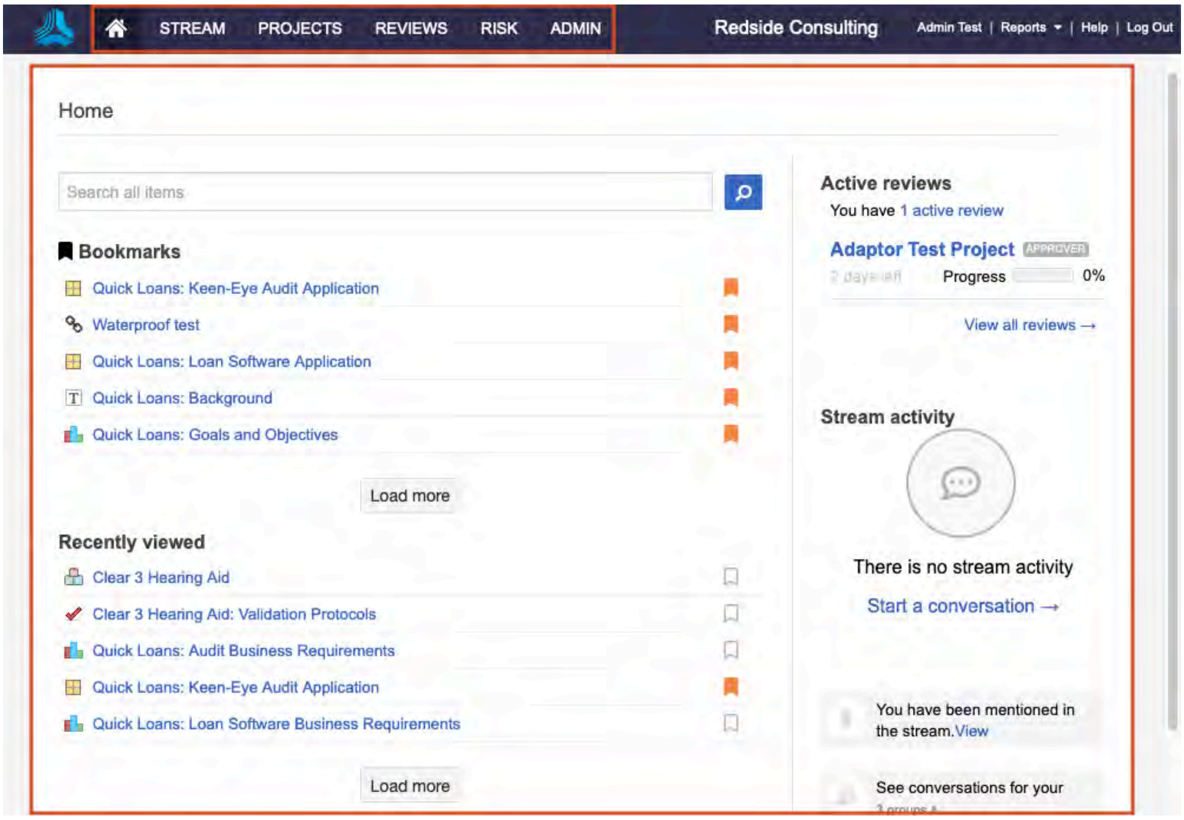
To start using Jama Connect, you need your user account credentials.

- **Trial account** — Sign up for a free trial at https://www.jamasoftware.com/platform/jama-connect/trial/
- **New user account** — Your administrator has your account username and password

As a new user of Jama Connect, this is the place to start: log in and get familiar with the different areas of the workspace.

To log in to Jama Connect:

1. In a supported web browser, enter the URL provided by your administrator.
2. Type your username and password, then click **Log in**.
   Header — Includes the main sections (Stream, Projects, Reviews, Risk, Admin) of the Jama Connect interface.
   Home — Shows links to your most relevant content like bookmarks, recent views, open views, stream comments, and actions.



Tips and more

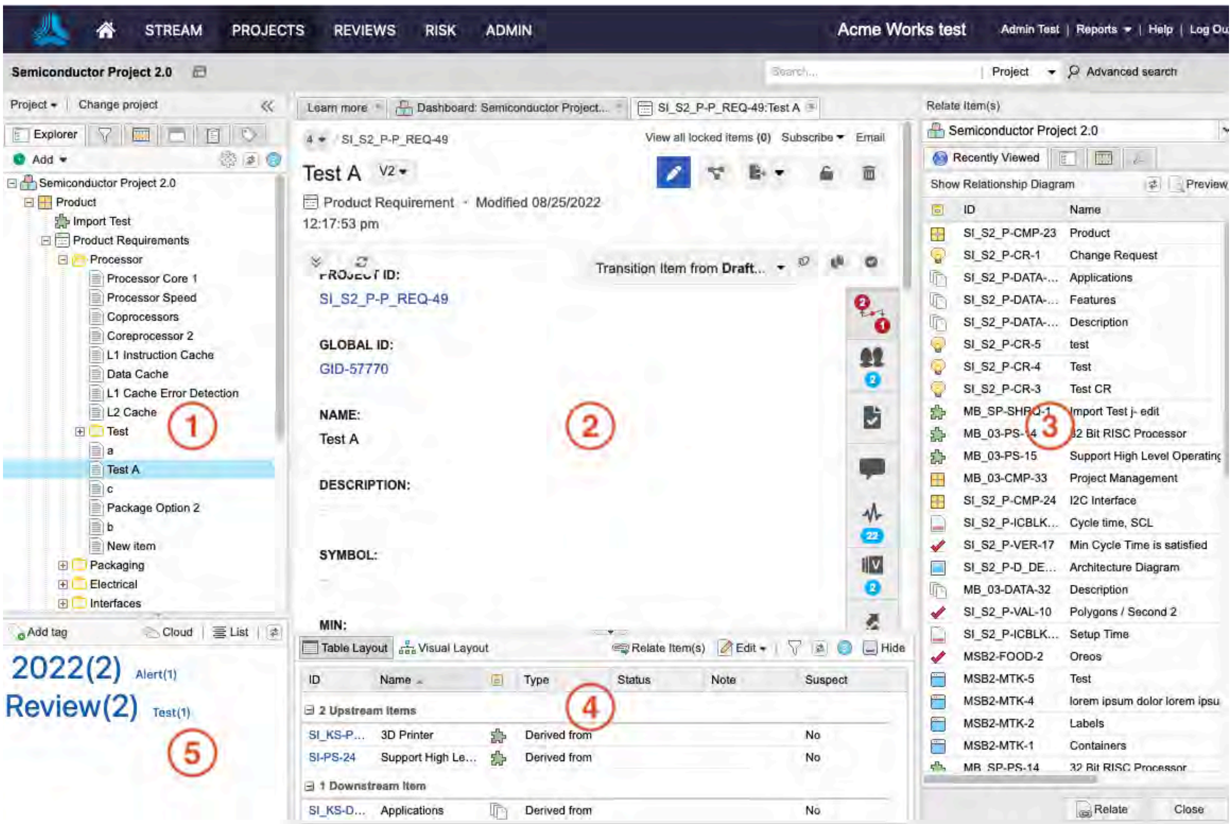
- You're allowed 10 login attempts within five minutes before you're locked out for 30 minutes. To unlock your account before then, follow the forgotten password procedure.
- To manage your account, select your name in the top right navigation to open the **My Profile** window.
- To log out of the application, click **Log Out** in the top right corner. If you don't log out, the default timeout is two hours.
- Bookmark projects, containers, sets, and folders so they appear under **Bookmarks** and **Recently viewed** sections. Having it appear in both places allows you to keep track of recently viewed items even if you remove the bookmark.

Exploring the Jama Connect workspace

The Jama Connect workspace is where you set up and manage your projects, create test plans, communicate with your team, track relationships, and more.

You can also view these short videos to learn the Jama Connect basics: how to navigate the system, add and edit information, build in traceability, send information for review, and collaborate with your project team.

The workspace is divided into five panes that you can expand, collapse, and resize.



1. **Explore and manage projects** — Select the tabs at the top of the left panel to expand these views: Explorer, Filters, Releases, Baselines, and Test Plans.
2. **View item details** — View the details for specific items. Content from Components, Sets, Folders, Filters, and individual items are displayed in this pane.
3. **Create trace relationships** — Add relationships between items for traceability or add items to a change request. Open this section from the Relationships tab and close it when it's not needed.
4. **Manage item information** — Manage information associated with comments, relationships, attachments, versions, and activities.
5. **Use keywords to navigate the workspace** — Navigate to items grouped by keywords.

Jama Connect is highly configurable, so you can customize the workflow to work best for you. For example, focus on creating requirements from the Explorer Tree, view details about a test case, or explore relationships. Depending on the task or goal, you might interact with one area or all areas of the workspace.

Navigation

These links can help you find your way around Jama Connect:

- Explorer Tree [50]
- Toolbar [51]
- Side toolbar [57]

Views

You can choose how you view your selected items in the center panel. Each view is suited to a different type of work.

- **Single Item View** [56] — Displays the information about one item in the center panel.
- **List View** [53] — Shows data from multiple items in a table with a different field in each column so you can sort, select, and compare items at a glance.
- **Reading View** [54] — Shows both text and images for a group of items so you can read through selected items like a document.
- **Trace View** [55] — Shows related upstream and downstream items, missing relationships, and item details in context of their relationship.
- **Compare View** [58] — Shows side-by-side content so you can compare differences between item versions.

Project approach and tree structure

Jama Connect is made up of projects and uses a tree approach, which allows users to easily organize content and view the content of each project.

What is a project?

Think of a project as a virtual container or “workspace” of information. Each project relates to a product you are creating or a software application you are developing.

Why have a project?

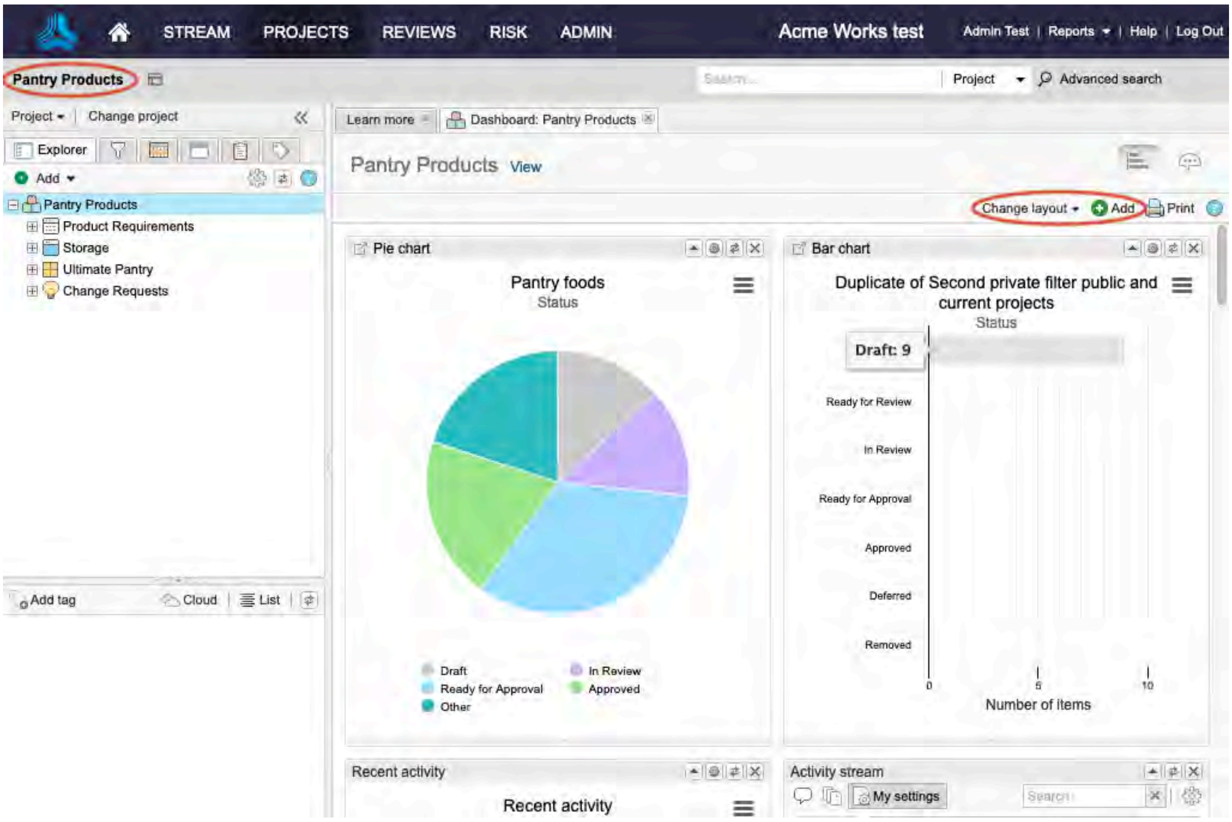
Projects allow you to organize content and apply permission schemas. For example, a user might be able to create and edit requirements in Project A, but you might not want them to see content in Project B.

Projects are created by the Jama Connect admins at your organization, who also control corresponding permissions for each project.

At a high level, each Jama Connect environment can contain multiple projects. Typically, a single project in Jama Connect relates to a single product or a single version of a system that you are building.

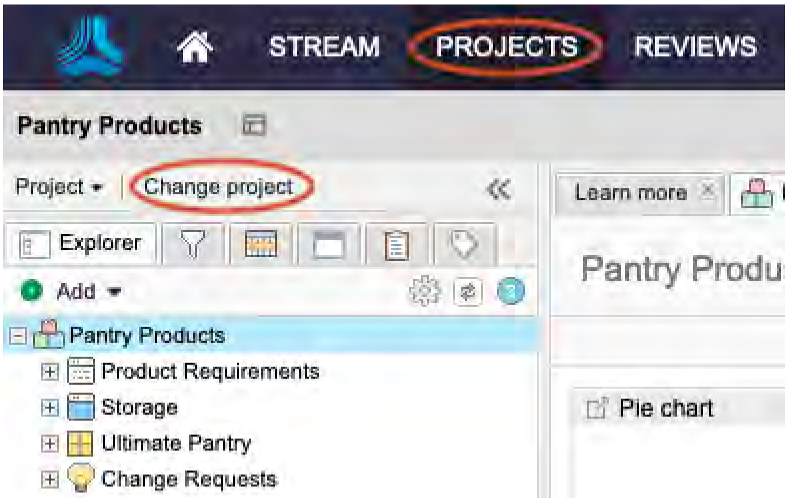
Monitoring your project

Within a Jama Connect project, you can track releases/phases, baselines, test plans, and results. You can also create a project **dashboard** to track the data your team wants to monitor for quality and progress.



How do I access my project?

To open a single project, select **Projects** in the header. If you're already in a project, click **Change project**.



Advantages of projects and tree structure

Jama Connect projects and the Explorer Tree are highly configurable, which allows your organization to adapt the solution to fit your own unique hierarchy and development process.

We also have several templates to get your team started. This allows your organization to:

- Standardize methodology across different teams
- Decrease context switching when working across multiple projects

- Enable reuse of shared requirements

Organizing your content

Each project has its own Explorer Tree, which displays project items in a hierarchical structure. Think of the tree like your filing cabinet.

Within the Explorer Tree you have access to several tools to organize your content:

- **Component** — A structural container used to organize a project into more manageable pieces.
  For example, if your project represented an automobile, typical components in your Jama Connect project might be: “Vehicle Airbag System” or “Emergency Braking System.” Below these components in the Explorer Tree are all requirements and test sets that make up the subsystems for a car.
- **Set** — A container that defines groups of items of a single **item type**. Sets can exist at the top of a project tree or nested under the components.
  For example, in our “Emergency Braking System” component we might have a set of “System Requirements” and a separate set of “Verification Tests.” Typically, requirements documents (Product Requirements, Functional Requirement specifications) translate in Jama Connect as a set.
- **Folder** — A way to organize items within a set.
- **Items** — The granular types of content in Jama Connect.
  For example, a single requirement is an item. A single test case is an item. You can configure multiple item types in Jama Connect.

Learn more about projects and Explorer Tree

- Projects at a high level [636]
- Configure Explorer Tree settings [47]

Item-based product development

Jama Connect is a product development platform that is database driven.

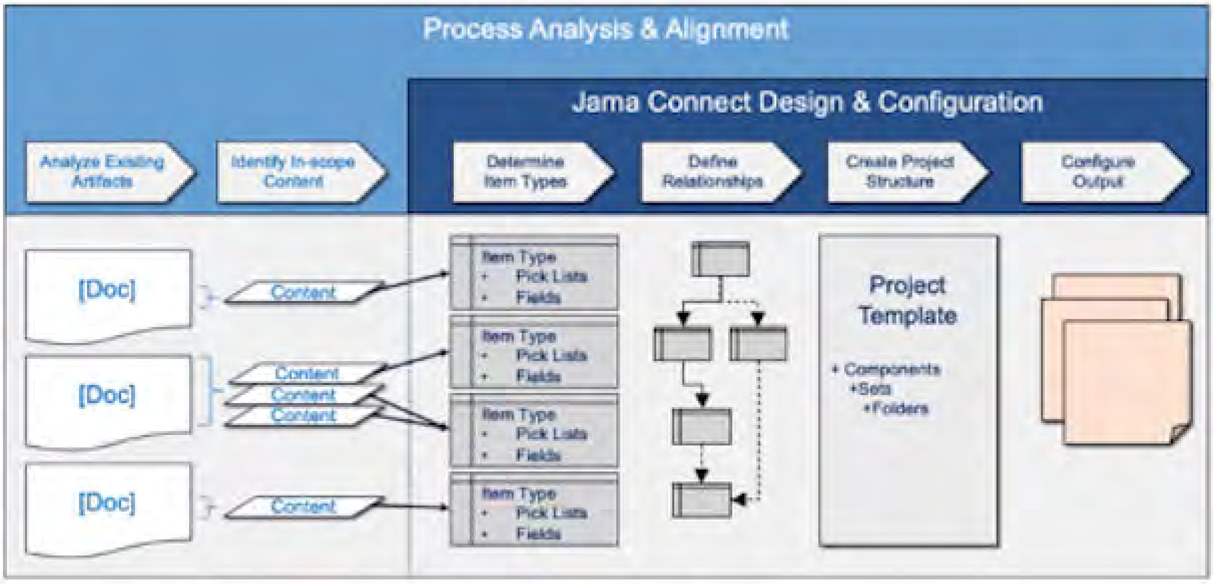
Why do we use *items* instead of *documents*? Several reasons:

- **Version control** — Track changes and feedback at an individual item level, whether the item is a requirement, a risk, a test, or even project documentation.
- **Data integrity** — Quickly search, filter, and create dashboards to view progress based on item attributes. Documents don’t allow for this functionality and often have data integrity issues.
- **Time savings** — Save time by not having to manually maintain IDs and trace links in a document. In Jama Connect, traceability is a by-product of the way you work.
- **Review efficiency** — Focus on smaller, more iterative item reviews. Users no longer have to wait for entire documents to be submitted before they can provide feedback. Get to market quicker!
- **Auditing quality** — With a few clicks, identify items that are missing coverage throughout the product development process. *Coverage* is the extent to which items are validated by another item.

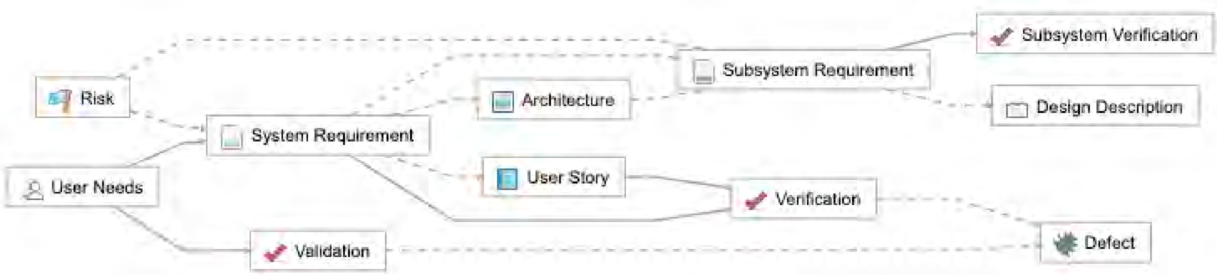
The shift from a document-based approach to item-based is key to the value of Jama Connect. Your team's methodology directly influences how you set up and configure your Jama Connect environment with different item types.

The following diagram illustrates how to shift from a document-based approach to an item-based approach using Jama Connect.

- Identify the documents and content that need to live in Jama Connect.
- Determine the item types that exist in those documents. For example, item types might be system requirements, use cases, or test cases. Item types must have defined relationships in Jama Connect, which you can specify with a relationship rule.
- Configure a project structure, then build your content. You can import existing documentation or author directly in Jama Connect.



The following diagram is a typical relationship model in Jama Connect that adheres to a Systems Engineering Methodology (SEM). In it, a box represents a single item type and lines represent relationships.



Your team's development methodology comes into play here, for example classic vs. agile methodology. While some teams use only one method, many teams use a combination.

Each method might use different terms. For example:

Classic Systems Engineering	Agile Methodology
• System Requirement • System Architecture • High-Level Requirement • Low-Level Requirement	• Strategic Themes • Epics • User Stories

Traceability from Requirements to Test

Traceability shows the relationship between items that depend upon and define each other. You can travel upstream or downstream to get more context and trace product definition from high-level requirements all the way through to final tests.

Relationships in Jama Connect are established between discrete items. For example, Stakeholder Requirement A is related to System Requirement X.

Benefits of establishing relationships

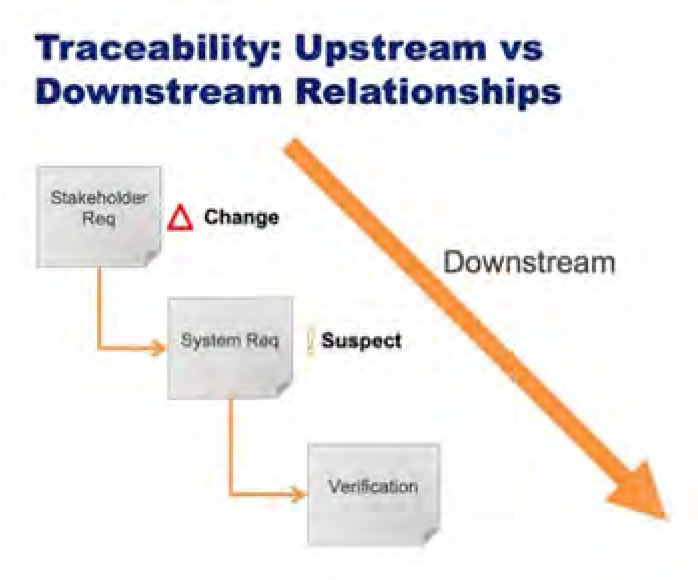
Why are relationships important in Jama Connect?

- **Allocation** — Understand which systems and subsystems implement the requirements.

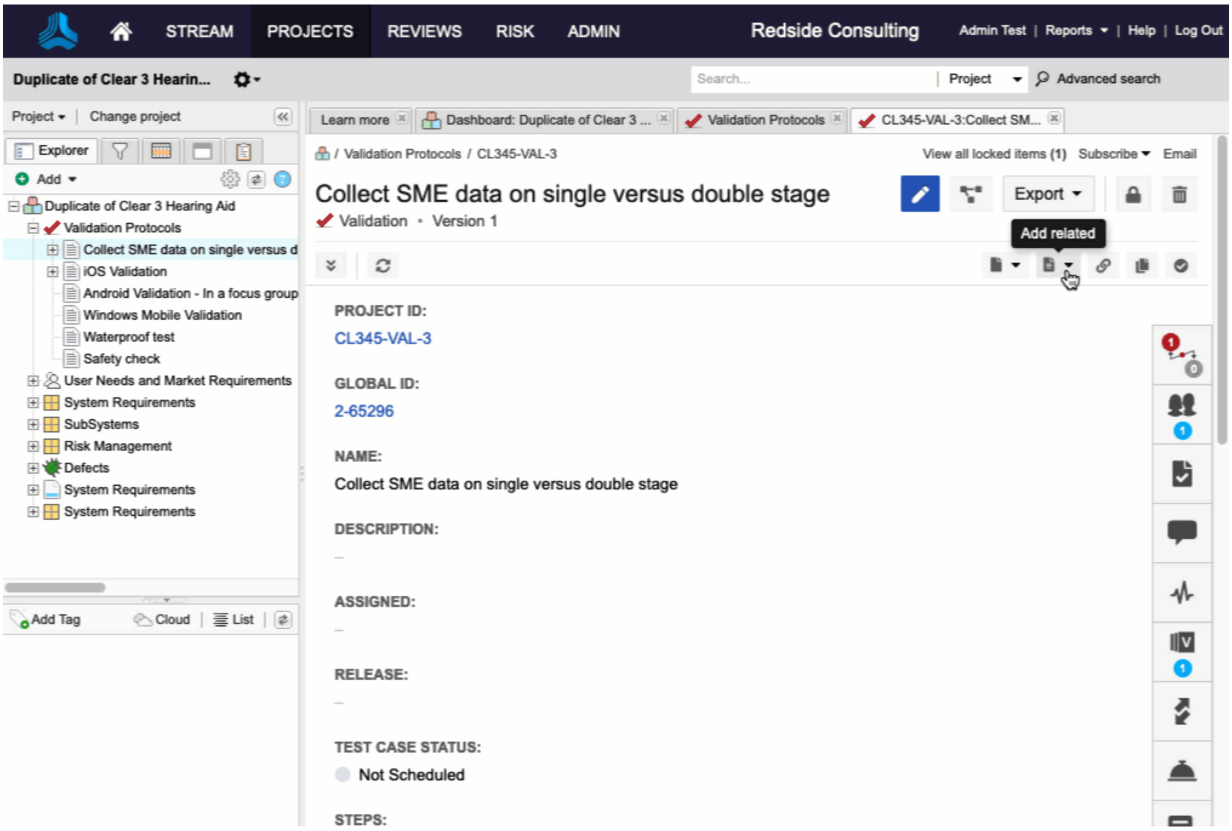
- **Traceability** — Break down high-level requirements into more detailed specifications.
- **Verification** — Improve implementation and quality by linking requirements to tests and their results.
- **Impact analysis** — When requirements change, identify and understand the ripple effect to lower-level requirements and testing.

Relationship rules are applied to projects to drive compliance to your organization's model and methodology. Setting up relationship rules for your item types is critical because it enforces the methodology your organization wants to use in Jama Connect.

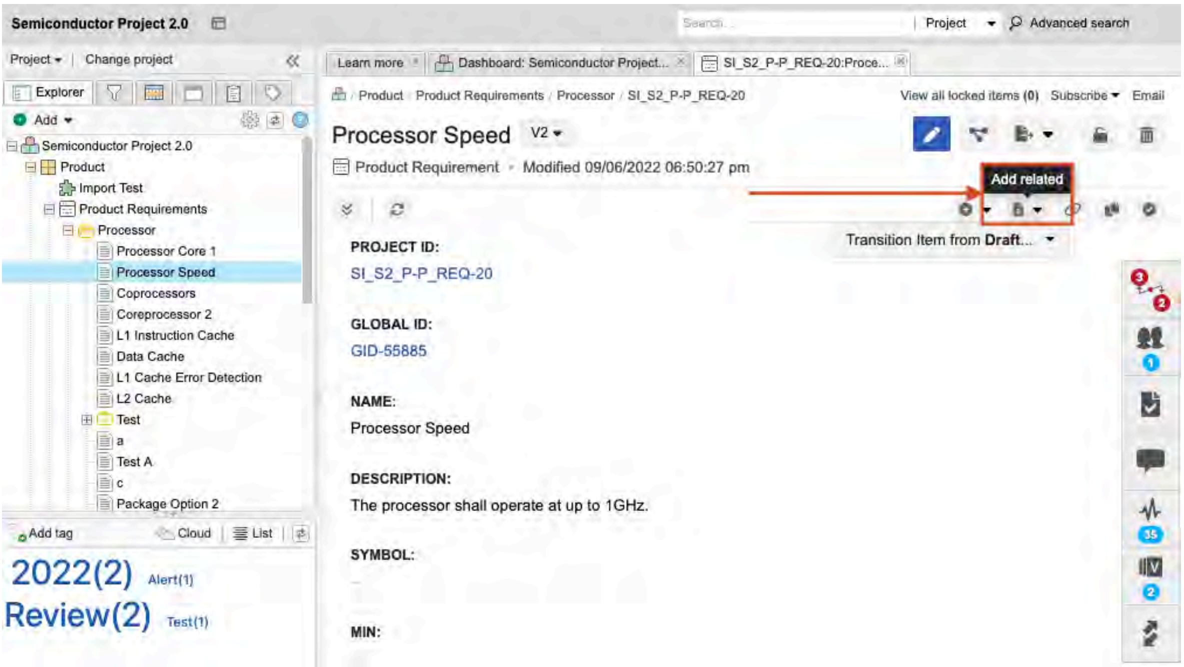
Jama Connect uses the terms "upstream" and "downstream" to describe relationship direction. When upstream items change, their downstream items are flagged as "suspect" so that you can review any impact the change might have.



How to establish a relationship:



1. Navigate to a single item in your project such as a user need or a requirement.
2. Click **Add related** and select the item type you want to add.



Jama Connect opens a new window where you configure the item relationship.

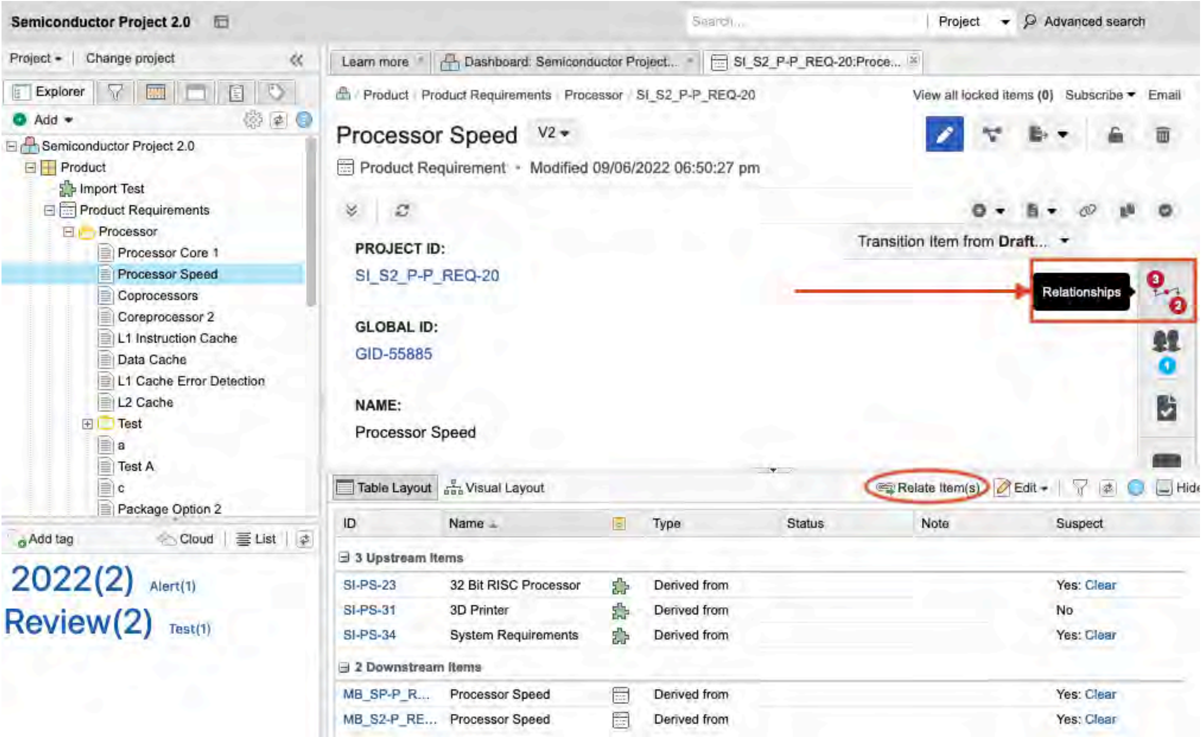
3. Click **Save and Close**.

The original item (Requirement) and the new item (Verification) are now linked with a trace relationship.

View and add relationships

- To view relationships, click the **Relationships** widget in right corner of the item.

- To add more relationships, click **Relate Items**.

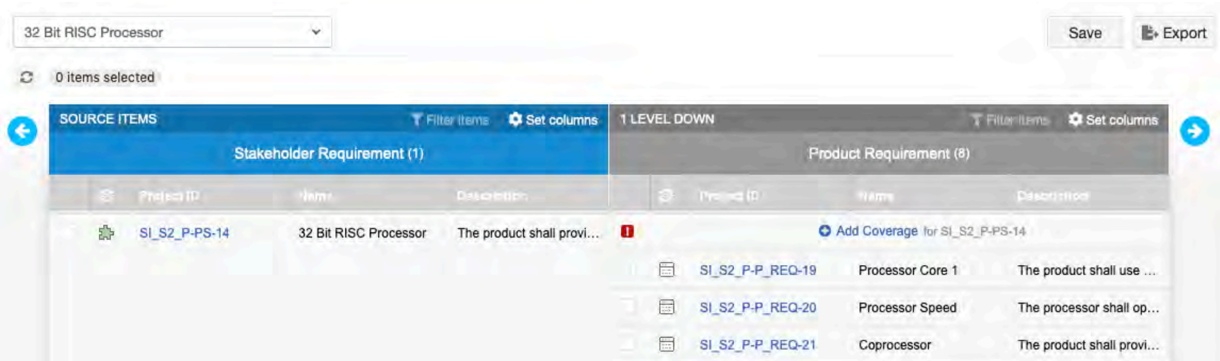


To learn more about adding relationships, see Relationships [286]

What's next

Once you establish relationships, the **Trace view** in Jama Connect is a great way to view a live trace matrix [294]. You can also filter and extract views of your traceability.

Trace view:



Tracking changes in your project

Throughout product development, being able to track changes is critical, along with details and context that led to the change, specific version differences, and stakeholders involved with and affected by the changes. Jama Connect gives you the ability to capture all of these details.

Jama Connect has two effective ways to track changes:

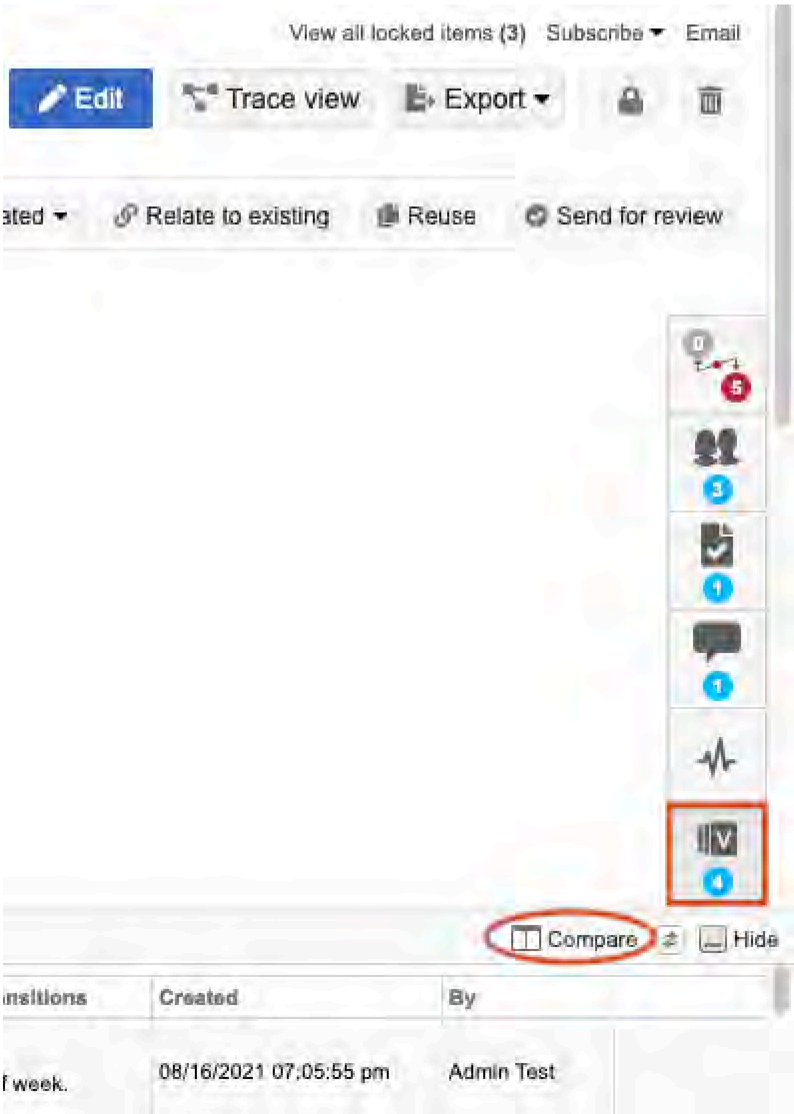
- **Versions** — Capture changes at an item level. For example, a single requirement might have multiple versions as well as associated change comments.
- **Baselines** — Capture a point-in-time snapshot of a group of items. Create a baseline to preserve a version of an entire Jama Connect project or set of approved items.

Version changes

A new version is created each time you make changes to an item. In the bottom panel of the interface, you can compare versions or make a past version current.

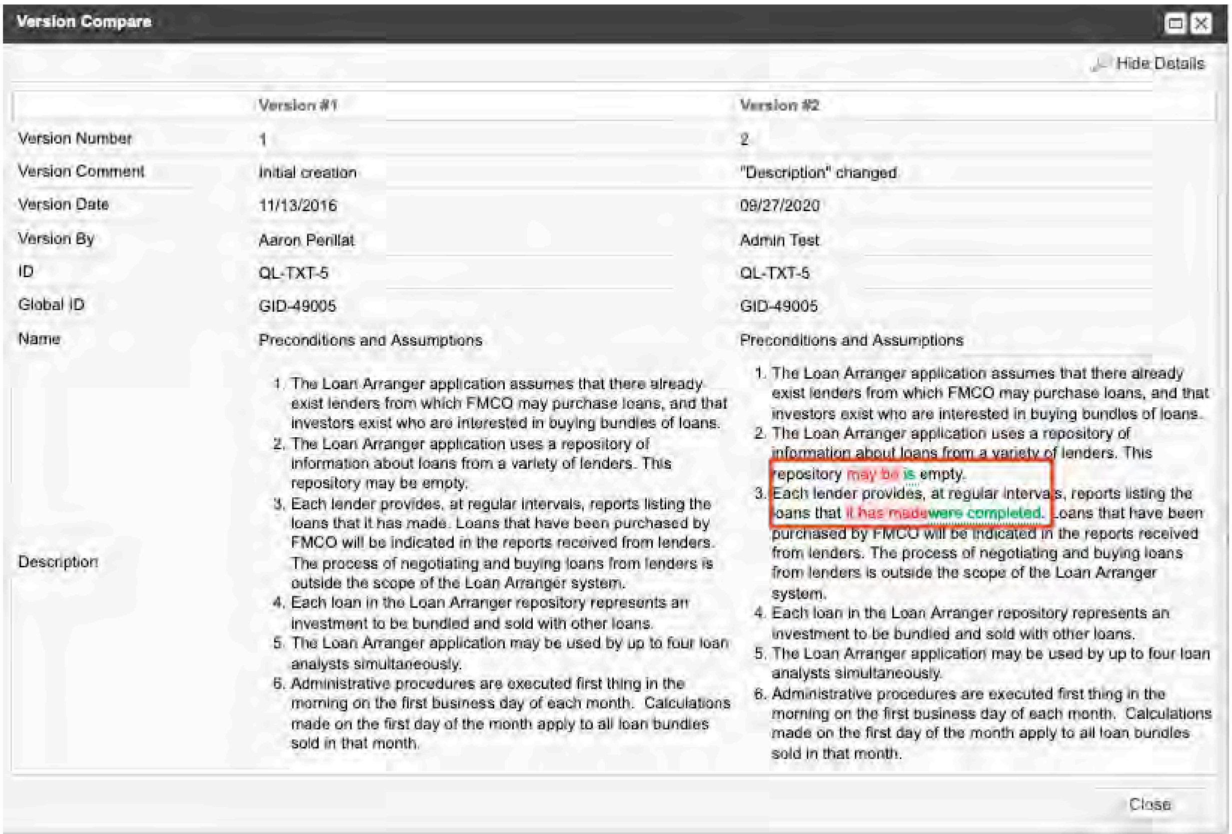
Changes to a single item

In the following screenshot, you can see how Jama Connect compares differences between multiple versions of an item. The example engineering requirement has two versions. In the bottom panel, you can also see who made the change, any change details, and any change comments. Get the complete context of change from just this one screen!



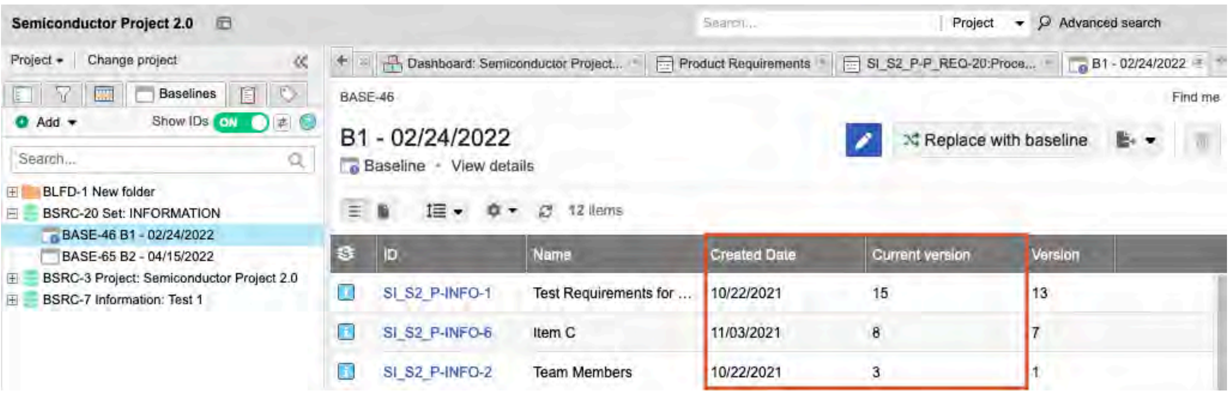
Version Compare view

This next screenshot shows the differences between two versions of a requirement. Individual field differences are shown and highlighted in red (removed content) and green (added content), making it easy to see what might have changed.



Changes to several items in a baseline

This screenshot shows a baseline in Jama Connect, which is a snapshot of several items.



Baselines can change over time as new requirements are added, removed, or updated. Jama Connect provides users with the ability to identify and assess these changes between different baselines through default reports.

How reviews work

Ever feel like work is harder than it should be? Multiple revisions of a document get emailed around; conflicting or out-of-sequence feedback on shared documents; time-consuming and costly review meetings. Sound familiar?

Jama Connect alleviates these pain points with its review features.

- Everyone is automatically included in the latest revision.
- Reviewers can simultaneously log their feedback and approvals.
- All feedback is associated with a specific revision of the document.
- Easily filter and view only the items that need additional review or feedback.

Reviews are critical to improving requirements and test quality and in increasing the shared understanding among the teams that are engineering and implementing the requirements. Most item types in Jama Connect can be sent to a review.

Review roles: who does what?

- **Moderator** — (Content owner) Starts the review and facilitates the discussion.
- **Reviewer** — Contributes to the discussion.
- **Approver** — Signs off and approves items in review.

Who can start a review?

Users with a Creator license and necessary permissions to author and edit in the project can start and moderate a review.

What's involved in a review?

Here's what a typical workflow looks like.

1	**Define what gets reviewed**	Before starting a review, determine which set or folder of items you want to send for review. You can select an entire document or particular sections only, which allows for a more agile and iterative review. A review can be started from a location, filter, release, baseline, or test plan.
2	**Start the review**	If leveraging Jama Connect workflow functionality, set the status of items to "Review:" right-click on the Explorer Tree location and select **Send for review**. If starting from a filter, release, baseline or test plan, right-click the name and select **Send for review**. Jama Connect loads the review setup wizard, where you can configure the review deadline and invite Reviewers and Approvers.
3	**Monitor progress**	When the review is initialized, Reviewers and Approvers receive an email invitation to participate. They work concurrently, adding comments and marking items "Approved" or "Rejected." As moderator, you can track participant progress and respond to comments.
4	**Incorporate changes**	As moderator, you edit and incorporate feedback from the participants. You are then prompted to publish a new revision of the review.
5	**Close the review**	Reviews close when the review deadline is reached or when the moderator closes the review manually. You can close the review for feedback, finalize the approval review, or mark the review as finalized.

Reviews can always be reopened to publish new revisions and review what has changed.

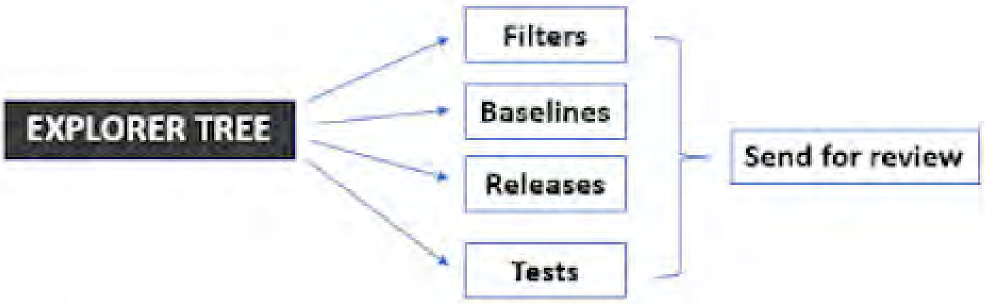
Best practices

- Facilitate a review before a Requirement is moved to "Approved" or "Rejected" status.
- Focus on small, iterative reviews with fewer than 200 requirements per review. A large requirements document can be difficult to consume.
- It's OK to have lots of review revisions; approvers are always included in the latest revision.
- Offer guidance on the type of feedback you need.

Create a review

You can create a review for any group of items in a project. And you can start a review from several places in the Jama Connect interface.

Regardless of where you begin, the process is the same through an easy-to-follow wizard.



Always start from **Reviews** in the top header.

1. Select **Reviews**, then select **Start a review**.

   The wizard opens to the Definition page.
2. Follow the prompts in the wizard to define your review. The pages of the review are:

3. Click **Initiate review**.

Learn more about reviews

For details about how to create and use reviews, explore these topics in the User Guide:

- Review moderator [158]
- Compare versions [194]
- Filter or search the review workspace [186]
- Organize and find review comments [184]
- Review Education Resources from Community site
- Review Center FAQ from Community site

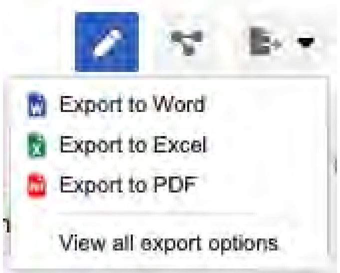
Exporting documents from Jama Connect

While Jama Connect alleviates many pain points around managing documents, you might still need to create documents to share with your customers, quality teams, or auditors.

The basics

With Jama Connect, you can easily create documents using our standard export to Word and Excel or by creating your own custom office templates.

You can export the items that appear in your Jama Connect view with these export options:



Beyond the basics with Office templates

If you need more than what the default Office templates provide, you can customize a template to suit your project. For details about how to create a custom Office template:

- Exports [321] (User Guide)
- Word Template Guide (Community)

Advanced reporting

If you require more control over the report output than Word templates provide, you can use an advanced reporting tool like BIRT or Velocity.

Here are some common scenarios for using an advanced reporting tool:

- **Ordering of documents** — Word templates always arrange your included items in the same order that they appeared in Jama Connect when you generated the export. If you need like items to stay together or certain item types to always be displayed before other types, you need to use a custom export.
- **Style formatting** — Although Word templates support basic text formatting like bullets and fonts, text size and color, they don't support page formatting options like section breaks or custom page numbering. BIRT and Velocity exports provide a broader level of control than Word.
- **Multiple levels of relationships** — Default Word templates can export relationships one level upstream or one level downstream. BIRT and Velocity can follow relationships and tree structure through multiple levels.
- **Conditional logic** — BIRT and Velocity both allow more control over when and where to display information. For example, an advanced reporting engine lets you display an item's status, but only if it were created more than 30 days ago and has an upstream relationship to a feature.

For more detailed information about advanced reporting:

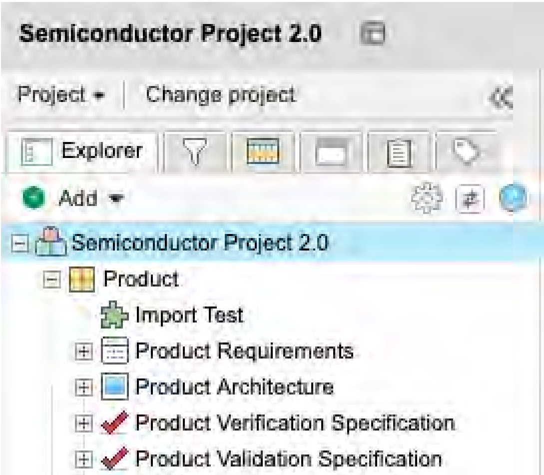
- Introduction to Advanced Reporting (Community)

Dashboards

You can configure your projects to show key metrics so you can quickly see what needs attention. Typically, dashboards are used to:

- **Monitor progress** — For example, status of Requirements or Execution Results of a Test Cycle.
- **Audit progress** — For example, show the count of items that are missing a critical data point or process step.

To access the dashboard, select the project name in the Explorer Tree.



As an administrator with organization or project permissions, you can customize dashboards per project (not per user).

Customizations include:

Filter results	Displays the results of an existing filter.
Assigned to me	Displays a list of items "assigned to" the current user.
Bar chart	Displays the results of an existing filter as a bar chart.
Recent activity	Displays a line graph of recent activity over a period of time.
Pie chart	Displays a pie chart for a filter and field that the user selects.
Activity stream	Displays the current activity stream of the project. View all current activity including comments, edits made, new items created, and assignment changes.
Project summary	Displays a summary of the entire project, including total number of items in the project, number of days until next release, and number of days until project completion.
Rich text	Displays user-defined text, images, diagrams, and equations.
Recently viewed	Displays the last 15 items viewed by the current user.
Relationship diagram	Displays the relationship rules applied to the project.

Testing

Do you need to validate and verify your product? Or maybe you need to create a report that shows the connection between regulations, requirements, and tests?

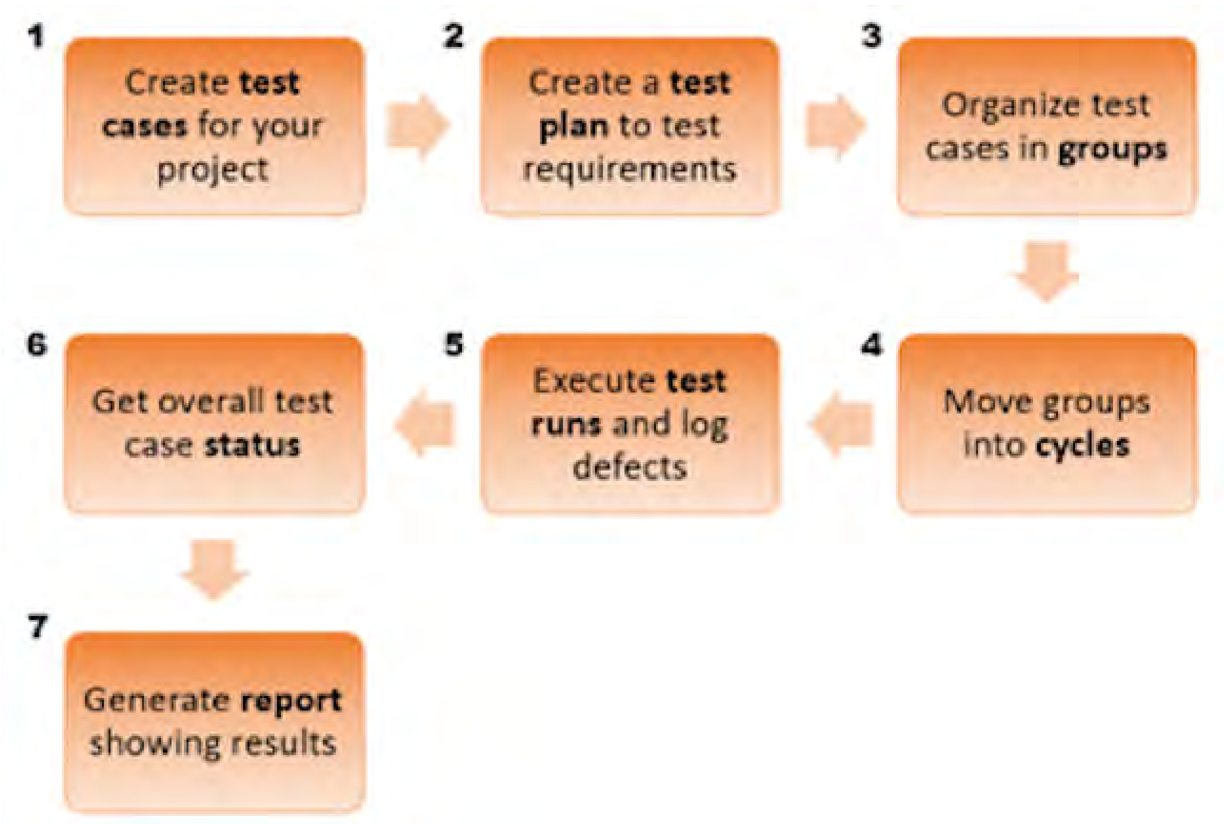
Then look no further: use Jama Connect test capabilities to guide your teams through the testing process, so you can validate and verify your products and systems.

Let's define our terms

Test cases	Items that contain the tests needed to validate or verify product features or systems. They contain the essential information about your tests, and can be organized by project, library, or ad hoc.
Test plans	Documents that describe the strategy and objective of the test.
Test groups	A collection of test plans that allows teams to organize test cases within a test plan.
Test runs	Item used to record results for a test case you ran against your product.
Test cycles	A series of test runs consisting of groups of test cases, that are ready for execution. In a test plan, you can add a test cycle to help manage and execute test runs.
Defects	Errors that are logged from test runs and traced to upstream test cases and requirements through the relationship configuration.

What's involved in testing?

Here's a typical workflow:



1	**Create test cases for your project**	Create test cases that meet the needs of a particular project or multiple projects across your organization.Test cases describe the specific tests you plan to use and their steps. Relate test cases to the requirement you're testing.
2	**Create a test plan to test requirements**	Create a test plan that gives an overview of how you want to test requirements.
3	**Organize test cases in groups**	Associate the cases you want to use into that plan using groups to organize them.
4	**Move groups into cycles**	Get ready for testing, by moving those groups into cycles where you can see a list of all the tests you want to run.
5	**Execute test runs and log defects**	Execute the test runs and log defects as needed.
6	**Get overall test case status**	Status of resulting test runs roll up to calculate the overall test case status.
7	**Generate report showing results**	You can then generate a report showing results, such as the Test Plan Summary Report or the Test Plan Detail Report.

Learn more about testing

- Test cases [337]
- Test plans [347]
- Test groups [350]
- Test cycles [358]
- Test runs [364]
- Defect item type [601]

All about baselines

A baseline in Jama Connect is a snapshot of your project at a point in time. The current version of each selected item — and their relationships — are forever associated with that baseline.

Why are baselines important?

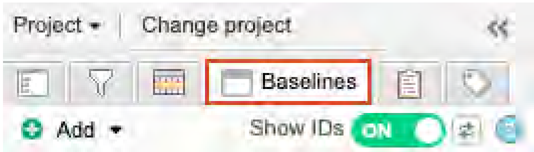
A baseline captures the relationship between your selected project components, as well as their state. For example, Draft, Reviewed, and Approved.

A project in Jama Connect can have many baselines. You can use baselines as the basis for an export or as a reference for a historical milestone. By creating a baseline at each project milestone, you can view the status of your project at key points in the lifecycle. For example:

- At gate reviews
- Before a reorganization
- Before an import of requirements

Where to create the baseline

In the Jama Connect Project, navigate to the **Baselines** tab and click **Add > Baseline**.



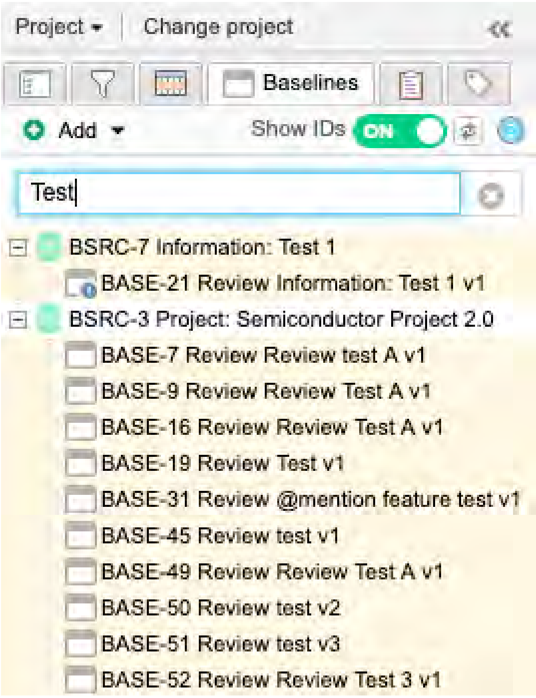
Create a baseline

Are you ready to send an item for review? Or maybe you need to capture a snapshot of the current set of requirements. Perhaps your project has reached a milestone like testing or approval.

Create a baseline to secure a snapshot of one or several items in your project.

1. Select the **Baseline** tab from the left panel tabs of your project.
2. From the **Add** drop-down menu, select **Baseline**.
3. Select the criteria that you want to include in your baseline, using the three tabs in the pop-up window:
   - **Item selection** — A copy of the project where you are working. Select your entire project, a single set, multiple sets, a single item, or multiples items.
   - **Releases** — If you created a release, baseline one or multiple items.
   - **Filters** — Baseline any advanced filters you created.
4. Click **Create**. The Add Baseline window appears with a pre-populated name.
5. *(Optional)* Rename the baseline or add a description.
6. Click **Save**.

Your baseline is now created and is highlighted under the source where you created it.



Organize your baseline tree: the basics

Working with baselines is dynamic and intuitive: reorganize, rename, and restructure your tree however you want. Let's create a folder or two, then we can arrange them.

Note: You must be a project admin or organization admin to do this.

1. From the **Add** drop-down menu, select **Folder**.
2. In the window that opens, type the name of the folder.
3. Click **Save**.

The new folder is saved at the top of your baseline tree.

Quick tips

- To add a folder to an existing folder, right-click on a folder and select **Add Folder**.
- To move a folder or a source, drag it to a location in your baseline tree.

Learn more about baselines

For detailed information about baselines, explore more topics in the User Guide:

- Baseline sources [265]
- Baseline organization [266]
- Baseline activity [274]
- Add electronic signatures to a baseline [248]

Reuse and synchronization

Reuse in Jama Connect is much more than a copy/paste mechanism. It's a full suite of features that allows for complex capabilities like:

- Maintaining a library of common requirements

- Branching a project to create a variant product
- Comparing differences between a local version of a requirement and its source library version

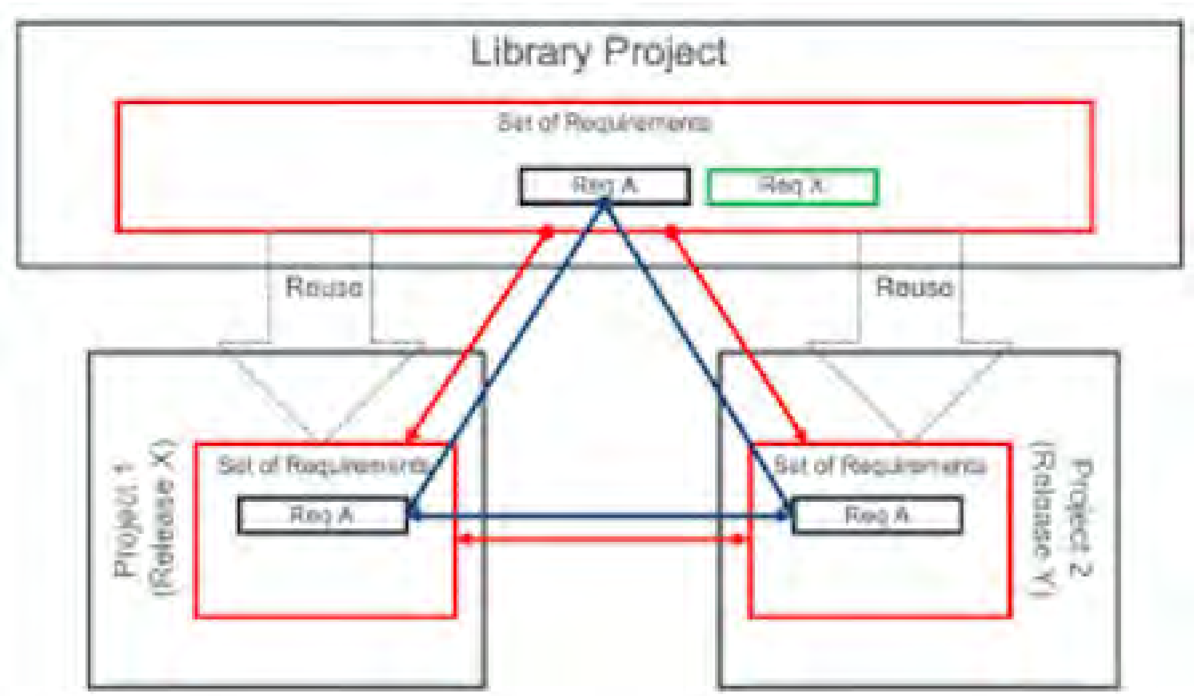
Reuse and synchronization methods detect variance and highlight the impact of that variance across releases and projects. These methods are useful whether your product keeps the same requirements as a previous version; if it integrates and improves on original requirements; or if you include custom requirements for each product.

To save time and effort for your teams:

- Reuse common product requirements across projects.
- Sync reused items to help determine and track variance across projects.

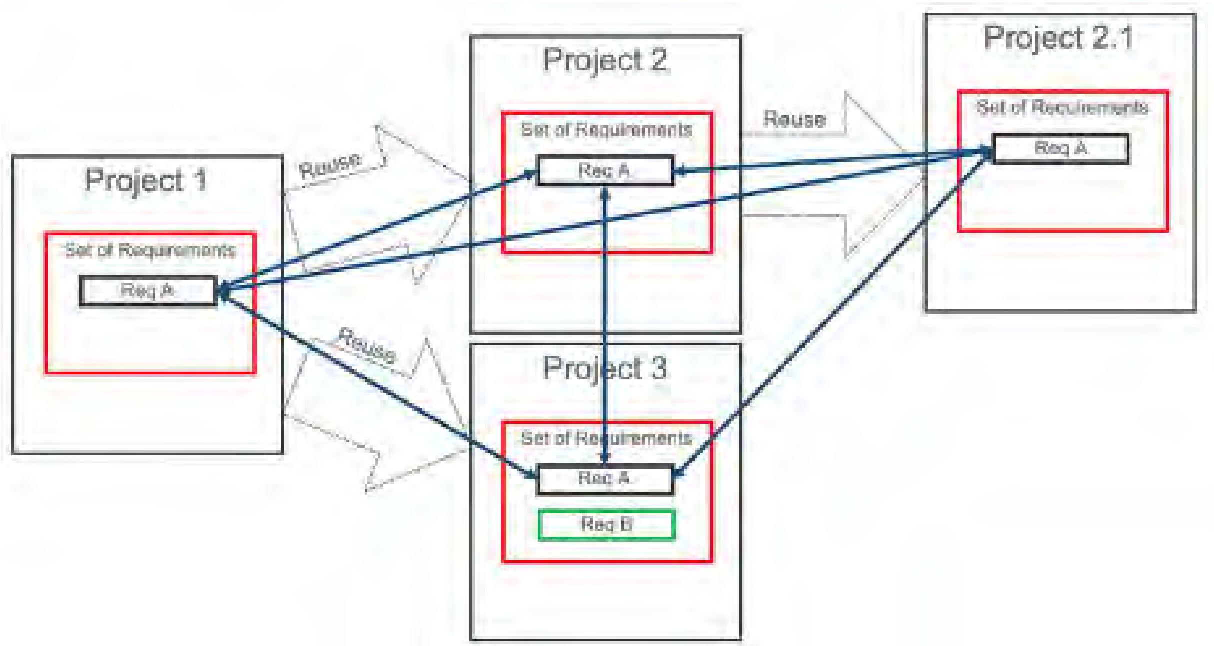
When you apply reuse and synchronization methods within your requirements management configuration infrastructure, you maximize your requirements resource management. You can modify and evolve existing work quickly while maintaining your requirements lineage.

Library approach



- A library project houses a collection of requirements maintained by a librarian or curator (permissions-based).
- The curator of a library can pull differences back into the library when needed.
- Project members can pull and push updates between the project and the library.

Branching approach



- Projects are branched by project duplication.
- Synchronization is enabled during project duplication and differences are monitored between containers and items.
- Jama Connect project baselines are created just after duplication. A baseline captures the state of the project at the time of duplication and is used for baseline comparisons.

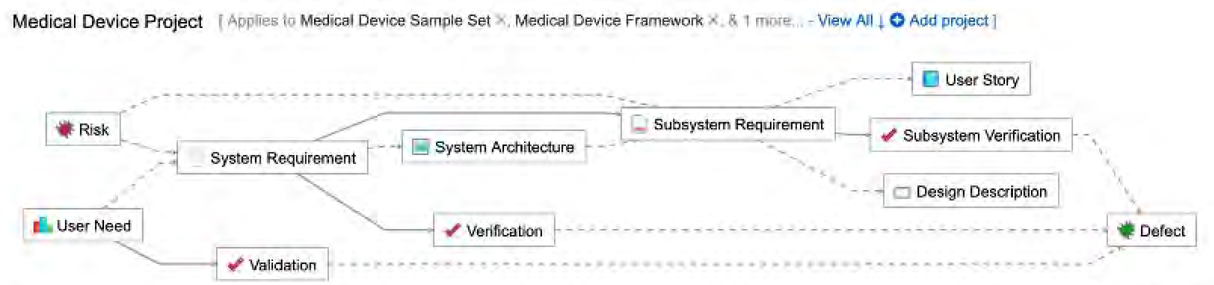
Administration

Administration in Jama Connect applies primarily to controlling the product development process and users' access to the data.

Product development process

There is no "one size fits all" process for developing products or applications. Each industry starts with a template modeled after best practices, but every company can tailor the process to fit its needs.

Here is an example process used to develop a medical device.



In this example:

- Boxes indicate an artifact/document (generically defined as item types in Jama Connect).
- Lines indicate relationships that enforce traceability between the items.
- Item types indicate items with configurable fields to record specific details about each requirement, including details like ID, Name, and Description, as well as values for capturing data (workflow status, validation method), similar to columns in a spreadsheet.

User management

A primary role for administration in any enterprise system is the assignment of licenses and managing access to data. Jama Connect includes several options for administrators to fine-tune read/write/review access to fit their company's needs.

Learn more about user management

- Licensing [585]
- Managing users [575]

Manage item types

By default, a trial user account is set up with permissions of an organization admin, which gives you access to the **ADMIN** module in the top-level navigation. If you don't see this, ask your administrator to update your permissions.

Edit an existing item type

1. Select **Admin > Organization**, then select **Item Types**.
2. Find the item type you want and click **Edit** in that row.
3. Adjust the details that your project users are able to see when they work with items.
   - **Display, Display plural** — The name used to identify the item type, for example, System Requirement.
   - **Type key** —The part of the ID that helps users quickly determine the item type of an item. For example, the default type key for System Requirement is **SREQ**, so when a user sees an item with the ID of QR-SREQ-34, they can know at-a-glance that the item is a System Requirement for that project.
   - **Use as** — Specific functions or permissions for item types configured as a test case or defect.
   - **Image** — An icon to help users quickly differentiate items.
   - **Widgets** — A graphic that shows additional data for the item. The most common widgets are Versions, Links, Attachments, Relationships, Activities, and Tags.
4. Click **Save**.

Add a field

Chances are that the fields available in your selected item type are just what you need for your process. But if you want to add details specific to your organization, you can do that too.

1. Select **Admin > Organization**, then select **Item types**.
2. Select **Fields** from the row of the item type.
3. Click **Add Field** from the fields' header for the item type.
4. Click **Custom Fields**, then select the type of field you want to add.
5. Enter the name you want users to see in **Field Label**.
   The **Unique Field Name** is pre-populated with a suggestion. This name is used for reporting or accessing from REST API [481].
6. Depending on the field type you select, additional options might be required. If prompted, configure them now.
7. Click **Save**.
8. (Optional) Use the arrow keys in the header to move the field into the order you want on the form.

Configure pick lists

A common field to configure on an item type is a pick list. Pick lists can be reused, and the list you want, like **Priority**, might already exist. You can adjust the language or values to fit your needs.

If you need a new list, you can create it before you add the new field to an item type.

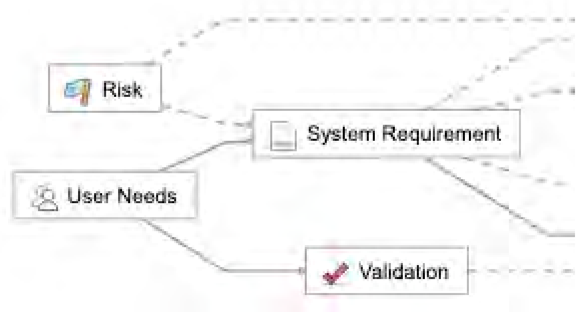
1. Select **Admin > Organization**, then select **Pick lists**.
2. Find the pick list you want and click **Values** in that row.
3. Add a new value or edit an existing value:
   - **New** — Click the **+** icon and enter the value.
   - **Existing** — Select the row and click the pencil icon.
4. Click **Save**.
5. (Optional) Use the arrow keys in the header to move the field into the order you want on the form.

Managing relationship rules

Relationships are an important part of ensuring compliance and quality. Many industries base their processes around the V-Model and need relationships to enforce the traceability through the stages.

Creating the correct relationships can be challenging for users, so Jama Connect gives admins the ability to configure rules that help guide users in making the correct connections.

In the previous process example for a medical device, the item type **User Need** can have two downstream relationships, **System Requirement** and **Validation**.



To configure these relationships, you use the **Relationships** option from the left panel.

Upstream		Downstream	Relationship Type	For Coverage
Architecture	→	Checklist	Related to	Yes
Automotive Cause	→	Automotive Subsystem Requirement	Satisfied By	Yes
High Level Requirement	→	Attachment	Derived from	Yes
Analysis Item	→	Automotive Failure Mode	Assimilated by	Yes
User Needs	→	System Requirement	Derived from	No
User Needs	→	Validation	Validated By	Yes

Upstream refers to the higher-level item type that is affected by the lower level (*downstream*) item, often through an activity like testing or decomposition.

Add a new relationship rule

Creating a relationship establishes a directional link between two items.

1. Select **Admin > Organization**, then select **Relationships**.
2. Find the relationship ruleset you want.
3. Scroll to the bottom of the list of rules and select **Add relationship**.
4. Configure the relationships:
   a. Select the **Upstream Type**.
   b. Select the **Downstream Type**.
      Relationship types describe why the relationship between the two items exists. View the pick list above the rulesets on the Relationships page.
   c. Click **Yes** or **No** to configure if the relationship is used for coverage.
      If you select **For Coverage**, Jama Connect notifies users if this relationship doesn't exist.
   d. Click **Save**.

Managing workflow

Workflow is an important part of ensuring compliance and quality.

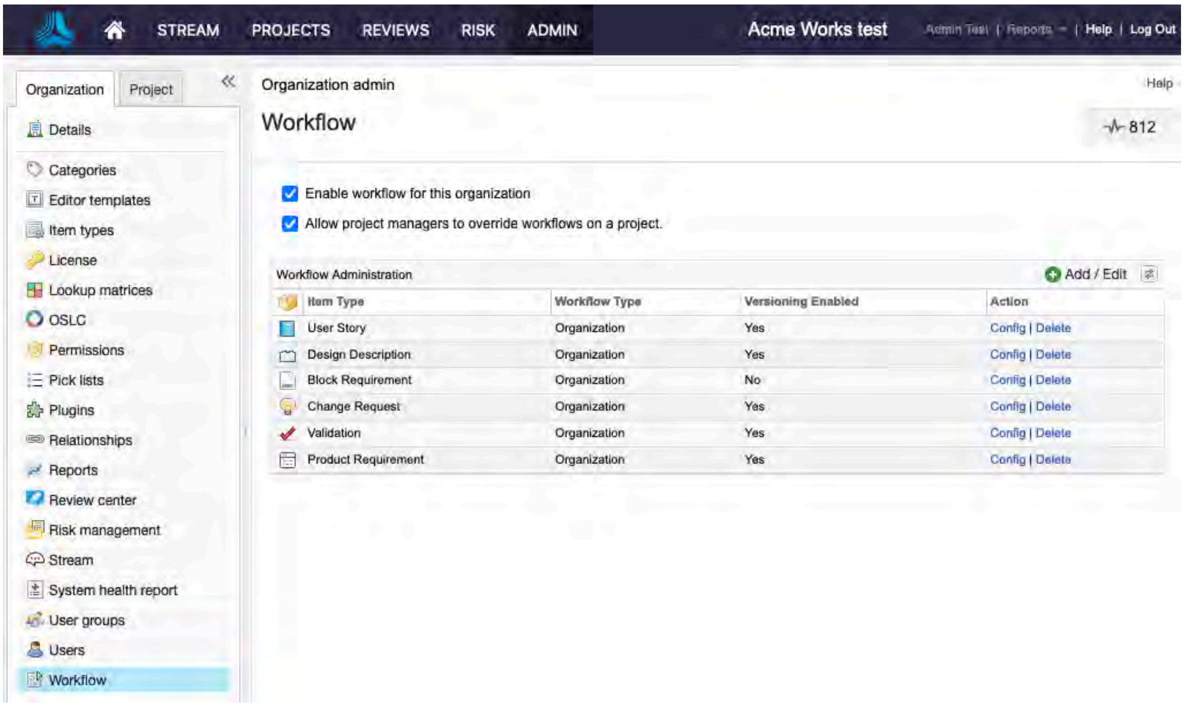
Workflow in Jama Connect is highly configurable. In general, workflow is set up on an item type with a pick list of available statuses. This process guides a user though specific steps, making sure that only users with correct permissions can make the workflow transitions (using the Transition Permissions features), then locks items from further updates when needed.

For example, when an item is moved from **Draft** to **Approved**, it is locked so no changes can be made while it is in the **Approved** state.

Add a new transition to a workflow

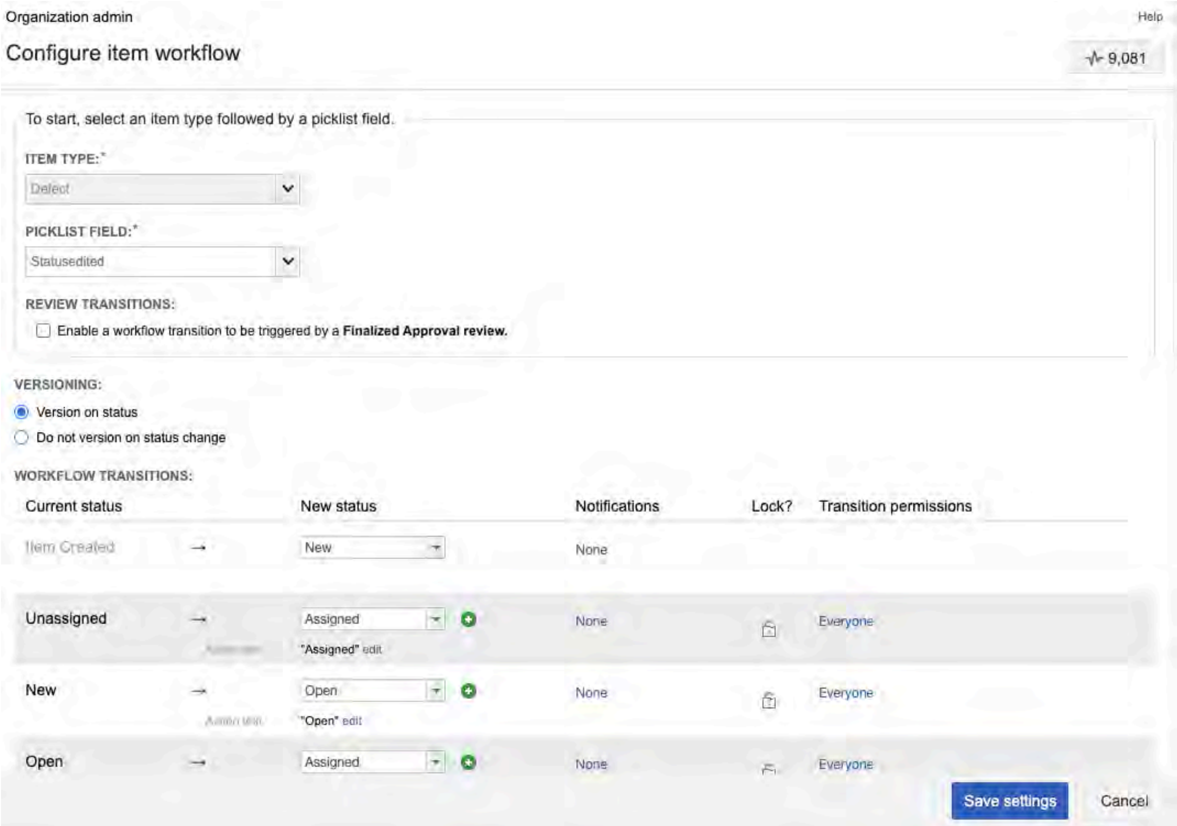
The best way to understand workflows is to start with a workflow that's included in your collection of data.

1. Select **Admin > Organization**, then select **Workflow**.



2. Find the item type you want and click **Config** in that row.
3. In the Workflow Configuration section, use the item type and picklist field options to set up and manage the transitions between status types.

The Current Status column shows all values for the selected picklist field; the New Status column is the option you want for the transition from that state. For example, a requirement that is a Draft can be Approved or Rejected.



4. *(Optional)* To add a transition state, click **+** and configure:
   - If users are notified of the change
   - If the item is locked when it transitions to the new state
   - Any restrictions on who can make the update
5. *(Optional)* Click **-** to remove a transition state.
6. Click **Save settings**.

REST API and extensibility

Jama Connect offers a powerful REST API that allows your team to integrate and extend the capabilities of Jama Connect.

Typical use cases include:

- Integrating test results from automated test scripts
- Extracting specific data for analysis in Business Intelligence tools
- Automating manual batch tasks

You can see REST API swagger documentation at **<your Jama URL>/api-docs/**

Interested in learning how to work with the Jama Connect REST API? The following resources can help you get started.

- **API Cookbook** provides recipes for users and partners creating integrations using the Jama Connect REST API: https://dev.jamasoftware.com/cookbook/
- **Jama Connect REST API documentation** provides information about the specifics of our API: https://rest.jamasoftware.com/

REST API terms

ID	Description
Project ID	Project IDs are unique to Jama Connect. Your administrator sets the default project and set keys. Example: <project key> - <set key> # <SBX-REQ-1 or SBX-TEST-3>
Global ID	Global IDs reference where a requirement or test was reused globally across Jama Connect projects. The Global ID isn't unique because several copies of an item might be connected that share the same Global ID. Example: GID-1234
API ID	API IDs are the database identifier for an item and is used by developers when interacting with Jama Connect from the REST API. In List View, you can locate the API ID as a column or in the browser URL for the item you're viewing. Example: 21374

Where to find the API ID

Find **Project** API ID in the URL:

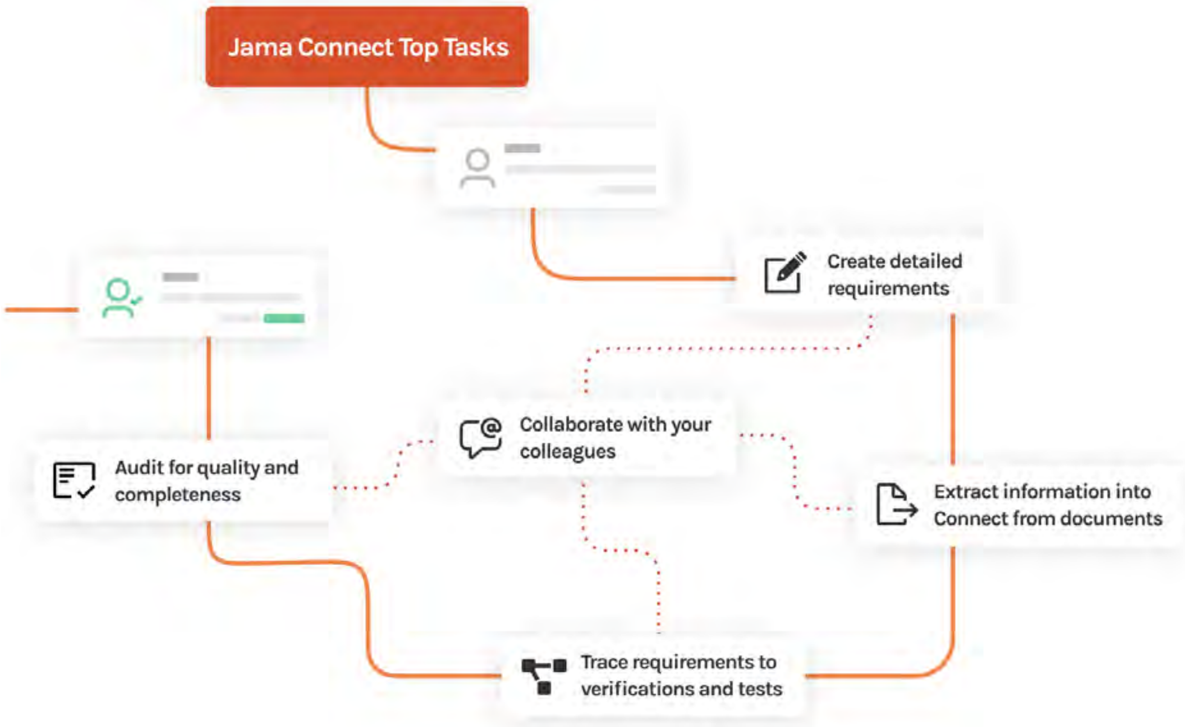
Find **Filter** API ID, navigate to the filter in Jama Connect, and look at the URL:

Find **Item** API IDs:

Find API IDs in List View:

Jama Connect top tasks

Want to learn more about the Jama Connect tasks that are of highest interest to our users? Based on research and feedback, we created a table with links to these top areas. A *top task* is a frequently used feature.



Top task	Helpful links
Create detailed requirements	Add an item [66] Create new items
Trace requirements	Traceability from requirements to test [15] Jama Connect for modern requirements management
Extract information from documents into Jama Connect	Import items [94] Import from Microsoft Word [95] Import from Microsoft Excel [104] Import from IBM DOORS [121]
Audit for quality and completeness	Item-based product development [14] Export test cases to Microsoft Excel [346] Test [337] Advanced filters [135] Dashboard [377]
Collaborate with your colleagues	Collaborating with your team [216] Reviews in Jama Connect [155] Staying connected with the Stream [224] Electronic signatures [245] Roles for review workflow [155]

Videos and top resources

These videos can help you get acquainted with Jama Connect and access additional information and resources.

- Get started with Jama Connect
- Jama Connect Basics
- Jama Community Top Resources

Setting up your work environment

You can change the settings for your profile and workspace to suit your needs and your project work.

My Profile window

- Add a photo
- Add contact information
- Change your password
- Control subscriptions (email notifications)
- Manage settings for reviews

Workspace

- Customize the Explorer Tree
- View content
- Configure fields

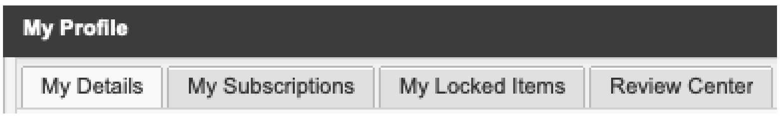
Managing your profile

Your profile window is where you change your password and user details, view locked items, and manage your review subscriptions.

To open the My Profile window, select your name in header.

Your profile window includes a row of tabs and a row of options and commands.

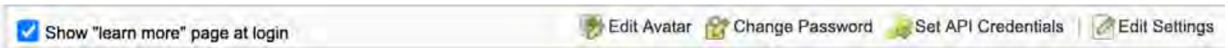
Tabs



Select this...	To..
My Details	Change your name, username, contact information, or license type.
My Subscriptions	Configure your notifications and item subscriptions [41].
My Locked Items	View your locked items [43].

Select this...	To..
Review Center	Configure your review subscriptions [42].

Options and commands



Select...	To...
Show "learn more" page at login	Enable the resources page to be displayed when you log in.
Edit Avatar	Replace the photo that is displayed for your user account.
Change Password	Reset your password [40] (if not using SSO).
Set API Credentials	Create credentials for API [40].
Edit Settings	Change the details of your user account.

Reset your password

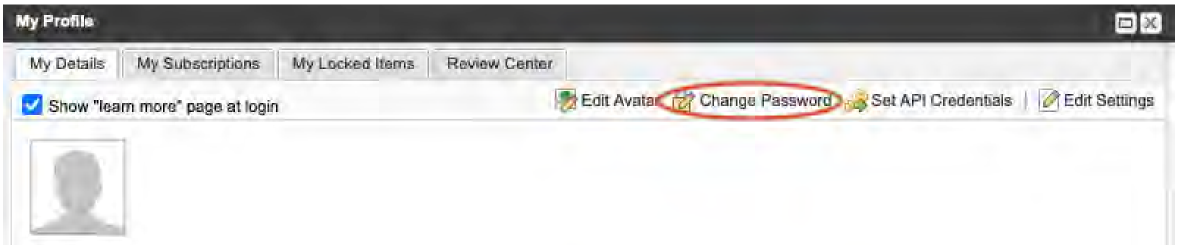
You can change your password from the My Profile window or from the login screen.

An organization or system admin can also reset user passwords [585].

NOTE

This feature is disabled if your organization uses LDAP or Crowd authentication.

1. Select your name in the header to open the My Profile window.
2. Select **Change Password** at the top of the window.



3. Enter and confirm your new password. To display tips about required characters, hover over the center of the window.
4. Click **Close**.

Set API credentials

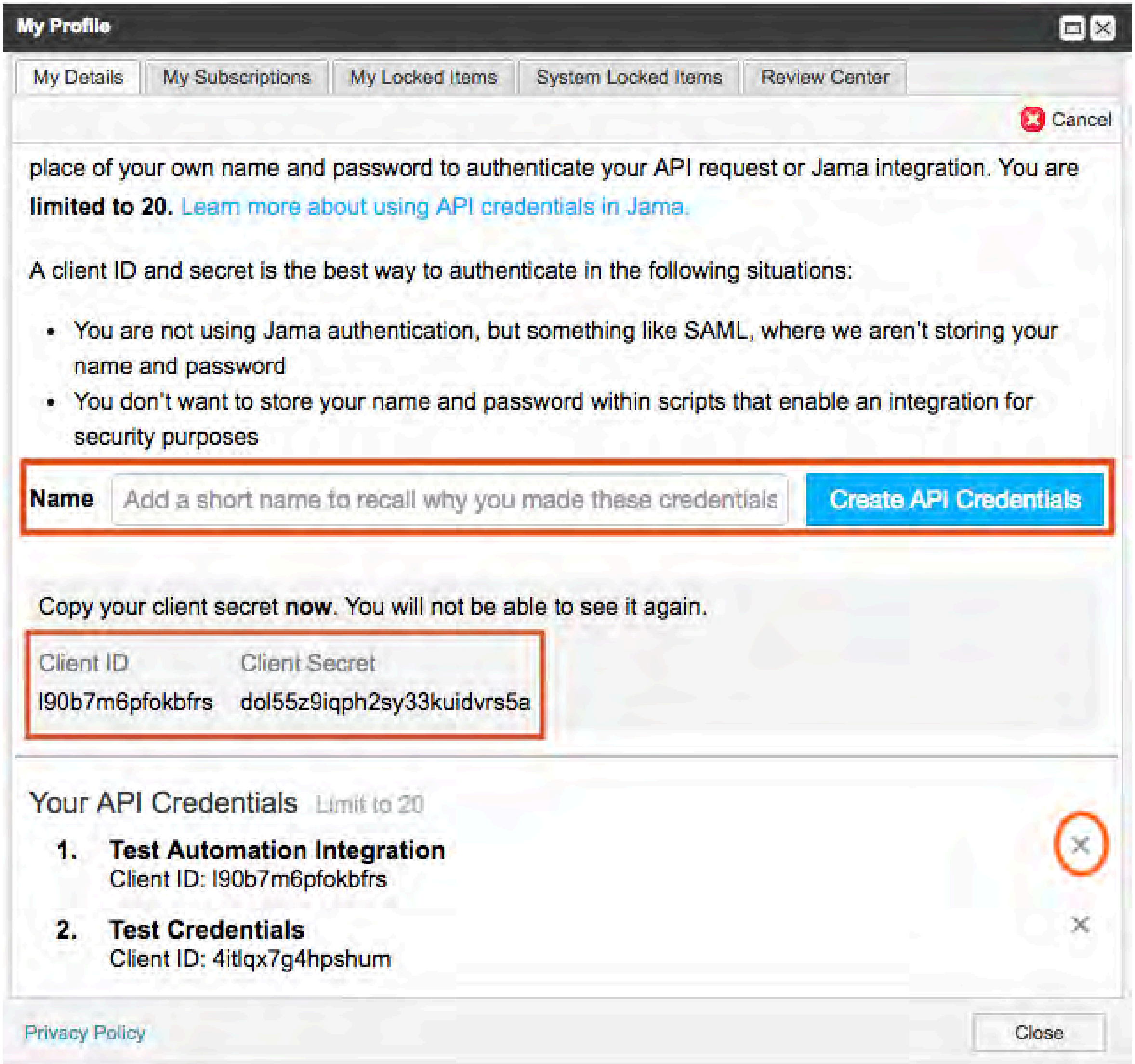
To integrate applications and scripts through the Jama Connect REST API [481], you must first generate API credentials. We currently use OAuth 2.0 authentication to generate pairs of client IDs and secrets.

Important considerations

- To use the API in a self-hosted environment, you need basic authentication for scripts and integrations.
- API credentials are only used for safe authentication. User access and privileges set by your Jama Connect admin are still enforced.
- For full instructions about using API credentials, see the developer notes on authentication.
- You can maintain a maximum of 20 API credentials. Remove any you don't need.

To set your API credentials:

1. Select your name in the header to open the My Profile window.
2. Select **Set API Credentials** at the top of the window.
3. Add a required name for this set of credentials with an optional description that helps you identify its use, such as Test Automation Integration.
4. Click **Create API Credentials**. Jama Connect generates a new Client ID and Client Secret pair.



5. Copy the Client ID and Client Secret into Jama Connect. The Client Secret is only visible after you click **Create API Credentials**. If you skip this step, you must recreate the Client Secret.
6. (Optional) Remove any credentials you don't need by clicking the **X** next to the name.
7. Click **Close**.

Your API credentials are now available for you to use.

Configure email notifications and subscriptions

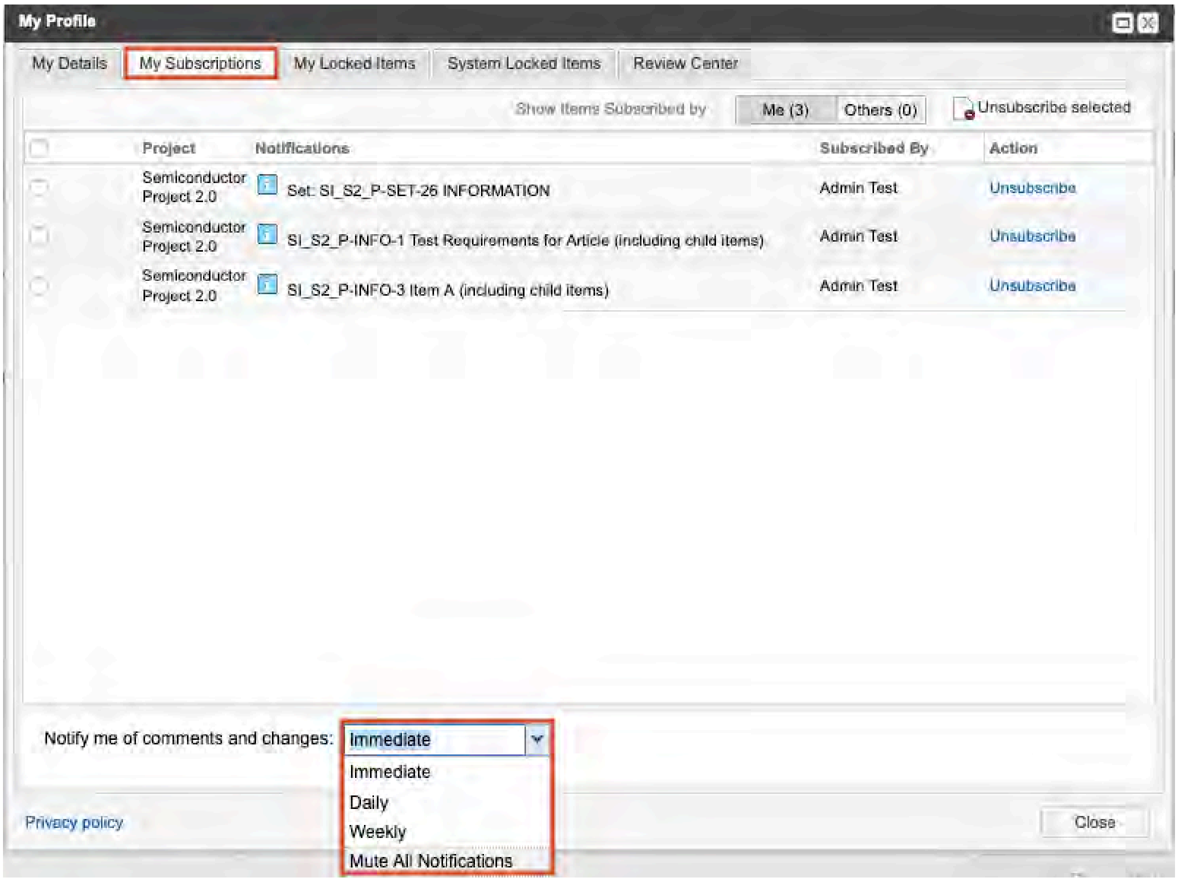
To stay up to date on changes, you can subscribe to email notifications [216]. First though, you must configure your profile to be able to receive these notifications.

If you have notifications that others subscribed you to, you can't unsubscribe, but you can mute them if your organization admin has enabled this functionality.

1. Select your name in the header to open the My Profile window.

2. Select **My Subscriptions**, then select the subscriptions you want to see:
   - **Me** — Subscriptions you created
   - **Others** — Subscriptions created for you by others

3. Define how often you want to receive notifications using the drop-down menu at the bottom of the window.
   The system automatically checks for new notifications every 5 minutes.
   - **Immediate** — Receive an email as soon as the activity occurs.
   - **Daily** — Receive a batch of notifications in one email per day.
   - **Weekly** — Receive a batch of notifications in one email per week.
   - **Mute All Notifications** — Silence all item subscription emails.



NOTE

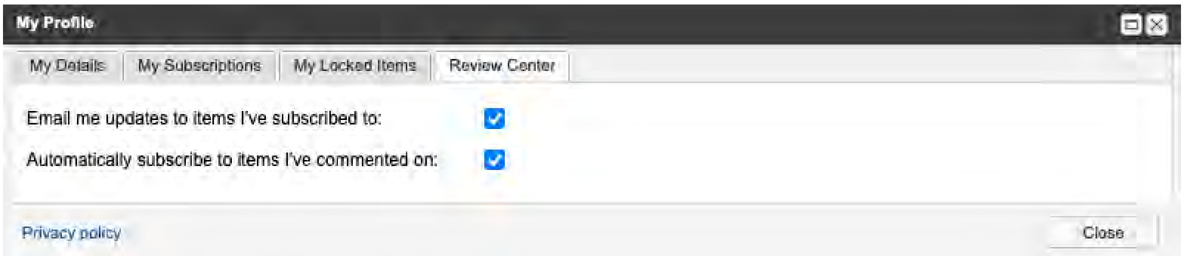
Muting notifications affects only email concerning your item subscriptions.

4. Click **Close**.

Configure your review settings

To keep up to date with review comments, you can subscribe to notifications for that review [200]. First, though, you must configure your profile to be able to receive these notifications.

1. Select your name in the header to open the My Profile window.
2. Select the **Review Center** tab.



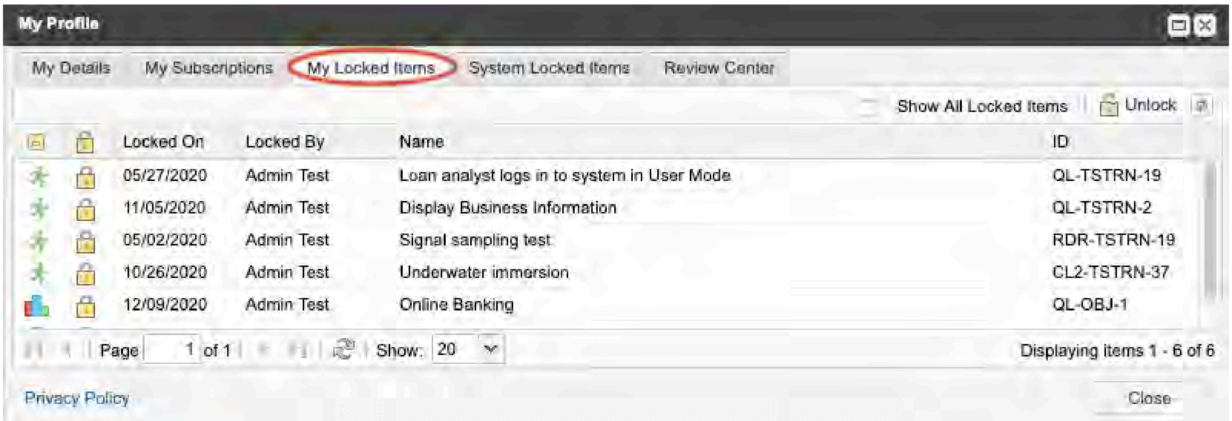
3. Select the options you want for review settings:
   - **Email me updates to items I’ve subscribed to**
   - **Automatically subscribe to items I’ve commented on**
4. Click **Close**.

Using and managing locked items

As a user, you can view your locked items across all projects. You can also unlock any items that you previously locked.

Items that were locked are listed in your profile window under the tab **My Locked Items**.

The list includes the item name and the date the item was locked.



TIP

If an item was locked by another user, you can see who locked it by viewing the item In List View or Single Item View. Hover over the item's **Edit** button.

The tab, **System Locked Items**, and the option, **Show All Locked Items**, are visible only to organization and project admins.

Organization admins and project admins can unlock items that were locked by any user. They can also view system-locked items and unlock them according to their permissions.

Action	Organization admin	Project admin
Unlock items locked by another user [561]	X	Only in projects where they are admins
View and unlock system-locked items [562]	Across all projects	Only in projects where they are admins
Enable category management for locked items [207]	X	

NOTE

Organization and project admins can't use the batch update workflow to unlock system-locked items.

View and unlock items across projects

You can view and unlock all the items you previously locked from your profile window.

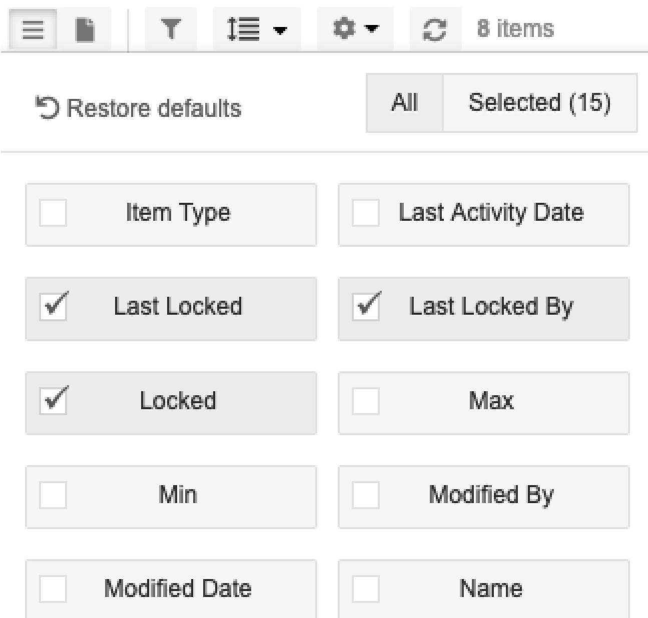
1. Select your name in the header to open the My Profile window.
2. Select the **My Locked Items** tab to view a list of items you locked.

3. Select the item you want to unlock, then click the **Unlock** icon in the top right corner of the window.

NOTE

The option **Show All Locked Items** is only visible to organization admins. Users don't see this option.

4. (Optional) Configure which fields are visible: open the item in List View, click the gear icon, then select **Locked**, **Last Locked By**, and **Last Locked**.

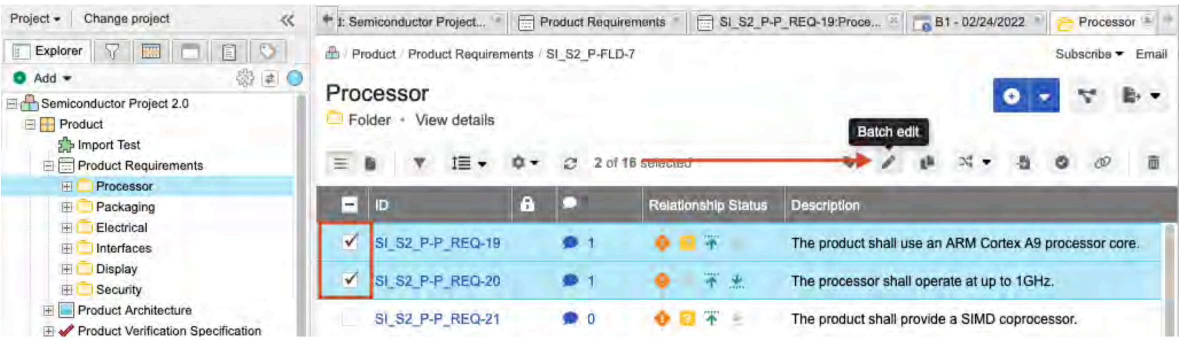


The new columns and results appear in the list of locked items on the My Locked Items tab.

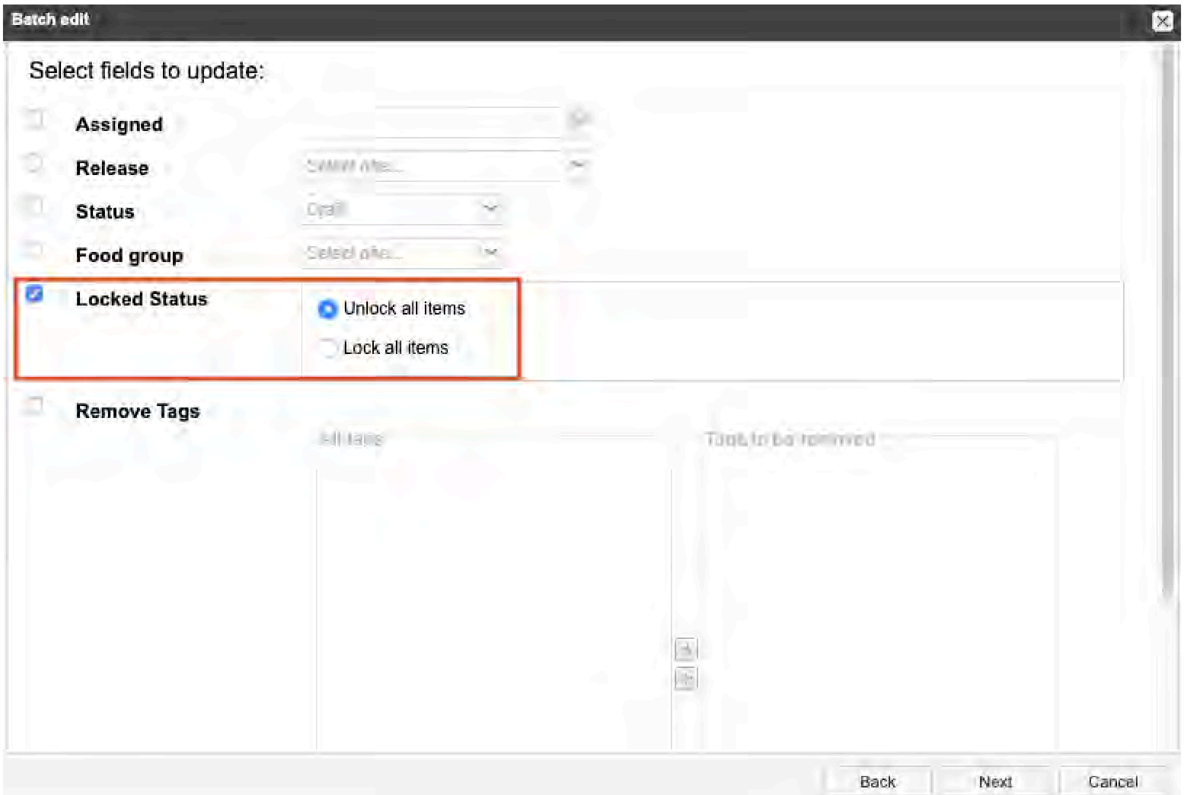
Lock or unlock items in List View

You can view and unlock items you previously locked by viewing them in List View. When you have multiple items to lock or unlock, you can use the batch edit option in List View.

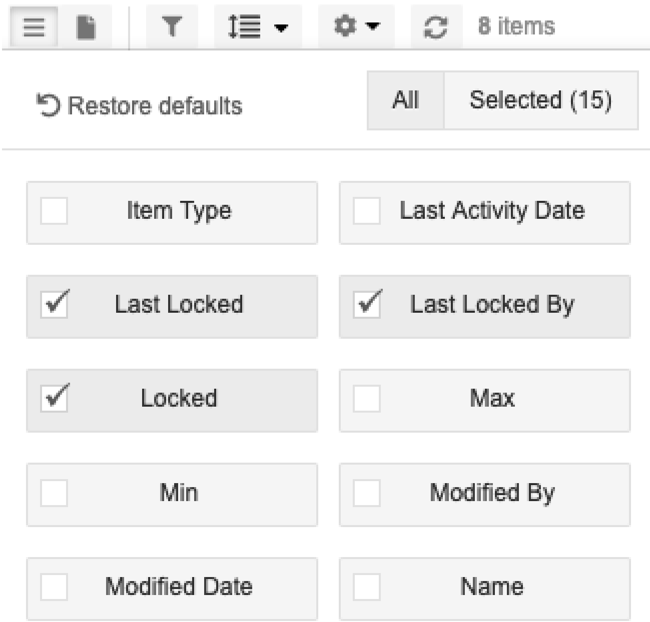
1. In List View, select the items you want to unlock.
2. Click the **Batch edit** icon.



3. In the Batch edit window, enable **Locked Status**, then select an option:
   - **Unlock all items**
   - **Lock all items**



4. Click **Next**, comment and notify users as needed, then click **Commit**.
5. (Optional) Configure which fields are visible: open the item in List View, click the gear icon, then select **Locked**, **Last Locked By**, and **Last Locked**.



The new columns and results appear in the list of locked items on the **My Locked Items** tab.

Adding and deleting bookmarks

Bookmarks are handy links to content that you view frequently and are displayed at the top of your homepage. You can bookmark projects, components, folders, sets, filters, risk analyses, and Trace Views.

Bookmarks always appear at the top of the homepage and are sorted by the page most recently viewed.

To add a bookmark, use one of these methods:

- **Bookmark recently viewed content on the homepage** — When you view a folder, set, component, or project, it appears on your homepage in the Recently viewed list. Select the empty bookmark icon for the content you want to bookmark. The bookmark icon changes to a solid icon and the content appears under the Bookmarks and **Recently viewed** sections.
- **Bookmark Trace Views** — When viewing a Trace View that you want to bookmark, you first save the Trace View [281], then select the bookmark icon at the top of the page. Trace View is now bookmarked on your homepage.
- **Use your browser's bookmarks or favorites feature** — Follow the conventions of your browser to bookmark any view in Jama Connect.

To remove a bookmark:

- On the homepage, select the solid bookmark icon in the bookmarks list. The content you remove appears at the top of the section.

Customizing your workspace

You can change the look and behavior of your workspace to suit how you work.

Explorer Tree

Customize the Explorer Tree to display the information that's most useful to you.

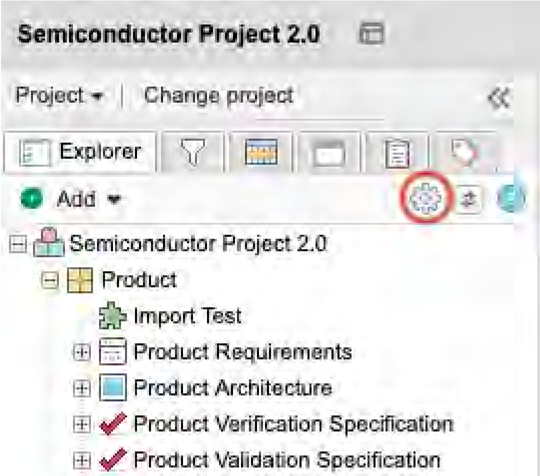
Fields

Configure which fields are visible in List View, Trace View, and Projects Reading View.

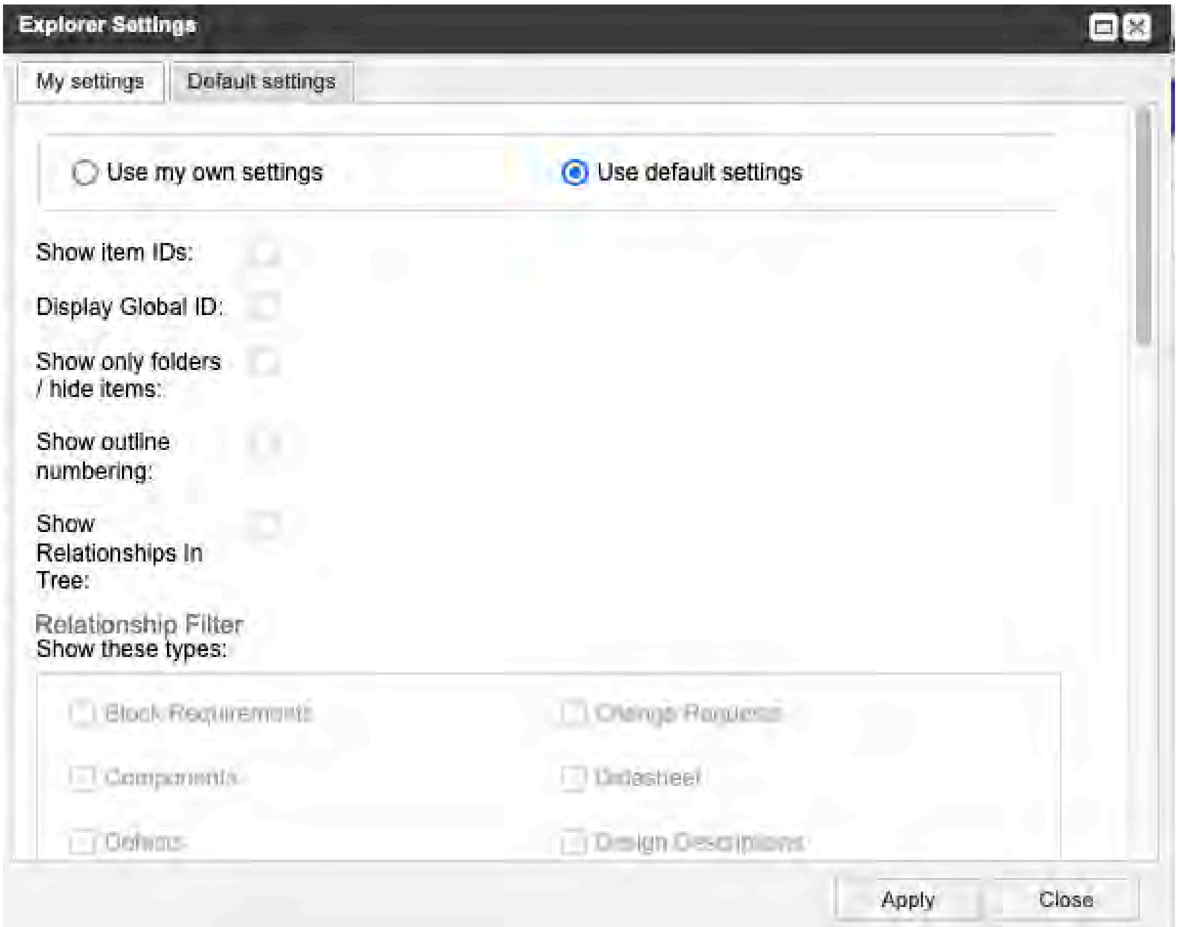
Customize the Explorer Tree

The Explorer Tree organizes the sets, components, folders and items in your project hierarchy. You can configure the Explorer Tree settings so that it displays only information that's useful to you.

1. Select the gear icon at the top of the Explorer Tree to open the Explorer Settings window.

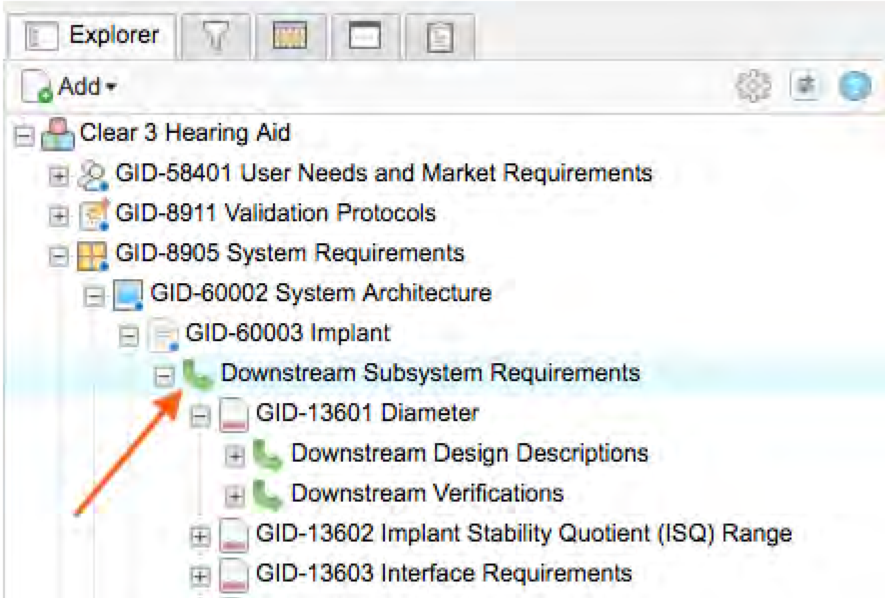


2. In the **My settings** tab, select the changes you want:



- **Use my own settings** — Overrides the default Explorer Tree settings with your personal settings.
- **Use default settings** — Returns the Explorer Tree to the default settings. An organization or project admin can configure default Explorer Tree settings [647].
- **Show item IDs** — Displays the unique ID [648] (as in PROJ-REQ-25) before each item.

- **Display global ID** — Displays the global ID (as in GID-8845) before each item. This can be helpful if the item is copied and synchronized.
- **Show only folders / hide items** — Hides items from view in the Explorer Tree. Components, set, and folders are still displayed. This can improve performance when your project has a large number of items.
- **Show outline numbering** — Displays a number scheme of order and depth in the Explorer Tree. Root level items have numbers like 1, 2, or 3. Child items contain the parent item number as well as its own number, like 1.1, 1.2, or 1.1.5.
- **Show relationships in Explorer Tree** — Displays downstream relationships of items in the Explorer Tree. Select the green downstream arrow to open the related items in List View.



> **IMPORTANT**
> Be careful not to relate an item back to itself, which can create an infinite loop that causes the Explorer Tree to expand.

3. Click **Apply**.
4. When you're satisfied with changes, click **Close**.

Configure fields

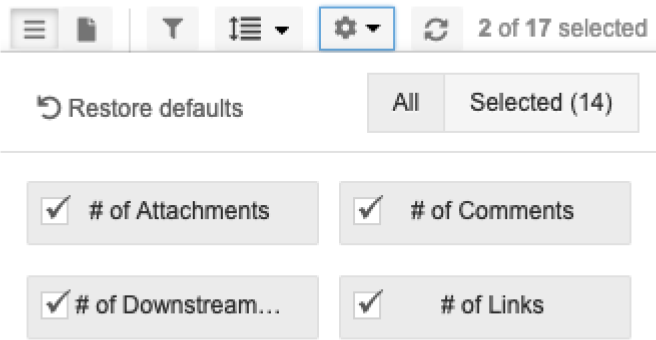
Choose which fields are visible for each item as it appears in Projects Reading View, List View, or Trace View.

Important considerations

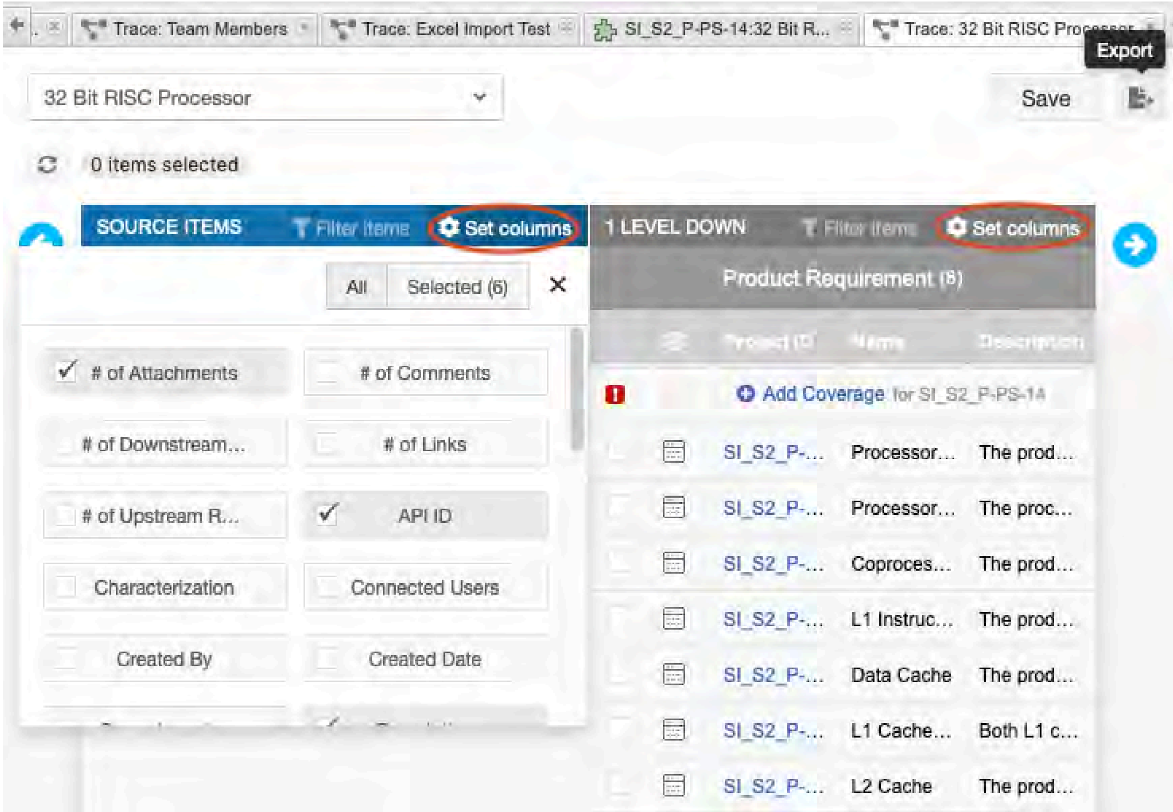
- You can configure your Compare View for synchronized items [317] or your List View for baselines [273].

To configure fields:

1. Click the **gear icon (show/hide fields)** in the toolbar [51].



In Trace View you can configure fields for each level independently.



2. In the drop-down list, select the fields you want to see.

> **NOTE**
> Reading View remembers user selections for a particular location, so they appear across sessions.

3. Click **Close**.

The list that is displayed shows your changes.

Introducing the Jama Connect interface

The Jama Connect interface is where you work with and manage your projects. It is made up of several distinct areas, each with its own purpose.

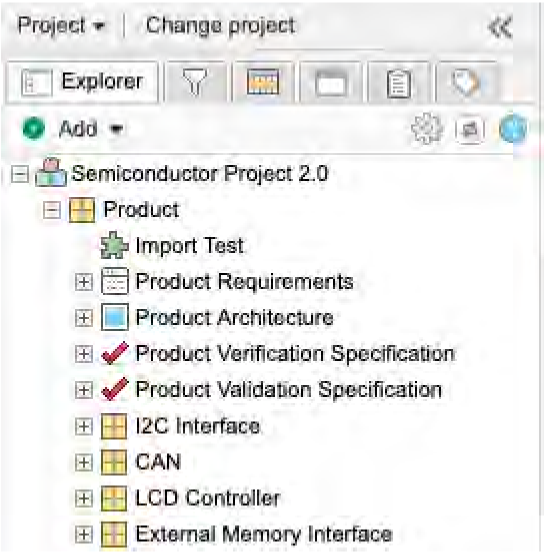
The information in *Get started* introduces you to the interface. This chapter takes a more detailed look with descriptions of toolbars and panes in the interface. It also includes instructions for customizing the Explorer Tree and configuring how you view your projects.

Explorer Tree

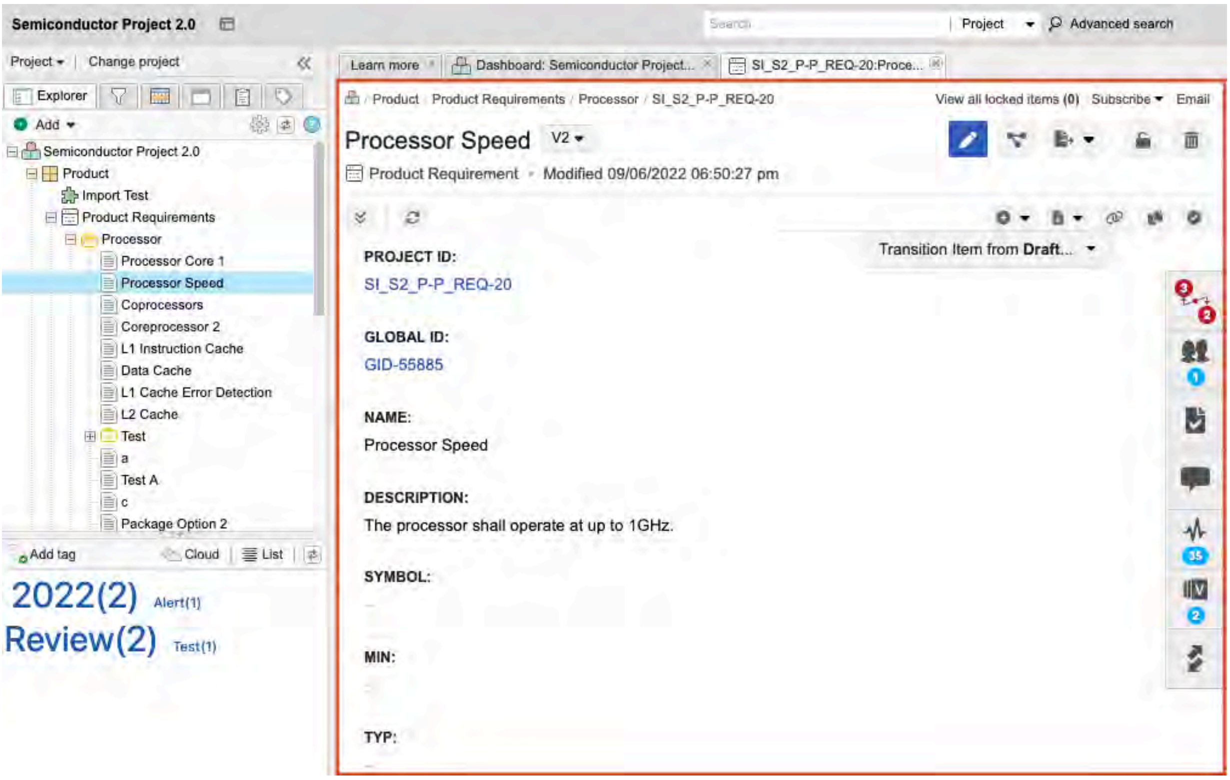
The Explorer Tree organizes the sets, components, folders, and items in your project hierarchy. You can configure the Explorer Tree settings so that it displays only information that's useful to you.

How it works

You can drag and drop items between the Explorer Tree and List View [53] to move items [79] and organize your project. You can also configure settings [47] so that the Explorer Tree displays information that's most useful to you.



Jama Connect arranges content by component, set, and folder. Select one to view its content.



For more information about how to use the Explorer Tree:

- Find an item in the Explorer Tree [145]
- Filter the Explorer Tree [140]
- Move items in the Explorer Tree [79]

Tips and more

- When working with a large number of items — more than 250 items per folder — work with them in List View instead of the Explorer Tree.
- To move multiple items, you can multi-select in the List View and drag them to their new location in the Explorer Tree.

Tools for viewing and controlling content

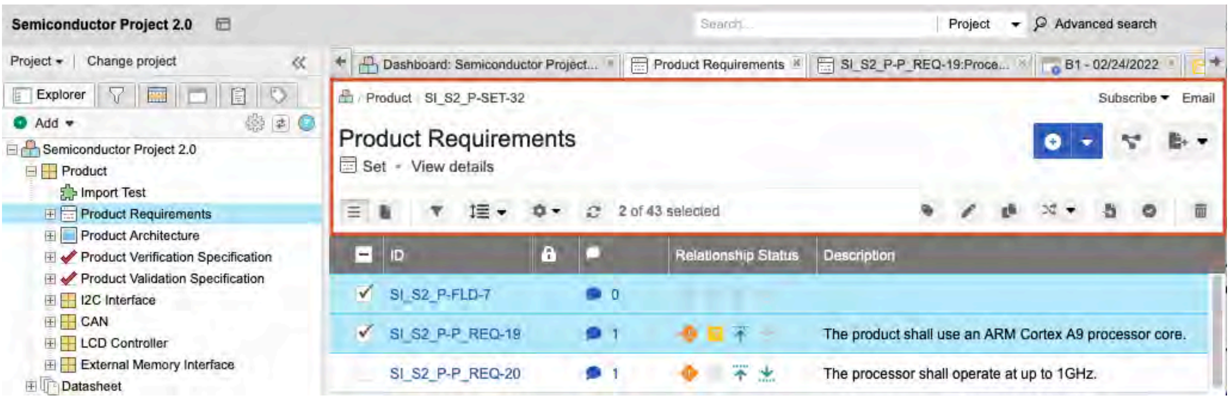
With Jama Connect, you can look at and control your content according to the type of work you need to do.

- Toolbar [51] — Provides different methods to control and view your content.
- List View [53] — Shows data from multiple items in a table with a different field in each column.
- Reading View [54] — Shows text and images for a group of items so you can read through selected items like a document.
- Trace View [55] — Shows related upstream and downstream items, missing relationships, and item details in context of their relationship.

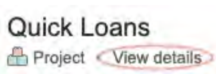
You can also customize fields [48] that control how you view your projects.

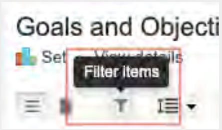
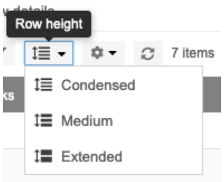
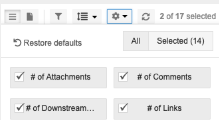
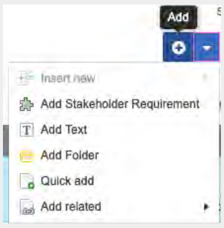
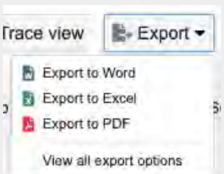
Toolbar

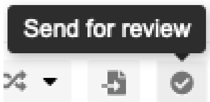
The toolbar is located in the center of the workspace. The tools allow you ways to control and view your content.



Toolbar options vary slightly depending on your location in the application.

Select...	To...
View details 	See the details of a component, set, folder, or a project overview.
List View 	Show data from multiple items in a table with a different field in each column. You can sort, select, and compare items at a glance. For more information, see List View [53].
Reading View 	Show text and images for a group of items, which allows you to read through selected items like a document. For more information, see Reading View [54].

Select...	To...
Filter items 	Open the filter panel and filter the items you want to see. A filter limits the group of items or comments by content, like author, keyword, date, or coverage.
Row height 	In List View, manually adjust the height of the rows. If you select **Extended**, rows are formatted to wrap text.
Gear icon (show/hide fields) 	Configure which fields appear for each item in Reading View, List View, or Trace View. For more information, see Configure fields [48].
Refresh 	Refresh the list of results and recent changes from other users.
Add 	Add items, folders, sets, and components.
Trace View 	Show related upstream and downstream items, missing relationships, and item details in context of their relationship. For more information, see Trace View [55].
Export 	Export your data to Word, Excel, PDF, or use one of the Office Templates.
Batch edit 	Update picklist fields and tags for multiple items at a time.
Reuse 	Reuse [300] when your projects contain items that are the same or similar.

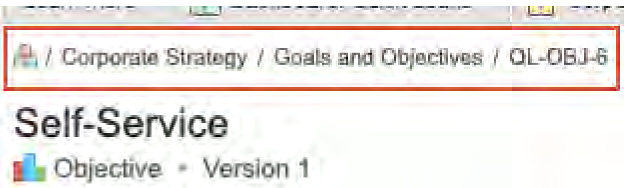
Select...	To...
Convert to 	Change an existing item or items from one type to another.
Batch transition 	Select multiple items of the same item type and transition them to a different workflow status.
Send for review 	Send specific items for review. **Note**: The maximum number of items you can **Send for review** is 500.
Relate to existing 	Relate two existing items of the same item type.

List View

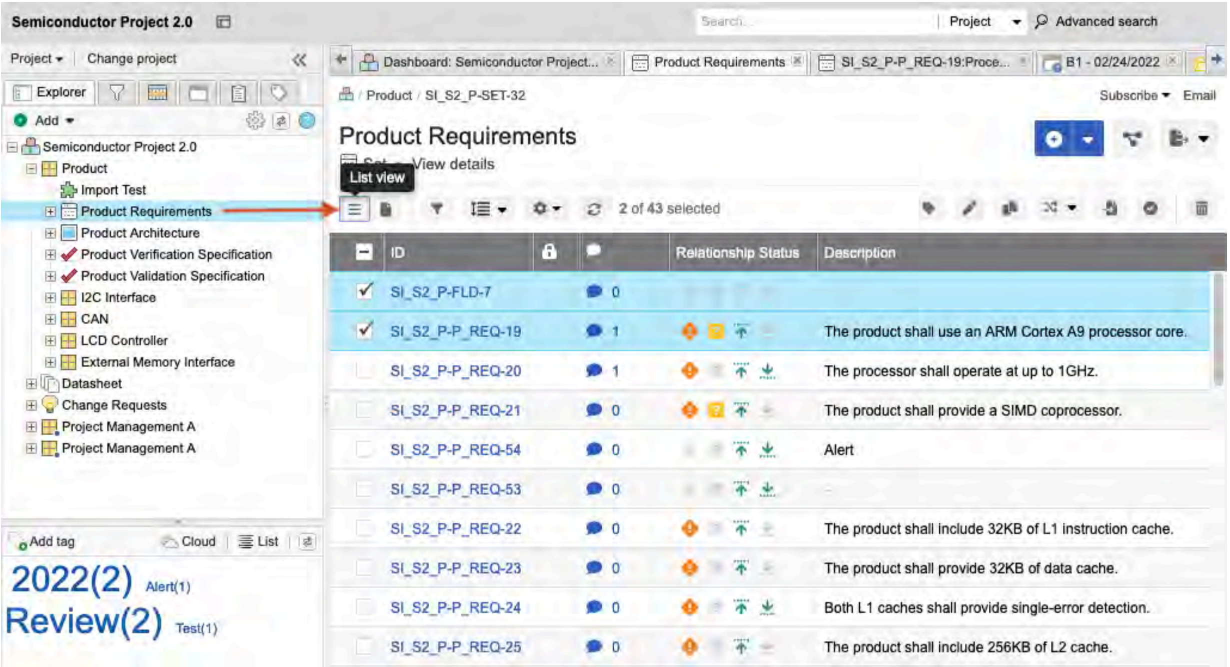
In List View, you can configure which fields appear as table columns. The table is dynamic — you can sort, select, drag and drop, and reorder columns.

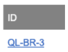
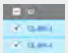
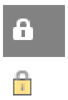
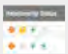
Tips and more

- To reorganize columns, select the column header and drag it to the new location.
- To choose which fields you see in the table, you can configure fields [48].
- Use the interactive links (breadcrumb navigation) to find your way around and view the location of your project hierarchy.



- To sort items, select the column header.

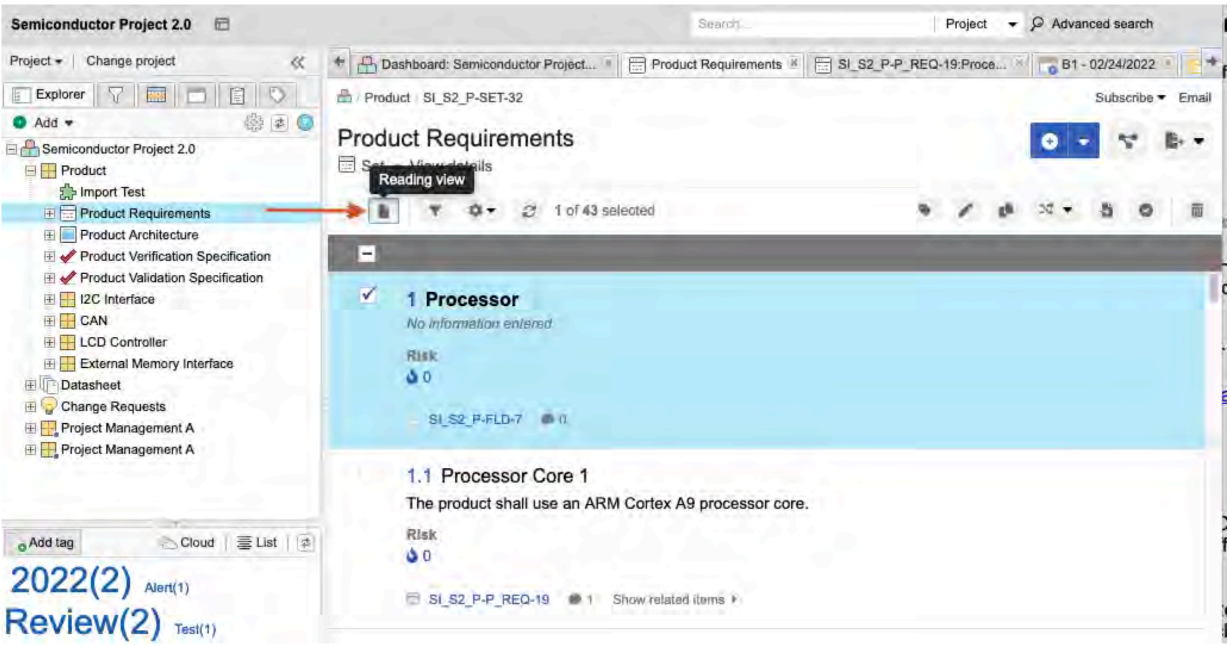


	View information about an item.
	Move [79] items in a project.
	View locked items [43].
	View how many relationships an item has, as well as whether those relationships meet the project's relationship rules. For more information, see Relationship Status Indicator [285].
	View and add comments [231].
	View and add connected users [245].
	View related items (the relationship between two items). For more information, see Add a relationship from Single Item View [286].

Reading View

Reading View shows text and images for a group of items so you can read through selected items like a document.

You can use Reading View in both Projects and Reviews. Click **Reading View** on the toolbar at the top of the center panel.

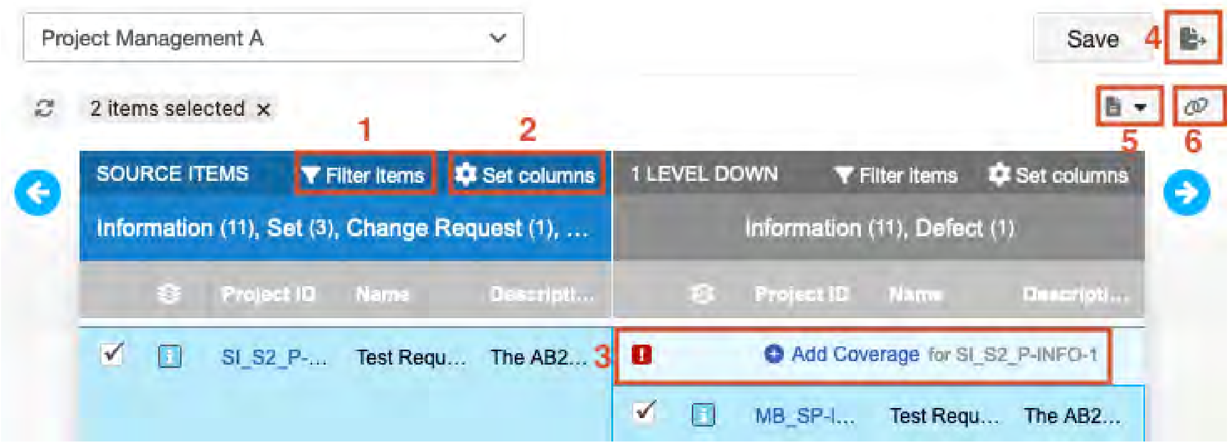


From **Projects > Reading View** you can:

- View images
- Select individual or multiple items
- Open items
- View hierarchy with numbering
- Drag items to the Explorer Tree to reorder (as long as item type allows it)
- Add comments and view connected users
- Configure fields [48]
- View related items
- Export hierarchical content from an advanced filter [141]

Trace View

Trace View shows related upstream and downstream items. It also shows item details in context of their relationship, as well as any missing coverage (downstream relationship).



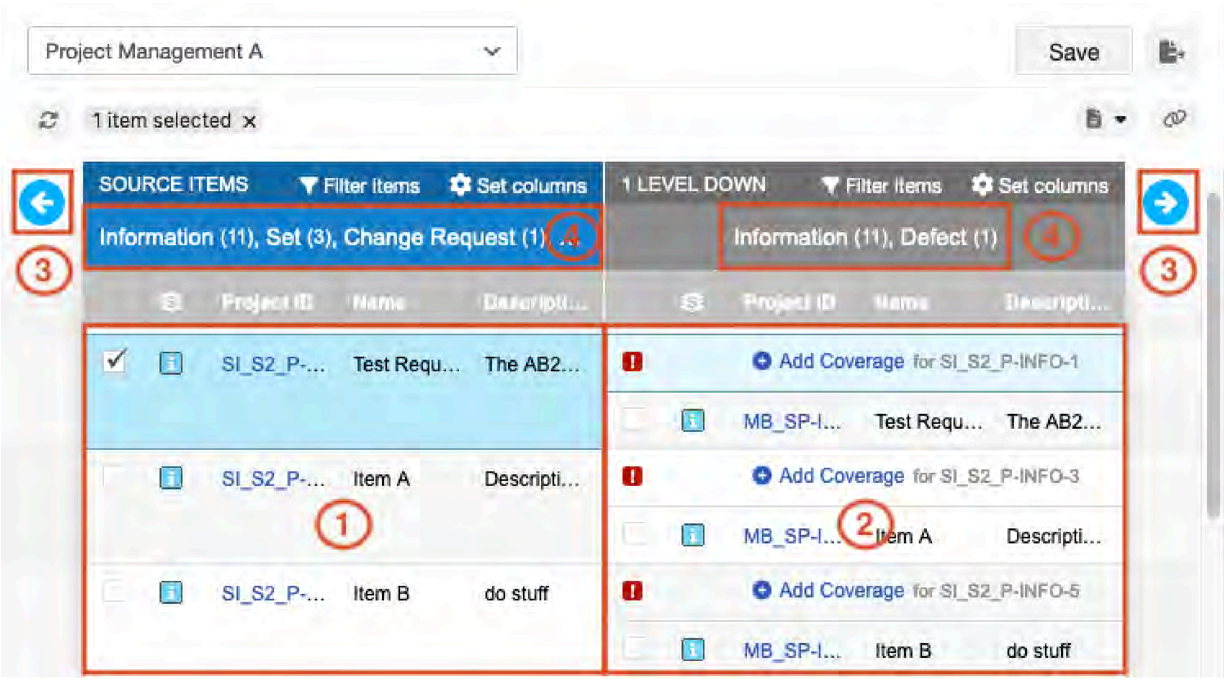
1. Filter item types in Trace View [283].
2. Configure each level to display or hide fields [48].
3. Find any gaps in coverage.
4. Export the content [282].

5. Add related items directly from this view with the Add menu option in the toolbar.
6. Establish relationships between existing items.

You can also display fields for various item types. For example, you can display the Test Case Status for verification and verification testing. If a test case item is visible in Trace View, you can navigate downstream to see any test runs generated from the test cases.

Understanding the Trace View interface

In the Source section, Trace View displays the items that were visible in the List View, Reading View, or Single Item View from the time the Trace View was initiated.



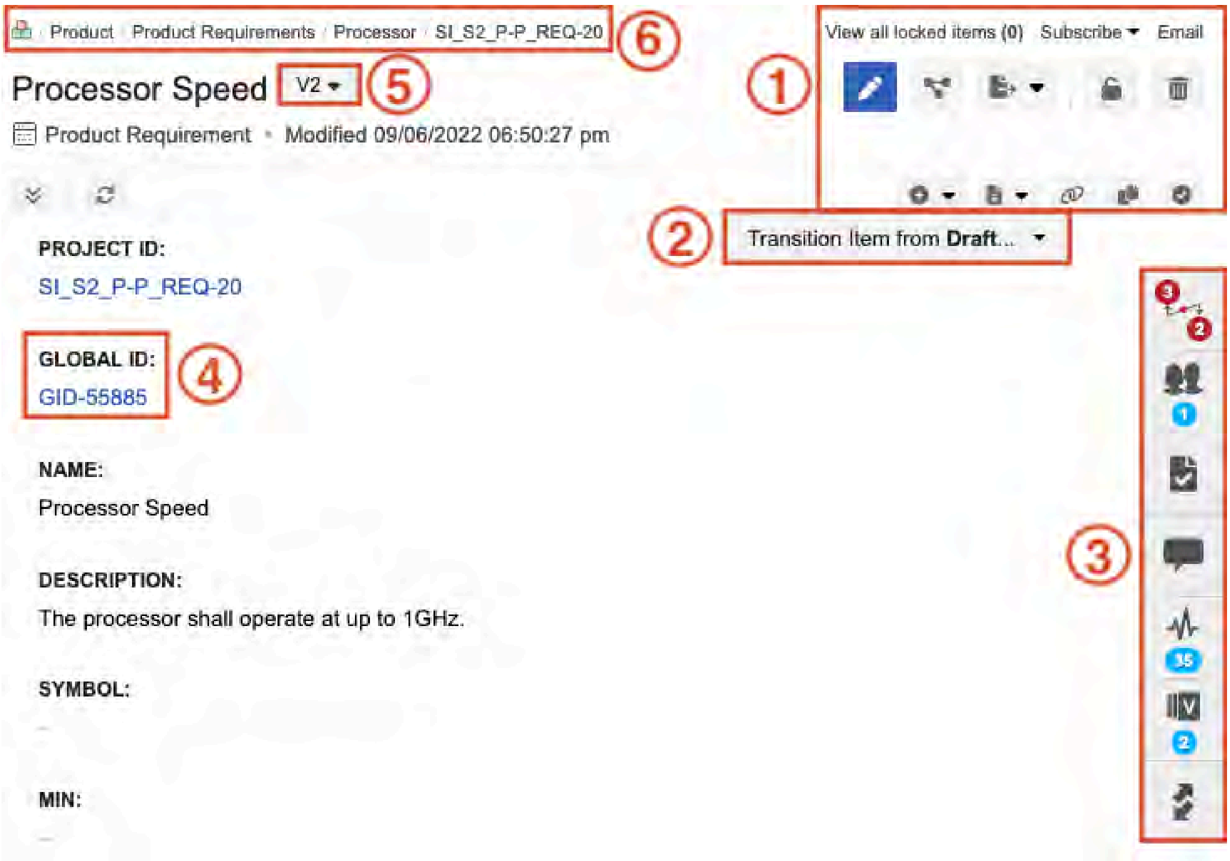
1. The source.
2. Direct downstream items.
3. Blue arrows = Travel upstream (right arrow) or downstream (left arrow).
4. Top of each level column = Number of item types on the entire level.

> **NOTE**
>
> The item count is a unique count. If the same item is downstream of multiple items in the source column, it appears multiple times in the "1 level down" column, but it's counted only once.

Single Item View

In Single Item View, you can view specific details about an item. For example, an item's ID, Name, Description, and Status. This view always shows all the fields the item type is configured to include by your admin.

You can also edit the item [70] and use widgets [677] to access different areas of Jama Connect.

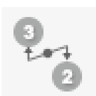
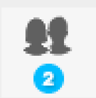


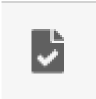
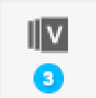
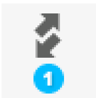
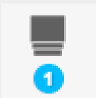
Here's a high-level overview of some of the features Single Item View offers:

1. Top right toolbar [51]
2. Projects workflow [218]
3. Side toolbar [57]
4. Global ID [298]
5. View previous versions of an item [254]
6. Breadcrumb navigation (formerly called "Find me") helps you find your way around and indicates the location in your project hierarchy.

Side toolbar

The side toolbar appears on the right side in Single Item View. The widgets give you access to different features of Jama Connect. Widgets can be configured by an organization administrator configured by an organization admin [599].

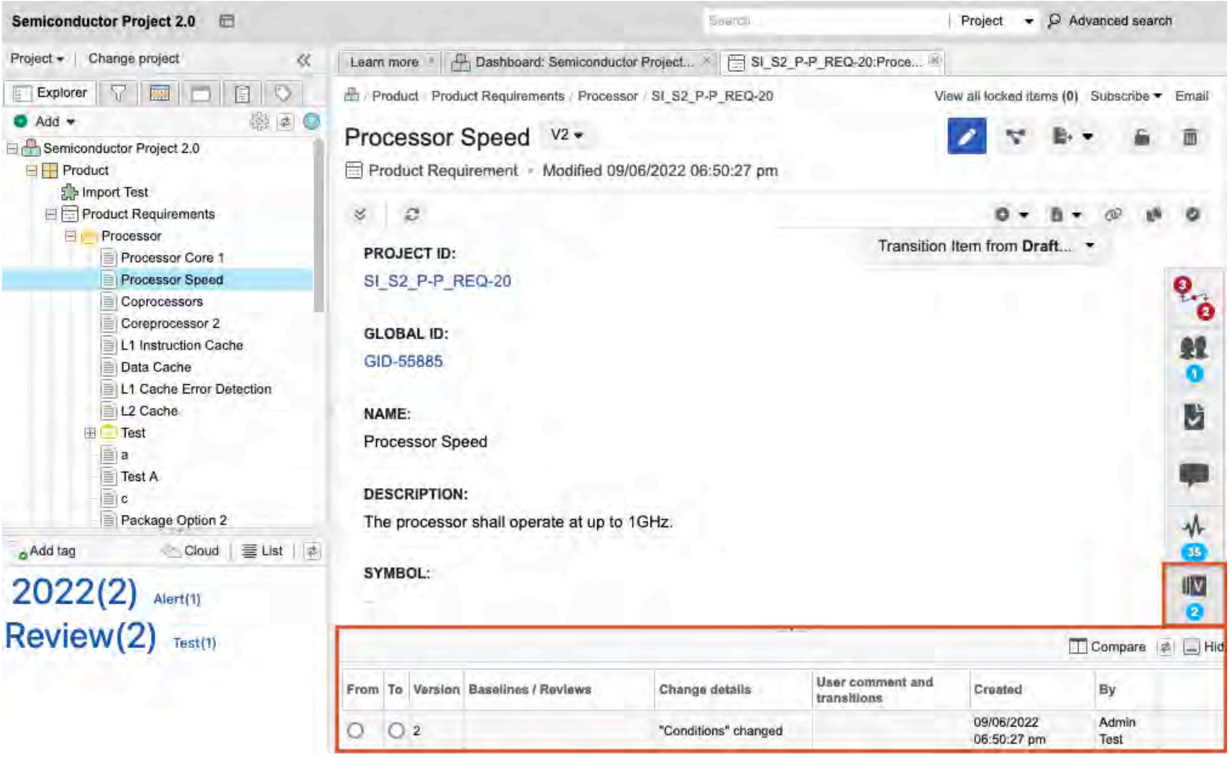
Select...	To...
Relationship Status Indicator 	Open the bottom panel where you can see the required relationships for this item and whether the item follows the project's relationship rules. Suspect relationships [293] are also flagged.
Connected users 	Open a window that displays the users directly associated with the item as well as indirectly associated with related or traced items. The number displayed is the number of connected users.

Select...	To...
Review comments 	Open and close the bottom panel of review comments [184] related to this item. The number displayed is the total number of comments for this item.
Comments 	Open and close the bottom panel of comments [231] related to this item. The number displayed is the total number of comments for this item.
Activities 	Open and close the bottom panel display of activities [230] related to this item.
Versions 	Open and close the bottom panel of item versions [251]. The number displayed is the total number of versions for this item.
Synchronized items 	Open and close the bottom panel of synchronized items [310].
Child items 	Open and close the bottom panel with a list view of child items [69]. Appears only if the selected items has child items.
Items to be changed 	Open and close the bottom panel with a list of change requests [256] that might affect this item.

Compare View

Compare View shows side-by-side content so you can compare differences between different item versions.

To open compare view, select the **Version** widget in the side toolbar.



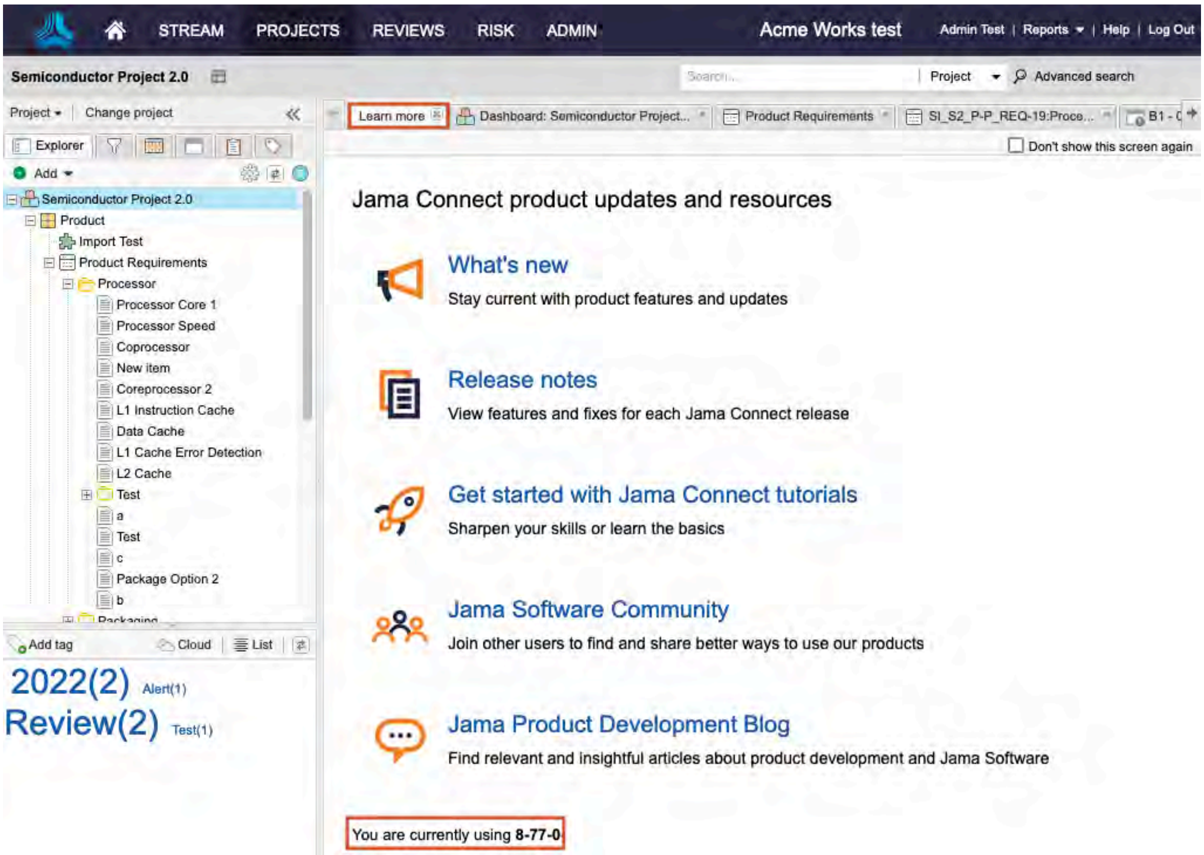
Compare View is used in these areas of Jama Connect:

- Compare versions of reviews [194]
- Compare synchronized items [313]
- Compare item versions [253]

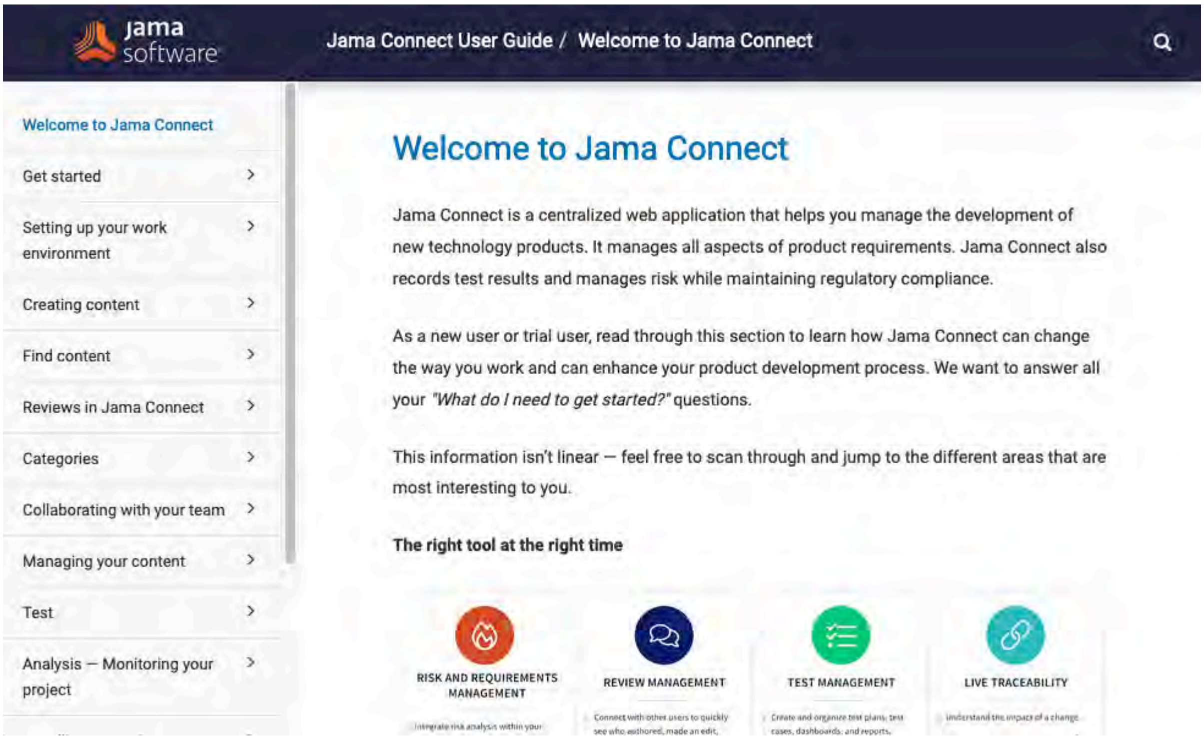
Learn more

You can access information about Jama Connect with these features.

- Select **Projects > Learn more** to see a list of resources about Jama Connect.



- You can see which version of Jama Connect you're using at the bottom of the page or from the login page if you're using the default authentication.
- Click **Help** in the top right corner to open the *Jama Connect User Guide* in a new tab.



- View a glossary [679] of Jama Connect terms in the User Guide.

Creating content

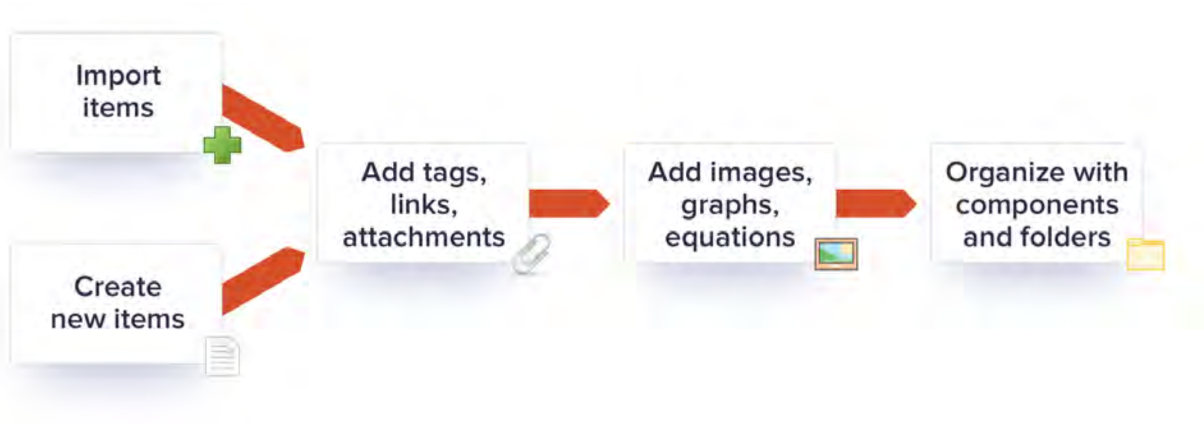
Content in Jama Connect is structured using an *item-based approach* rather than a document-based approach. Items are the major building blocks for your content and Jama Connect includes several item types.

Item type: Containers		
	Components	• Structural container • Organize projects into manageable pieces
	Sets	• Structural container • Access rights can be configured • Items of the same type can be grouped • Contain folders, test items, child items
	Folders	• Structural container • Organize items • Manage hierarchy in the Explorer Tree • Contain text items or items of the same type
Item type: Items		
	Item	• Individual building block of a project • Comprised of customizable fields

Organizations typically create items as requirements, features, use cases, test cases, defects, or other information types that define the scope of a project or product.

To create content in Jama Connect, you can import existing content from another platform, or you can author directly in the application.

A typical process for creating content might include these tasks:



TIP

Before populating Jama Connect with your data, discuss with others in your organization which elements of the application you want to use and how you want to use them. Involving team members early in the process can help avoid rework later.

Containers

Containers help organize your content in Jama Connect. Types of containers include components [62], sets [63], and folders [64].

Item type: Containers		
	Components	• Structural container • Organize projects into manageable pieces
	Sets	• Structural container • Access rights can be configured • Items of the same type can be grouped • Contain folders, test items, child items
	Folders	• Structural container • Organize items • Manage hierarchy in the Explorer Tree • Contain text items or items of the same type

NOTE

A source folder [265] is a specific type of folder that refers to baselines. It is the only container type that is not an item.

Add a component

A *component* is a structural container item used to organize a project into more manageable pieces.

For example, you might define each piece of your product with a different component.

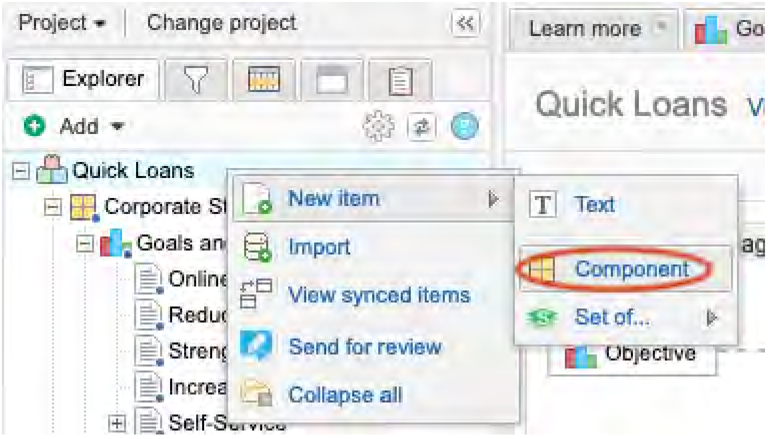
- Components can only be located or moved to the root of the Explorer Tree or inside another component.
- Components might contain sets of various item types, text items, and sub-components. Each component can have different access rights.

NOTE

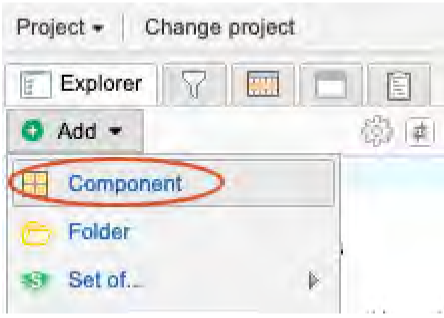
Text items can appear anywhere in this structure.

To add a component:

1. Open the Add Item window using one of these methods:
   - Wherever you want to add a component or sub-component in the Explorer Tree, right-click on the project name.



- Select **Add > Component** at the top of the left panel in the project where you want to add the component.



2. In the Add Item window:
   a. Write a name and description for the component.
   b. (Optional) Select **Notify** to select users or groups you want to notify about the creation of this component.
   c. (Optional) To add more components, select **Add another**.
   d. (Optional) Use the Select Location window to choose where to put the new folder.
      This option appears only if you created a folder from the Add drop-down menu.
      Invalid locations are disabled.
3. Click **Save and Close**.

Add a set

A *set* is a structural container item with configurable access rights, used to group items of the same type. It can also contain folders, text items, child text items, and child items of the same type.

A set contains items of the same type. You can move or copy between sets of the same item type.

Item types for a set are configured by an organization administrator [596].

To add a set:

1. Open the Add Item window using one of these methods:
   - Wherever you want to add a set in the Explorer Tree, right-click on the project name and select **Add > New item > Set of...**, then select the item type from the list.
   - From the top of the left panel, select **Add > Set of...**, then select the item type from the list.
2. In the Add Item window:
   a. Edit the set key, name, and description of the set.
   b. (Optional) Select **Notify** to select users or groups you want to notify about the creation of this set.
   c. (Optional) Select **Add Another** to add more components, then select the location for the new set.

d. (Optional) Use the Select Location window to choose where to put the new set. This option appears only if you created the set from the Add drop-down menu. Invalid locations are disabled.

3. Click **Save and Close**.

Add a folder

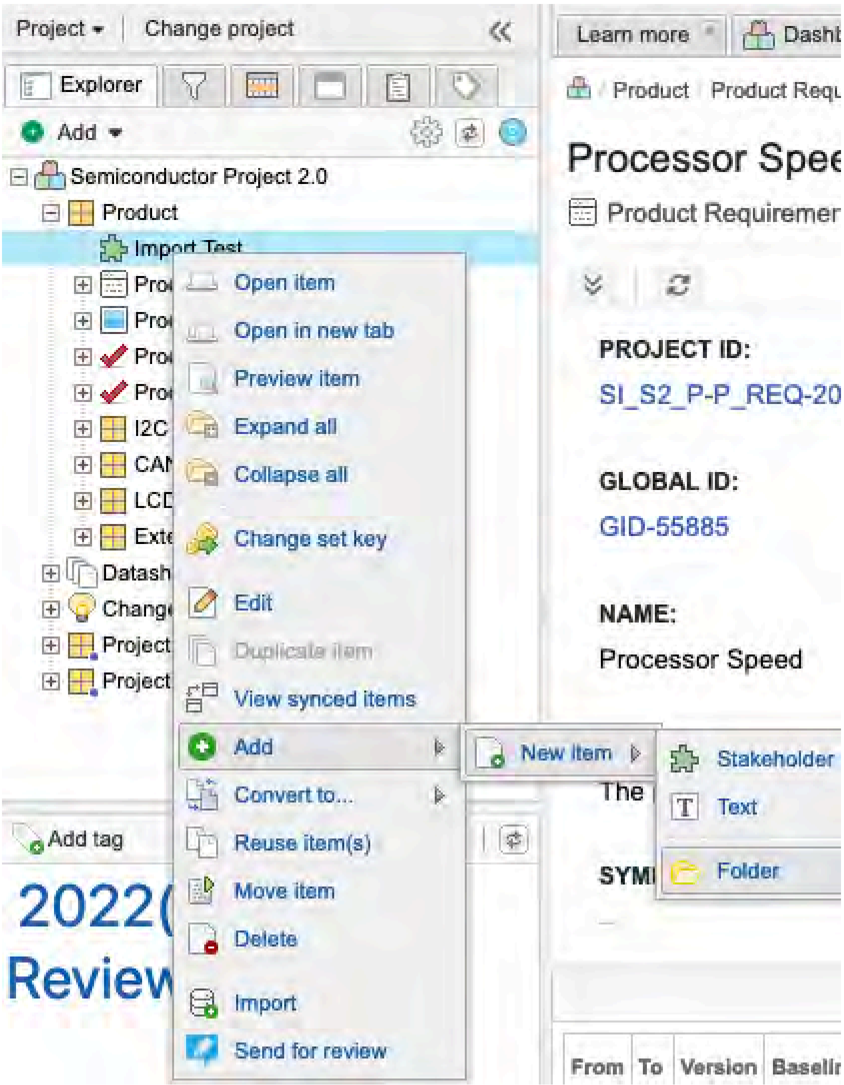
A *folder* is a container item you can use to organize items and manage hierarchy in the Explorer Tree.

Folders are a structural item type that contain other items, not an array of different item types. Folders can contain only text items and the same item type as the folder itself. Folders can be located or moved inside a set of the same item type, or inside another folder. You can't place a folder inside a component of mixed item types.

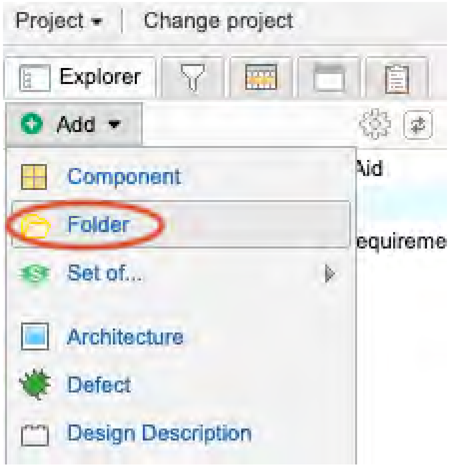
An item can be moved between folders and sets of the same item type using drag and drop within the Explorer Tree or from List View. Folders can be dragged to other sets of the same item type or into other folders also in the same item type.

To add a folder:

1. Open the Add Item window using one of these methods:
   - Wherever you want to add a folder in the Explorer Tree, right-click on the set name and select **Add > New item > Folder**.



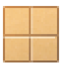
   - Select **Add > Folder** at the top of the left panel in the project where you want to add the folder.



2. In the Add Item window:
   a. Write a name and description for the folder.
   b. (Optional) Select **Notify** to select users or groups you want to notify about the creation of this folder.
   c. (Optional) To add more folders, select **Add another**.
   d. (Optional) Use the Select Location window to choose where to put the new folder.
   This option appears only if you created a folder from the Add drop-down menu.
   Invalid locations are disabled.
3. Click **Save and Close**.

Items

Items are the building blocks of Jama Connect. Projects are made up of items and items are made up of fields. Items can be containers [62] or documents.

Item type: Containers		
	Components	• Structural container • Organize projects into manageable pieces
	Sets	• Structural container • Access rights can be configured • Items of the same type can be grouped • Contain folders, test items, child items
	Folders	• Structural container • Organize items • Manage hierarchy in the Explorer Tree • Contain text items or items of the same type
Item type: Items		
	Item	• Individual building block of a project • Comprised of customizable fields

All items have a global ID [298], a unique ID [648], and an item type that's determined by an organization administrator [596].

NOTE

Baselines, source folders, risks, risk analyses, reviews, and test groups aren't items, so they don't have an item type and a global or unique ID.

Several places in Jama Connect allow you to see a quick preview of an item without opening it in the center panel. For example, right-click on an item in the Explorer Tree and select **Preview item**.

Container items

Select **View details** next to a container's title to:

- Display container's detailed information.
- Open container's attachments [84].
- Edit the name or description of the container itself.

TIP

To receive email notifications when a container changes, subscribe yourself [217] or others [217] to the container.

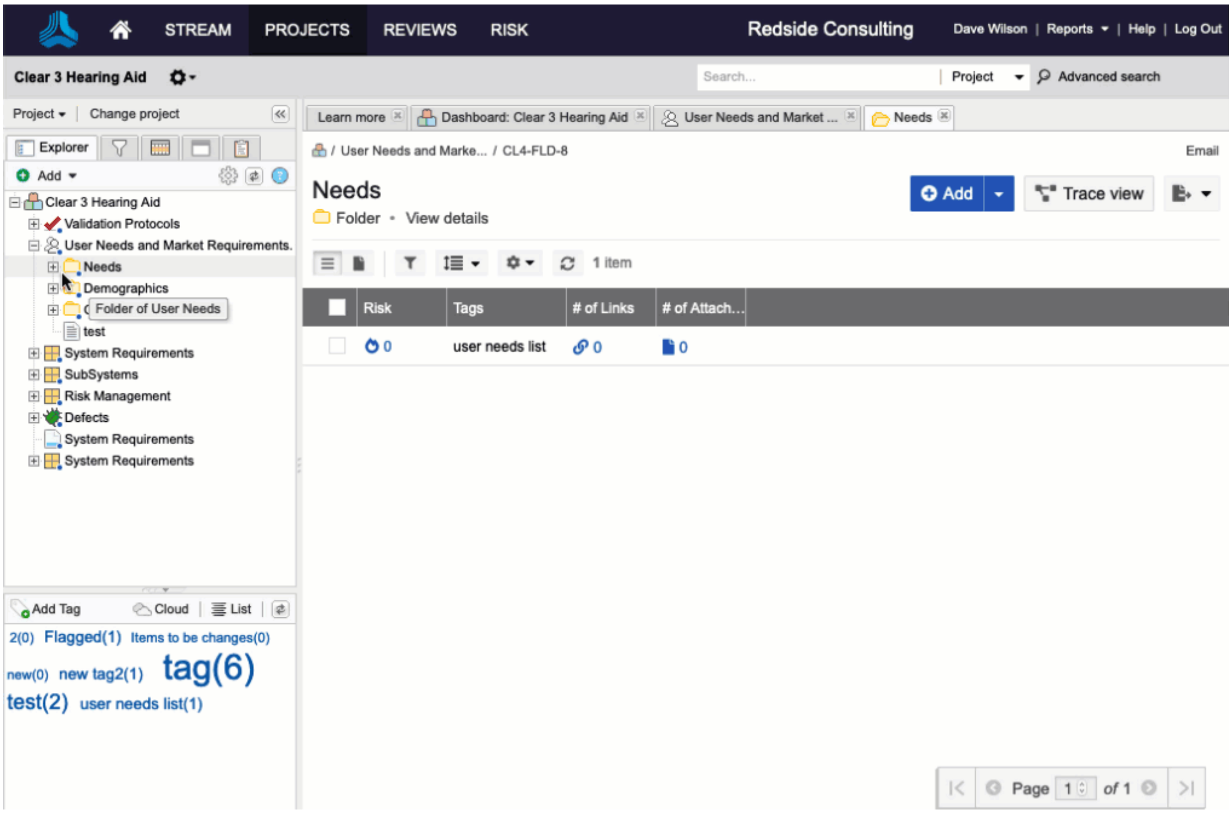
Add an item

Even if you import data from another application or sync data from another tool, you can also add a new item to your project as needed.

You can an add an item to a project from several places in Jama Connect. The list of displayed items includes only item types that are valid for the selected location.

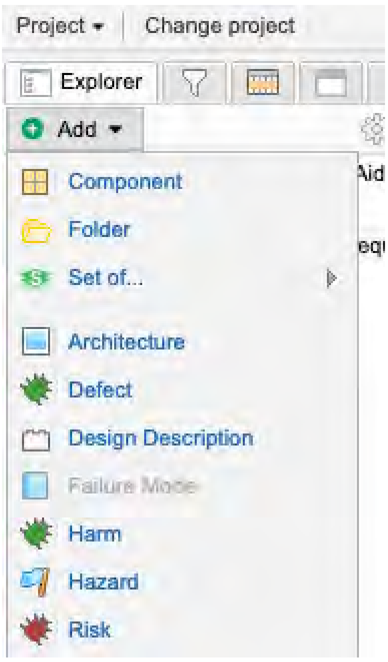
NOTE

You can't add items in filters or in lists of mixed item types.

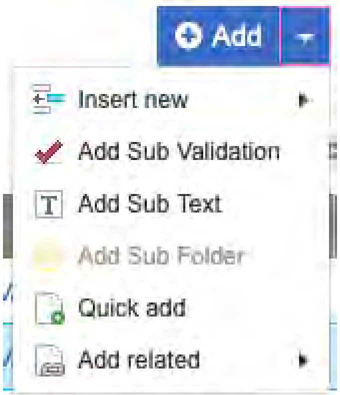


To add an item to your project:

1. Open the Add item window using one of these methods.
   - **Right-click the project name** — In the Explorer Tree (or wherever in that project you want to add an item), right-click the project name, select **Add > New item**, then select an item type from the list that appears.
   - **Add drop-down list** — In the project where you want to add the item, select **Add** at the top of the left panel, then select the item type from the list that appears.

   - **Toolbar** — From the toolbar above Single Item View, List View, or Reading View, select **Add**, then choose the item type from the list that appears.



In List View, if the list contains items of a single item type and no items are selected, you can add an item of the same type, a text item, or a set to the bottom of the list.
If an item is selected, use one of these options.
- **Insert new** to insert a new item below the selected item.
- **Add Item Type as child** to add an item as a child item of the selected item.
- **Add related** to add a related item to the selected item. If a relationship rule [150] was applied to that project, only item types that meet the rules are available for that selection.
- **Quick add** add items in a set of the same item type.

2. Select the location where you want to add the new item in the window that opens (invalid locations are disabled), then click **Select & Close**.
3. In the Add Item window:
   a. Fill in the fields for the selected item type.
   b. (Optional) Select **Notify** to add a notification comment and select users or groups to notify about the creation of this item.
   Comments are included in the version notes for the item [251] and are displayed in the stream [230].
4. Select **Save** or **Save and Close**.
5. Select **Commit**.

Quick-add an item

The Quick-add option lets you add multiple items at a time to a set of the same item type.

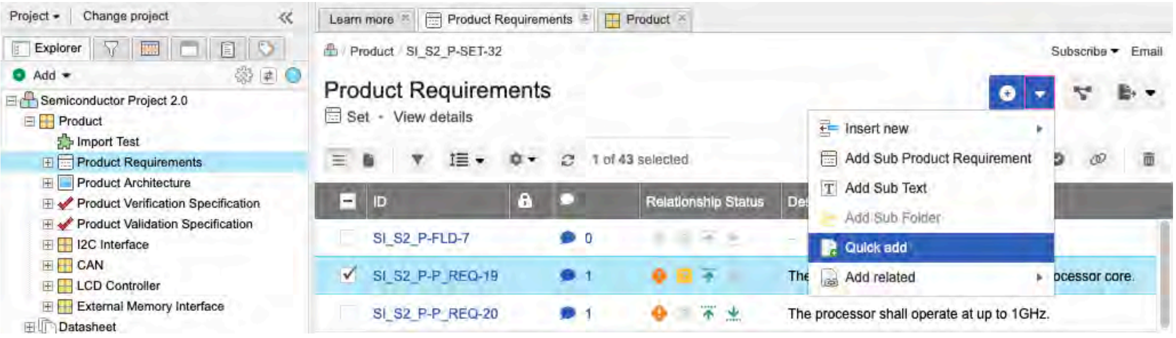
You can add up to 50 items at once.

Important considerations

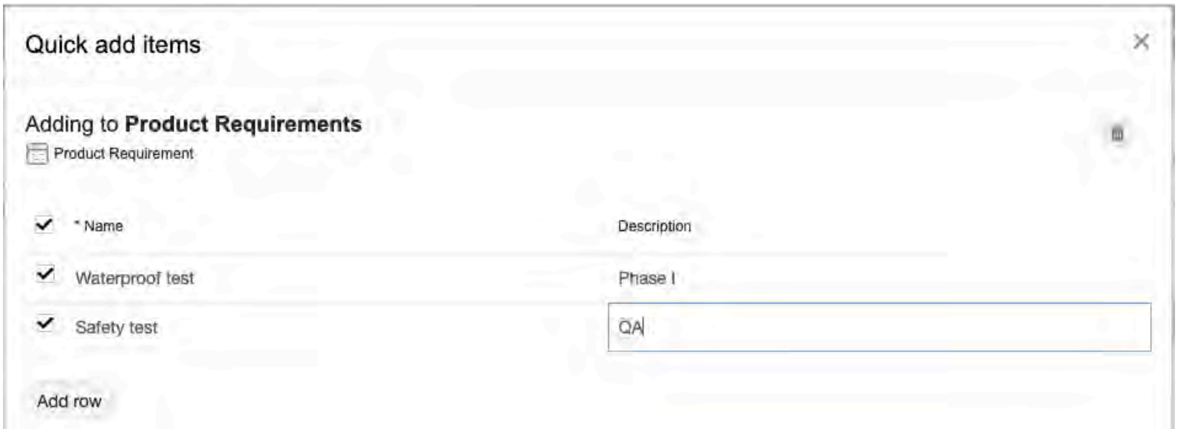
- The Name field is required.
- The Description field is required or read-only based on how the item type is configured.
- To add required fields, edit the item after you create it.

To quick-add an item:

1. In your project, select **Add > Quick add**.
   If you don't see the Quick add option, then the item you're adding doesn't match the item type in that set.



2. Enter the required name for the item (255 characters maximum) and an optional description (500 characters maximum).
3. Click **Add Row** to include additional rows as needed, for a maximum of 50 rows (items). Include a name and optional description for each added item.
   Use the tab key to move across the table.



4. Click **Save**.
   The new items appear in the Explorer Tree.
5. To add required fields to a new item, select the item to open and edit it.

Add a child item

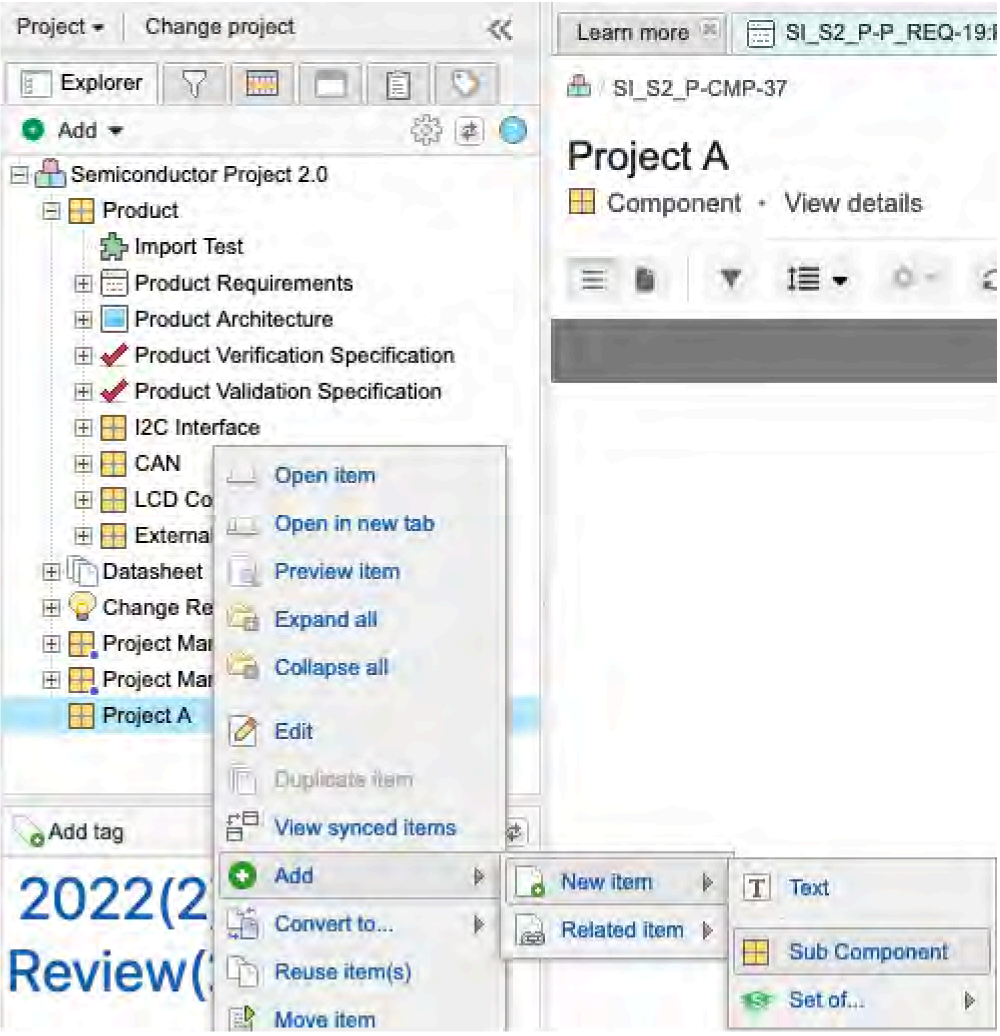
Create a child item when you need an item that falls hierarchically below a parent item of the same item type.

Important considerations

- If a parent item includes a child item, the parent item can't be converted to a text item.
- A parent item can include a child item that is a text item.
- Relationships and attribute values of a parent item aren't inherited by child items.

To add a child item:

1. Right-click on an item and select **Add > New item > Sub Component**.



2. In the Add item window, fill in the fields for the selected item type.
3. (Optional) Select **Notify** to add a notification comment and select users or groups to notify about the creation of this item.
   Comments are included in the version notes for the item and are displayed in the stream.
4. Select **Save** or **Save and Close**.
5. Select **Commit**.

Edit an item

You can edit a saved item any time you need to add or change its information.

Single Item View automatically displays items in a read-only format.

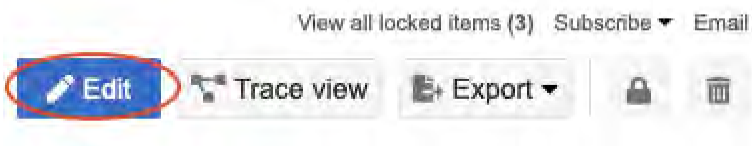
Important considerations

- You must have create/edit permissions to edit an item.
- A field must be enabled for read/write permissions.
- If a field is disabled for editing, it might have been configured to be read-only [605] by an organization admin, locked by another user, or locked through a workflow.

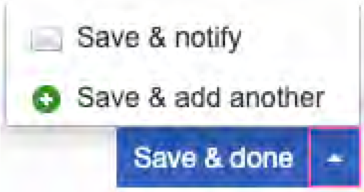
To edit an item:

1. Select the field you want to edit, using one of these methods:
   - Double-click on the field
   - Hover over the field and select the pencil icon to make it editable.

- Select **Edit** from the toolbar.



2. Edit the item field, as needed.
3. When you're done editing, select an option:



   - **Save & done**.
   - To save and add another item of the same type, select the arrow on the middle button, then select **Save & add another**.
   - To save and notify other Jama Connect users, select the arrow on the middle button, then select **Save & notify**.
4. Select **Save Changes** to complete the edit and create a new version of the item.

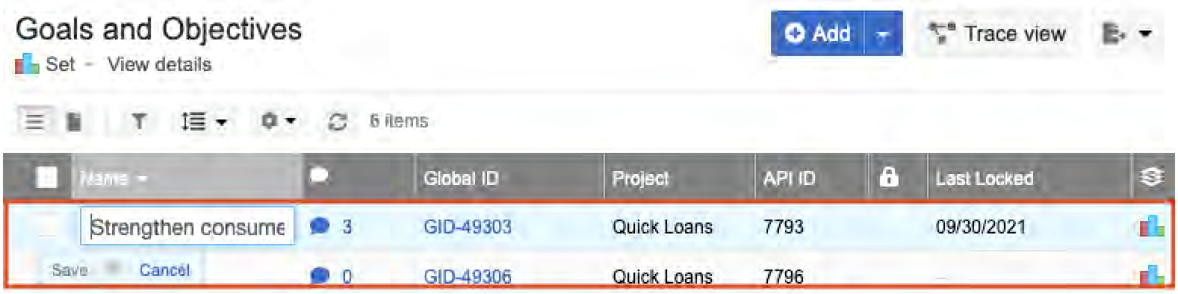
A confirmation message confirms that the item was successfully changed.

Edit an item in List View

You can edit an item to make needed changes, for example to picklists, fields, and tags. In List View you can update multiple items of the same type. You can make changes in one item, then press **Enter** to move to the next row.

> **TIP**
> If you need to make the same changes across multiple items, use batch update [72].

1. Double-click the field you want to edit in projects List View.



2. To undo any unsaved changes, press **Escape** or select **Cancel** below the selected item.
3. Select **Save** or press **Enter** to save the change and move to the next item in the list.

Batch-update multiple items

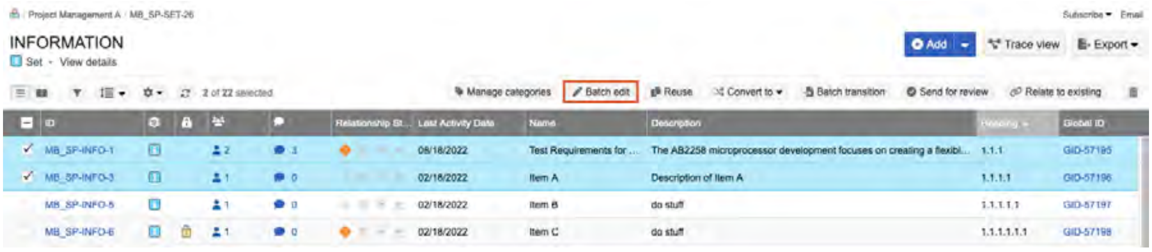
You can update picklists, fields, and tags for multiple items at one time.

Important considerations

- You can't batch-update rich text fields. Instead, use a Jama Connect to Excel round trip [117].
- You can't batch update test runs using this method. Instead, use the Test runs window to batch update test runs [374].

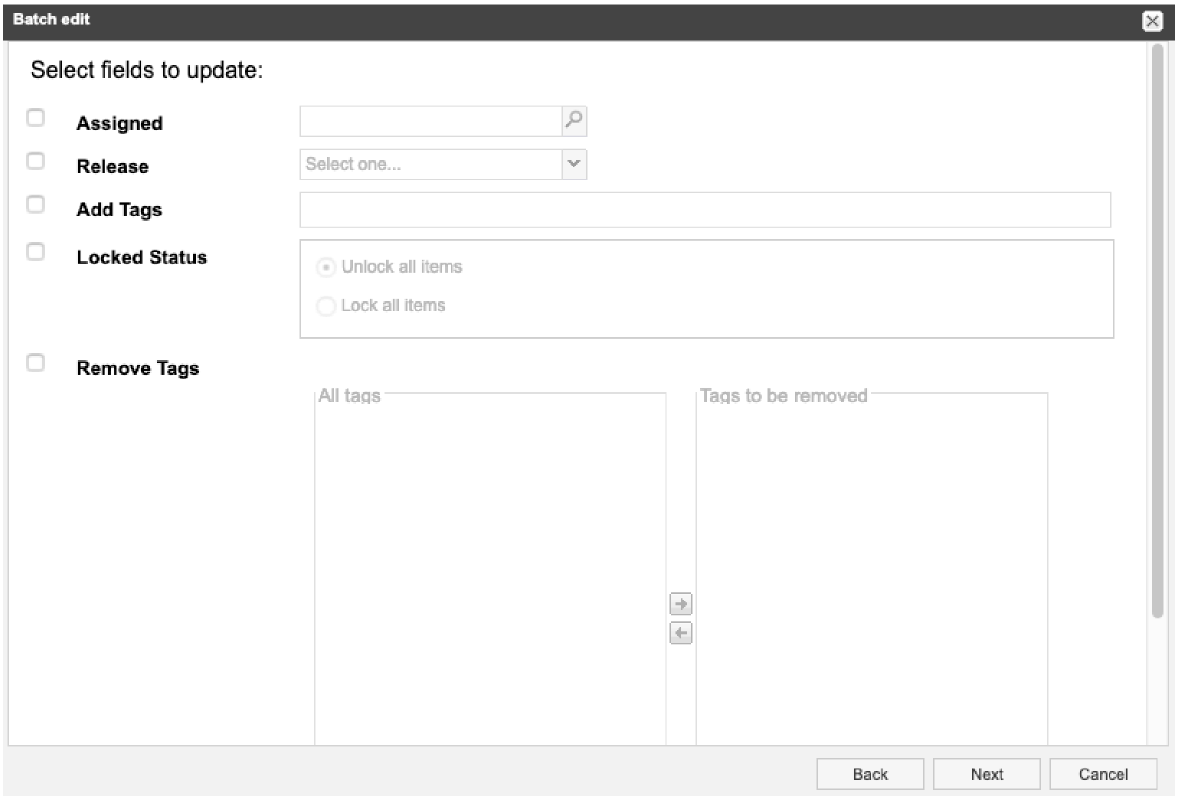
To batch-update items:

1. Select items that you want to edit using one of these methods:
   - In List View, select the items that you want to edit, then select **Batch edit** to open the Batch update window.

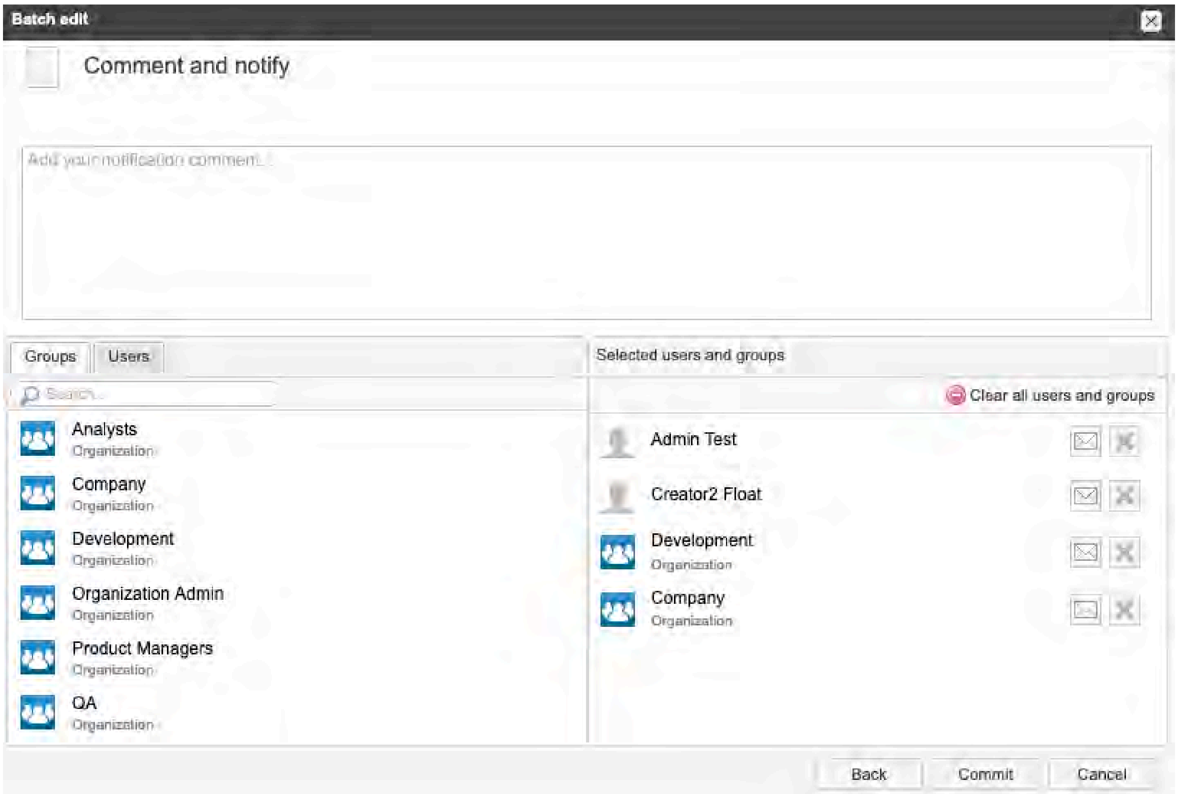


   - (Review moderator only) Select items for batch update in the item progress [197] tab of review statistics.

2. In the Batch edit window, make your changes, then select **Next**.



3. (Optional) Select users or groups and send a notification about this batch update.



4. Select **Commit**.

Add, edit, or delete links

You can add a link to an item using two methods.

- Associate a link with an item.

- Embed a link in a rich text field in an item.

If the Links widget was enabled by an organization administrator [599], you can store a link or URL in Jama Connect, then assign the link to individual items across projects.

Important considerations

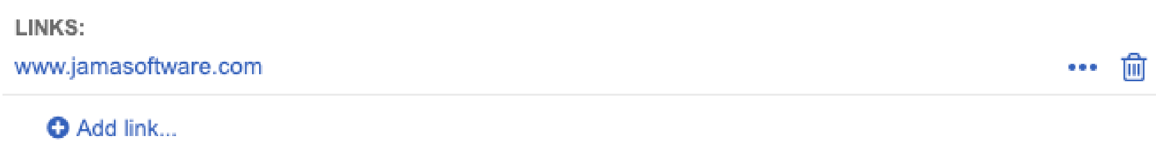
URLs that are prefixed with "http://" are treated as unique links. URLs without the prefix are added to the end of the Jama Connect URL, which might be helpful if you placed files on the server and you want to link them without uploading them as attachments.

For example:

- **http://www.creativecommons.org** — Opens a new browser window with the URL https://creative-commons.org/
- **screenshots/login.html** — Opens a new browser window with the URL http://localhost:8080/con-tour/screenshots/login.html

To add, edit, or delete a link:

1. To add a link, in Single Item View, select **Add link**, then fill in the fields and select **Save**.



2. To edit or delete a link, select **Edit** or **Delete** from the link's row.

Locking an item

A lock makes an item read-only, so that it can't be edited or deleted. An item can be manually locked [74] or automatically locked [222] by the system.

What *can* you do with a locked item?

- Reuse [300] and create relationships from a locked item.
- View and unlock locked items [43].
- Find out who locked an item.

What *can't* you do with a locked item?

- Edit, delete, or synchronize locked items.

Who can unlock a Jama Connect item?

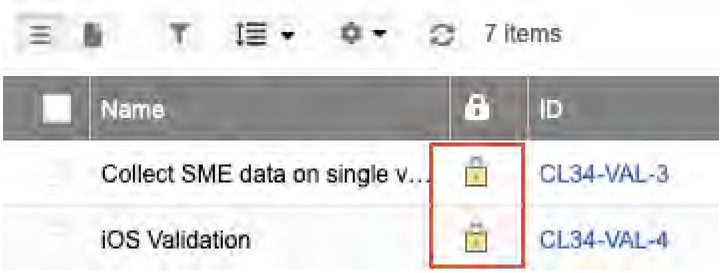
An organization admin or project admin can unlock system-locked items [562], but only an organization admin can unlock items manually locked by another user [561].

Locked items	Who can unlock?
Manually locked by other users	Organization admin
Locked by system or workflow	• Project admin • Organization admin • Creator user with workflow transition permissions *(only for projects the user administers)*

Manually lock and unlock items from the toolbar

To prevent others from making changes while you're working on an item, you can manually lock that item.

When you configure List View to show locked items, a gold lock appears next to items that are manually locked.

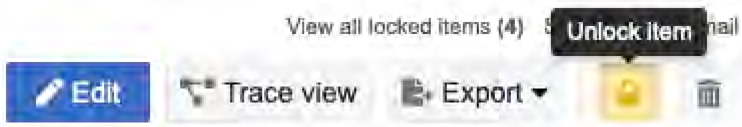


TIP

If you need to access an item locked by another user, contact that user or your organization administrator to unlock it.

1. **To lock an item manually** — In Single Item View, select **Lock item** from the toolbar.

2. **To unlock an item** — (Organization or project admins only) In Single Item View, select unlock item [43] from the toolbar.



Converting items to another item type

In Jama Connect you can change an existing item or items from one type to another. When you convert an item to another type, these attributes remain intact: short name, description, relationships, versions, activities, comments, and tags.

To convert an item, folder, set, or component, you can use:

- Drag and drop [76]
- Context actions menu [77]

Important considerations

- A field is converted only if its name or data type is identical in the current and new item types.
- A lookup field is converted only if it refers to the same pick list (and has has the same name and data type) in the current and new item types.
- Converting an item breaks the sync if you reused that item.
- If converting an item puts the item out of compliance with the relationship rules, the issue is reflected in the relationship diagram.
- When you convert a set, all items in that set are converted to a different item type.
- You can't "undo" an item conversion [79] but you can convert the item back to the original item type. Use the same procedure you used to convert items.

You can convert from...	To...	Notes
Component	set text item	Sets within the original component convert to folders in the newly created set.
Set	component set folder text item	For components, the original set must be empty and at the top level of the hierarchy. Original set must be empty.
Folder	item folder	
Item	item text item* folder**	
Text item	component set item	

* An item that include child items can't be converted to a text item.

** A child item can't be converted to a folder unless the parent is converted first. When converting to a folder, items lose widget functionality and custom field values.

Convert items using drag and drop

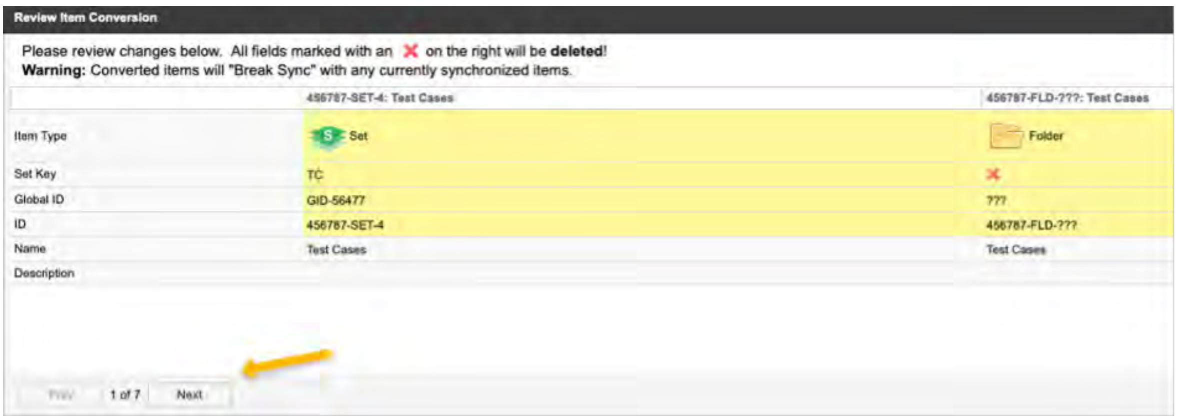
When you need to change the item type for all items in a set, use the drag and drop method.

Important considerations

- Before converting items, read about how conversions work in Jama Connect [75].
- When you drag and drop a text item into a folder of your required type, the text item is moved to that location, but it isn't converted.
- You can't use bulk conversion for text items. You must convert them one at a time.
- When converting an item to a folder, select **Recursively convert all items with Children to Folders** in the Review Item Conversion window. Parent items at every level beneath the item being converted are converted to a folder.

To convert an item or set to another item type with drag and drop:

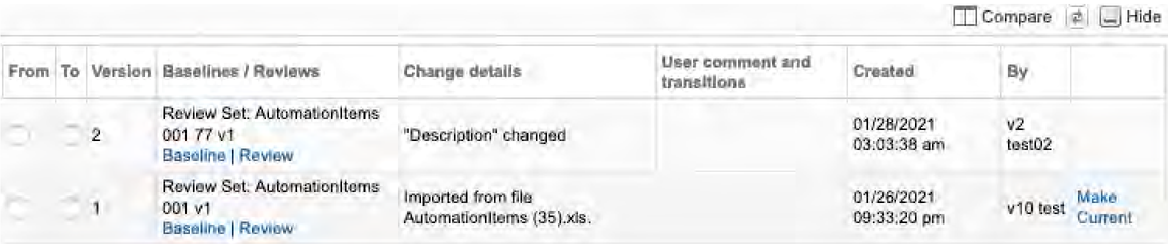
1. From List View or the Explorer Tree, select the items and drag them into the set where you want to move them.
2. Review the information in the Review Item Conversion window.



3. Click **Next** to view each page of the Review Item Conversion window.
4. If converting an item to a folder, select **Recursively convert all items with Children to Folders**. Parent items at every level beneath the item being converted are converted to a folder.

> **NOTE**
> This option appears only when you select a folder to be converted.

5. Select **Convert**.
   If the item can belong in its current location (such as a text item), it remains there. However, sets can't contain mixed item types, so the item might need to be moved.
6. If prompted to move an item, select the new location for that item, then click **Select and Close**.
7. To see changes, select **Versions** in the side toolbar [57] of Single Item View [56] to open the item's version tab.



Compare | Hide

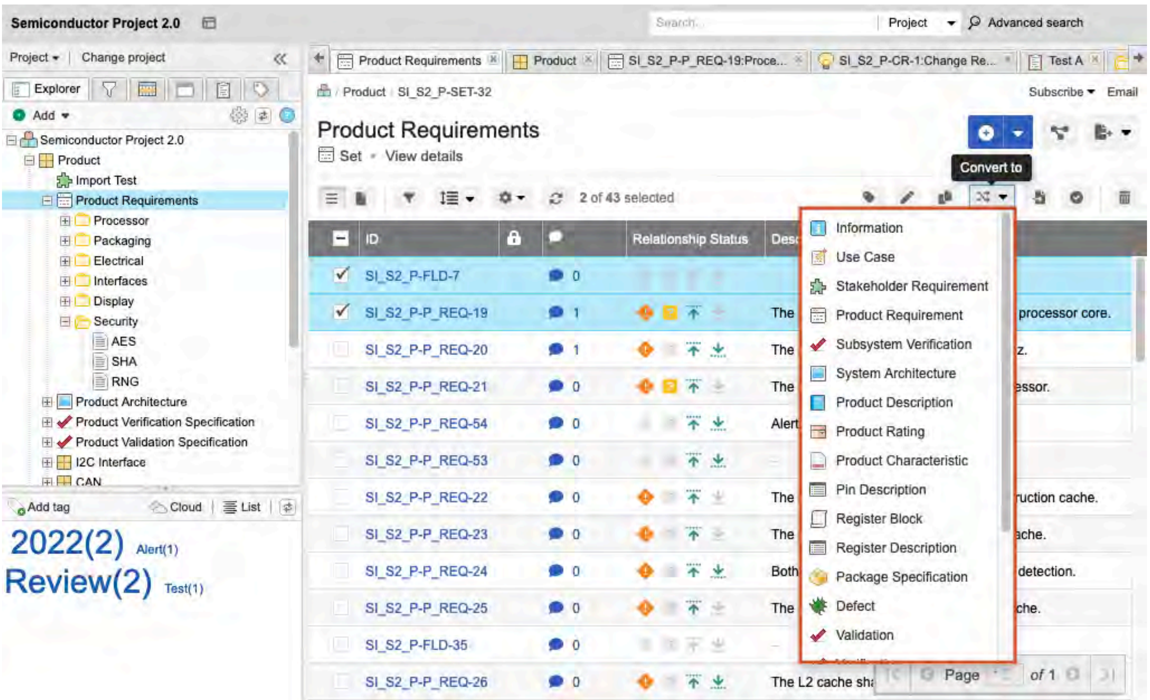
From	To	Version	Baselines / Reviews	Change details	User comment and transitions	Created	By	
		2	Review Set: AutomationItems 001 77 v1 Baseline | Review	"Description" changed		01/28/2021 03:03:38 am	v2 test02	
		1	Review Set: AutomationItems 001 v1 Baseline | Review	Imported from file AutomationItems (35).xls.		01/26/2021 09:33:20 pm	v10 test	Make Current

Convert items in List View or Explorer Tree

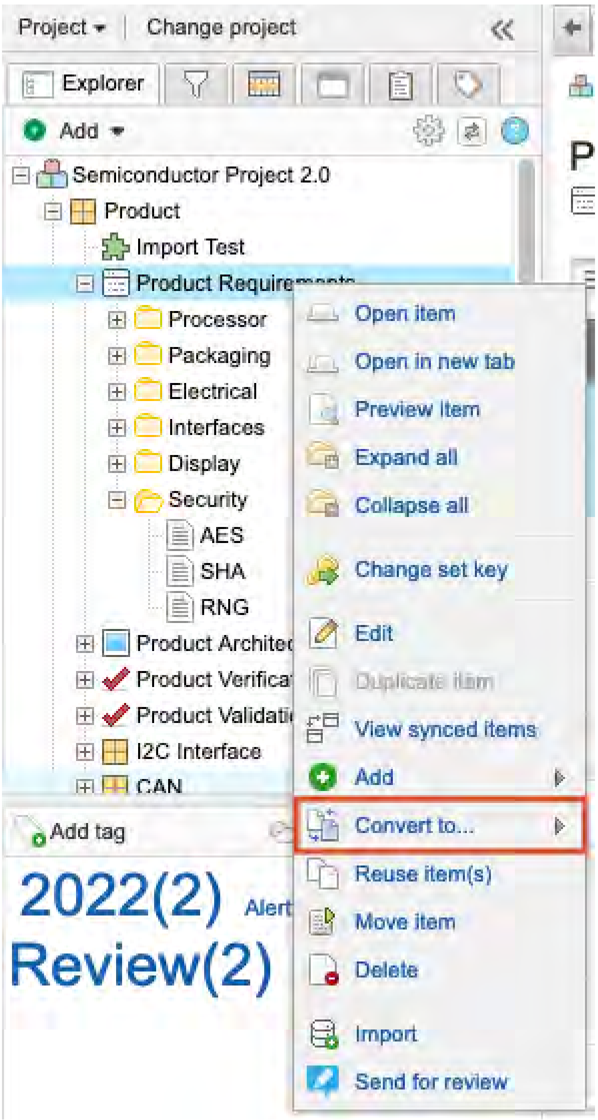
You can use the drop-down menu in List View or the Explorer Tree to convert items or sets.

Before converting items, read about how conversions work in Jama Connect [75].

1. In List View or the Explorer Tree, select the items you want to convert, select **Convert to**, then select an item type from the list that appears.
   - **List View** — Select the checkbox for the item or set.



   - **Explorer Tree** — Right-click on an item or set.



The Review Item Conversion window highlights in white the fields that are copied into the new item type.

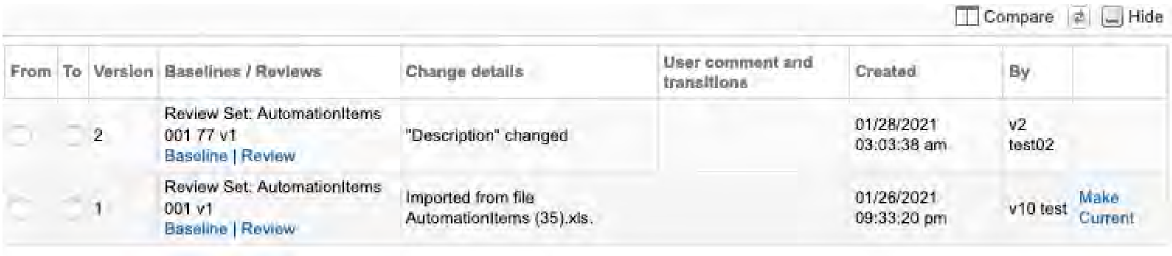
2. Click **Next** to view each page of the Review Item Conversion window.
3. If converting an item to a folder, select **Recursively convert all items with Children to Folders**. Parent items at every level beneath the item being converted are converted to a folder.

This option appears only when you select a folder to be converted.

4. Select **Convert**.
   If the item can belong in its current location (such as a text item), it remains there. However, sets can't contain mixed item types, so the item might need to be moved.
5. If prompted to move an item, select the new location for that item, then click **Select & Close**.

> **NOTE**
>
> If you select multiple items in List View, you must also specify a location, even if it's the items' original location. Doing this ensures that the items end up in the correct place.

6. To see the changes, select **Versions** in the side toolbar [57] of Single Item View [56] to open the item's version tab.



Convert items back to original type

You can't undo an item conversion, but you can convert your items back to their original type. When changing back, the item receives new identifiers.

- Use the same procedure you used to convert your items to convert the same items back to the original type.
- Any fields that don't convert in the new conversion direction are lost. To determine if fields were lost, select **Versions** in the side toolbar of Single Item View to open the bottom panel and select **Compare**.
- Any fields that were lost must be manually replaced by an organization administrator [605].

Moving items

Within a project, you can move items using the Explorer Tree [79] or List View [80]. Once items are moved, you can undo the move or find the items in the stream [146].

Rules for moving items

Item type	Rule
Component	Can have child components and can be moved to the root of the Explorer Tree.
Set	Can be moved inside a component or to the root of the Explorer Tree. Sets can't have child sets.
Folder	Can be moved to a set that's the same item type as the set where the folder was created, or to another folder.
Item	Can have child items of the same item type and be moved to a set of the same item type or to a folder.
Text item	Can be moved anywhere in the Explorer Tree.
General	You must have write-access to both an item and its new location. When components, sets, or folders are moved, all items within them are also moved.

Move items in Explorer Tree

Items must meet valid item location rules [79] before then can be moved.

You can also move items between projects [80].

Visual indicators tell you if a move is allowed or provides guidance for moving an item.

- **Green indicator** — Moves that are allowed.
- **Red indicator** —Moves that aren't allowed.
- **Dotted blue line** — Guide for moving an item between other items.

To move items in the Explorer Tree:

1. Select the item you want to move in the Explorer Tree.
2. Drag and drop the item to the new location.

Move items in List View

Items must meet valid item location rules [79] before they can be moved.

Quick tips

- If you select the tab at the top of the Explorer Tree and drag items from List View to the release, you can change the release on one item or multiple items.
- You can move items between projects [80].

To move items in List View:

1. In List View, select the items you want to move.
2. Drag and drop the items to the chosen location.

Move items between projects

You can move an item or set of items, along with all associated conversations, versions, and attachments to a different project. This is useful when a project has grown too large and performance has started to degrade.

Important considerations — Review this list before you move items between projects

- A move can't be undone. Users can move items back to the original project but IDs are changed.
- You can only move components and sets between projects. If you're trying to move a folder of items or individual items from a component or set, you must first create a new component/set, then move those items to the new component/set.
- Document key IDs are changed when an item is moved. The new ID is based on rules set up in the destination project.
- When an item is moved, all associated stream collaboration, activities, and versions are moved to the new project. Attachments, tags, and releases are copied to the new project.
- If you delete the source project, images inserted in a rich text field that are copied in other projects are also deleted because they are referenced and aren’t copied from the original project. To keep images intact in the duplicated project, we recommend archiving the source project.
- Original attachments, tags, and releases still exist in the source project, including links, images, and diagrams within rich text fields.
- Test runs can't be moved. Test cases can be moved without impacting test runs.
- Items contained in a review aren't shown in future versions of a review after they are moved.
- The document ID in old baselines reflect the new ID.
- If any moved item is associated with an integration sync, integrations such as the JIH can't be running while a move is being performed.
- Performance might be impacted at the time of the move if other resource-intensive processes are being done at the same time.

TIP

If you delete the source project, images inserted in a rich text field that are copied in other projects are also deleted because they are referenced and aren't copied from the original project. To keep images intact in the duplicated project, we recommend archiving the source project.

To move items between projects:

1. Make sure that:
   - You have write permissions in the source and destination project.
   - The items to be moved must be unlocked.
   - All other move operations are completed. You can't make two moves at the same time.
2. In the source project, right-click on the set or component of items you want to move, then select **Move item**.
3. In the Move items to... window, select the destination project and select **Move**.
4. Review details and select **Confirm**.
   During the move you can go to the destination project by selecting **Go to project** or stay in the same project by selecting **Done**.
   A pop-up window shows progress of the move. If any item fails to move, the entire move fails.

Once the move is complete, you can find recently moved items [146] from the Activity Stream.

Duplicate an item

You might want to copy an item to use it as a template for a new project or a new requirement.

You can duplicate items in Jama Connect using these methods.

- **Duplicate items** — Create a copy of the item's name, description, test steps (if applicable), and the ability to choose to include tags, attachments, and links. You can duplicate items that are locked.
- **Reuse items** — Creates a copy of an item, but with more options. With this method you can reuse multiple items, reuse items with children, duplicate more of the item's content, or duplicate an item from another project. For more information, see Reuse items [301].

NOTE

You must have read/write permissions to duplicate an item.

To duplicate an item:

1. Right-click on the item you want to copy and select **Duplicate item** from the menu.
2. In the Duplicate item window, indicate whether you want to duplicate tags, attachments, or links.
3. Press **Enter** or select **Duplicate**.

   NOTE

   According to the item type, selected preferences are saved across sessions. However, clearing your browser data restores default options. When specific attributes (as in links) aren't enabled for an item type, the option doesn't appear in the pop-up window.

The item you duplicated opens in Single Item View of the duplicated item.

Delete an item

When you delete items, they aren't physically deleted. They are marked as inactive and are no longer visible to users or reports. If needed, they can be re-activated through the database.

Anyone with read/write permissions for an item can delete it, unless an organization administrator has made the option unavailable [629].

Important considerations

- You can delete an item only if it is unlocked.
- Deleted items show up in the activity stream. The activity entry is also the only method of restoring a deleted item [82] for those with delete permissions.
- In most cases, nothing is deleted from the Jama Connect database. Even if you delete another user, item, or something else in the system, a record is maintained and the deleted object is merely de-activated on the front end. However, you can permanently delete the selected project and everything under it from the database.

To delete an item:

1. To delete in Single Item View [56], choose an item and select **Delete**.
2. To delete in List View [53] or Reading View [54], choose one or more items and select **Delete**.
3. To delete in the Explorer Tree, right-click on an item and select **Delete**.

Restore a deleted item

If you have permission to delete an item, you can also restore it. When you restore a deleted item, it retains all comments, versions, and relationships associated with the item.

NOTE

You must have project admin permissions to restore items deleted by someone else.

1. Select the project name at the top of the left panel to open the dashboard, then open the Activity Stream widget [377] to view recent activities.
2. In the search field at the top of the Activity Stream widget, type **delete** to display all recently deleted items.

3. Find the item you want to restore and select **Restore**.

If the set for the restored item was removed, a component with a temporary set is created. The item can then be moved to any set of the same item type.

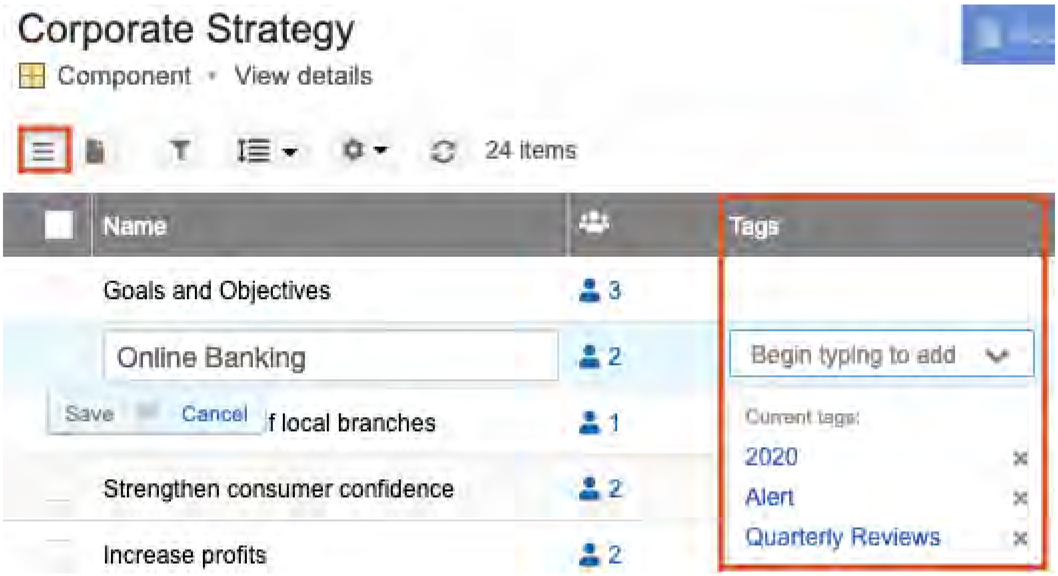
Tags

Tags are labels that you can attach to items. They can help you find items with something in common.

> **NOTE**
> These tags are different than hashtags [232] that you apply to comments in the stream.

Tags are displayed in the bottom of the left panel in a section that can be hidden.

- Search for tags [133] using the "tag:" prefix.
- You can edit tags in List View.



- Tags can be displayed in a Cloud view:

In either view, select the tag to view its associated items.

Add and delete tags

Add and delete tags as your project evolves, if you created a tag by accident, or to keep items organized.

The tags widget must be enabled by an organization administrator [596]. Otherwise, the option to add a tag isn't available in the UI.

1. To add a tag to an item:

a. In Single Item View, select **Add tag**.

b. Enter the tag name in the available field.

2. To delete a tag from an item, select the **X** in the tag.

Attachments

Attachments are external files such as images, documents, and spreadsheets that can be attached to an item.

A project administrator can manage attachments [652] for a project.

Important considerations

- You must have create/edit permissions to access attachments.
- These default filetypes are allowed: APK, AVI, BMP, CSV, DOC, DOCM, DOCX, DOT, DOTX, DWG, GIF, GZ, JAMA, JPEG, LOG, MD, MOV, MP3, MP4, MPEG, ODG, ODP, ODS, ODT, PAGES, PDF, PGP, PNG, PPT, PPTM, PPTX, RAR, RTF, TGZ, TIF, TIFF, TRA, TXT, VCS, VSD, VSDX, VSS, WAR, WAV, WMA, WMV, WPS, XCF, XLS, XLSB, XLSM, XLSX, XLT, XPS, ZIP, ZIPX.
- Hosted environment — To add filetypes or ask about the number or size limits for attachments, ask your Named Support Contact to request this from support.
- Self-hosted environment — The system admin can update this list directly [509].

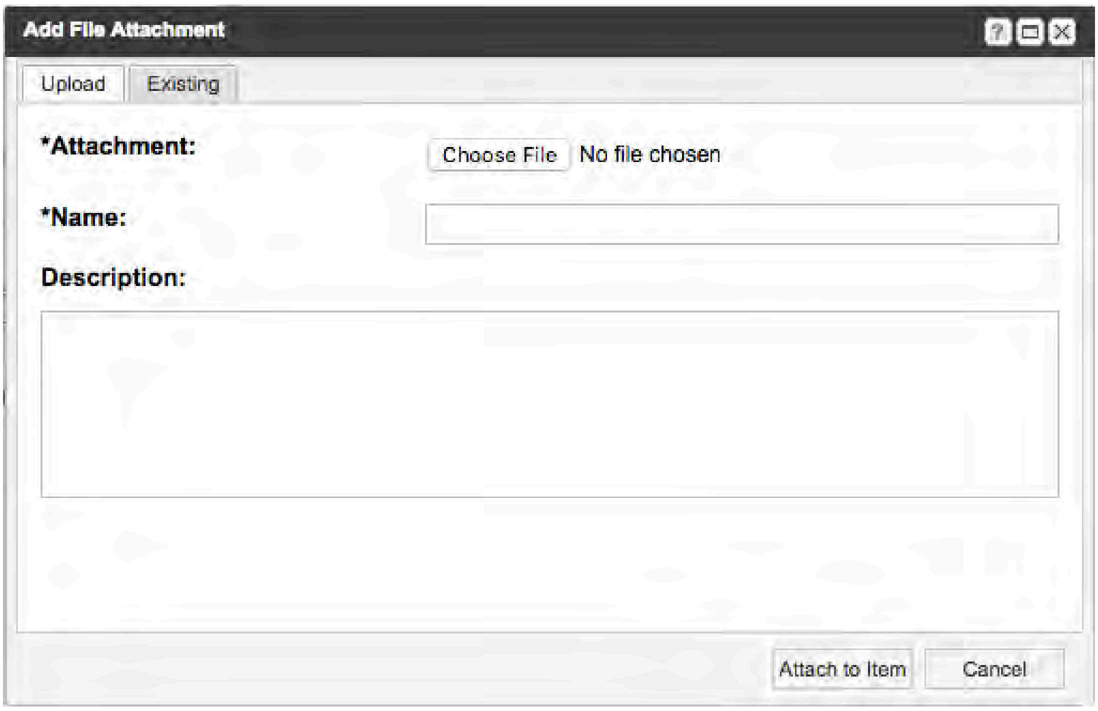
Add, edit, and delete attachments

An attachment is an external file such as an image, document, or spreadsheet that can be added to an item. You can add, edit, or delete attachments as needed.

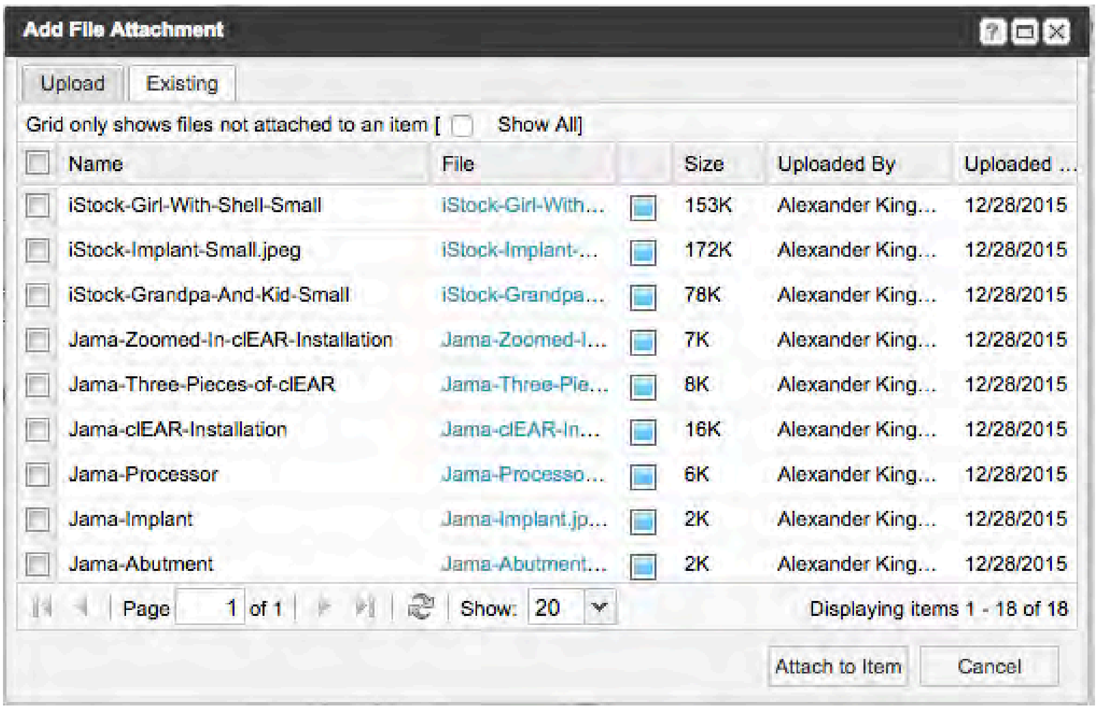
> **NOTE**
> You must have create/edit permissions to access attachments.

1. To add an attachment:
   a. In Single Item View, select **Add attachment**.

   - To upload new items, select the **Upload** tab in the Add File Attachment window, then select **Choose file** to select the file you want to attach and upload.

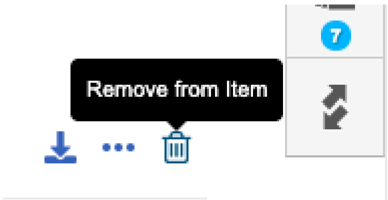


- To attach files that are already uploaded to Jama Connect, select the **Existing** tab in the Add File Attachment window, then select the file you want to attach. Select **Show all** to see all the files that are already attached to an item.

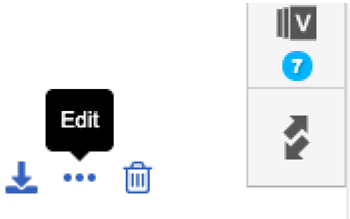


b. Select **Attach to Item**.
   The file is now shown in Single Item View as an attachment.
c. To download the attachment, select the attachment name or the down arrow icon.

2. To delete an attachment, select **Remove from item** (trash icon).



3. To edit what is attached to an item, select **Edit** (three dots icon) to open the Edit File Attachment window.



You can then:

- Reload the attachment.
- Update the name and description.
- Upload a different attachment, which overwrites the existing one. To add a new attachment, start from step 1.

4. Select **Save and Close**.

Using the rich text editor

When the rich text editor is enabled [605] by your organization admin, you can format text in individual fields and embed other data like images and tables.

With rich text fields you can use text formatting, hyperlinks [89], images [88], tables [89], spellcheck-er (English), templates [92], diagrams, graphs [90], and equations [91].

NOTE
The equation editor requires additional licensing. Contact your Jama Software account manager for more information.

If a field is enabled with rich text, you see the rich text menu, which provides rich text controls. These controls are like text editing options in many software applications. You can also use keyboard shortcuts [673] with the rich text editor.

Important considerations

- Many third-party reporting tools can't display rich text (HTML) properly.
- Integrations with third-party applications might not be able to accept rich text (HTML) data.
- Each rich text section can have its own style, making it difficult to control the overall look and feel of your report.
- As needed, you can disable the rich text editor [605].
- Whenever a rich text item is saved, Jama Connect deletes certain text (usually code like JavaScript) that might be a security risk. This doesn't affect most data.

Rich text toolbar and buttons

1. **Text style and size**
2. **Cut, copy, and paste** — Paste action inserts selected text as plain text.
3. **Field view** — Insert document templates [92] (must be configured [619] by organization admin), view source code, and fullscreen mode.
4. **Format text**
5. **Subscript, superscript**
6. **Text alignment**
7. **List formatting**
8. **Edit text**
9. **Insert links [89]**
10. **Special tools** — Add diagrams [90], images [88], tables [89], special characters.
11. **Accessibility checker**
12. **Equations editor** — Math Editor, Chemistry Editor.

The spellchecker automatically underlines misspelled words in red. **Cmd+right-click** on the word to view spelling suggestions.

Insert image to rich text fields

The rich text editor lets you add an image to an item field. The editor provides multiple methods for adding an image.

> **NOTE**
> A system admin can manage file types [509] for self-hosted customers. Cloud customers need to contact support before they can use this option.

1. Add an image using one of these rich text methods:
   - **Toolbar option: Add image**

     > **TIP**
     > Provide the full path to the image file to comply with third-party converters for PDF and Word. If you move Jama Connect to a new server or modify the server name, edit your image files to match the path or name change.

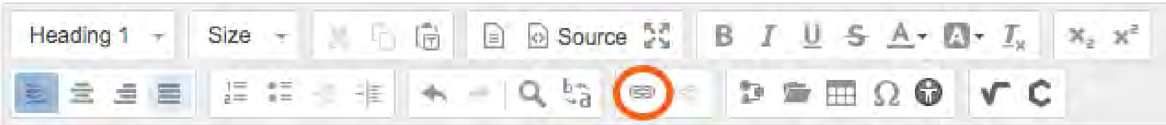
   - **Copy and paste** (not available with Internet Explorer 10)
   - **Drag and drop**
   - **Browse the server** (select **Add image from the server**)

2. (Optional) Resize or move the image as needed.
   A system admin or organization admin can define a maximum height and width setting for an inserted image.
3. If an inserted image is too large to be displayed, select **Expand** to view the image in full size.

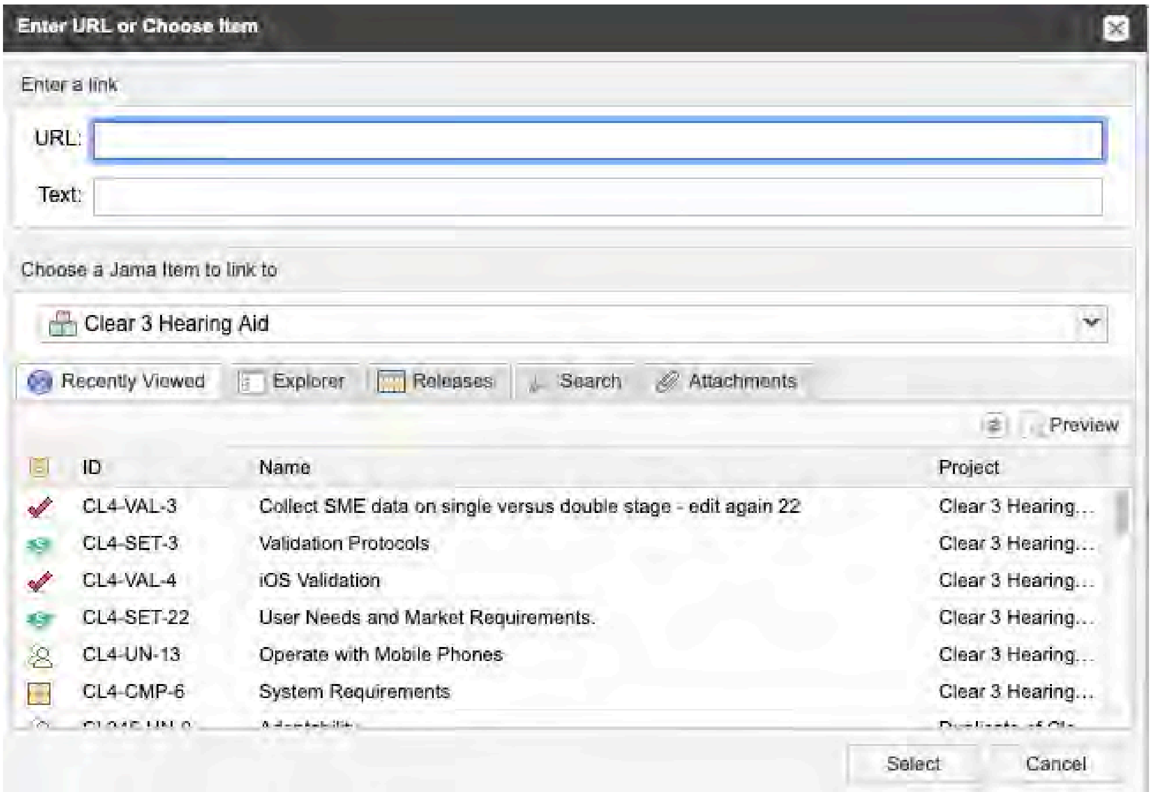
Insert a link in rich text fields

Direct links to attachment files can be helpful to reviewers. You can link from a rich text field directly to other sets, items, and attachments in Jama Connect, or to an external link.

1. Select the **Link** icon in the Rich Text toolbar.



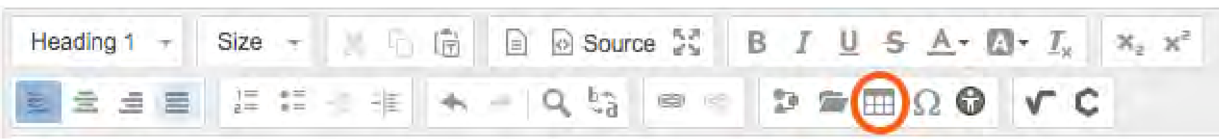
2. In the Enter URL or Choose Item window, do one of the following:
   - Enter the URL for an external link.
   - Select tabs to choose your link from recently viewed locations, the Explorer Tree, releases, search results, or attachments, then under the Attachments tab, upload a file directly from your desktop.



3. Click **Select** to place your link in the rich text field. The link doesn't work until you save changes to your item.
4. To break a link, select the **Break link** icon in the toolbar.

Add and edit tables with rich text editor

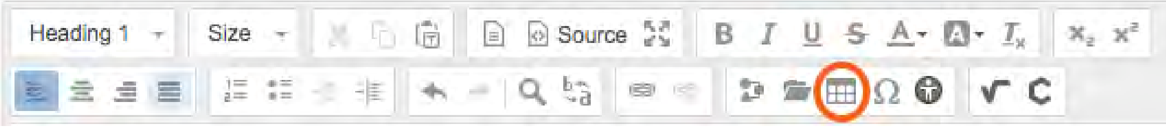
You can add a table to an individual field using the tools section of the rich text editor [87]. You can also edit the table.



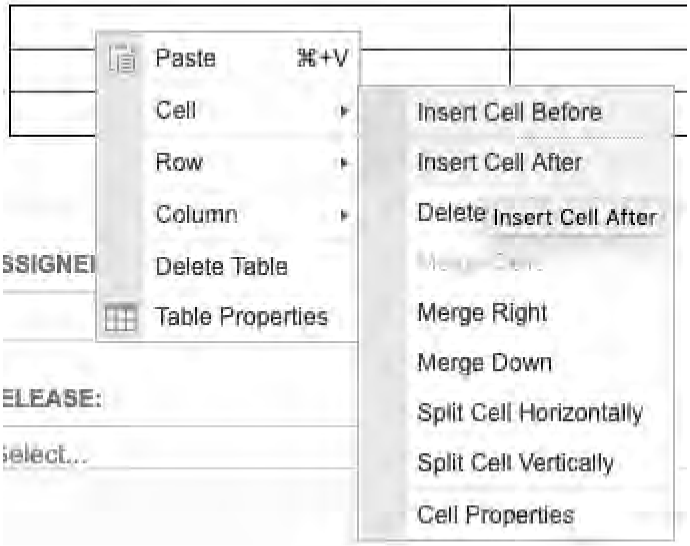
TIP

Although you can import tables from other documents, they can be difficult to work with once imported, and they don't export cleanly. Instead, create tables manually in Jama Connect.

1. To add a table, select the **Table** icon in the Tools section of the rich text editor.



2. To format a table, right-click any table cell, then select the preferred action.



3. To resize a table, select its borders.
4. To add space above or below a table, hover your mouse near the space, then select the blue button that appears on the right.

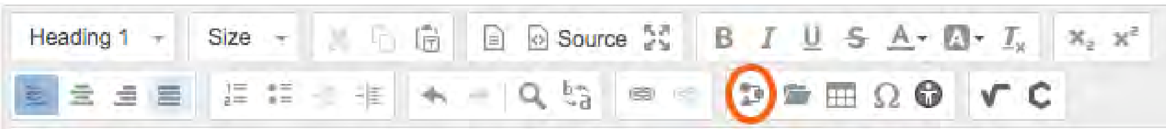
Insert rich text diagrams

Diagrams can be anything from basic shapes to more complex modeling and business process flows. Once saved, a diagram is an editable image within the rich-text field.

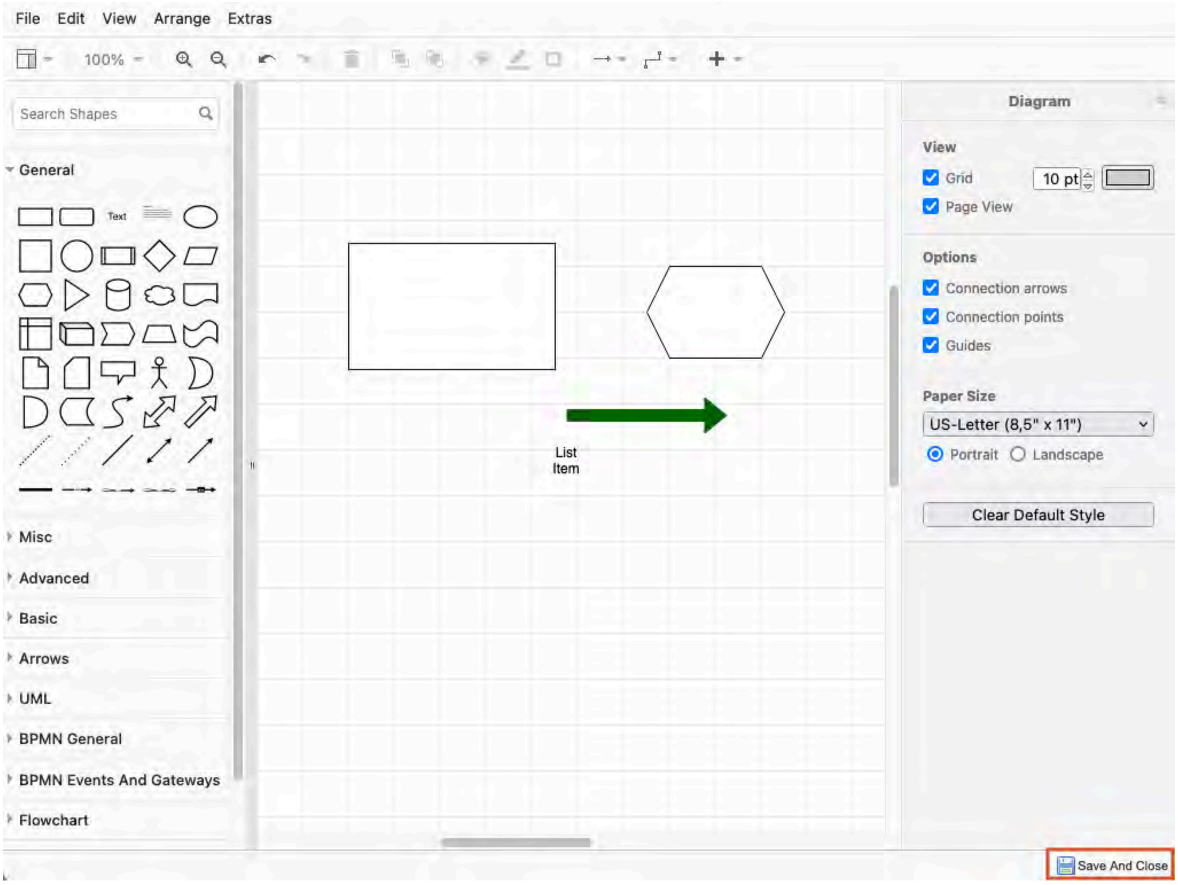
Important considerations

- You can't copy and paste between the diagram editor and other applications.
- You can't import images from other diagramming tools.

1. Select **Diagram** in the Rich Text toolbar to open the Graph Editor window. If you highlight an existing diagram before selecting the button, it appears in the window for editing.



2. In the **Graph Editor** window, create new shapes by dragging from the menu on the left and dropping to the canvas.



3. To add shapes, icons, tables, or text, or to use the search function, use options in the left pane. For more information, see MXGraph Editor.
4. To format style text and arrangement, use the options on the right.
5. When finished, select **Save and Close** to insert your image into the field.

Insert equations in rich text fields

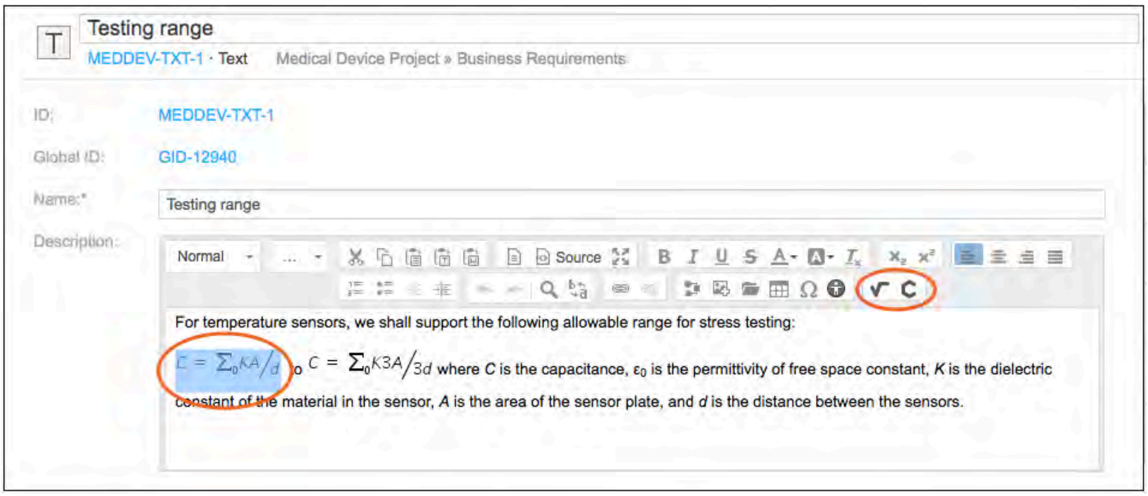
With this editor, you can create complex equations and edit them in Jama Connect. These are converted into images for safe storage and export, but are always editable when you have a MathType license.

Important considerations

Your organization determines the total number of floating licenses, which are available on a first-come/first-served basis. If a license is available, you can use it by opening the Equation Editor. To release the license, close the Equation Editor. If a license isn't available, try again in a few minutes or contact your admin for help.

> **NOTE**
> The MathType Equations Editor requires a separate license. Contact your Jama Connect administrator or sales representative to inquire about purchasing this license.
>
> For self-hosted customers with a license, the system administrator can enable the equations editor [500].

1. To add a new equation or formula, open the appropriate editor by clicking its icon (**Math Editor** or **Chemistry Editor**), then select the equation or formula you need.
2. To edit an existing equation or formula in your item, use one of these methods:
   - Highlight the equation/formula, then select the appropriate icon for the editor you need.
   - Double-click on the equation/formula to open the appropriate editor.



For more information about how to create mathematical equations or chemistry formulas, see the MathType User Guide.

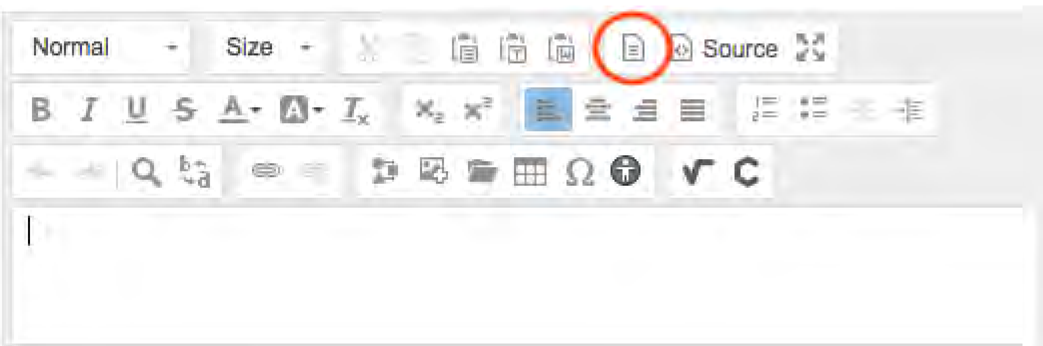
Insert templates to rich text editor

Templates are pre-written text or documents that can be inserted into the rich text editor to help uniformly format items like test cases or use cases.

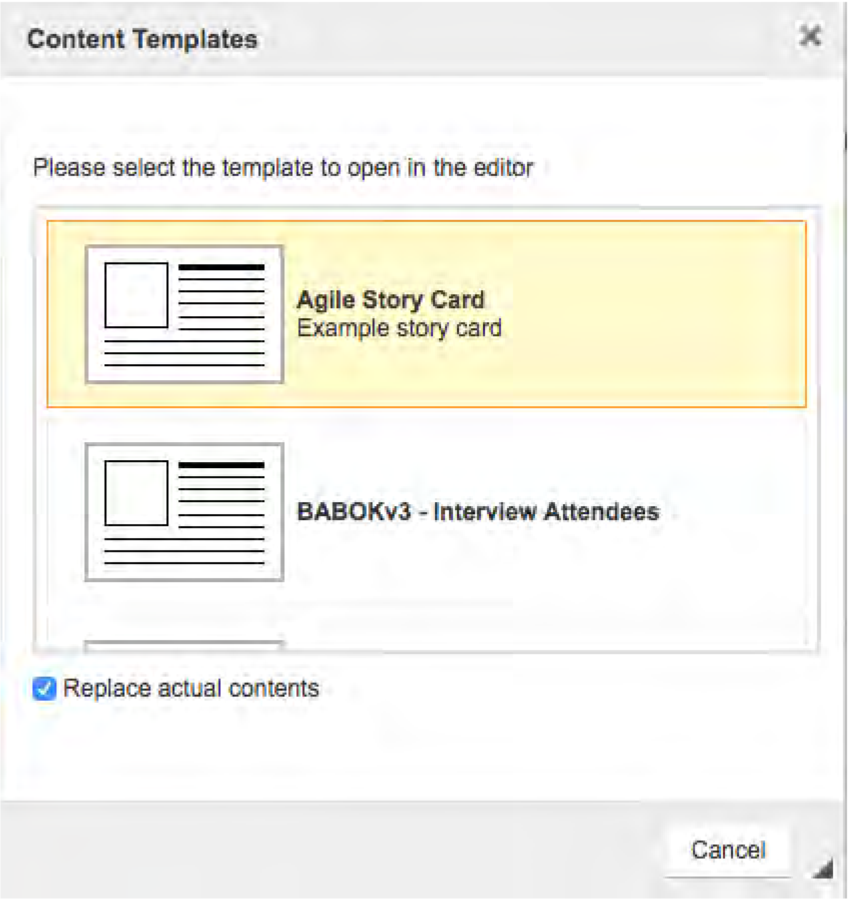
IMPORTANT

This feature must be configured by an organization admin [619] before you can use it.

1. To open the **Content Templates** window, select the **Templates** icon in the Rich Text toolbar.



2. Select a template from the list (for example, Basic Use Case, Document Style Use Case, Basic Test Case, and Agile Story Card) and continue editing the item.

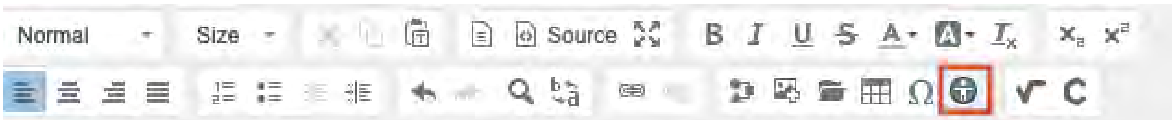


3. Select **Replace actual contents** to delete content currently in the field.
4. Click **Save & done**.

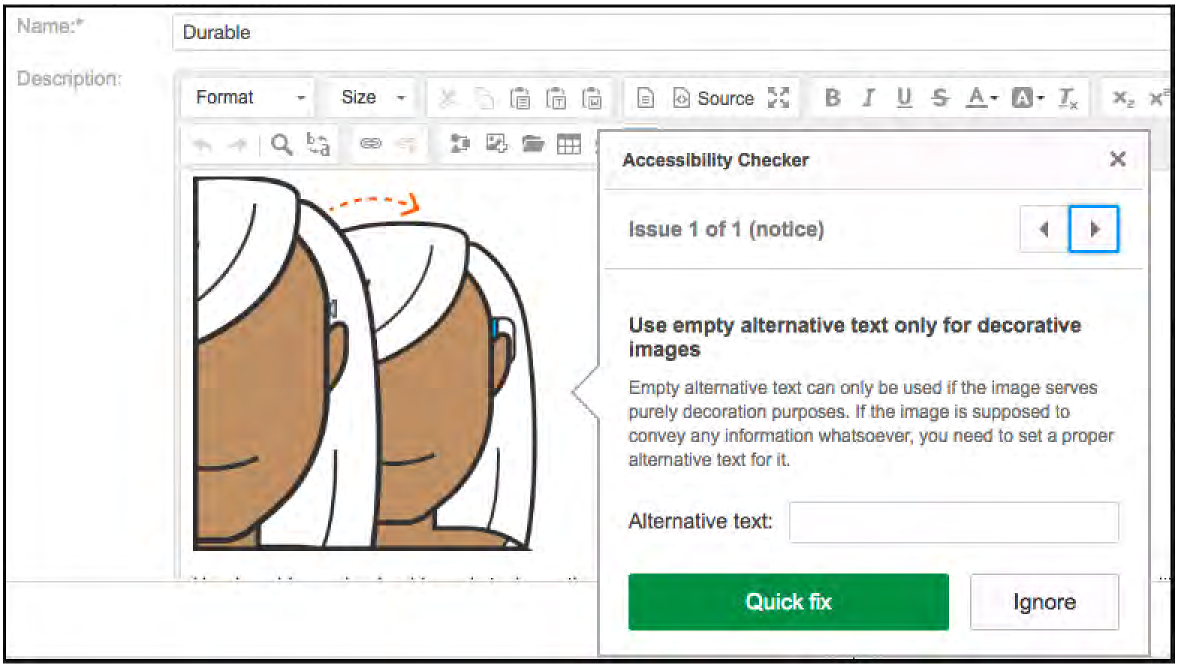
Run Accessibility Checker

The Accessibility Checker is a plugin that analyzes content created in the rich text editor. It lets you know if the content meets standards for people with impaired visual, cognitive, or motor skills.

1. Select the **Accessibility Checker** icon from the Rich Text toolbar.



The plugin inspects output HTML code to identify common accessibility problems and offers a "quick fix" solution.



2. Use the arrows at the top of the pop-up window to scroll through issues found by the Accessibility Checker.
3. For each identified issue, do one of the following:
   - Enter the suggested changes and select **Quick fix** to apply the changes.
   - Select **Ignore**.
4. If the Accessibility Checker finds no issues, you see a confirmation message. Select **OK** to close the message.

Importing content into Jama Connect

Content in Jama Connect is structured using an item-based approach. Items in Jama Connect can be containers (components, sets, folders) or instances of a particular type of item, such as a requirement or test case.

One way to populate Jama Connect with content is to import existing items (such as requirements or test cases) from other applications.

The most common applications for importing items into Jama Connect are:

Microsoft Word	• Determine hierarchy of imported items with Word heading styles (Heading 1, Heading 2...). • Retain formatting like bulleted lists, numbered lists, and text formatting. • Import Word tables as rich text field content or use tables to identify and import discrete items into Jama Connect.
Excel	• Map columns directly to fields. • Determine hierarchy of imported items with cell coloring or indentation. • Import via one-way import [113] or round-trip import/export [117].
IBM Doors	• Import objects found within Modules. • Map object attributes directly to fields within Jama Connect. • Maintain relationships during import with active IBM DOORS data.

The Data Import Wizard guides you through the process of importing items into Jama Connect. It recognizes file types like .doc, .docx, .xls, .xlsx, and .csv and displays options accordingly.

You might need to prepare your source file for a successful import. For example, if your Word file has requirements in tables, you might need to ensure that all tables use consistent headings in the first row so that the wizard can identify each table for import.

TIP

Before populating Jama Connect with your data, discuss with others on your team to make sure all needed information has a “home” (field) in Jama Connect. Involving team members in this process can avoid rework of having to import again for data that was not initially taken into account.

Importing items from a Word file

You can add items to Jama Connect from a Word file. You might, for example, have a Word document with various types of requirements (customer, system, or software requirements) or with test cases.

TIP

If you are familiar with how to prepare a Word file for import, go to Import a Word file [100].

When using a Word document to import items into Jama Connect, you can use these features to control how things are imported.

- **Headings and styles** — From the document’s **Styles** list, you can use default heading styles to determine hierarchy (nesting) of imported items in Jama Connect.Headings are always imported as items, not as folders. However, the hierarchy can be converted to folders once imported to Jama Connect. Apply the Normal style to item descriptions.
- **Tables** — Tables in a Word document can be imported directly into Jama Connect rich text fields as tables. Word tables can also be used to create discrete items in Jama Connect. If a table has a first row header and one row per requirement, the content is read as one item per row. If a table has two columns where the first column contains headings (for example, “Requirement Text”) and the second column contains data (for example, “The system shall…”), the content is read as individual items for each table that conforms to a repeated structure.
- **Import/Ignore Sections** — Use designated keywords in your Word document to define which sec-tions to import and which to ignore. This is useful for large documents when not all content is relevant to import.
- **Field mapping** — Define how Word elements map to Jama Connect item fields. This process varies slightly, depending on whether you use headers or tables to identify items.

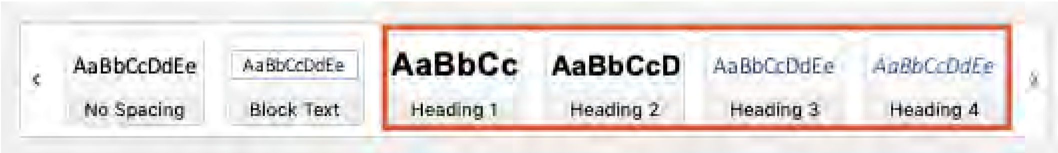
NOTE

Many Word styles are imported, but not all are converted exactly. The import wizard can't import a table of contents. Images are included as part of the import. OLE components, such as embedded Visio diagrams, are imported as PNG images.

Setting hierarchy with heading styles

When importing items from a Word document, you must prepare the document so that the import is successful. An important step in this preparation is to set the hierarchy, how items are nested in Jama Connect.

To set the hierarchy, use Word heading styles. Each heading represents a new item in Jama Connect. The heading text is imported into the item's **Name** field and any paragraph text, tables, or images are imported into the **Description** field.

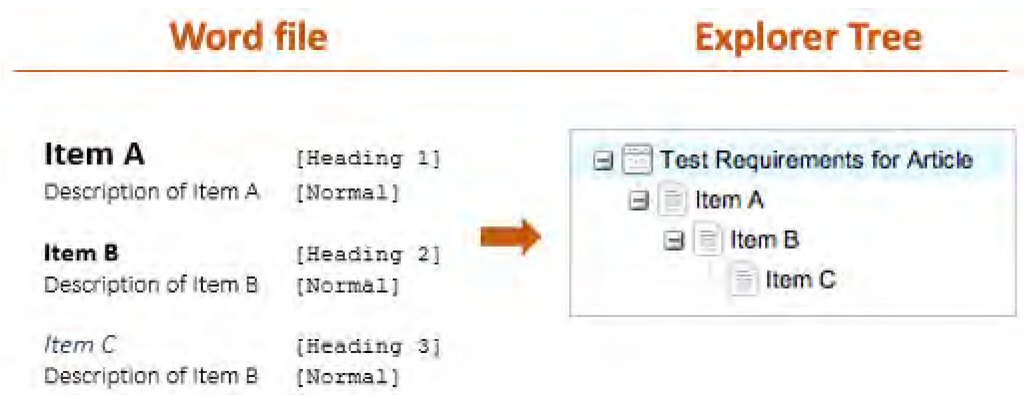


NOTE

In your Word document, all headings are imported as items, never as folders. However, the item hierarchy can be converted to folders after import using the Convert function.

The hierarchy of imported items is determined by which heading level you apply to the item name. A nested heading in Word is treated as a child item in Jama Connect, with a maximum of seven levels.

For example, in this diagram, **Item A** uses Heading 1 and is imported as a parent item. **Item B** uses Heading 2 and is imported as a child of Item A, and **Item C** uses Heading 3 and is imported as a child of Item B.



When you open the imported item in Single Item View, the **Name** field is populated with the text of the Word heading, and the Description field is populated with the text of the **Normal** style paragraph.

NOTE
For the Description and rich text fields, formatting for bullets, bold, italic, and underlining are retained when imported. Numbered lists are imported as bullets. When a list contains multiple levels, Jama Connect continues to use bullets. However, each set is indented to indicate the original level.

How tables are imported from Word

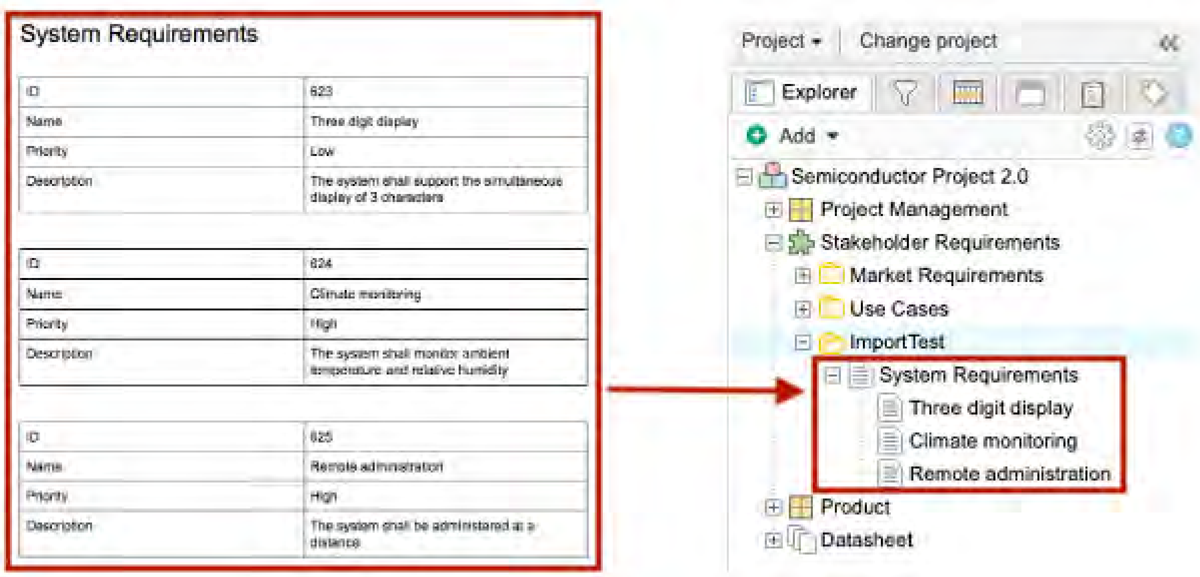
When importing items from a Word document, the Data Import Wizard lets you choose how tables are imported.

Each table is an individual item

Select this option when your Word document includes a separate table for each item you want to import. The wizard prompts you to complete field mappings with this option.

In this example, the document heading (**System Requirements**) is imported to Jama Connect as a parent item and each table is imported as a separate child item.

The table for each item must have at least two columns: column 1 is the field name (for example, **Name**) and column 2 is the field value (for example, **Three digit display**).



TIP

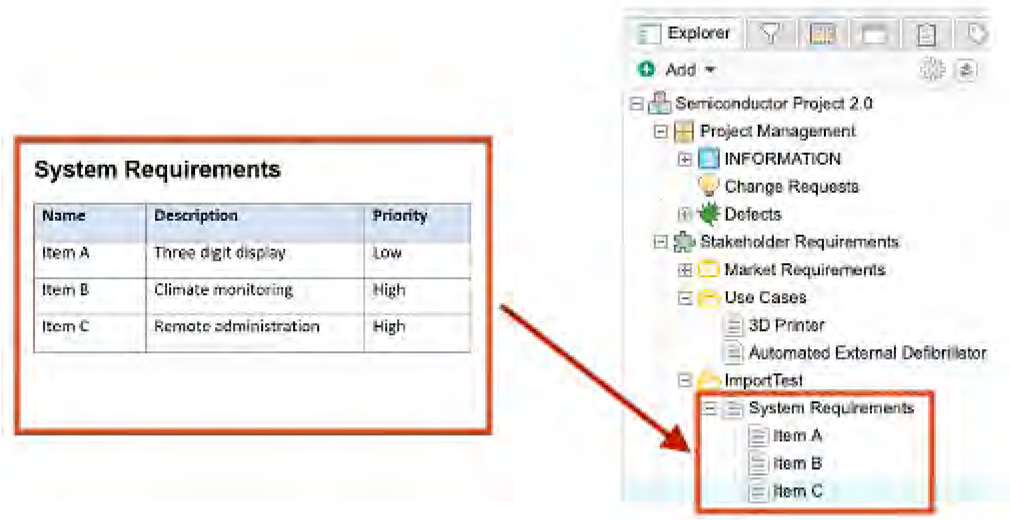
If your Word file includes multiple tables, make sure that all tables use the same wording for the field name in the header (first) row. For example, if one table uses **ID** for the field name, all tables must use **ID**, as in this example.

Each table row is an individual item

Select this option when your Word document includes tables where the first row is the heading row and each subsequent row constitutes a discrete item. The wizard prompts you to complete field mappings with this option.

The cells with field names must be the top row of the table. Each subsequent row represents a separate item, and a row's cells define the field values. If you have multiple tables in your document, each table must have the same heading values to be recognized by the import tool.

This is an example document after importing into the set called System Requirements.

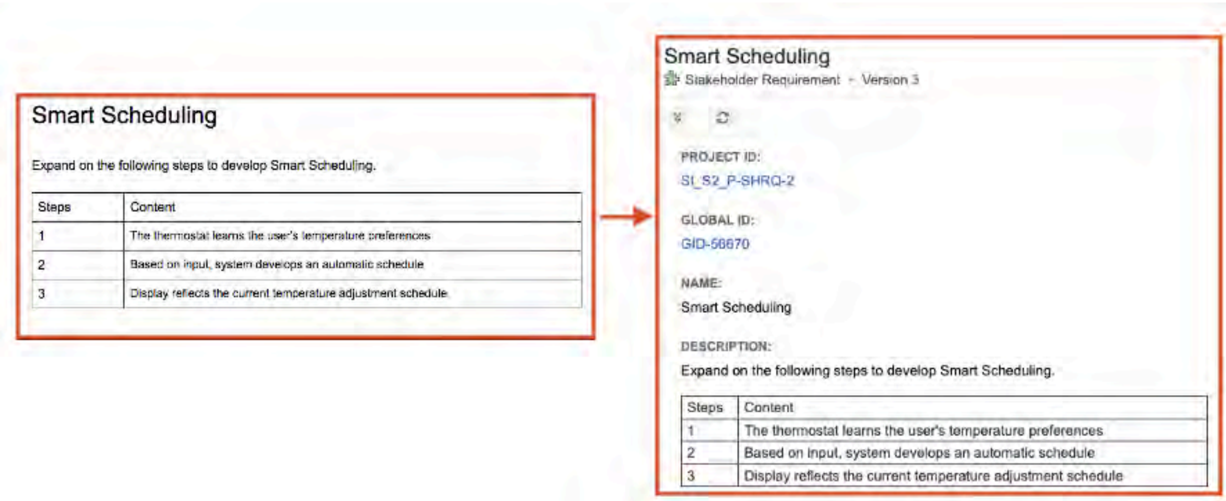


Descriptions might include tables

Select this default option when the document you're importing has no tables or the content of a table applies only to the item description.

You don't need to map fields when you select this option.

Here is an example document and the results after you import.

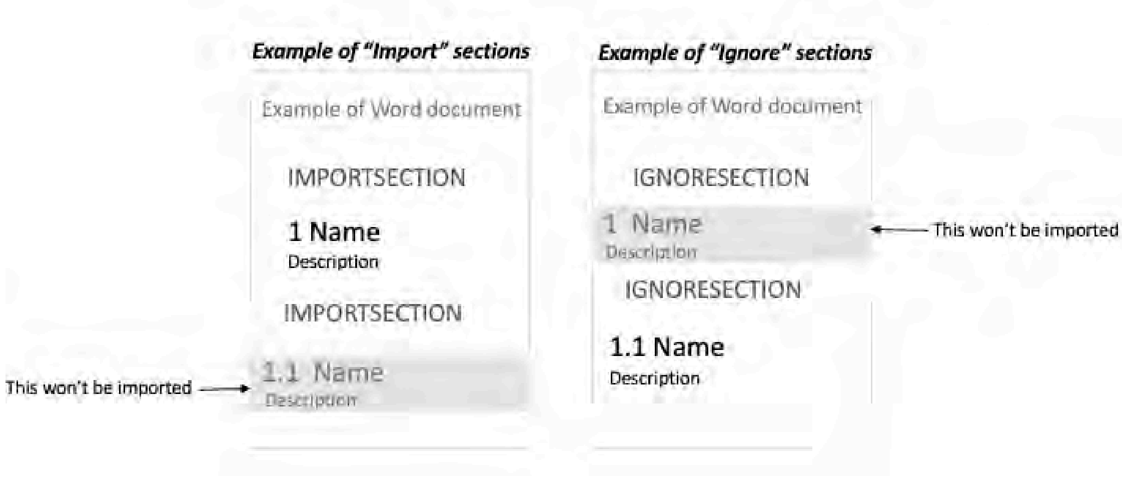


Prepare your Word file for import

Before you import a Word file, make sure it is formatted for a successful import. For example, confirm that you use default headings and that your tables are formatted properly.

You might also need to define the *document scope* by tagging sections of content to include and exclude. Requirement documents are often large and might contain sections or items that need to be imported to different sets, different folders, or not at all.

1. Open the Word file you intend to import to Jama Connect.
2. Set hierarchy with heading styles [96] (how items are nested in Jama Connect).
3. If your file includes tables, make sure they are formatted according to how tables are imported from Word [97].
4. (Optional) If you don't want to import the entire file, add keywords to sections you want to import and ignore.
   Use start/stop keywords that are simple, one-word, and all caps with no formatting. Keywords must not be actual words that might appear in the content. Commonly used start/stop keywords are IMPORTSECTION and IGNORESECTION.
   a. Insert the keyword IMPORTSECTION *before and after* each section you want to import.
   b. Insert the keyword IGNORESECTION *before and after* each section you want to exclude from the import.

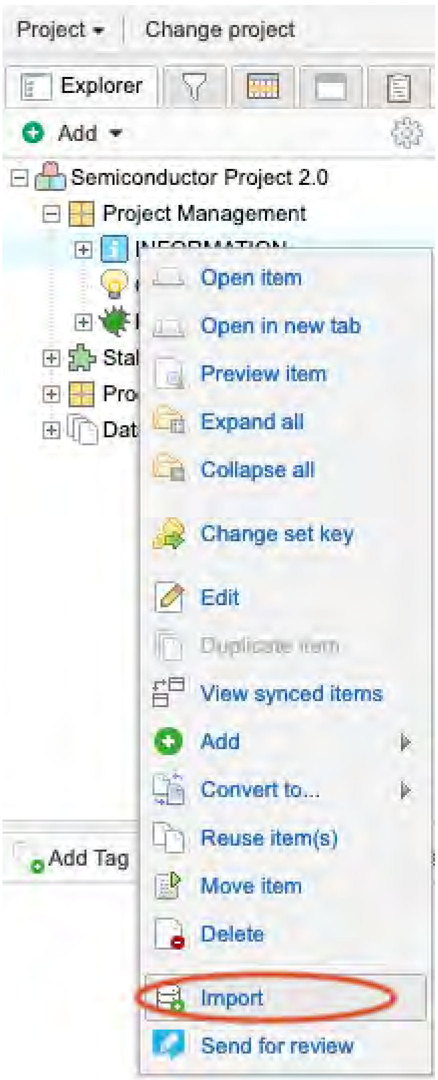


5. Save and close the Word file.

Import a Word file

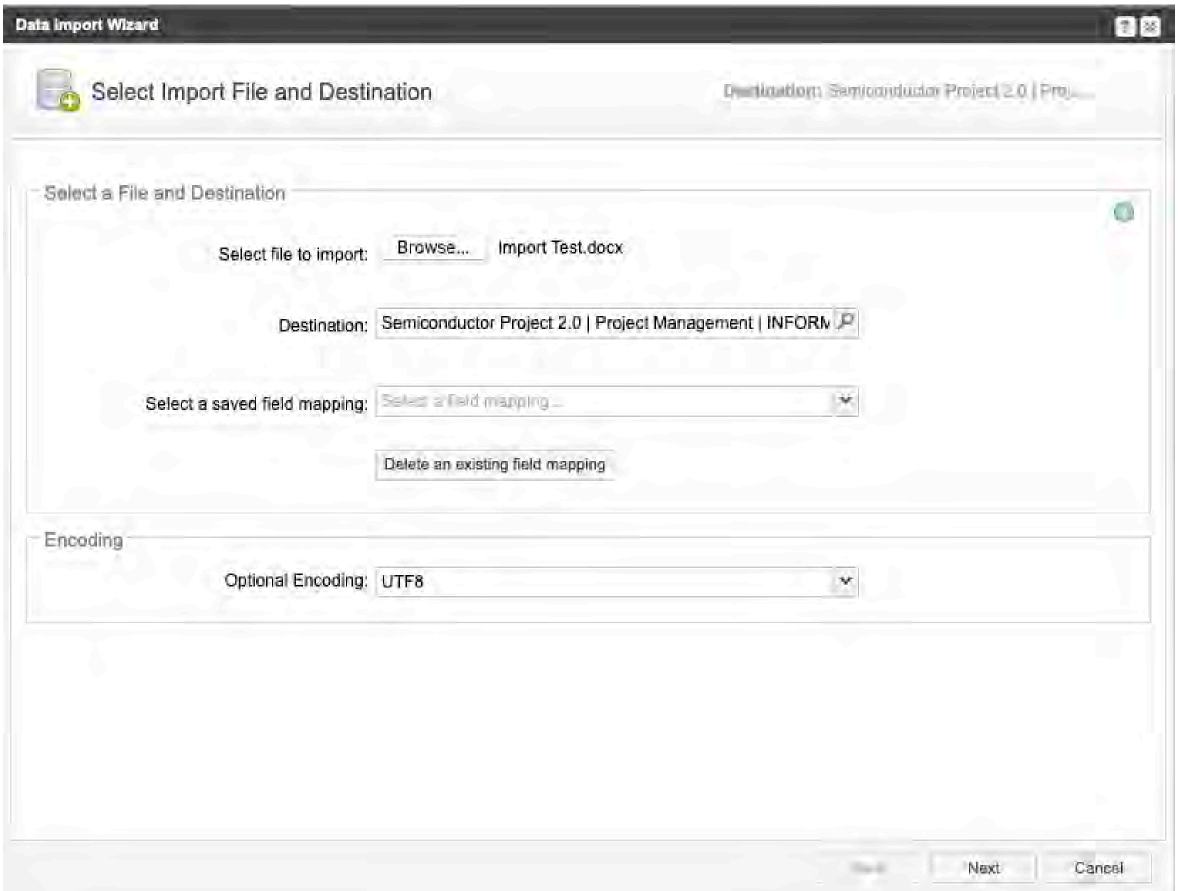
Once you have exported data from DOORS, you can import it to Jama Connect using the Data Import Wizard in Jama Connect.

1. Open the Data Import Wizard: In the Explorer Tree, right-click an item where you want to import new items, then select **Import**. Your file will be imported below the selected item.



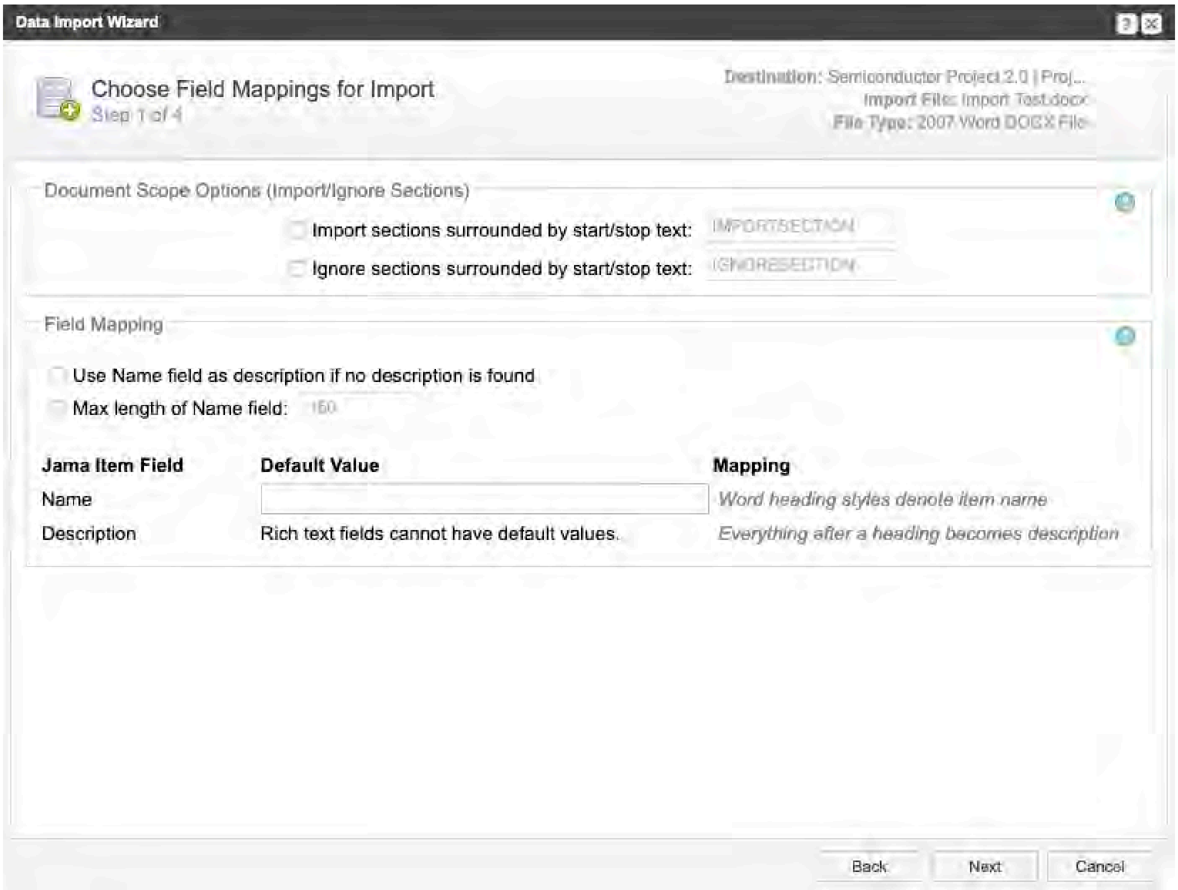
The first page of the wizard opens with the **Destination** field pre-populated.

2. Complete the **Select Import File and Destination** page, then click **Next**.



   a. Click **Browse** and select the Word file you want to import.
      If the file type isn't recognized, the import doesn't continue.
   b. (Optional) If you previously saved your field mappings for importing a Word file, click the **Select a saved field mapping** field and choose that file.
      This is useful if you are importing multiple documents with the same field mapping.
   c. (Optional) In the **Encoding** section, select the character set encoding to use during the import. For most imports you can use the default, UTF-8, which is used by the Jama Connect database.

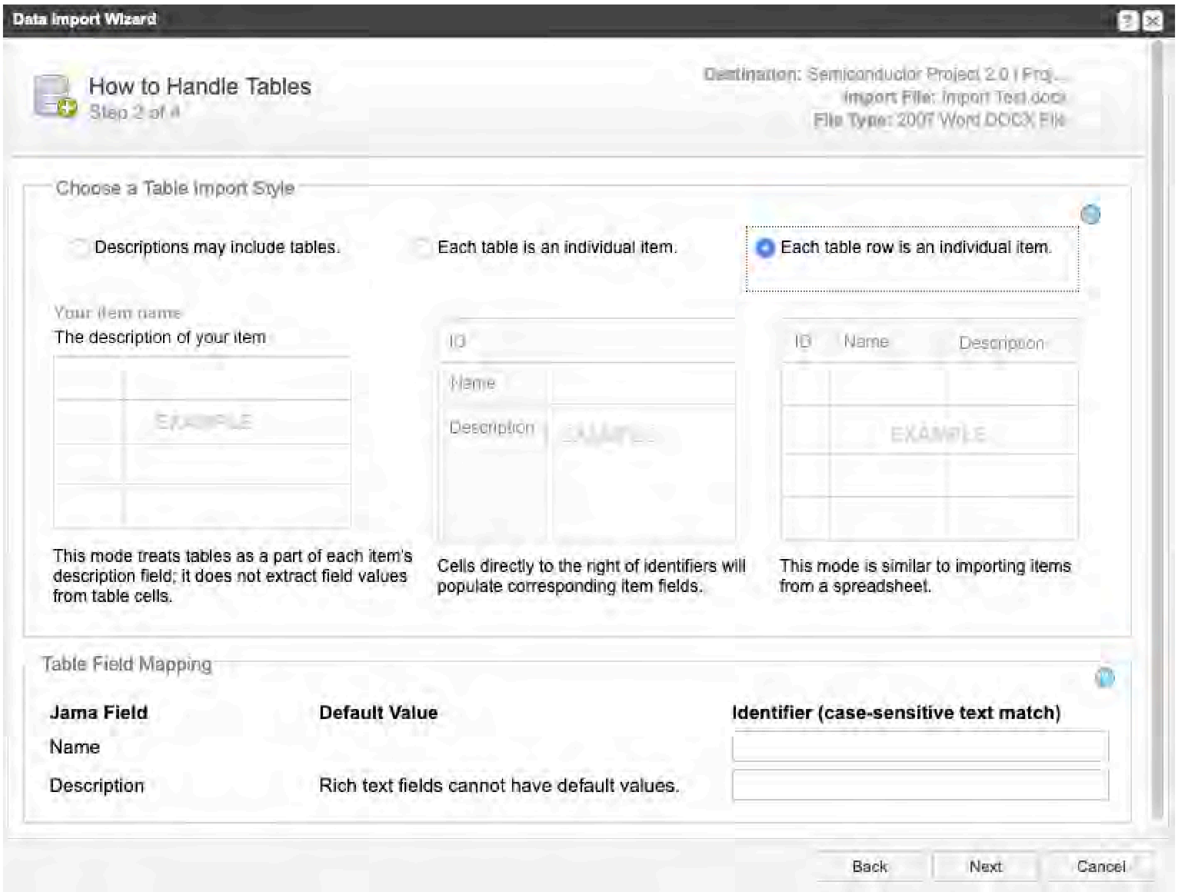
3. Complete the **Choose Field Mappings for Import** page, then click **Next**.



a. **Document Scope Options** — If you tagged your Word file to import and ignore some sections, select the checkboxes and enter the name of each keyword (for example, INCLUDESECTION and IMPORTSECTION).

b. **Field Mapping**
   - **Max length of Name field** — Select this and enter a maximum number of characters for the name. Default is 255 but this option lets you further limit the name length.
   - **Default Value** — Use this option (when available) if you want a field value to be used by default. Then, all items created during import include the default value you enter. For example, you can set the status to **Draft** for all imported items.

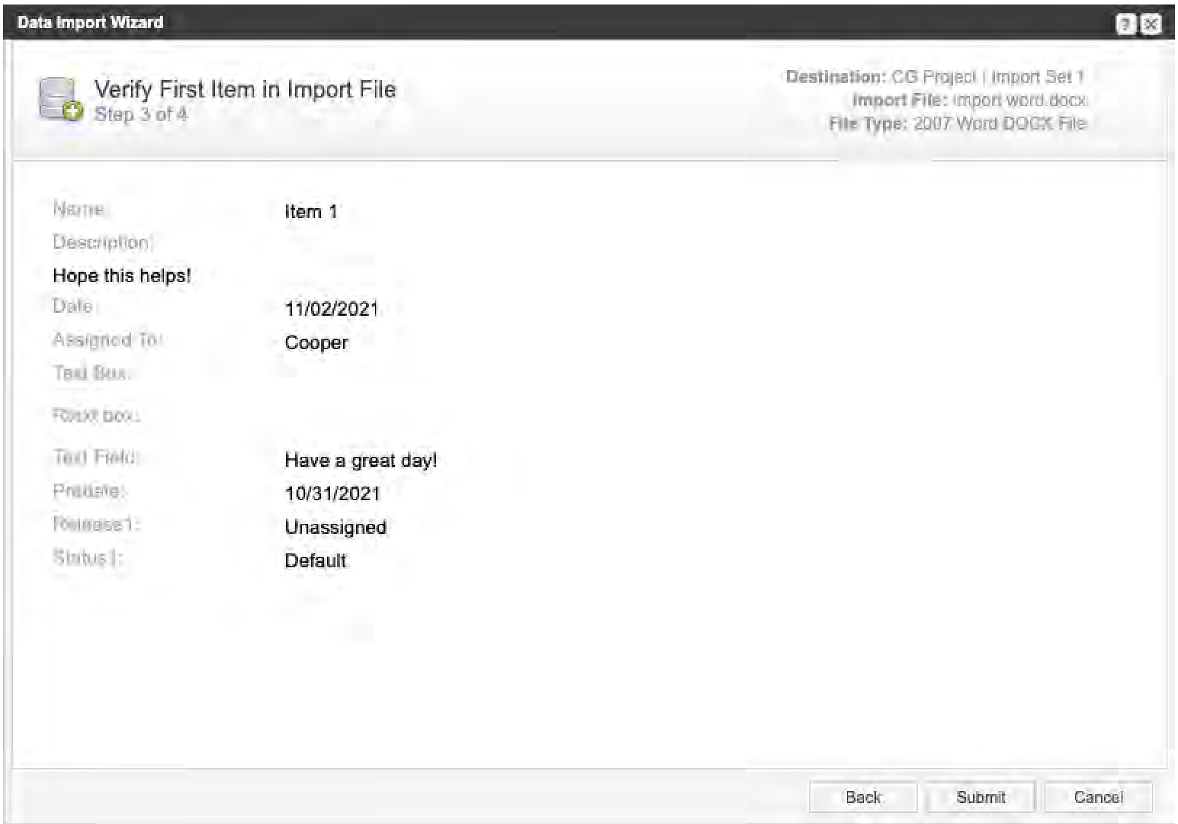
4. Complete the **How to Handle Tables** page, then click **Next**.



a. **Choose a Table Import Style** — Select this option if your item description includes tables:
   - **Descriptions may include tables** — Select this option if your file uses headings for hierarchy, but the content includes some tables.
   - **Each table is an individual item** — Select this option if your file uses tables and includes a separate table for each item. Must complete Table Field Mapping.
   - **Each table row is an individual item** — Select this option if your file uses tables and the tables use a separate row for each item. Must complete Table Field Mapping.

b. **Table Field Mapping** — Complete this section if importing table content as individual items (option 2 or 3 above). From your Word tables, copy the heading values into the Identifier field for each Jama Field mapping. For some Jama Fields, you can set a default value (for example, setting status to Draft), which populates the field if the mapping has no value.

5. **Verify First Item in Import File** — Review the mapping of the first item found in the document you're importing. If the mapping is correct, select **Submit** to import the target document.



a. (Optional) Select **Import another file** to restart the wizard.
b. (Optional) To reuse the field mapping settings, select **Save this as new document mapping**.

> **NOTE**
> Field mappings are project-specific and can be used by any user in the project where the mappings are saved.

c. Click **Submit**.

6. Click **Close**.

A message appears in the Data Import Wizard to confirm that the import was successful.

Importing from Excel

You can use the Excel Import Wizard to import data into Jama Connect from a Microsoft Excel document. This process is called a *one-way Excel import*. You can also export existing data from Jama Connect to an Excel template, then update the data in Excel as needed, and import it back into Jama Connect. This called an *Excel round-trip*.

To ensure a successful import, your Excel worksheet must be created and formatted for the specific type of data (items, test cases, item relationships) that you want to import.

For items and test cases, your worksheet indicates item hierarchy — how items are nested — as folders, parent items, or child items. You can use color or indentation to define hierarchy.

When importing items, your worksheet can include only one item type. If you need to import more than one item type, you must create a separate worksheet for each item type and import each worksheet separately.

TIP

If you are familiar with how to prepare an Excel file for import, go to the tasks Import items [113], Export/import via Jama Connect-to-Excel round trip [117], and Import relationships [120].

Recognized file types

Jama Connect imports data from Excel files with these extensions: **.xlsx**, **.xls**, and **.csv**.

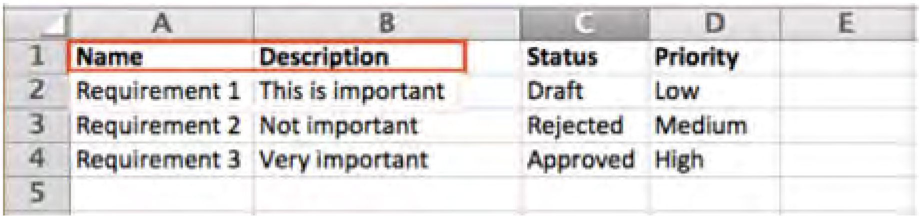
NOTE

An import from a file with a .csv extension doesn't create folders or hierarchy. Only .xlsx and .xls files create folders and hierarchy.

Preparing a worksheet to import items

Before importing items from your Excel worksheet, make sure it contains all the necessary elements for a successful import.

- One item type per worksheet. If you have more than one item type to import, create a separate worksheet for each type.
- Header row [106] **with field names**



	A	B	C	D	E
1	Name	Description	Status	Priority	
2	Requirement 1	This is important	Draft	Low	
3	Requirement 2	Not important	Rejected	Medium	
4	Requirement 3	Very important	Approved	High	
5					

- Valid pick list options [106]
  If importing into a Jama Connect pick list field, make sure the values in your Excel worksheet exactly match the available values in the Jama Connect field.
- **Date format**
  When including dates in text-formatted cells, always format dates like this:
  mm/dd/yyyy hh:mm:ss Z (example: **-0800, +1000, +0700**) where **Z** is the time zone difference from GMT.
- **Roundtrip**
  If importing to update existing items in Jama Connect, you must use a spreadsheet generated from Jama Connect when you select the **Excel Export for Roundtrip** option.
  Create a baseline [263] before a round-trip export/import process, in case you need to restore old data.

TIP

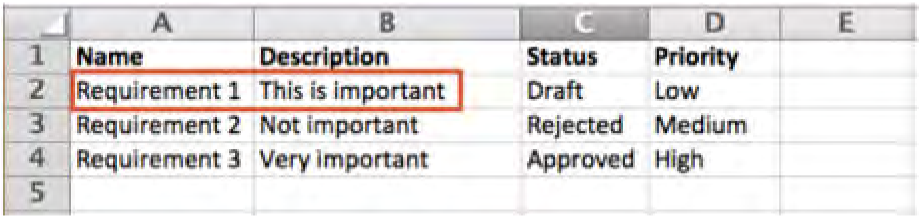
To import test cases or requirements, see Preparing a worksheet to import test cases [110] or Preparing a worksheet to import relationships [112].

Defining header row in Excel

Including a header row in your worksheet helps to easily map columns in the worksheet to fields in Jama Connect. Typically, the Header row is the first row in your worksheet, but it doesn't have to be.

The header row includes fields listed horizontally, with values for those fields defined in subsequent rows.

Your worksheet can contain only one header row. If you don't use column headers, the import automatically numbers the columns sequentially from left to right, starting with 1.



	A	B	C	D	E
1	Name	Description	Status	Priority	
2	Requirement 1	This is important	Draft	Low	
3	Requirement 2	Not important	Rejected	Medium	
4	Requirement 3	Very important	Approved	High	
5					

We recommend that you always include **Name** and **Description** fields. You can add optional fields like **Status** or **Priority**.

If you don't include a **Name** field, the worksheet must still contain a column to be mapped to the Jama Connect **Name** field. Every item and folder in Jama Connect must have a value in the **Name** field. If your requirements were previously managed in an Excel worksheet without this field, you can create a new column for **Name** values or designate an existing column, such as a legacy ID value, for the **Name**.

If other fields for the imported item type are required (based on Admin configurations), you can add them to your worksheet or plan to set a default value during the import.

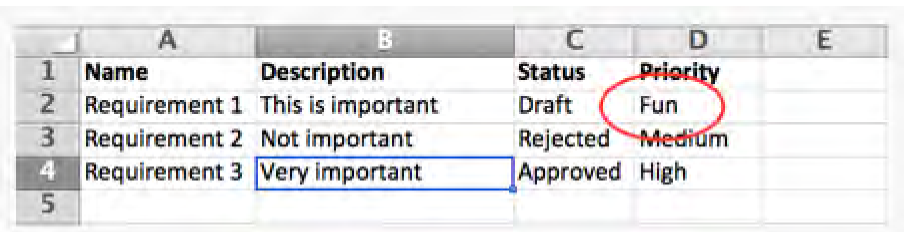
IMPORTANT

An organization administrator can add or delete fields [605] for an item type in Jama Connect. However, the **Name** field is a system field and can't be disabled.

Defining pick lists in Excel

When your worksheet includes a column for a pick list in Jama Connect, for example **Priority** or **Status**, the values you define must match the list of available values in Jama Connect. Otherwise, the imported item shows a blank entry for that field value.

In this example worksheet, Requirement 1 lists **Fun** as a Priority value, which doesn't match the values in Jama Connect (**High**, **Medium**, **Low**). After importing this item, the List Item View shows a blank entry for Priority.



	A	B	C	D	E
1	Name	Description	Status	Priority	
2	Requirement 1	This is important	Draft	Fun	
3	Requirement 2	Not important	Rejected	Medium	
4	Requirement 3	Very important	Approved	High	
5					

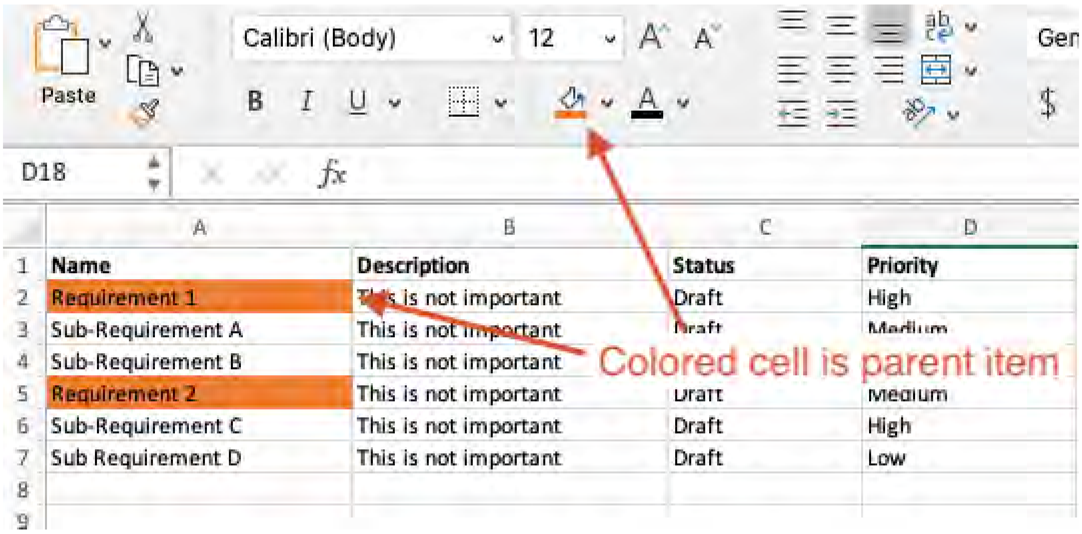
TIP

Before importing your worksheet, identify the columns in Excel that will be mapped to pick list fields in Jama Connect. Use the Excel Filter functionality to identify the values found in that column in Excel. If the values found in Excel do not have an exact match in the Jama Connect pick list, you must correct errors before importing. Otherwise, the value will be blank.

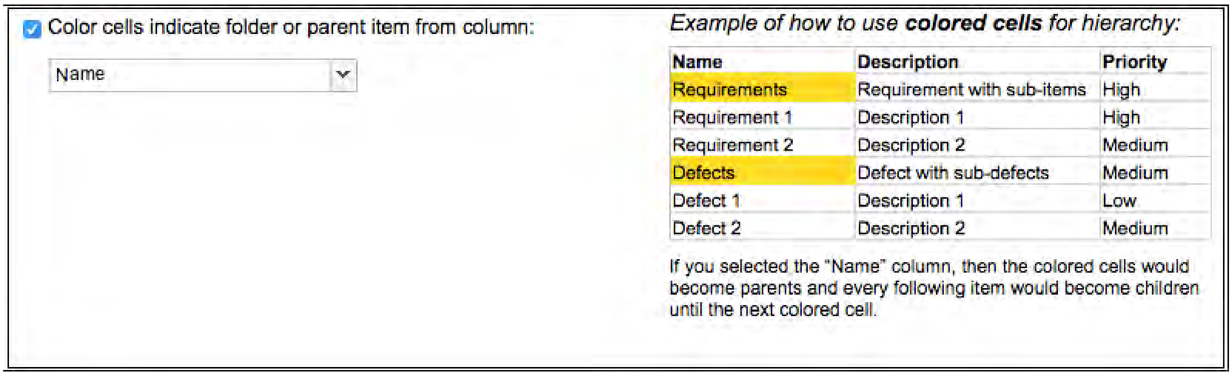
Setting hierarchy with color in Excel

When you import items from an Excel worksheet, you can use cell color to determine hierarchy of imported items. This method allows only one tier of hierarchy and doesn't differentiate between colors.

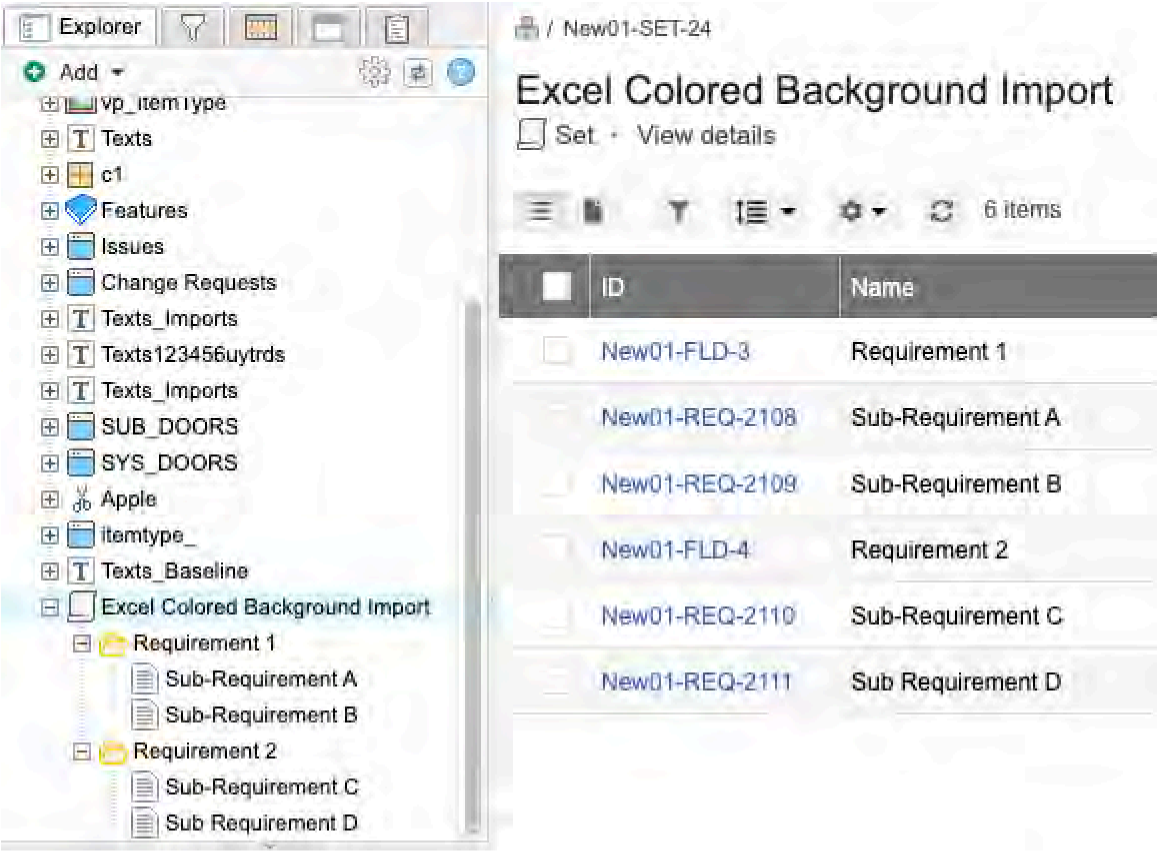
In your Excel worksheet, you can select the cell you want to use as a parent container and use a color to indicate hierarchy.



When you import the document, the Data Import Wizard prompts you to select the column that will determine hierarchy. In this example, **Name** column is selected.



The resulting import shows the colored cells as parent containers.

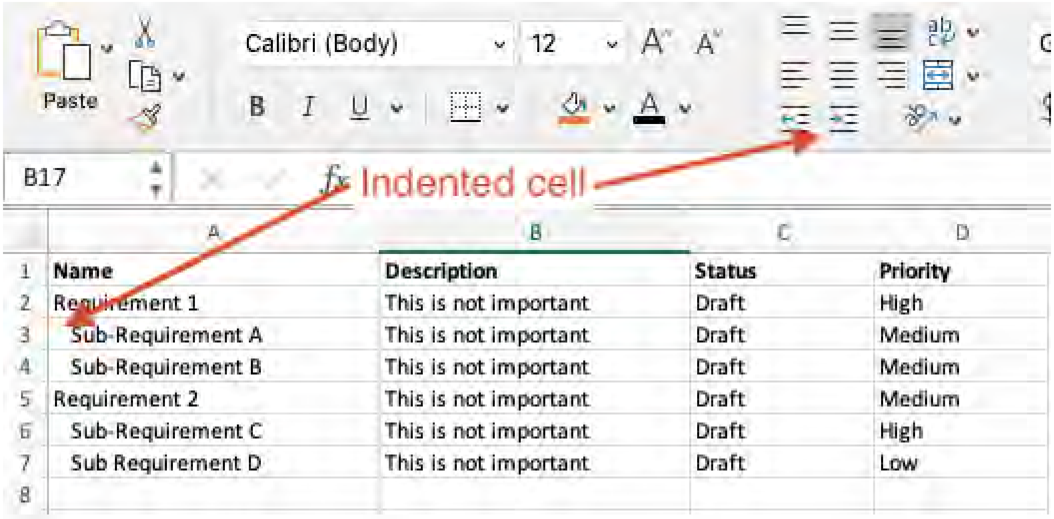


Setting hierarchy with indentation in Excel

When you import from an Excel worksheet, you can use indentation to determine hierarchy of imported items.

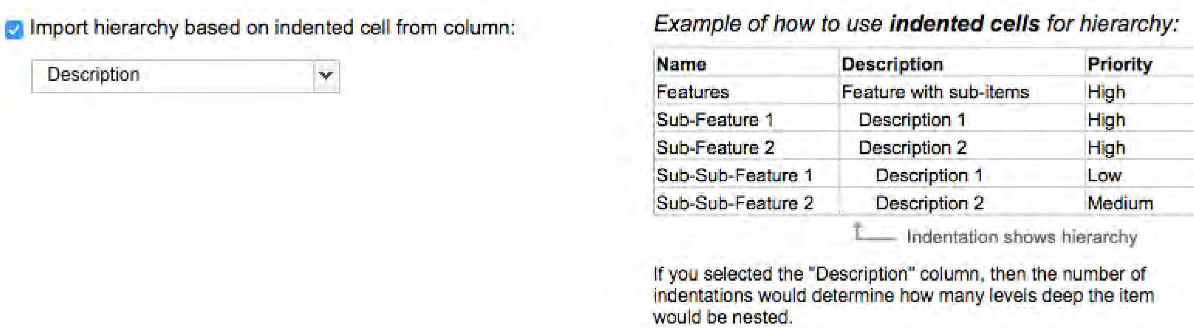
In your Excel worksheet, you decide which cells you want to be parent items, then indent the cells below the parent items.

Using indentation for hierarchy allows multiple levels of hierarchy (for example, folders containing sub-folders and subfolders containing items). This is an advantage over using highlighted cells for hierarchy.



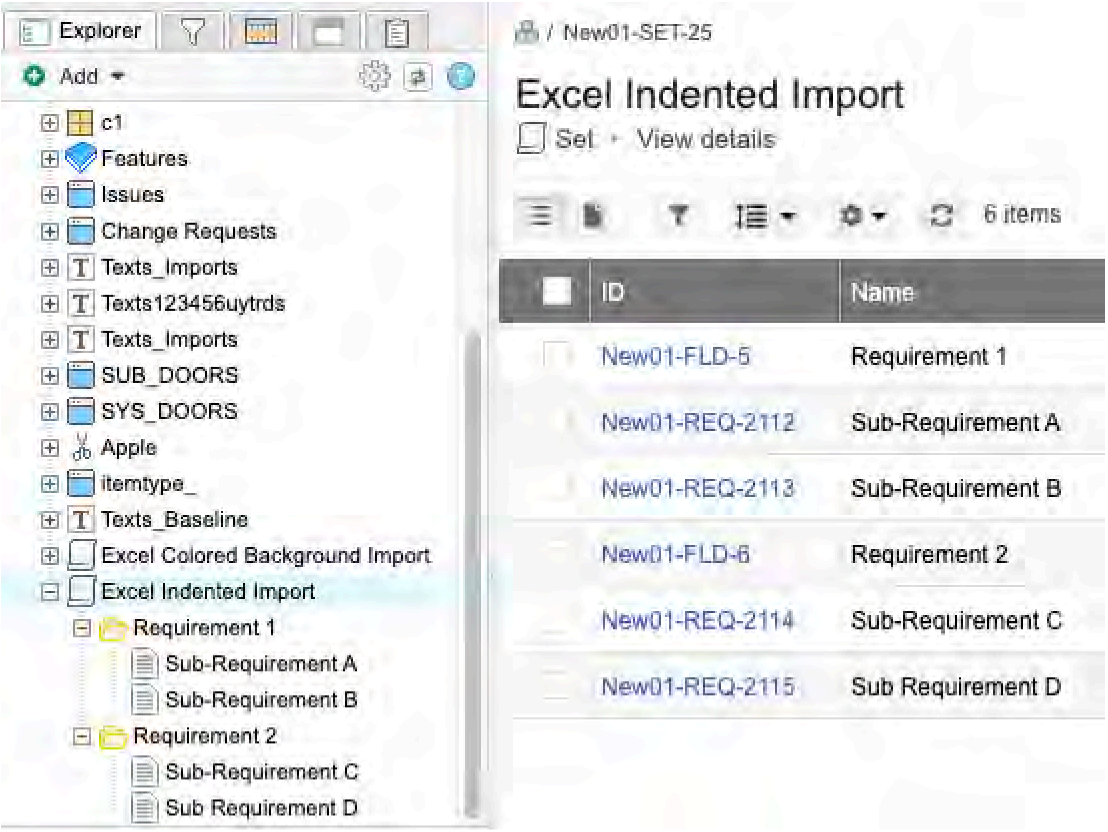
	A	B	C	D
1	Name	Description	Status	Priority
2	Requirement 1	This is not important	Draft	High
3	Sub-Requirement A	This is not important	Draft	Medium
4	Sub-Requirement B	This is not important	Draft	Medium
5	Requirement 2	This is not important	Draft	Medium
6	Sub-Requirement C	This is not important	Draft	High
7	Sub Requirement D	This is not important	Draft	Low
8				

When you import the document, the Data Import Wizard prompts you to select the column that will determine hierarchy. In this example, **Description** column is selected.



Name	Description	Priority
Features	Feature with sub-items	High
Sub-Feature 1	Description 1	High
Sub-Feature 2	Description 2	High
Sub-Sub-Feature 1	Description 1	Low
Sub-Sub-Feature 2	Description 2	Medium

The resulting import shows the indented cells as child items:



Preparing a worksheet to import test cases

To import test cases and their steps, you use the **Excel import to Jama Connect** option. You can use a **one-way import** to import a test case from an Excel worksheet or, if you need to update existing test cases, you can use a **round-trip** process.

Required header fields

To successfully import test cases and their test steps, your Excel worksheet must contain one header row with these four columns (field names): **Test Case Name**, **Action**, **Expected Results**, and **Notes**.

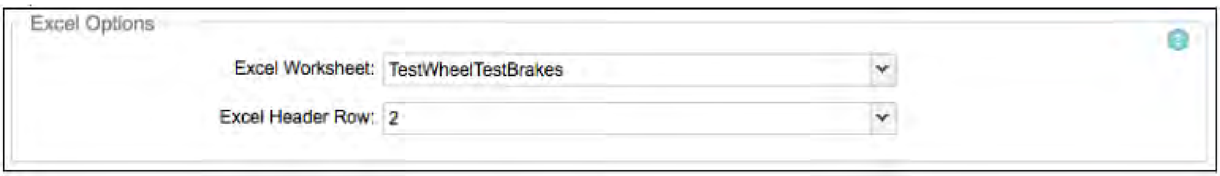
A	B	C	D
Test Case Name	**Action**	**Expected Results**	**Notes**

One-way import for test cases

Quickly bring legacy test cases into Jama Connect. This example worksheet imports two test cases: "Test Wheel" and "Test Brakes." Each row with the repeated test case name is imported as a new test step.

A	B	C	D
Test Case Name	**Action**	**Expected Results**	**Notes**
Test Wheel	Rotate	move in circular motion with no obstruction	tester notes
Test Wheel	Let air out	self inflator starts	tester notes
Test Wheel	Poke Hole	self inflator starts	tester notes
Test Wheel	bend spoke	wheel breaks	tester notes
Test Brakes	apply brakes downhill	slows to a stop in 20ft at 80% downgrade at 50MPH	tester notes
Test Brakes	apply brakes downhill	slows to a stop in 30ft at 85% downgrade at 50MPH	tester notes
Test Brakes	apply brakes downhill	slows to a stop in 40ft at 90% downgrade at 50MPH	tester notes
Test Brakes	apply brakes downhill	slows to a stop in 15ft at 80% downgrade at 40MPH	tester notes
Test Brakes	apply brakes downhill	slows to a stop in 20ft at 85% downgrade at 40MPH	tester notes
Test Brakes	apply brakes downhill	slows to a stop in 25ft at 90% downgrade at 40MPH	tester notes
Test Brakes	apply brakes downhill	slows to a stop in 10ft at 80% downgrade at 30MPH	tester notes
Test Brakes	apply brakes downhill	slows to a stop in 15ft at 85% downgrade at 30MPH	tester notes
Test Brakes	apply brakes downhill	slows to a stop in 20ft at 90% downgrade at 30MPH	tester notes

When importing the Excel file, follow the instructions for any one-way import [113]. The Data Import Wizard prompts you to select the worksheet, plus the number of the header row.



NOTE

To import items or requirements, see Preparing a worksheet to import items [105] or Preparing a worksheet to import relationships [112].

Round-trip for test cases

When you need to update a test case already in Jama Connect, you can use a round-trip [117] process. First you export a test case from Jama Connect, which generates an Excel file populated with the required fields. Next you update any fields that need changes, then re-import the data back to Jama Connect.

Because of the relationship between test cases and test runs, you can't update the test case status [341] in a round-trip import/export. The test case status field is calculated from all test runs derived from that test case.Test case status.

Add and delete a test step in Excel

You might need to add a new step to your test case or delete an existing step.

1. **Add a test step** — Copy an existing row (step), then right-click on the row where you want to insert the copy and select **Insert Copied Cells**. Edit the fields in the copied row to reflect the information needed for the new step.

K	L	M	N	O	P	Q	R	S	T	U	V
Description	Ass	Priority	Test Case	Locked By	Last I	Modified B	Modified	Step #	Step Actio	Step Expected	Step Notes
Tests included whe		Medium	Not Sched		05/17	Sam Test	05/17/20	1	Not Sched		
open a web browse		Unassigne	Not Sched			Sam Test	05/17/20	1	Not Sched		
open a web browse		Unassigne	Not Sched			Sam Test	05/17/20	2	Not Sched		
open a web browse		Unassigne	Not Sched			Sam Test	05/17/20	3	Not Sched		
open a web browse		Unassigne	Not Sched			Sam Test	05/17/20	4	Not Sched		
open a web browse		Unassigne	Not Sched			Sam Test	05/17/20	6	Not Sched		
open a web browse		Unassigne	Not Sched			Sam Test	05/17/20	7	Not Sched		
open a web browse		Unassigne	Not Sched			Sam Test	05/17/20	7	Not Sched		
open a web browse		Unassigne	Not Sched			Sam Test	05/17/20	8	Not Sched		
open a web browse		Unassigne	Not Sched			Sam Test	05/17/20	9	Not Sched		
open a web browse		Unassigne	Not Sched			Sam Test	05/17/20	10	Not Sched		
open a web browse		Unassigne	Not Sched			Sam Test	05/17/20	11	Not Sched		

IMPORTANT

Always use **Insert Copied Cells** instead of **Paste**. The Paste command replaces the row instead of adding a new row, and subsequent steps are removed on import.

2. **Remove a step** — Right-click on the row (step) you want to remove, then select **Delete**. Re-numbering of steps takes effect on import.
3. Save the file.

Preparing a worksheet to import relationships

Relationships are imported to Jama Connect from an CSV file, using a relationship import plugin [564]. You can't import relationships with the Excel Import Wizard.

A properly formatted CSV file, when opened in Excel, consists of two columns:

- **Column A** — Parent or upstream item references
- **Column B** — Child or downstream item references

	A	B
1	CP-REQ-10	CP-UC-94
2	CP-REQ-8	CP-UC-95
3	CP-REQ-9	CP-UC-96
4		

As needed, you can import multiple relationships to a single item or many relationships to many items. To accomplish this, you create duplicate cell combinations for those items. In this example, CP-REQ-10 has three relationships, each in its own row.

	A	B
1	CP-REQ-10	CP-UC-94
2	CP-REQ-10	CP-UC-95
3	CP-REQ-10	CP-UC-96
4		

NOTE

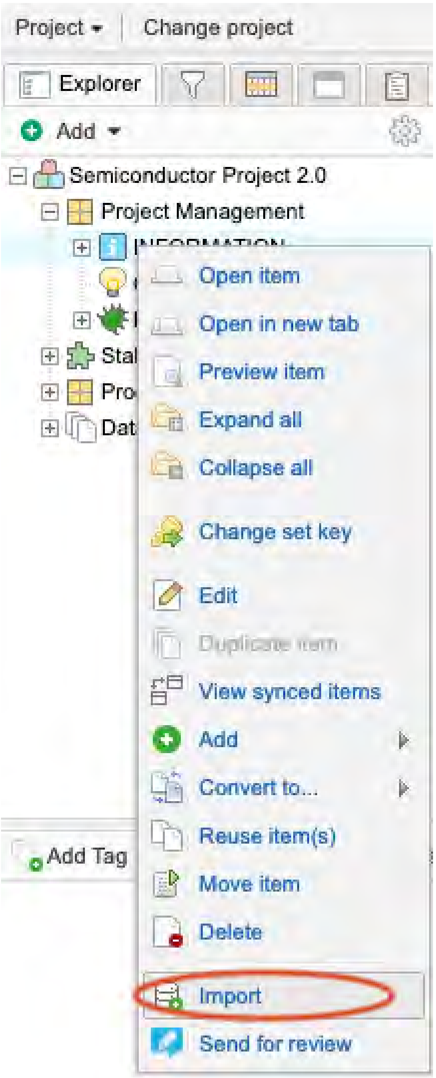
To import items or test cases, see Preparing a worksheet to import items [105] or Preparing a worksheet to import test cases [110].

Import items or test cases from an Excel worksheet

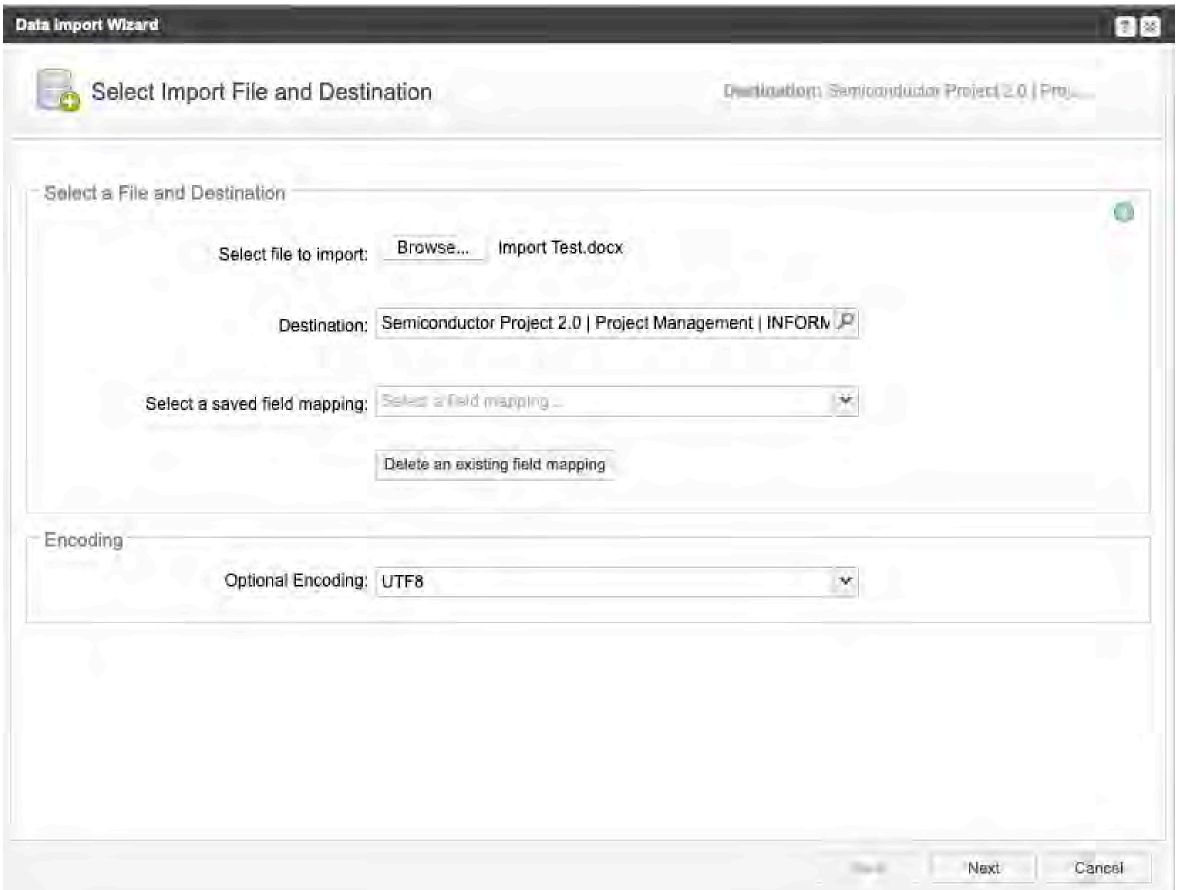
Importing items or test cases from Excel to Jama Connect is called a one-way import. The process is handled by the Data Import Wizard, which guides you through the steps. The wizard recognizes .xls and .xlsx file types.

> **IMPORTANT**
>
> You can't create new items with a one-way import. If you need to add new items, use an Excel round trip [117].

1. Open the Data Import Wizard: In the Explorer Tree, right-click the set or folder where you want to import new items, then select **Import**. Your file will be imported below the selected item.

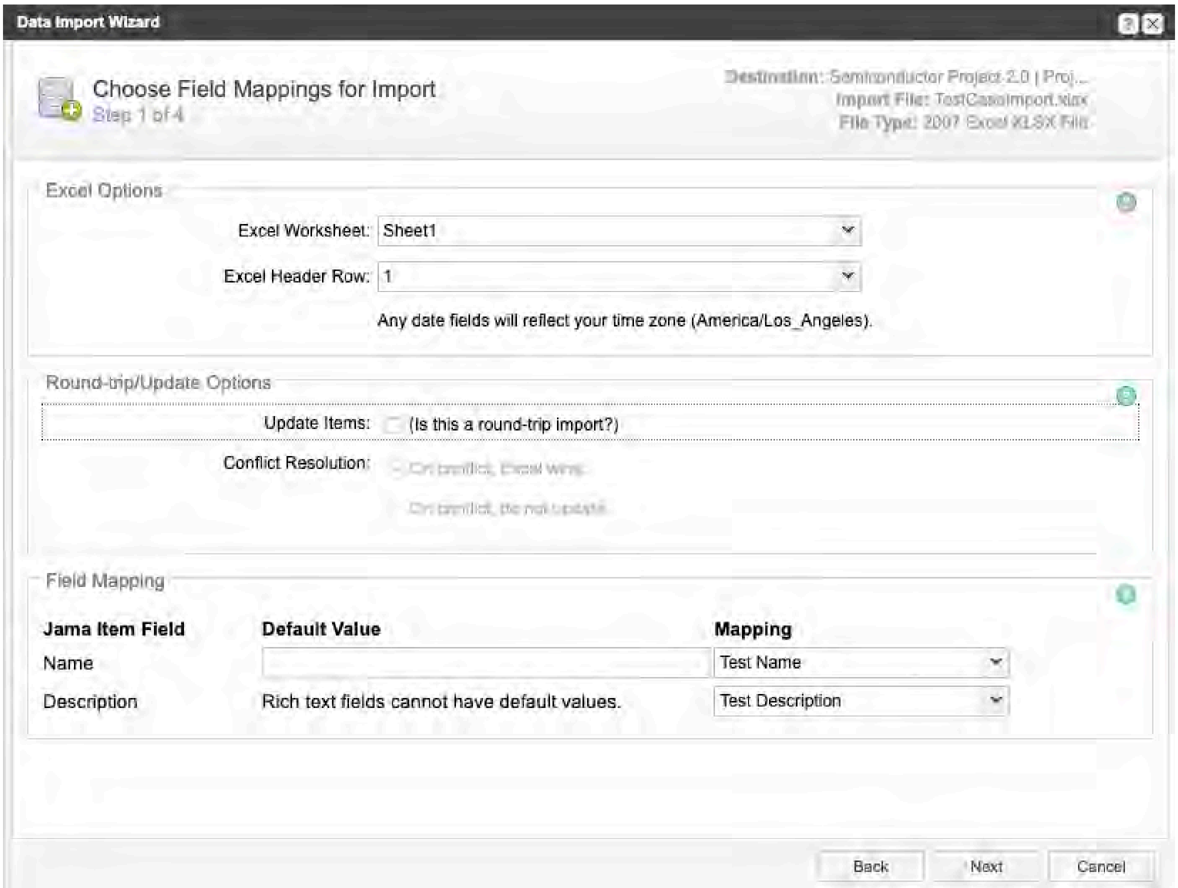
   The first page of the wizard opens with the **Destination** field pre-populated.
2. Complete the **Select Import File and Destination** page, then click **Next**.



a. Click **Browse** and select the Excel file you want to import. If the file type isn't recognized, the import doesn't continue.

b. (Optional) **Encoding** — Select **UTF8**.

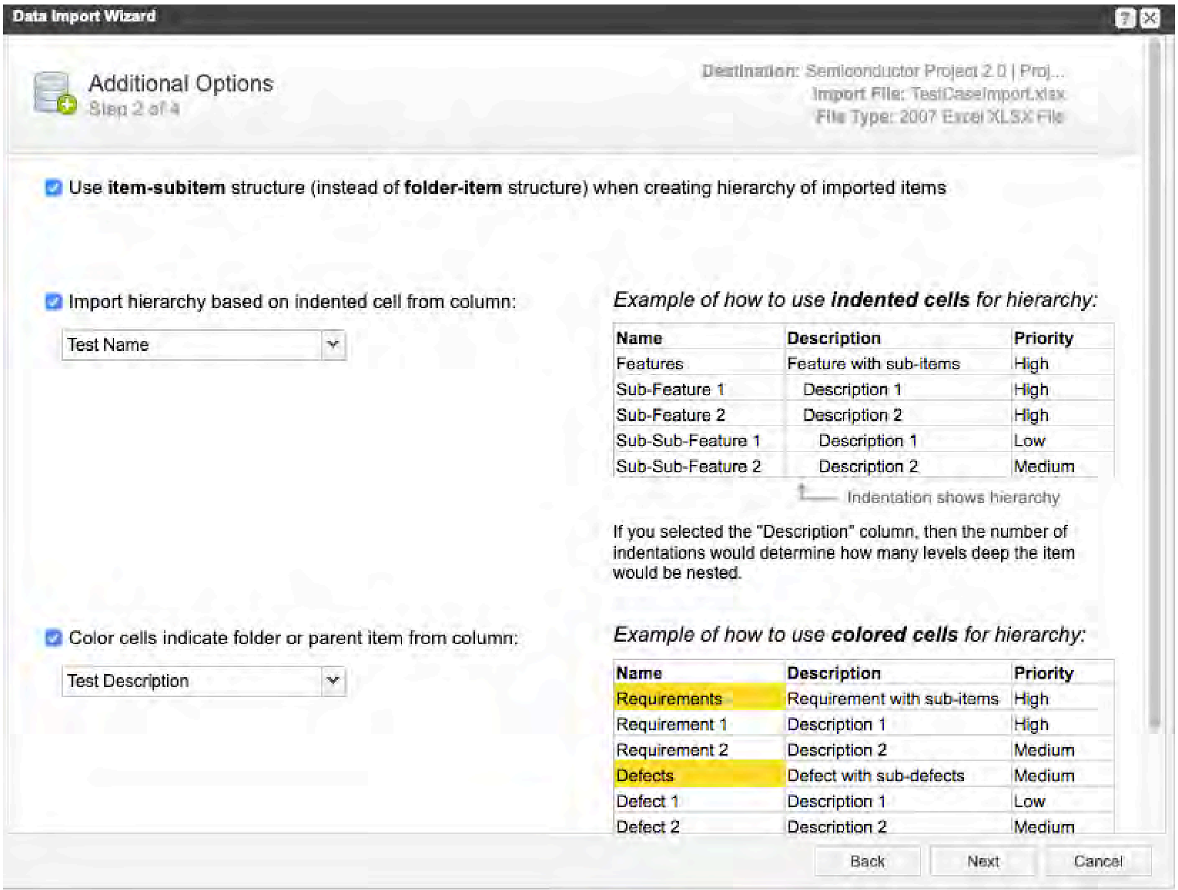
3. Complete the **Choose Field Mappings for Import** page, then click **Next**.



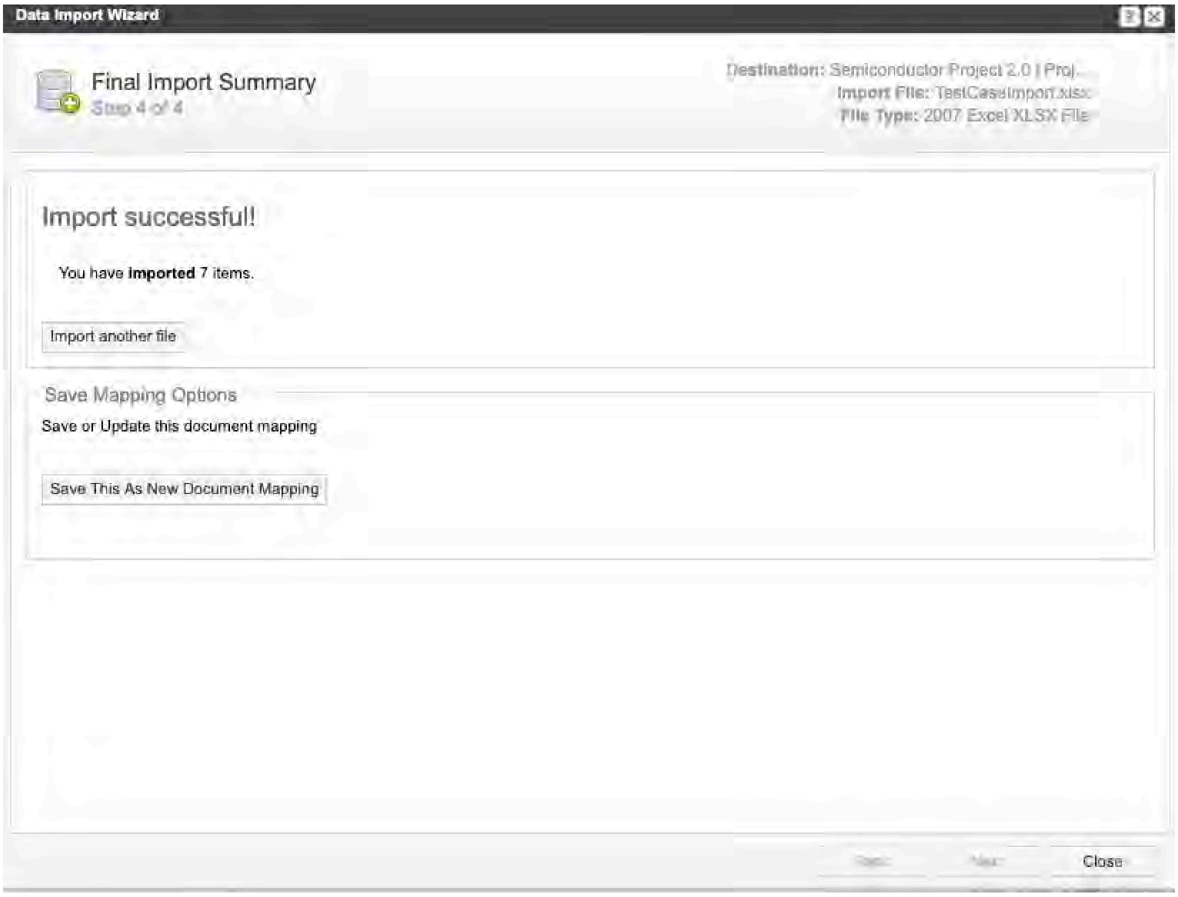
Excel Options — If your file has more than one worksheet, select the one you want to import, then enter the number for the header row. If a header row doesn't exist, select row **0**, which populates the Mapping section with the Excel default column names.

- **Round trip/Update Options** — For one-way import, leave these options unselected.
- **Field Mapping** — Select the appropriate column from the worksheet for each field in Jama Connect where you want to import data. Select a mapping for **Name** and any required fields, as determined by the Admin configuration for the item type. Fields not required for the import don’t need to be mapped.

4. On the **Additional options** page, indicate whether your worksheet uses cell color or indentation for hierarchy, then click **Next**.



5. If the fields were mapped successfully, you see a preview of your import. Click **Submit** to import all items.
   The **Final Import Summary** page confirms the total number of items imported.



6. (Optional) Import another worksheet or save the current mappings to use for future uploads.

> **NOTE**
> Field mappings are project-specific and can be used by any user in the project where the mappings are saved.

7. Click **Close**.

Export/import via Jama Connect-to-Excel round-trip

With a round trip, you can batch edit multiple items or test cases in Jama Connect, as well as create new items or test steps to be imported.

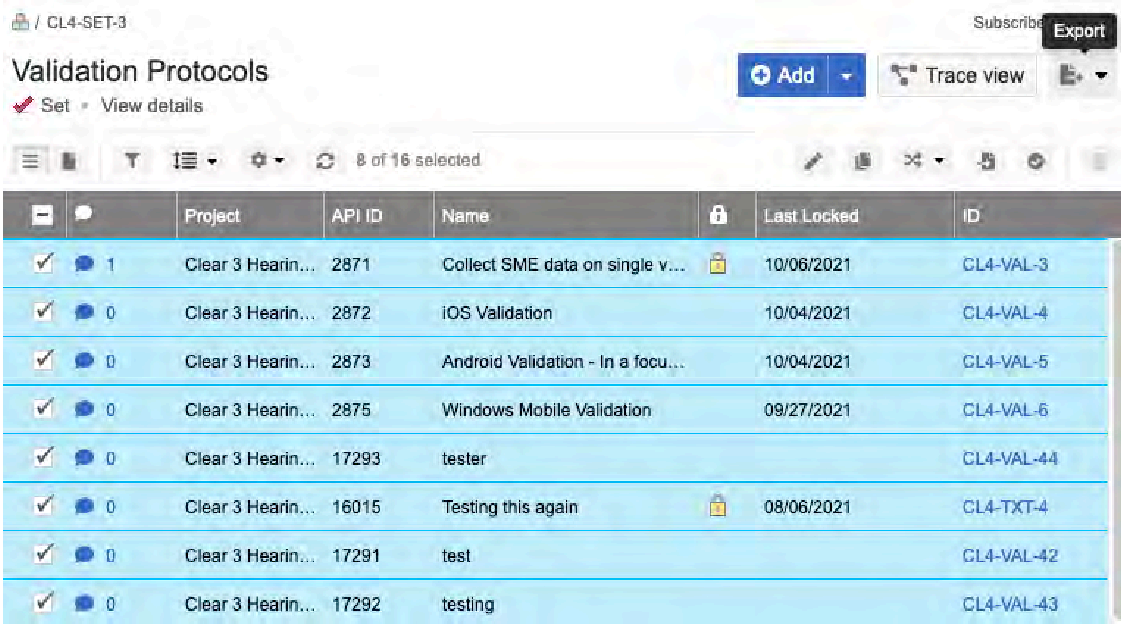
The round-trip process involves these steps:

1. Export the items you want to edit from Jama Connect to an Excel worksheet.
2. Make your changes in the worksheet (add items or steps, delete steps, change field values).
3. Import the edited worksheet back into Jama Connect.

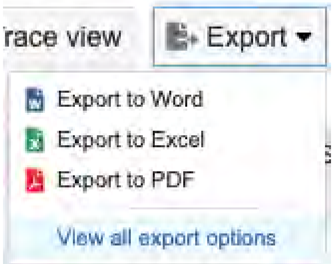
Round trip requires you to re-import Excel documents created by Jama Connect using an Excel template. When the system identifies items that originated in Jama Connect, it updates your items according to the conflict rule set at the time of the import.

Excel has a cell character limitation and, during the export, truncates rich text fields that exceed the limit. A truncated rich text field can impact the data that's imported to Jama Connect using round-trip.

1. Export a folder, filter, or set of items to Excel:
   a. In List View, select the columns that you want to export to Excel.
      Only the columns shown in List View are exported, so be sure to display all columns you need to include.



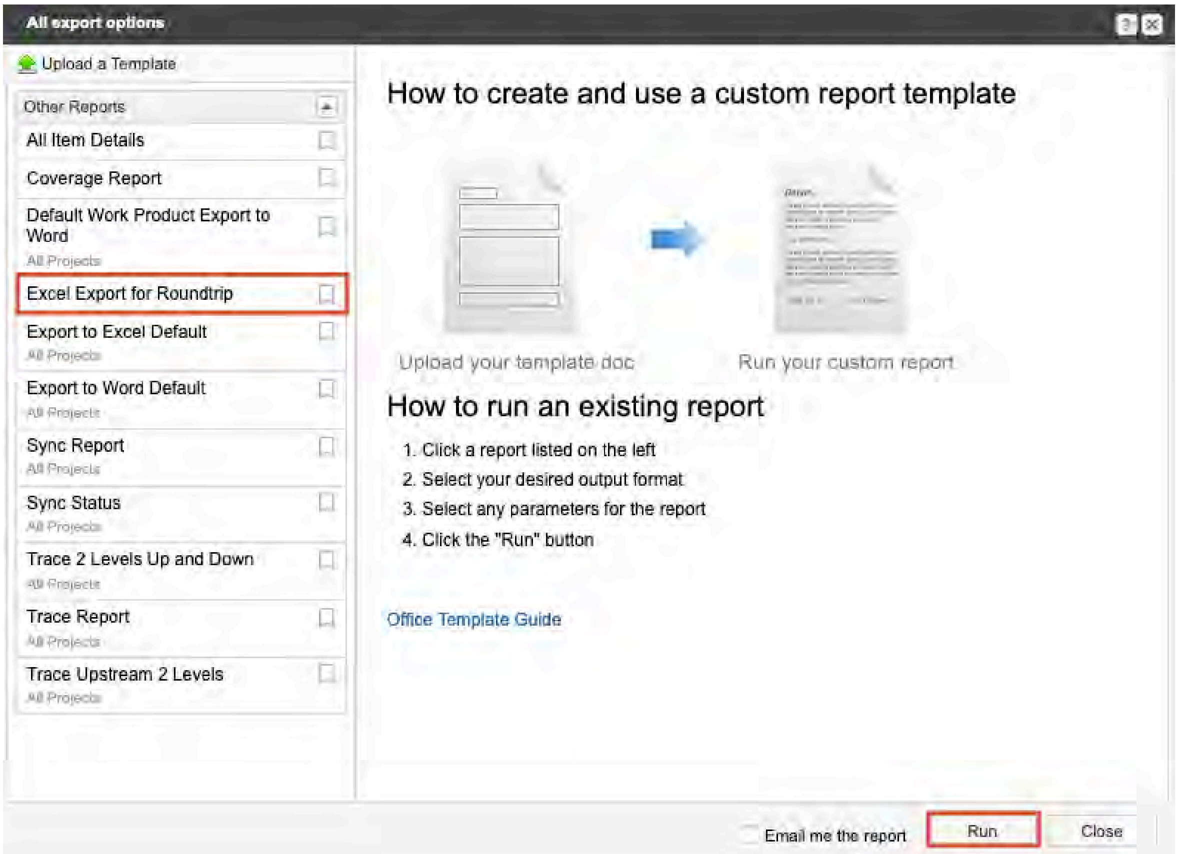
b. Select **Export > View all export options**.



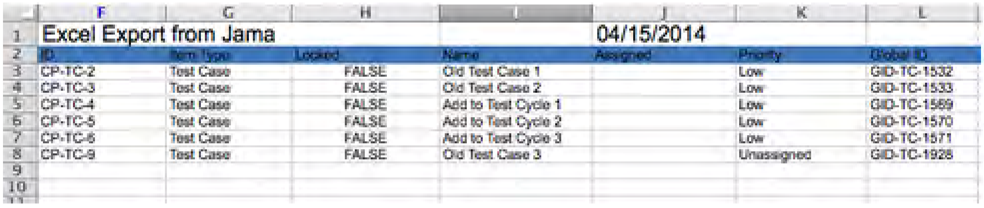
c. In the window that opens, select **Excel Export for Roundtrip** from the menu on the left, then select **Run**.

NOTE

Excel limits the number of characters that a cell can contain. If a Jama Connect field (rich text field) exceeds the limit, Excel truncates the text when it's exported. As a result, the Jama Connect is updated with the truncated data if imported via round-trip.



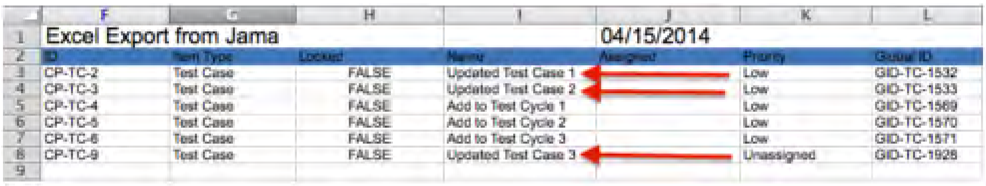
2. Open the newly downloaded Excel report and save it to a place where it can be edited.



	F	G	H	I	J	K	L
1	Excel Export from Jama				04/15/2014		
2	ID	Item Type	Locked	Name	Assigned	Priority	Global ID
3	CP-TC-2	Test Case	FALSE	Old Test Case 1		Low	GID-TC-1532
4	CP-TC-3	Test Case	FALSE	Old Test Case 2		Low	GID-TC-1533
5	CP-TC-4	Test Case	FALSE	Add to Test Cycle 1		Low	GID-TC-1569
6	CP-TC-5	Test Case	FALSE	Add to Test Cycle 2		Low	GID-TC-1570
7	CP-TC-6	Test Case	FALSE	Add to Test Cycle 3		Low	GID-TC-1571
8	CP-TC-9	Test Case	FALSE	Old Test Case 3		Unassigned	GID-TC-1928
9							
10							

Columns A–E are hidden. They contain fields that Jama Connect requires to update existing items.

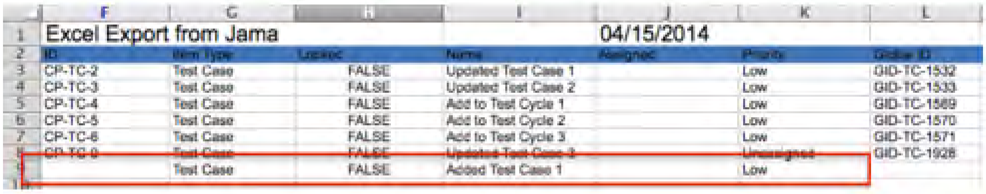
3. Edit the exported Excel document with required changes, then save it.
   a. Edit the fields you need to update. In this example, the names of three test cases are changed.



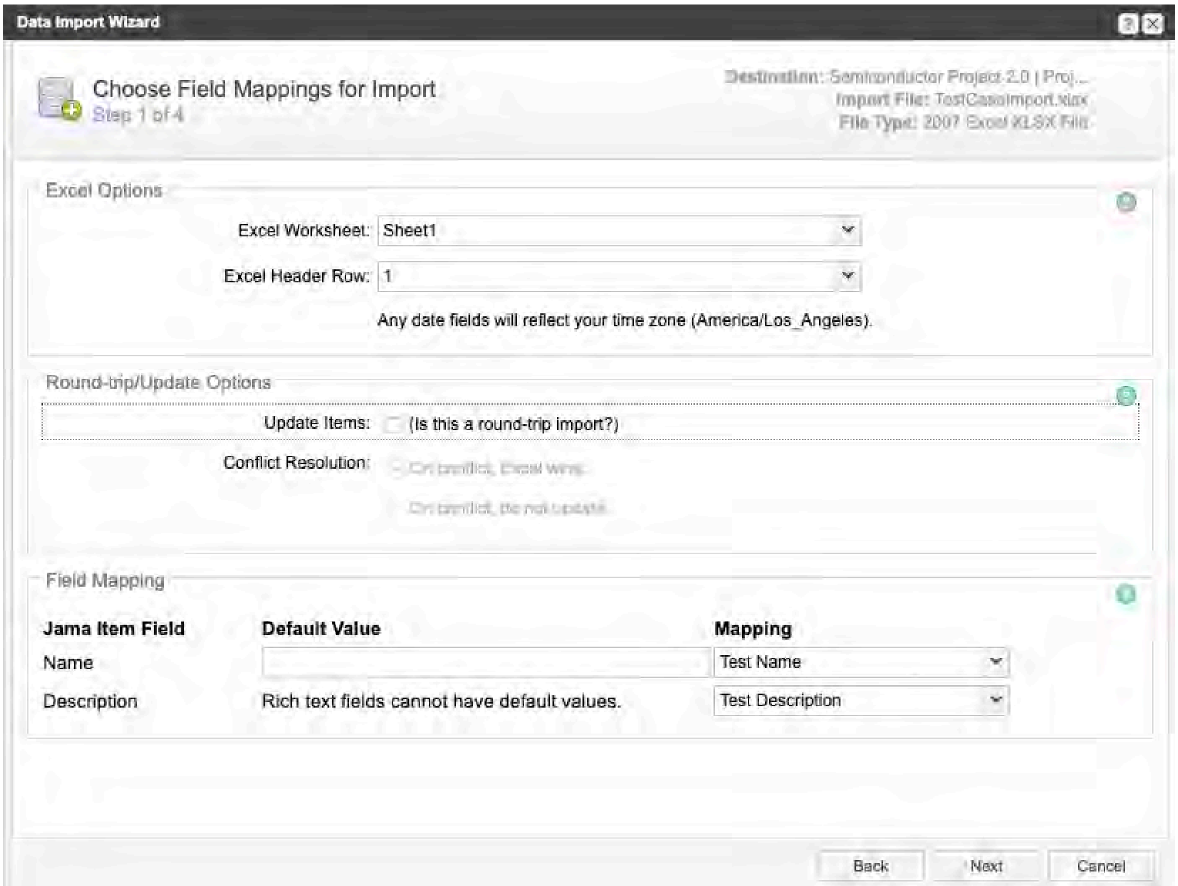
	F	G	H	I	J	K	L
1	Excel Export from Jama				04/15/2014		
2	ID	Item Type	Locked	Name	Assigned	Priority	Global ID
3	CP-TC-2	Test Case	FALSE	Updated Test Case 1		Low	GID-TC-1532
4	CP-TC-3	Test Case	FALSE	Updated Test Case 2		Low	GID-TC-1533
5	CP-TC-4	Test Case	FALSE	Add to Test Cycle 1		Low	GID-TC-1569
6	CP-TC-5	Test Case	FALSE	Add to Test Cycle 2		Low	GID-TC-1570
7	CP-TC-6	Test Case	FALSE	Add to Test Cycle 3		Low	GID-TC-1571
8	CP-TC-9	Test Case	FALSE	Updated Test Case 3		Unassigned	GID-TC-1928
9							

   If a field is based on a pick list in Jama Connect (for example, **Priority**), the pick list values are exported as well. This ensures that valid data is entered before re-importing to Jama Connect.

   b. As needed, create new items or test steps that you want added to Jama Connect. After import, added items appear at the bottom of the set or folder where you import to.
      - You can add only one item type for the selected set or folder.
      - Leave the **ID** and **Global ID** fields blank. These values are assigned to new items during import
      - Leave **Assigned** field blank.



4. Import the edited Excel file. The process is the same as for the one-way import except for the **Choose Field Mappings for Import** page:



a. **Excel Options** — If your file has more than one worksheet, select the one you want to import. Select the number of the row in your worksheet that contains the headers. By default, the Excel for Roundtrip export uses row 2 as the header row.
If a header row doesn't exist, select row **0**, which populates the Mapping section with the Excel default column names.

b. **Round trip/Update Options** — Select the checkbox for **Update Items** to update Jama Connect items that were modified in the round-trip Excel worksheet.
Select an option for **Conflict Resolution: Excel wins** or **Do Not Update**. Conflicts might occur when a field in Jama Connect has changed values since the round-trip export was generated.

c. **Field Mapping** — Select the appropriate column from the worksheet for each field in Jama Connect where you want to import data. Select a mapping for **Name** and any required fields, as determined by the Admin configuration for the item type. Fields not required for the import don’t need to be mapped.

Import relationships from Excel

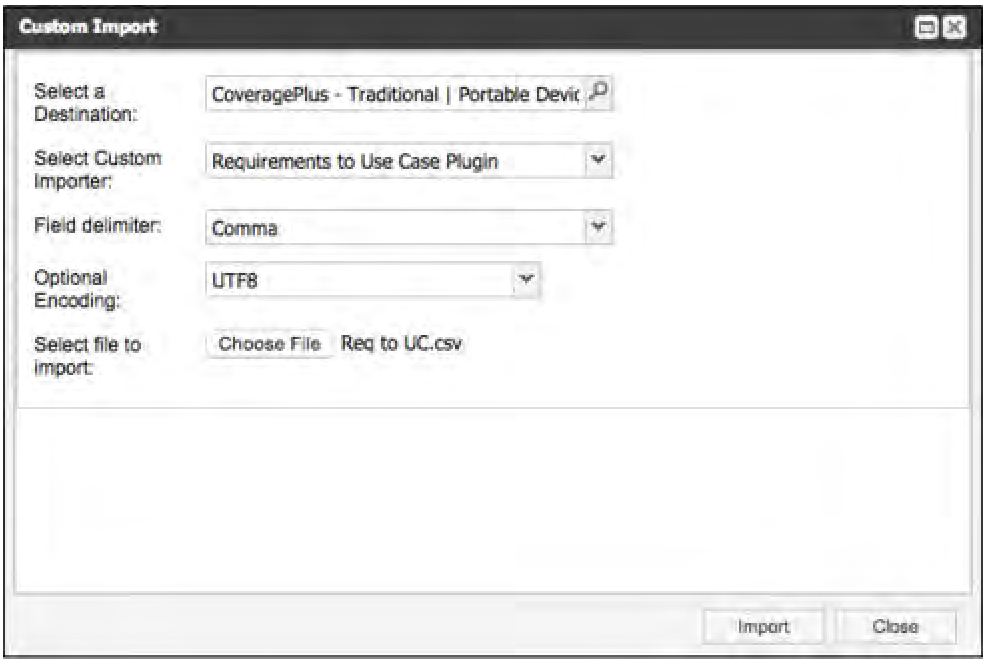
Relationships are imported to Jama Connect from a CSV file. The file consists of two columns.

Important considerations

- A relationship import plugin must be configured [564] and enabled.
- A CSV file must include correct parent and child field values and must have the .csv extension.
- Import relationships in small batches no larger than 250 at a time.
- Check that your parameters are written correctly and reference the right API ID or field. For more information, see Configure import relationships plugin [564].

To import relationships:

1. From the Jama Connect header, select **Project > Import > Custom Import**.
2. In the window that opens, configure these settings:
   - **Select a destination** — Select the location in your project for the Import Relationships Plugin. Destination is required, but it doesn't affect the import.
   - **Select custom importer** — Select the **Import Relationships Plugin** created by your organization admin.
   - **Field delimiter** — Select **Comma**.
   - **Optional Encoding** — Select **UTF8**.
   - **Select file to import** — Click **Choose File**, then navigate to the CSV file with the required relationships.



3. Select your Excel file and click **Import**.

Give Jama Connect time to process the relationships. If you're importing more than 100 relationships, the update isn't instantaneous.

When the import is complete, you see a notification at the top of your screen: "Success: X items imported."

Importing from IBM DOORS

You can import active IBM DOORS data, such as requirements, test cases, and project information to Jama Connect. You can also maintain relationships during the import process.

Here are the steps for a successful import:

1. Ensure you meet Jama Connect [122] and DOORS [122] prerequisites.
2. Export HTML zip file from DOORS [124].
3. Import to Jama Connect [125].

DOORS export prerequisites

Before exporting data from IBM DOORS, verify these prerequisites for a successful export.

Mapping

- The **Object Identifier** column in IBM DOORS is typically mapped to the **Name** field in Jama Connect.
- If you're importing hierarchy, the DOORS standard **Object Heading and Text** (or **Main**) column must be mapped to the **Description** field in Jama Connect. This is the only column that exports hierarchy information to HTML for Jama Connect imports.

Links

If you're importing links (trace relationships) across multiple modules in DOORS:

- The modules must be open when you export. A DOORS export includes only the modules that are shown in your view, so make sure no filters are selected because they limit the number of items exported.
- Each module must have a unique prefix so that the **Object Identifier** is unique. DOORS doesn't enforce this requirement, so make sure you confirm that each module has a unique prefix before you export.
- The **Object Identifier** column must be visible in the DOORS module view (not **Object Number** or **Absolute Number**). The **Object Identifier** is a combination of the **Module Prefix** and the **Absolute Number** (as in SYS32). If the **Object Identifier** has only integer values, the **Module Prefix** is most likely empty.

Jama Connect prerequisites for DOORS import

Before importing data from DOORS to Jama Connect, verify these prerequisites for a successful import.

Links

Relationships between items aren't created until both items are imported.

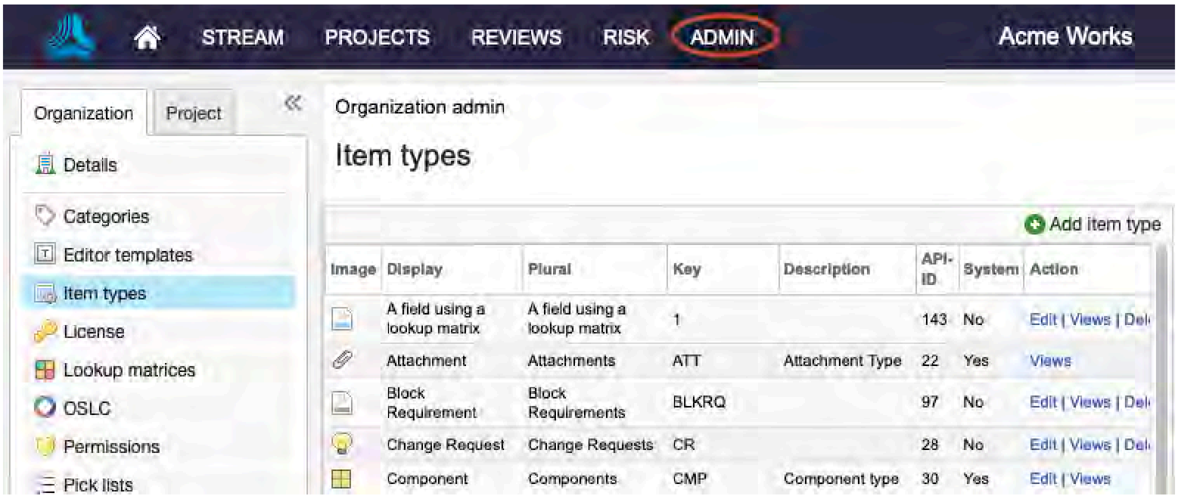
- To import relationships (or trace links), you must create a custom field in Jama Connect [605] for each item type you're importing.
- Each custom field must contain a unique identifier, which aids in importing relationships from DOORS to Jama Connect.

Create custom fields in Jama Connect

To import relationships (or trace links), you must first create a new custom field in Jama Connect for each item type you're importing. Each field must contain a unique identifier.

> **TIP**
> When importing many custom fields from DOORS, create a common custom item type that contains all the custom fields. Use this item type only for the initial import, then later convert sets to a standardized set of item types. That way, every imported item includes legacy DOORS information in its version history. To view this information, compare versions [253].

1. In Jama Connect, select **Admin > Organization > Item types**.



2. Find the item type you're using for the DOORS import, then select **Add field**.

3. In the Add Field window, complete these options, then click **Save**.

- **Select a Field Type** — Select **Custom Fields**, then select **Text Field** from the drop-down menu.
- **Field label** — Enter a name for the field (for example, "DOORS ID").
- **Unique Field Name** — Enter "SYS_DOORS_ID." This is case-sensitive and must exactly match the above image.
- Select **Read Only**.

This item type can now accept relationships (trace links) imported from DOORS.

Item type fields for Attachment

Order	Label	Infotip	Unique Field Name	Field Type	Control	Pick List	Calculation	Read Only	Allow API Overwrite	Required	Suspect	Sync	API ID
1	Attachment		attachment	Integer							✓		184
2	Global ID		globalId	Text Field				✓		✓			326
3	Name		name	Text Field						✓	✓	✓	185
4	Description		description	Text Box	Text Box						✓	✓	186
5	Test		date2	Date				✓	✓				141
6	Doors ID		SYS_DOORS_ID	Text Field									142

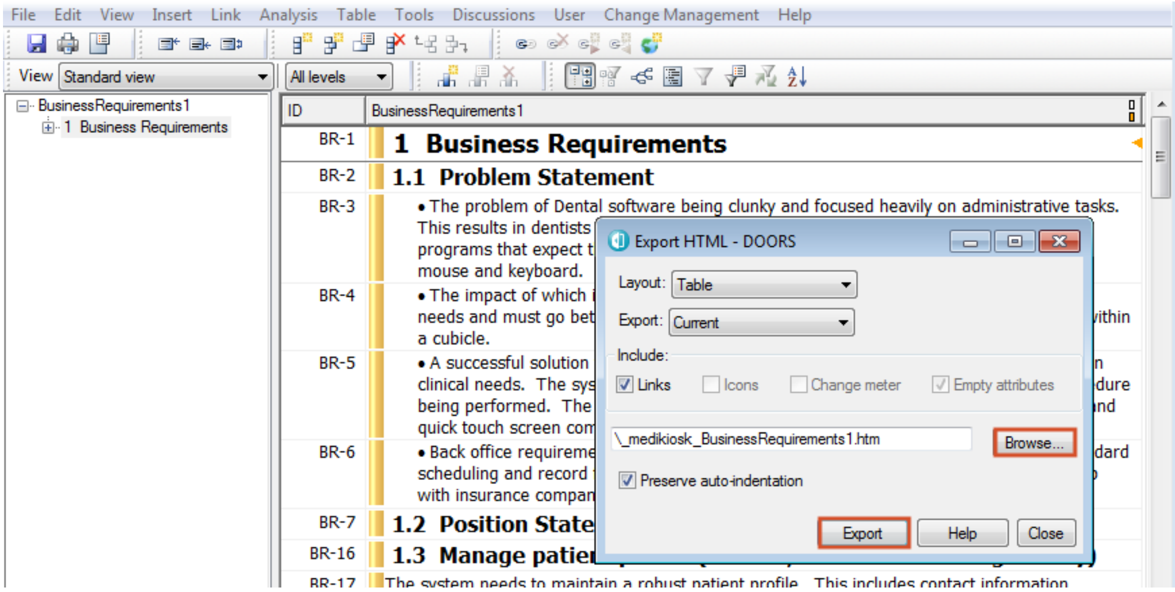
IMPORTANT

The SYS_DOOR_ID field must be created for all the item types you are relating.

Export data from DOORS

Before you can import data from IBM DOORS to Jama Connect, you must export it to an HTML .zip file.

1. On your local system, create the export target folder in the local drive/directory.
2. Open a DOORS module that you want to export and make sure there are no active filters.
3. Select **File > Export > HTML**.
4. Select **Layout > Table**.
5. Select **Export > Current**.
6. Select **Links** to import links as relationships and create the necessary field in Jama Connect [122].
7. Select a folder or location where you want to store your DOORS files.
8. **Browse** to the target folder and select **Export**.



9. Without making changes, create a .zip file to the target folder that contains the exported HTML content.

IMPORTANT

Changing or moving the exported files before compressing them can create unreliable results.

Images in the item description are imported. Comments, attachments, and item history aren't imported.

Import DOORS files to Jama Connect

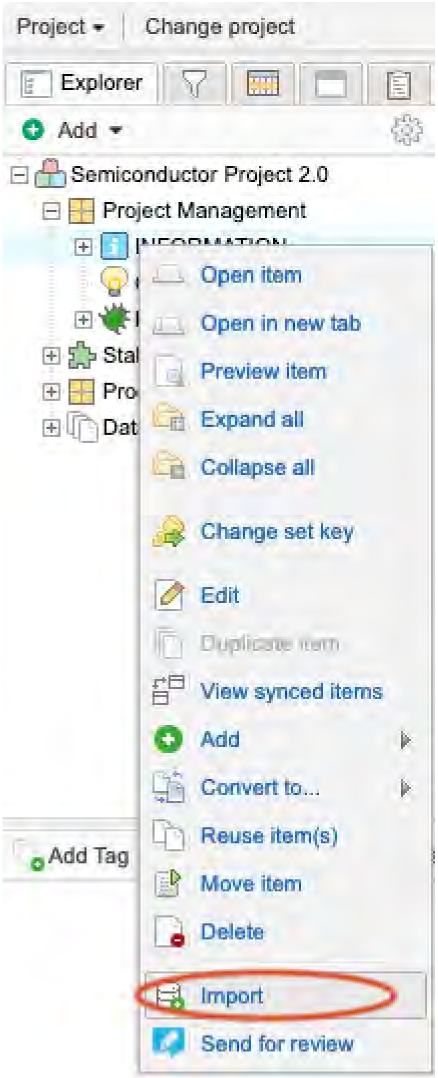
Once you have exported data from DOORS, you can import it to Jama Connect using the Data Import Wizard in Jama Connect.

The import process creates:

- Sets or folders in an existing set. DOORS Attributes map to fields in Jama Connect.
- Relationships between items only after both items are imported.

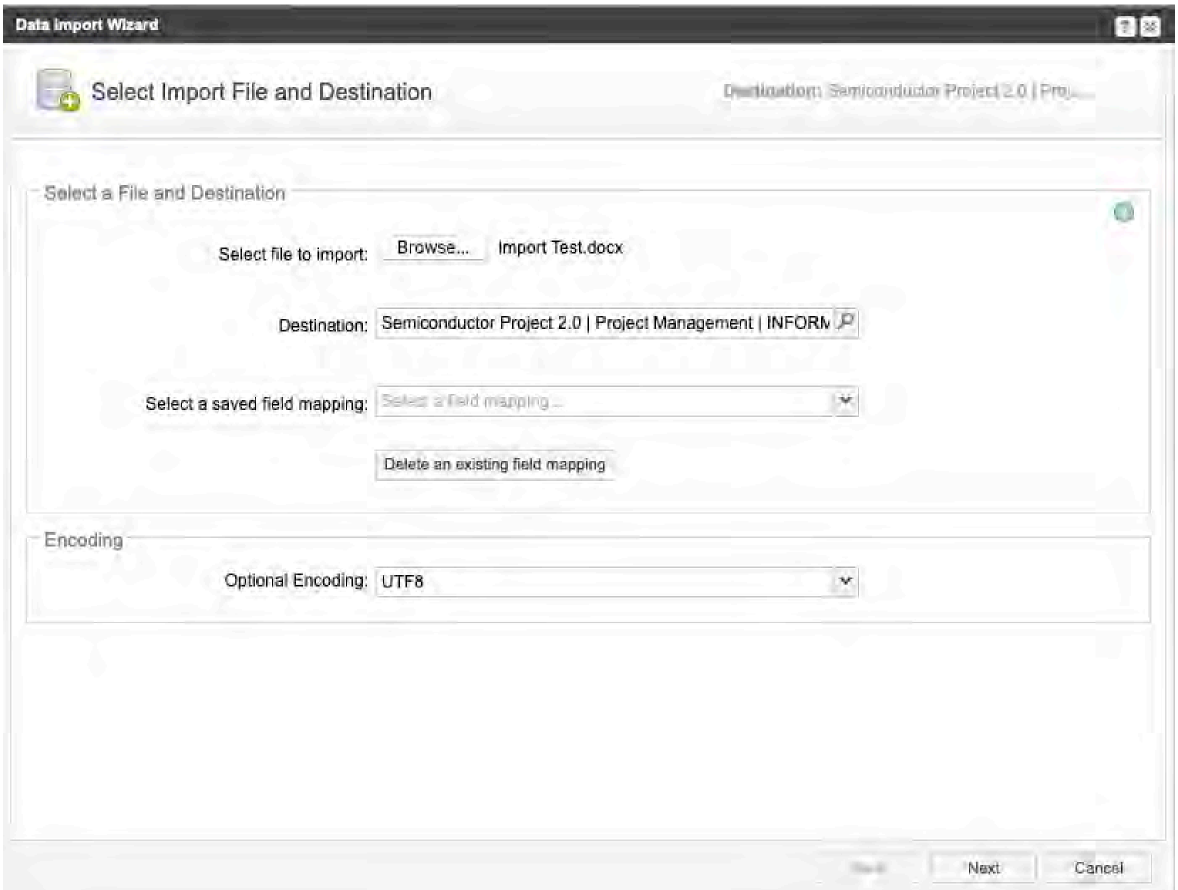
The Data Import Wizard guides you through the import steps.

1. Open the Data Import Wizard: In the Explorer Tree, right-click an item where you want to import new items, then select **Import**. Your file will be imported below the selected item.



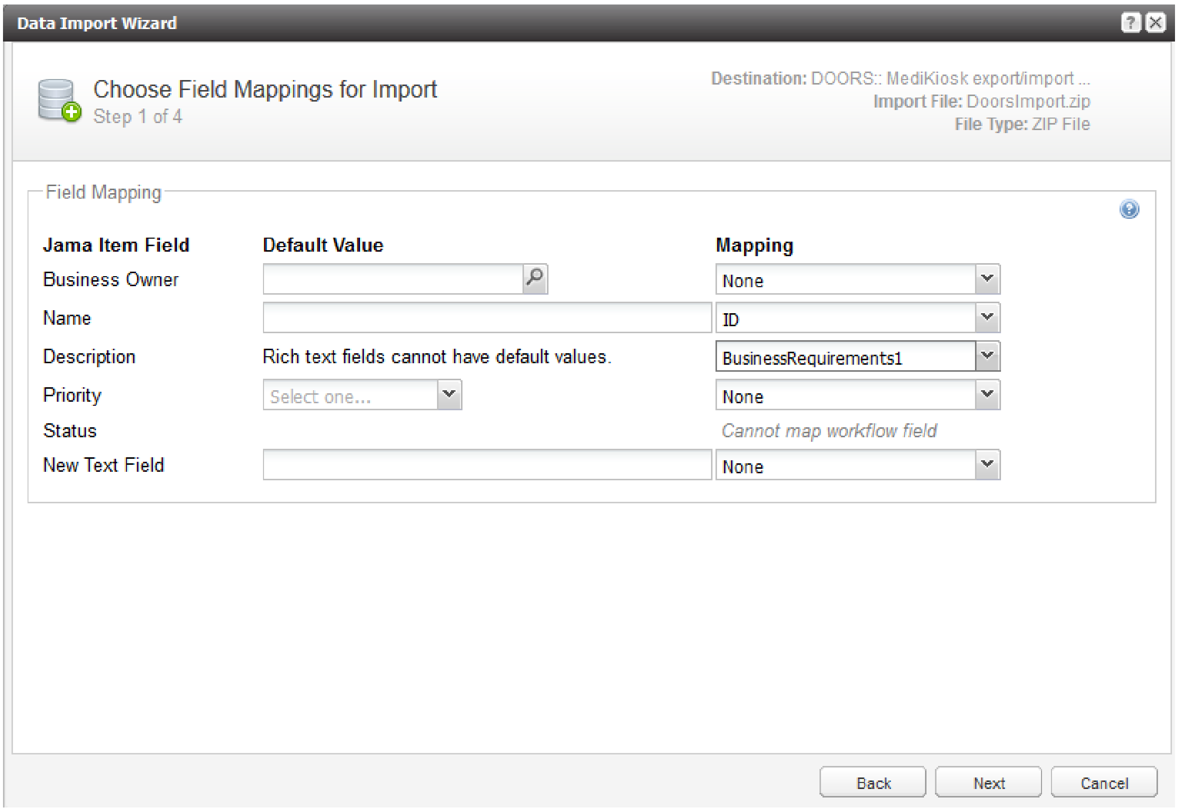
The first page of the wizard opens with the **Destination** field pre-populated.

2. Complete the **Select Import File and Destination** page, then click **Next**.



- Click **Browse** and select the DOORS file you want to import.
  If the file type isn’t recognized, the import doesn't continue.
- (Optional) **Select a saved field mapping** — Select previously created import configurations that were saved in the project for the same file type. This is helpful if you need to import multiple documents with the same field-mapping layout.
- **Optional Encoding** — Select **UTF8**.

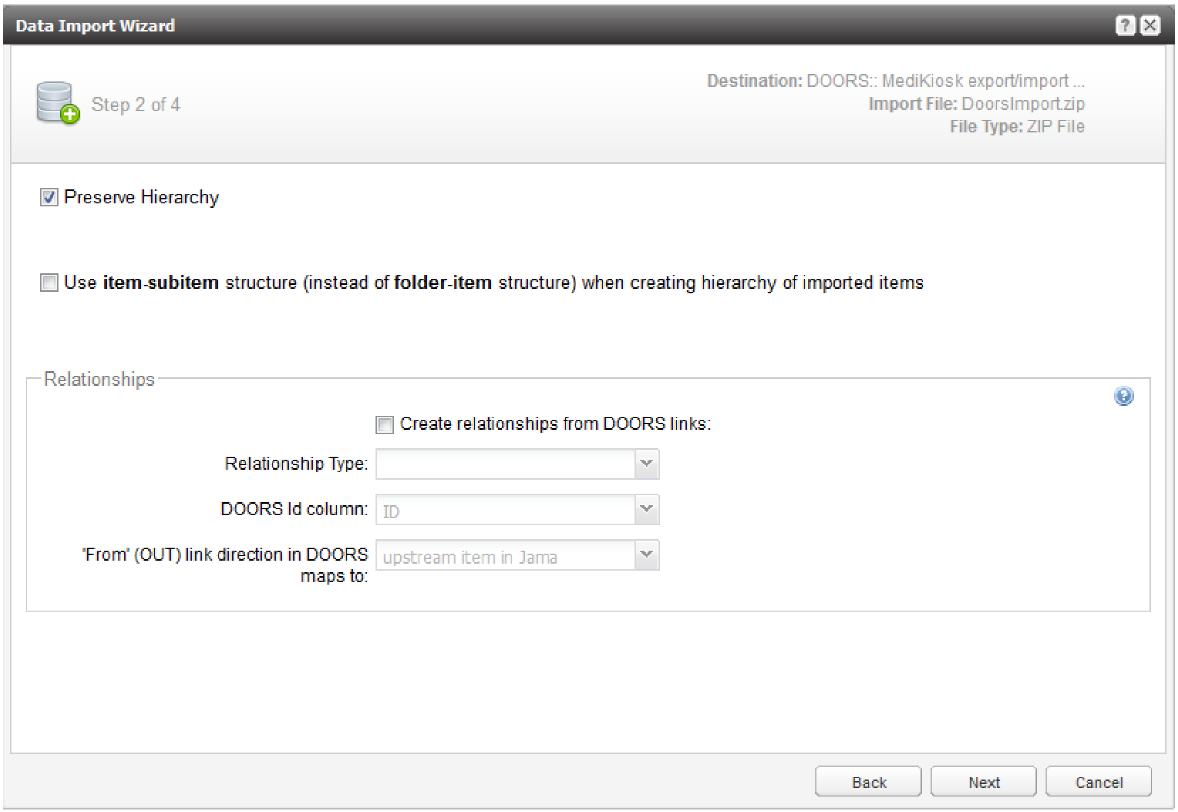
3. Complete the **Choose Field Mappings for Import** page, then click **Next**.



- **Field Mapping** — Select a mapping for the **Name** field (this is usually the DOORS Object Identifier attribute). You can assign a default value for other Jama Connect fields and select which DOORS attributes you want to map to each.

> **IMPORTANT**
>
> The Description field is usually mapped to the Main attribute in DOORS. Bullets and other symbols are exported from DOORS as images, not as formatting. If you're mapping a field that contains images or formatting, the corresponding import field must be configured as a rich text field, otherwise these images don't appear.
>
> You can't select a mapping for Step action, Step expected results or Step notes.

4. Select the options you want for hierarchy and relationships, then click **Next**.

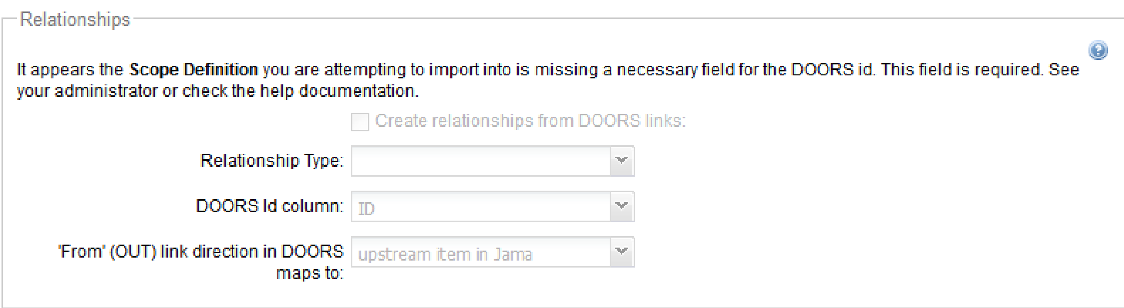


- **Preserve hierarchy** — Select to keep the DOORS hierarchy when importing. If left unselected, the resulting items are at the same level.
- **Use item/sub-item structure** — Select if you want all parent items to keep the item type of their children. If left unselected, all parent items become folders.

IMPORTANT

All items converted to folders lose their relationships (links). If you're importing relationships, use the item or child-item structure.

- **Create relationships from DOORS links** — Select to migrate Trace Links from DOORS to relationships in Jama Connect.
  If you see the following error, check that you successfully completed all Jama Connect prerequisites [122] before import.



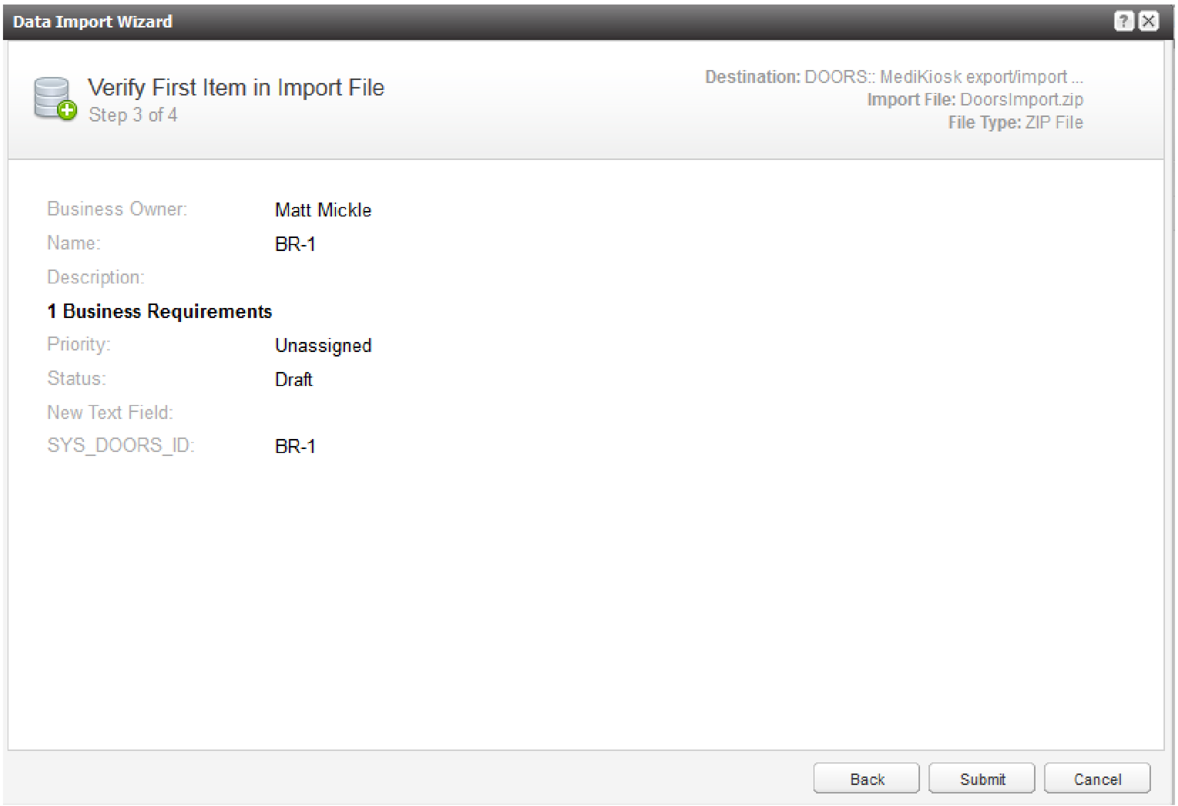
- **Relationship type** — Select the type of relationship you want to create. If left unselected, this value is set to your organization's default value.
- **DOORS ID column** — Select the name of the column from your export that contains the DOORS Object Identifier, which is used as the identifier when creating relationships. It must match between item types.

- **'From' (OUT) link direction in DOORS maps to** — Set **OUT=upstream** or **OUT=downstream**. DOORS and Jama Connect use different terminology for relationship direction. The selection depends on how relationships are used in DOORS. Check the HTML file or run a test import to verify that this works as expected.

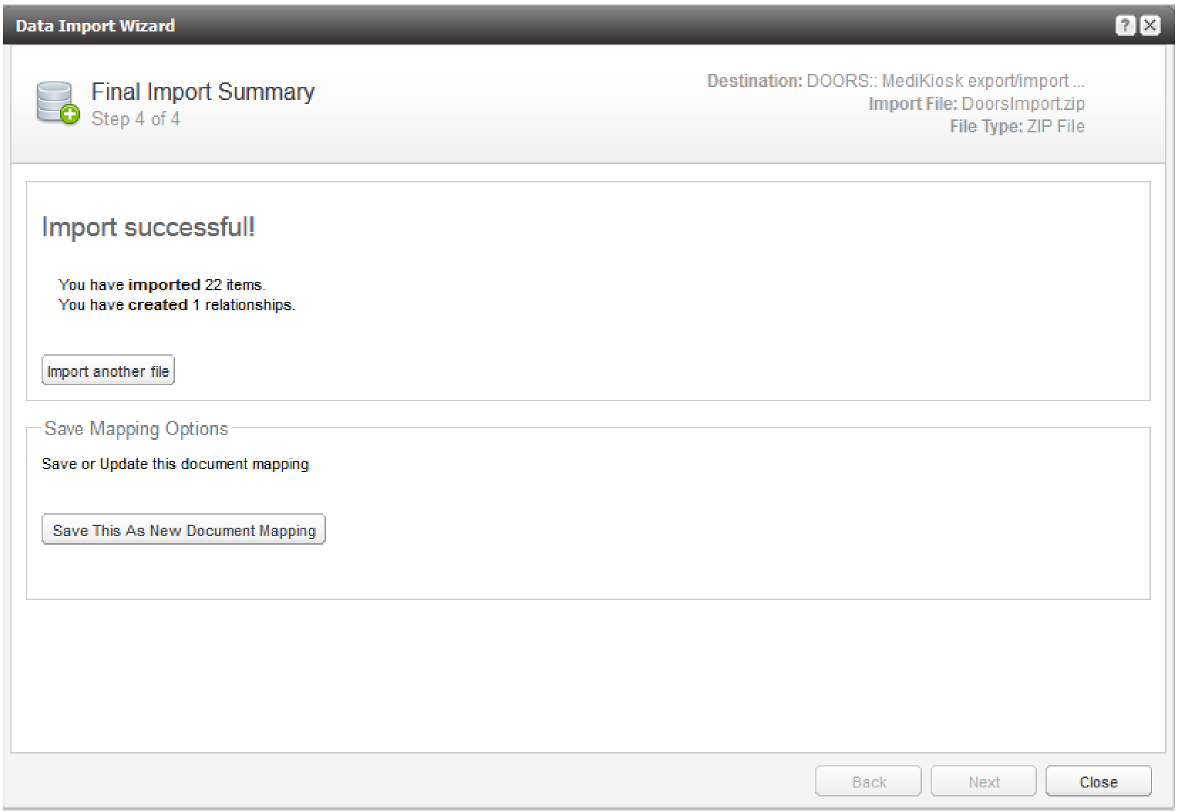
IMPORTANT

Because relationships are created based on the DOORS Object Identifier, importing items twice creates multiple relationships.

5. If the fields were mapped successfully, you see a preview of your import. Verify that it looks correct, then click **Submit** to import all items.



The **Final Import Summary** page confirms the total number of items imported.



- (Optional) Import another DOORS Module.
- (Optional) If you plan on importing the same item type (objects) with the same mappings multiple times, you can save your mapping changes as a new document mapping here.

6. Click **Close**.

Find content

The content you want to find might be anywhere in your project. For example, you might want to look at the requirements or test plans.

Jama Connect gives you many ways to directly access the items you need:

- Search [132] — Look through an index of your item type fields, as well as text within a Word document, a PDF document, or text attachments, to bring up a list of items.
  Use the search bar in the header to help you find the topic you're looking for.
- Filter [134] — Limit the results of a search by content such as author, keyword, date, or coverage. You can also filter stream comments, review comments, reviews, review items, Trace View items, and project items. To open the filter panel, select **Filter items** at the top of the center panel in List View or Reading View.
- Advanced filters [135] — Save a set of rules or conditions for later use and share that filter with other users.
- Quick find [141] — If you don't remember where to find something in the application, use the quick find [141] topic in this guide.

Full text search

Jama Connect uses an index of the database fields for its search function. It also searches in text files, Word files, and PDF files to find the items you're looking for.

You can search item IDs, descriptions, attachments, and field values. Search for an item's unique ID (not global ID) and it opens.

Important considerations

- The application doesn't support searches for null values, including checkboxes that haven't been selected.
- Files larger than 25 MB aren't indexed, so their content isn't searchable.
- These file types are indexable: PDF, DOC, DOCX, PPT, PPTX, TXT, RTF.
- These file types are *not* indexable: XLSX, XLS, XML, HTML, HTM.

Ways you can search

For a simple search you can enter a word or a phrase in the search field. For an advanced search you can use wildcards, Boolean operators, and more.

- **Single term** — Enter a single word to find items. For example, `Test` returns items with the terms `test`, `pretest`, `tests`, `tested`, and `tester`.
- **Phrase** — Enter a group of words surrounded by double quotes. For example, “`primary test`" returns only items that contain the words `primary test`.
- **Single character wildcard** — Enter a single character wildcard (?) with a single term (not a phrase). For example, `te?t` returns items that contain `test`, `tent`, and `text`.
- **Multi-character wildcard** — Enter a multi-character wildcard (*) with a single term (not a phrase). For example, `syn*ize` returns items containing the terms `synchronize` and `synthesize`.

> **IMPORTANT**
> Don't begin a search with a wildcard (such as ?!*); doing so generates a syntax error.

- **Boolean operators** — Boolean operators in ALL CAPS to combine phrases or terms.
  - **OR (||)** is the default Boolean operator when you enter two terms or phrases. For example, `primary test` OR `sample` returns items that contain either `primary test` **OR** `sample`.
  - **AND** returns items where both terms and phrases exist. For example, `primary test AND sample` returns documents that contain **both** `primary test` **and** `sample`.
  - **+** returns items that must contain the term or phrase immediately following the +. For example, `+primary test` returns items that must contain `primary` and might contain `test`.
  - **NOT (-)** excludes items that contain the word or phrase after NOT. The application doesn't allow null searches, so you must enter something before the word NOT to get any results. For example, `primary test` `NOT sample` returns items that contain `primary test` but not `sample`.
- **Parentheses** — Use parentheses to group clauses and form sub-queries. For example, `(tests OR samples) AND maps` returns results that contain `tests` and `maps OR samples` and `maps`.
- **Prefix** — Use the prefix `tag:` to indicate the tag field in your query. For example, `tag: requirement management AND tag:security`.
- **Field name** — Use field names followed by a colon to search for information in specific fields. If a field name contains spaces, replace the space with an underscore character (_). For example, `user_status:`new returns items with a **User status** field that contains new.

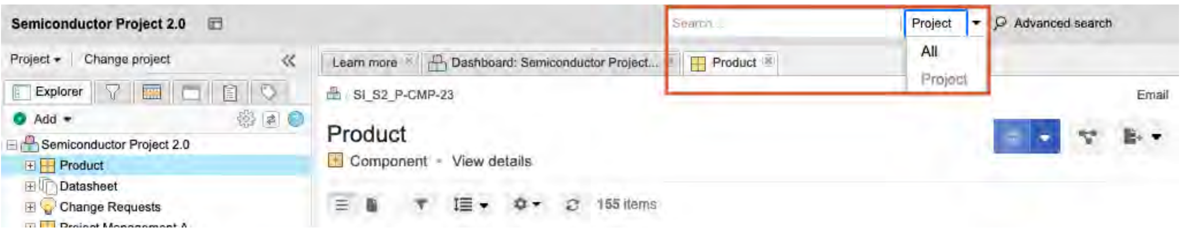
Search for content

When you need to search across all projects or within a current project, you can enter a query in the search field.

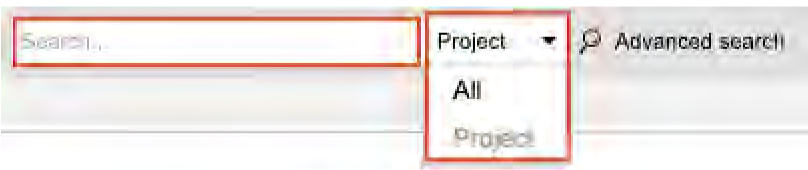
> **NOTE**
>
> This search method is for a simple search. For more complex searches, use advanced filters [135].

For projects or sets to appear in your search results, you must have read permissions for them.

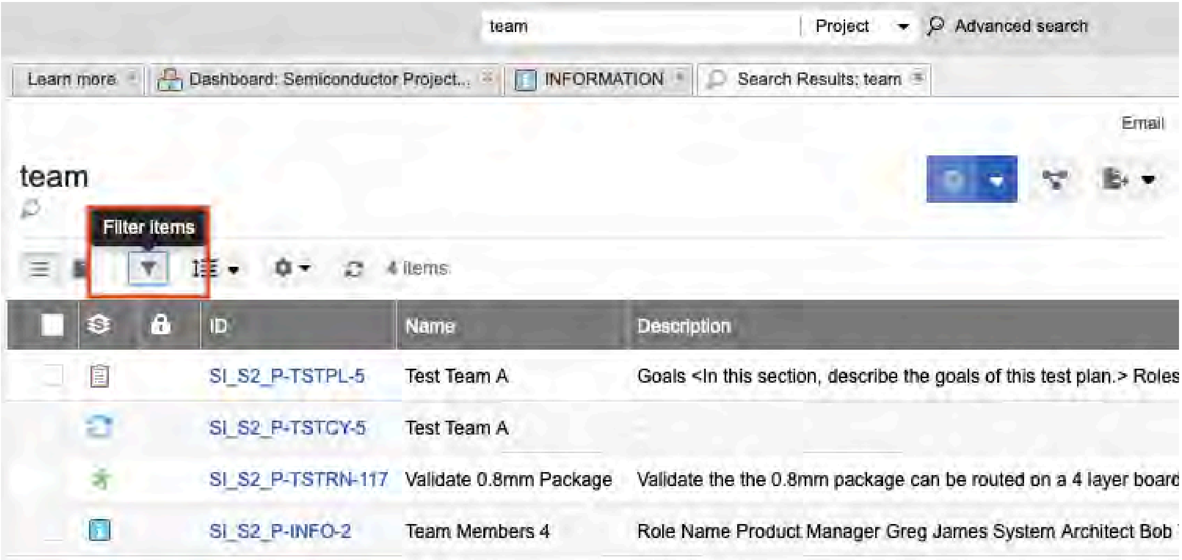
1. In the header next to the Search field, select where you want to search using the drop-down menu.

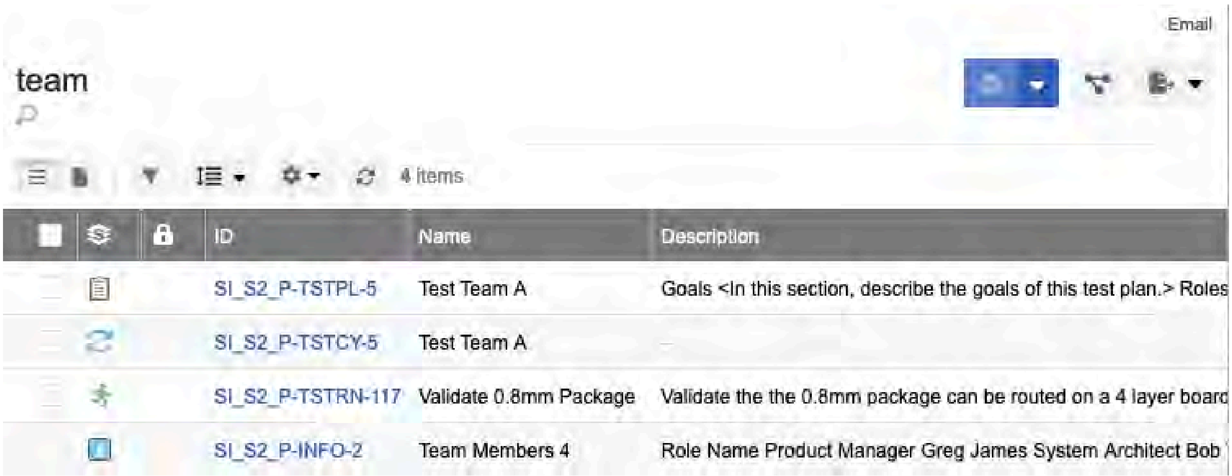
   - **Project** — Within the current project.
   - **All** — Across all projects in your organization.
2. Enter your query in the search field and press **Enter**.

3. (Optional) Select **Filter items** to refine your search. For details, see Filter items for targeted results [134].



The results appear in List View.

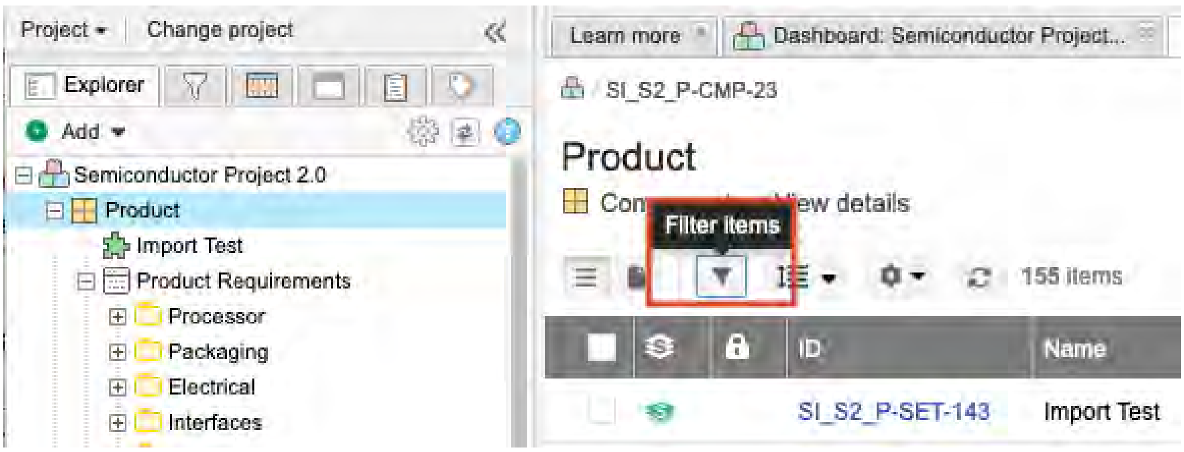


Filter items for targeted results

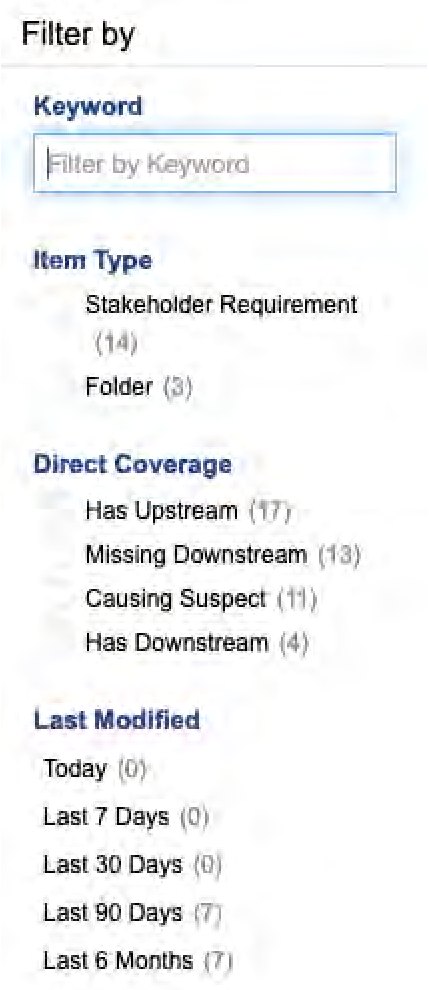
Using a filter is an easy way to refine your search results. To limit and focus your text search, you can filter content by author, date, or coverage.

Filters can't be saved. If you want to reuse a specific filter, use the advanced filters [135].

1. In Projects, select **Filter items** to open the **Filter by** panel.



2. Define how you want to filter your results. Filters are cumulative and the options you select are displayed at the top of the screen.
   - **Keyword** — Enter a term in the Keyword field.
   - **Item Type** — Templates for sets used within each project. For example, you can filter by System Requirement, Set, Folder, or more.
   - **Author** — The person who created or last modified the item.
   - **Direct Coverage** — Parameters for upstream, downstream, missing, and suspect relationships [284].
   - **Last Modified** — Time stamp of when the item was last modified.



   The search results appear in List View.
3. When you're done, select **Hide Filters** to close the panel.

All filters that were applied to the item are preserved and visible at the top of the page.

Advanced filters

With the Advanced filters feature you can save a filter (a set of rules or conditions) for later use, as well as share it with other users.

This feature lets you add advanced filters [136], edit advanced filters [136], bookmark them, filter the Explorer Tree [140], and send items for review [159].

Rules and conditions

- Each rule is matched to a specific item type or to all item types that have a specified conditions.

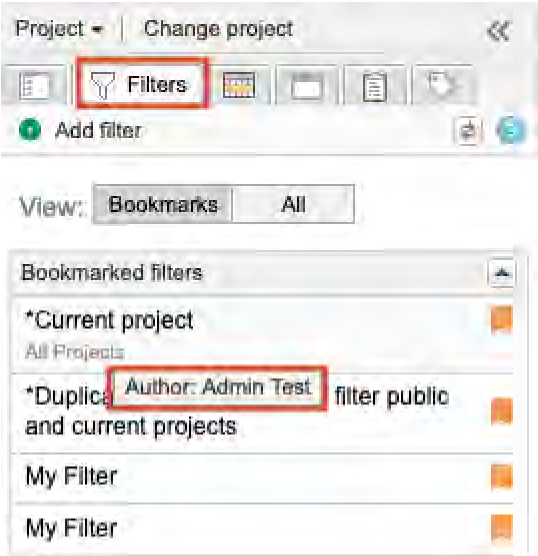
- A condition describes specific attributes of an item such as fields, tags, relationships, location, keyword, or if the item has children.
- Each rule can contain any number of conditions.
- A rule can be set to return items that follow any one of the conditions, all of the conditions, or none of the conditions.

Finding advanced filters

In the left panel next to the Explorer Tree tab, select **Filters** to display a list of existing filters.

TIP

To find out the author of a filter, hover over the filter name.



IMPORTANT

You can delete a shared filter even if you're not the creator. Before you do however, make sure the filter isn't shared. When you delete a shared filter, it's deleted for everyone.

Add or edit advanced filters

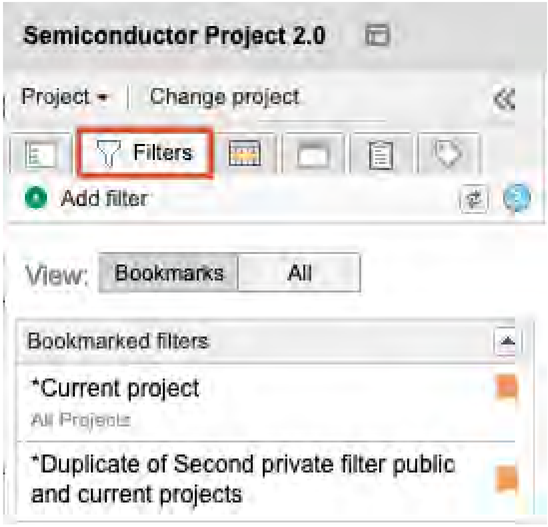
For best search results and quality performance, make your filters as specific as possible to return only the results you need.

If you run a filter against all your Jama Connect projects, the results you get might be too broad to be helpful and performance can be affected by such a large data set.

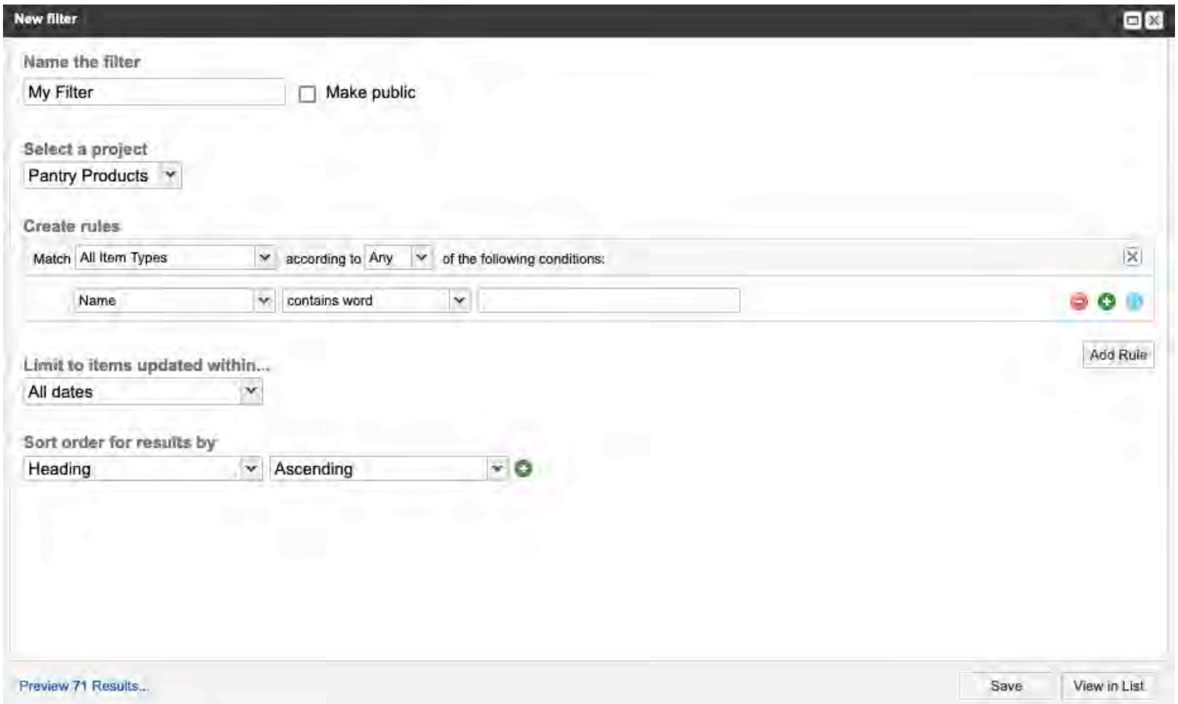
NOTE

Only organization administrators can edit filters that they didn't create. Depending on your permissions, you might not be able to edit filters that were created by other users. To view their details, right-click on the filter name under the **Filters** tab and select **View criteria**.

1. Select the **Filters** tab in the Explorer Tree.



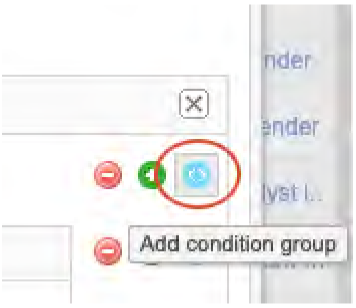
2. Select **Add filter** to open the New filter window.



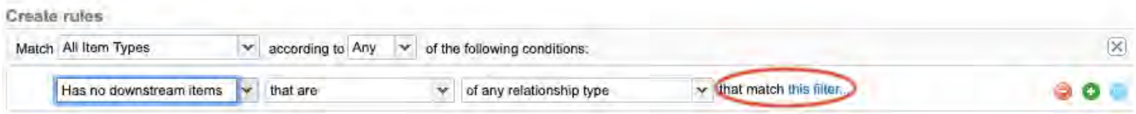
3. Enter a name for the filter and select an option to indicate the project scope:
   - **This project only** — Queries data from the project the user is viewing at the time. The filter appears only when using this project.
   - **Current project** — Queries data from the project the user is viewing at the time. But the filter is also available for use in other projects.

- **All projects** — Pulls data from every project in the organization that the user has permissions to view. Using this option, you can see items from other projects that match the filter criteria.

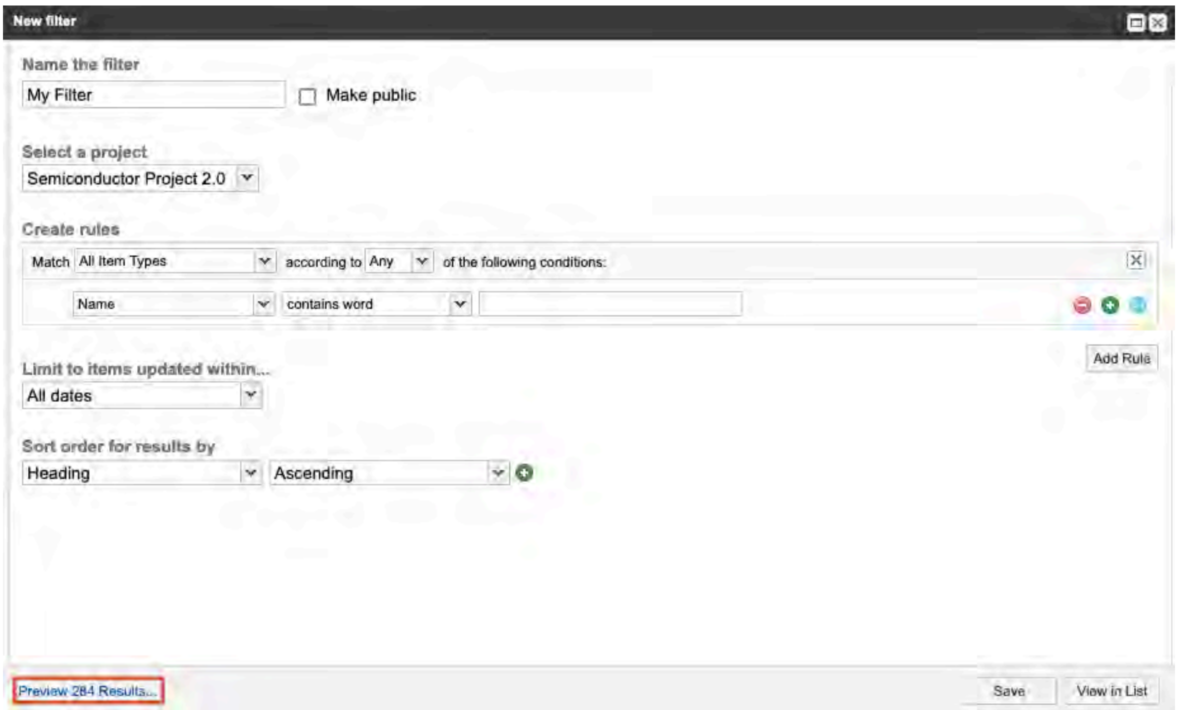
4. (Optional) Select **Make public** to make the filter available to anyone with access to the project.
5. Define your filter with available conditions, which depend on the selected item type.
   - **Add rule** creates a new rule. A filter can contain any number of rules.
   - **+** adds a condition.
   - **–** removes a condition.
   - **Add condition group** (blue button) adds a condition group, which depends on the selected item type.



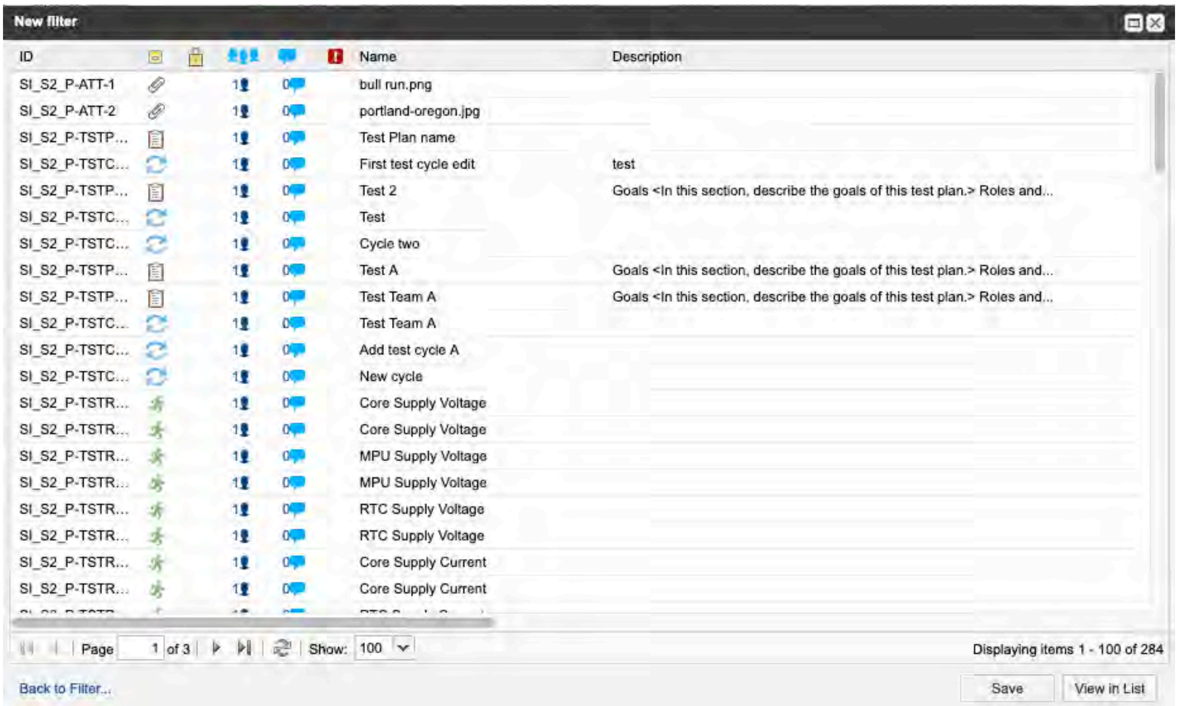
   - **this filter...** opens the **Embedded Filter** window, where you can add a sub-filter to your relationship condition.



   For example, you can create a filter to identify change requests with downstream relationships and a sub-filter to limit downstream items to the relationship item type.
   - **Limit to items updated within** options limit the filter to items updated within a certain time frame.
   - **Sort order for results by** options define how results are sorted on output.
6. Select **Preview <number> Results...** in the bottom left corner of the New filter window. Results appear in the same window.



Results example:

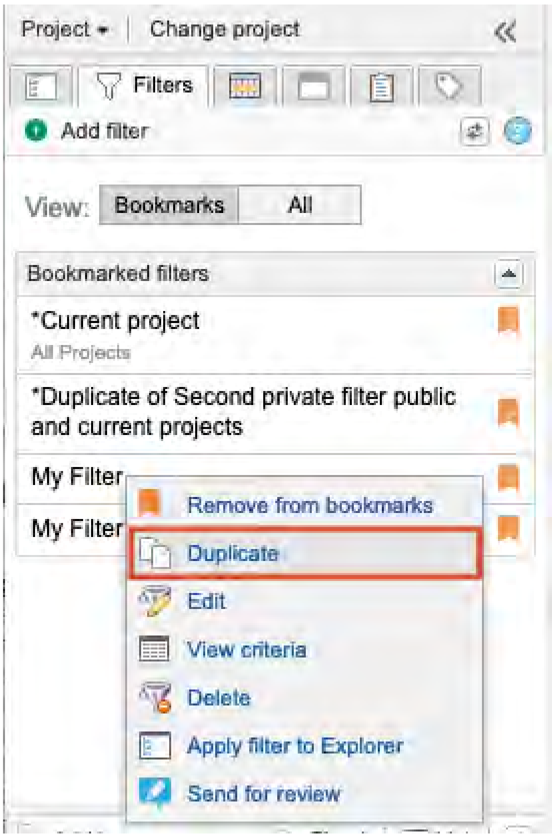


7. (Optional) Click **View in List** to see the filter items in List View.
8. When finished creating and editing your filter, click **Save**.

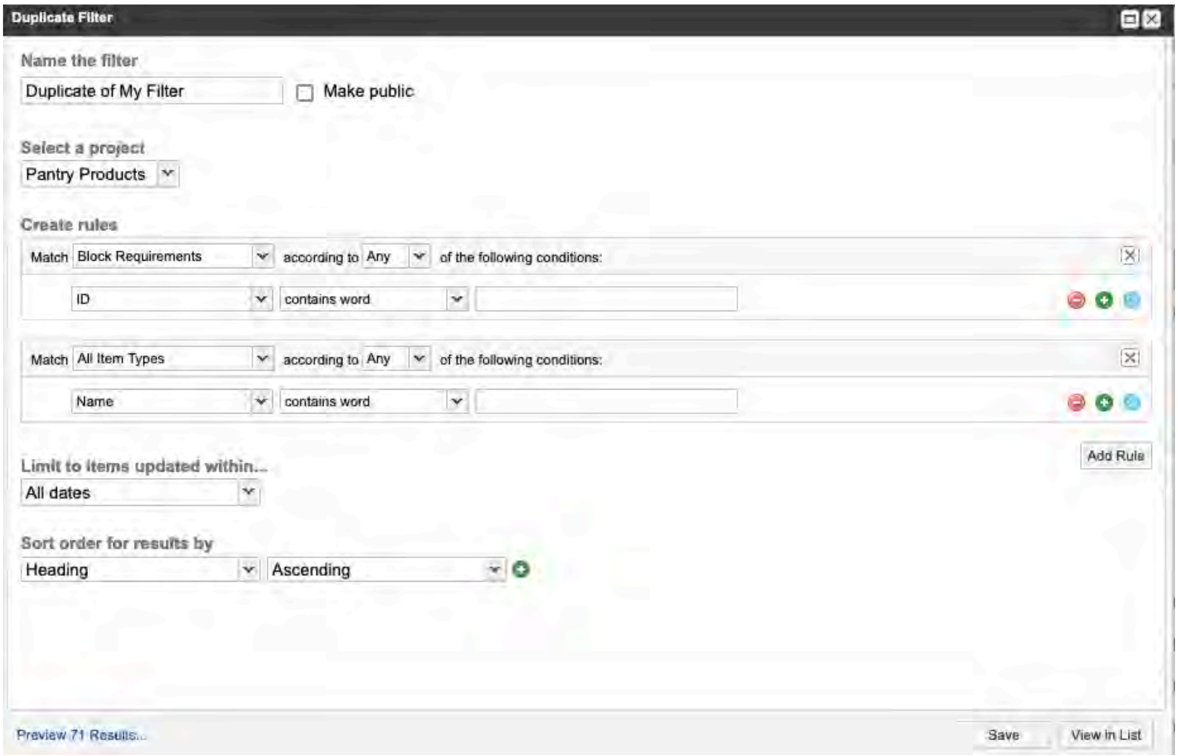
Duplicate advanced filters

To save time when creating advanced filters, you can duplicate an existing filter, then edit it for another search. This is especially useful with complex criteria.

1. View your saved filters by selecting the **Filters** tab in the Explorer Tree.



2. Right-click on the filter you want to copy and select **Duplicate**.
3. In the window that opens, enter a name for the copy and edit the filter settings [136] as needed.

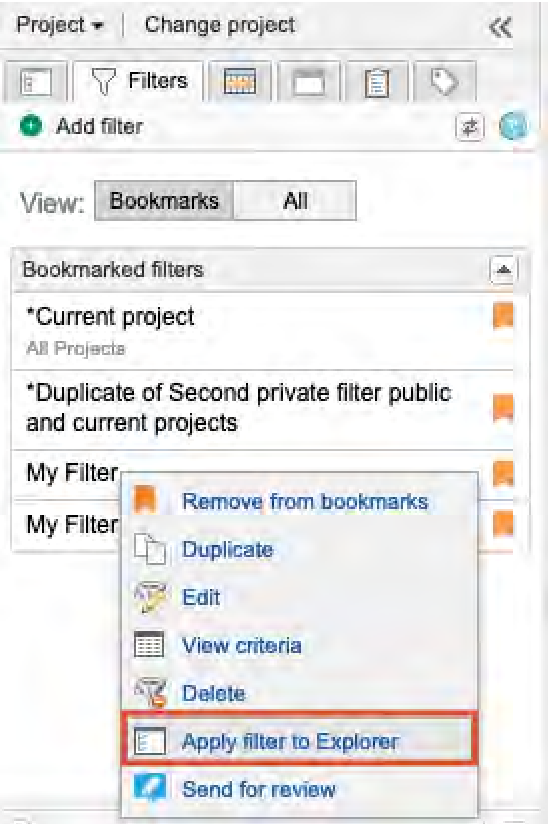


4. Click **Save**.

Filter the Explorer Tree

The Explorer Tree can contain a lot of items, which can be difficult or time-consuming to find what you need. To quickly locate multiple items, apply an existing filter.

1. View your saved filters by selecting the **Filters** tab in the Explorer Tree.
2. Right-click on the filter you want to use and select **Apply filter to Explorer**.



The filter results are shown in the Explorer Tree. Items in the hierarchy that don't apply are shown in lighter text.

Export from advanced filters

You can use advanced filters to export data directly to Word, Excel, or PDF.

If you view your filter results in Reading View, the hierarchy container items are visible. These items offer visual context and are included in your export. However, you can't select or change the items from this view.

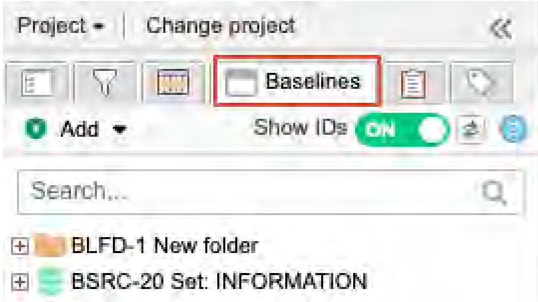
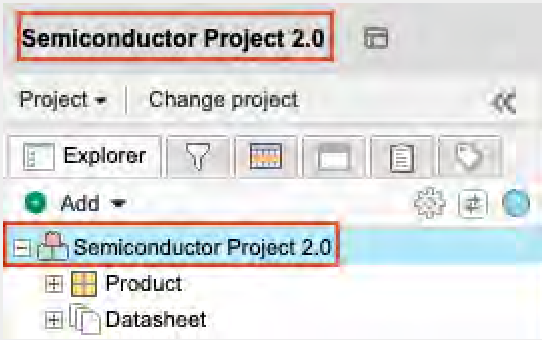
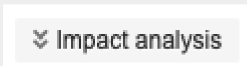
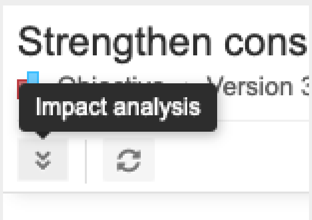
1. Create the advanced filter [135] that gathers the items you want to export.
2. Select **Export** and choose the output type.

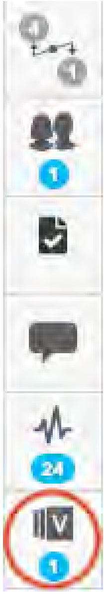
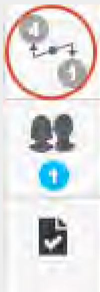
The file opens in a new tab.

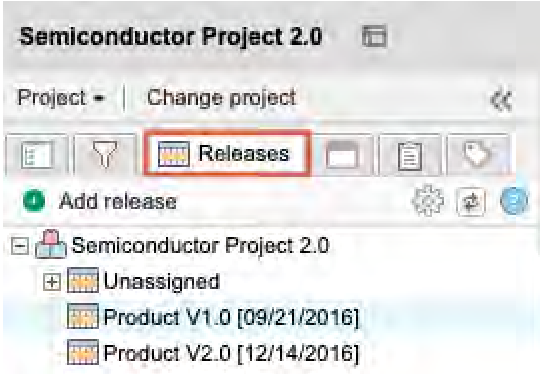
Quick find

Use this handy table to quickly find the Jama Connect feature you need.

> **NOTE**
> When viewing Jama Connect on a small screen, icons are displayed as image-only, without the text.

To find...	Where	Select...
Baselines	Explorer Tree	**Baselines** tab 
Dashboard	• Upper left corner of the screen • Explorer Tree	**Project name** 
Homepage	Top header from anywhere in Jama Connect	**House icon** 
Impact Analysis	Single Item View	**Single Item View > Impact analysis**  Image-only version: 

To find...	Where	Select...
Item versions	Single Item View (side toolbar)	**Versions** widget 
Relationships	Single Item View (side toolbar)	**Relationships** widget 
Relationship Status Indicator	• Side toolbar • In a column in List View (when configured)	**Relationships** widget  • **Top number** -- Represents the number of upstream items related to this item. • **Bottom number** -- Represents the number of downstream items.
Relationship rules	Single Item View	**Relationships** widget > **Relate items** in the bottom panel > **Show relationship diagram** at the top of the right panel For more information, see Find relationship rules [150].

<table>
<tr><th>To find...</th><th>Where</th><th>Select...</th></tr>
<tr><td>Releases</td><td>Top of the left panel</td><td>Releases

</td></tr>
<tr><td>Review status</td><td>Header</td><td>Reviews

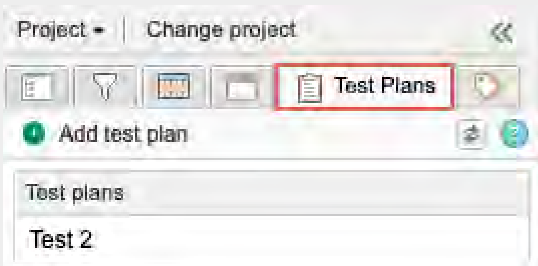

Grid -- Displays review status at the bottom of each card.


Table -- Displays review status in the Review status column.

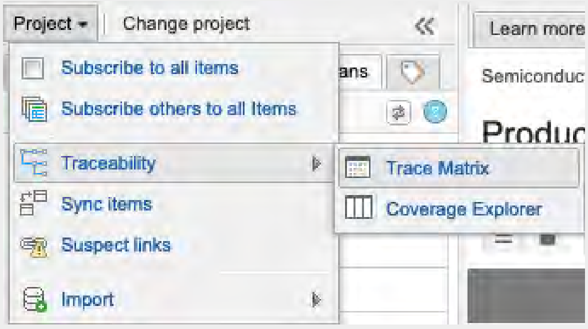
</td></tr>
<tr><td>Risk analyses</td><td>Header</td><td>Risk

</td></tr>
<tr><td>Suspect links</td><td>List View
Single Item View
Advanced filters
Explorer Tree</td><td>You can find suspect links from several places in Jama Connect.

For more information, see Find suspect links [151].</td></tr>
<tr><td>Test cases</td><td>Explorer Tree
Projects > List View
Projects > Trace View</td><td>You can find test cases from several places in Jama Connect.

For more information, see Find test cases [153].</td></tr>
<tr><td>Test plans</td><td>Explorer Tree</td><td>Test Plans tab > <plan>

</td></tr>
<tr><td>Trace View</td><td>Projects</td><td>Trace View button

</td></tr>
</table>

To find...	Where	Select...
Traceability Matrix	Projects > Project > Traceability	Trace Matrix 

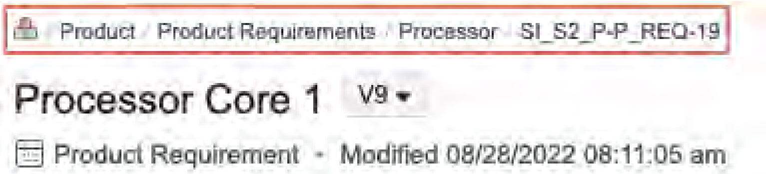
Find an item in the Explorer Tree

If you've navigated to an item from search results, filter results, or tags, you can quickly locate an item in the Explorer Tree.

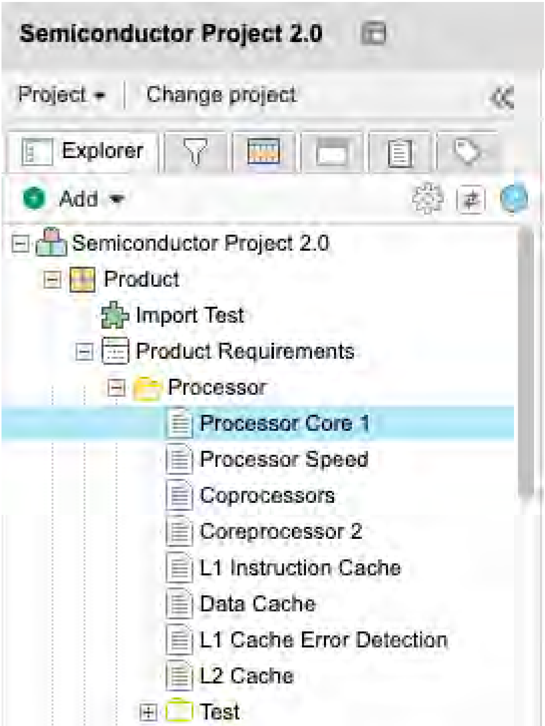
> **NOTE**
>
> If a component, set, or folder contains over 250 items, some items aren't visible in the Explorer Tree.

Use one of these methods to find an item in the Explorer Tree:

- From the Single Item View toolbar, use interactive links to find a location in your project hierarchy.



- From the Explorer Tree, view the highlighted item you want to find.

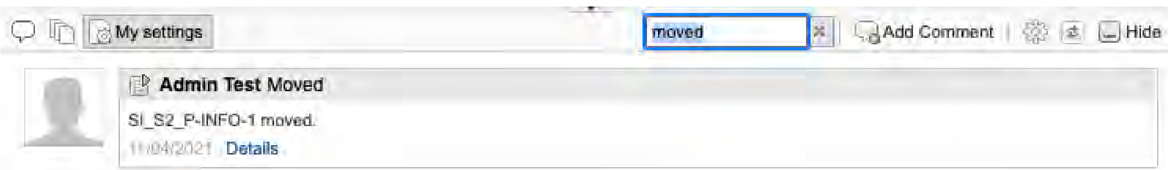


Find moved items

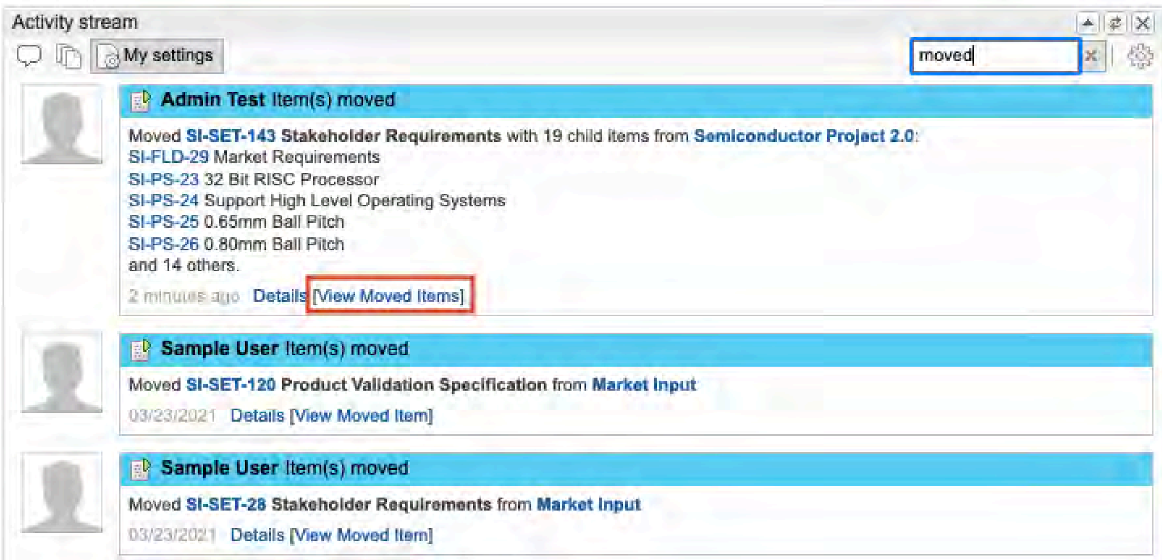
If you don't know where to look for items that were moved, you can use the Activity Stream to find and access recently moved items. This is also an easy way to move all items back to the previous location (or to another location) after a move is made.

To find moved items:

1. Open the Activity stream [226] and enter **moved** in the search field.



2. Select **View Moved Items** to see the files that were moved.



The results appear in List View.

3. (Optional) Hover your mouse over the location to see the file path.

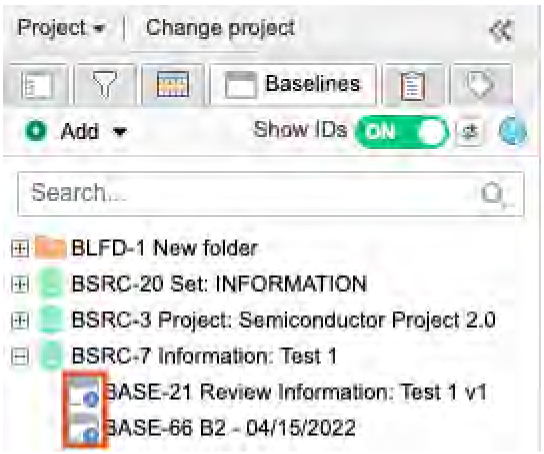
Find synchronized items

With reuse and synchronization, you can duplicate supporting information and continuously keep it in sync. Supporting information includes any item, container of items, or a project.

Only an organization admin can configure reuse and synchronize [563].

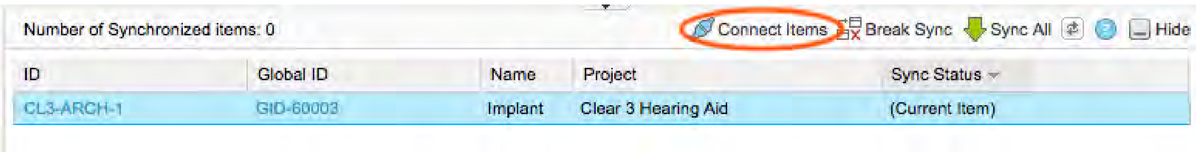
Use one of these methods to identify synchronized items or find reused items:

- **Explorer Tree** — In the Explorer Tree, a blue dot indicates that an item was synchronized.



- **List View** — Select an item in List View, then select **Actions > Reuse** to open the Reuse item(s) window.
- **Project drop-down menu** — An organization or project admin can select **Project > Sync items** to open the Sync items window, or **Project >Manage all projects** to duplicate (and optionally synchronize) projects [638].
- **Manage all projects** — An organization or project admin can select **Project > Manage all projects** to duplicate (and optionally synchronize) projects [638].
- **Stream** — Reuse and synchronization of items adds activity entries to the stream [241] for all items created or modified during the process.

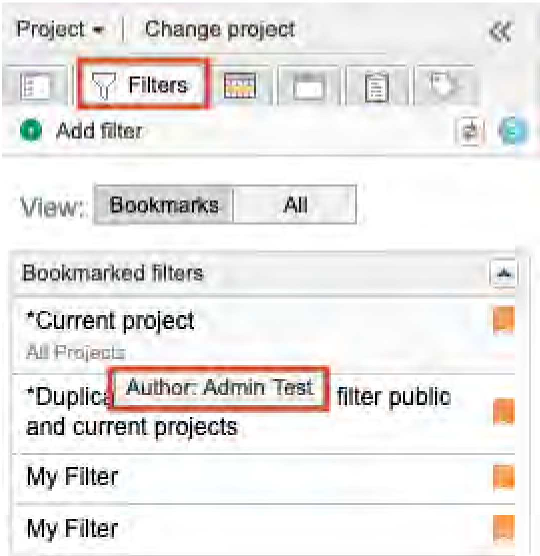
- **Synced items window** — Right-click on any item in the Explorer Tree, then select **View synched items** to open the Sync Items window. There you can select any item or container on the left to see which other items have the same global ID.
- **Bottom panel** — Open an item in Single Item View, then on the right toolbar, select **Synchronized items** to open the bottom panel, which displays all items currently synchronized with this item.



Find advanced filters

Once you or other users create and save advanced filters, you can view them in a list and find out which user created each one.

1. From the project with the existing filters you want to view, select **Filters**.
2. Hover your cursor over the filter name to see who created the filter.



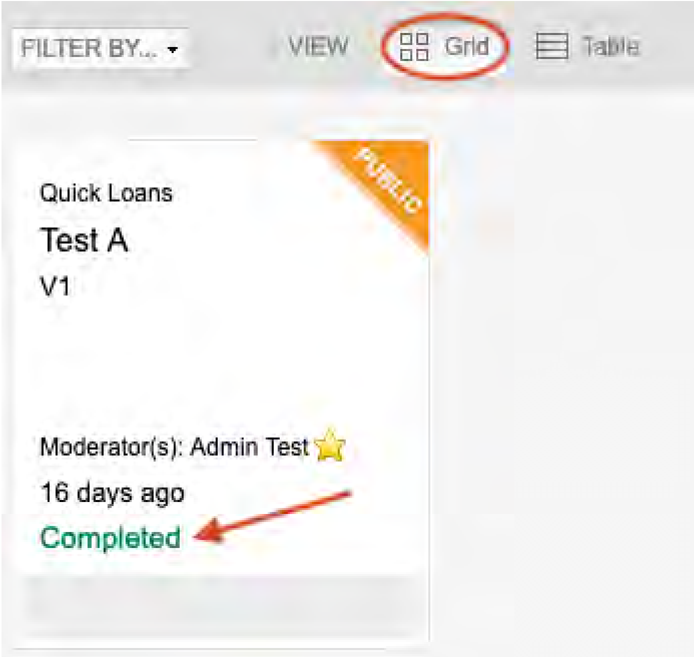
> **IMPORTANT**
>
> You can delete a filter when you no longer need it. Before you do however, make sure the filter isn't shared. If you delete a shared filter, even if you're not the creator, it's deleted for everyone.

Find review status

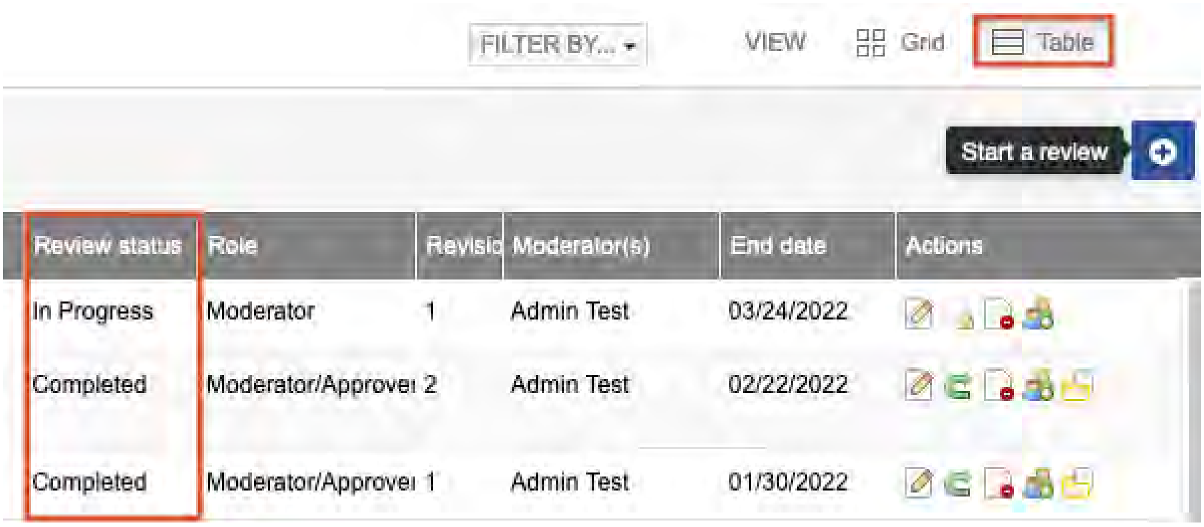
Quickly find a review status using one of these methods.

In some cases, the review status value in Grid View is different than in Table View. For example, **In Progress** (Table View) vs **X days left** (Grid View).

- Select **Grid** to see the review status at the bottom of each card.

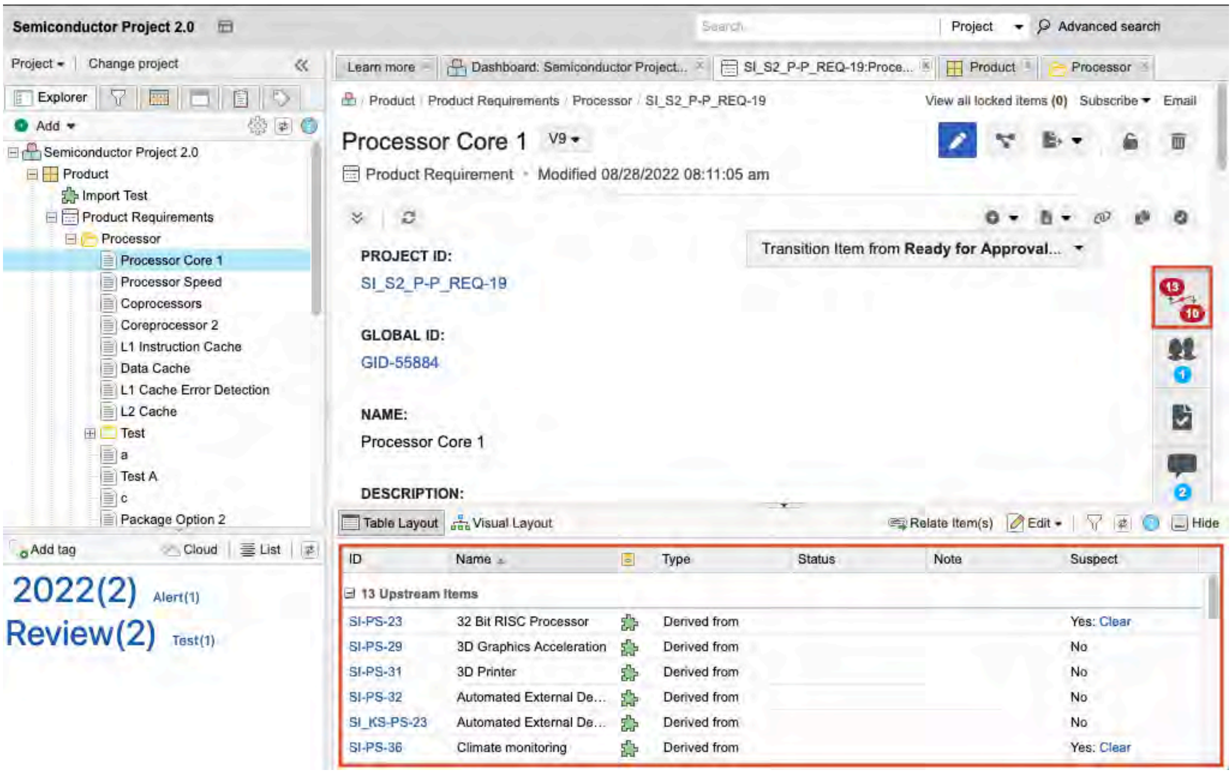


- Select **Table** to display review status in the **Review status** column.

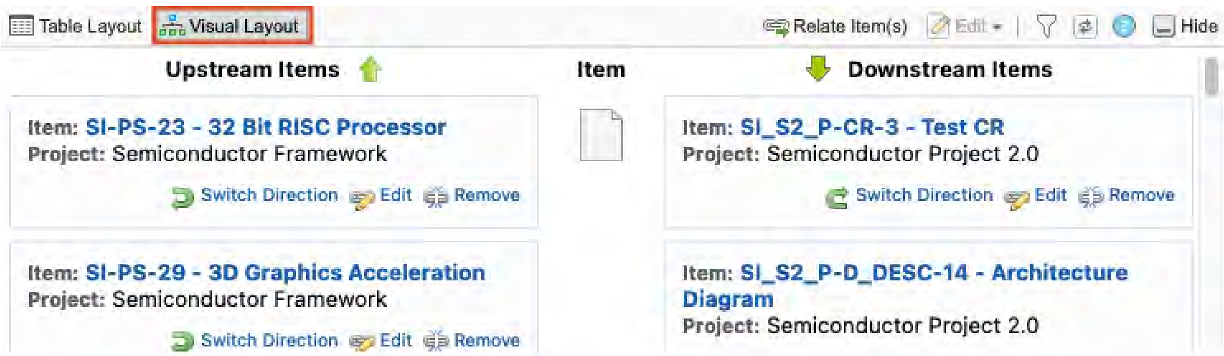


Find relationships

In Single Item View, you can view and filter [292] related items when you click **Relationships** in the side toolbar, which opens the bottom panel.



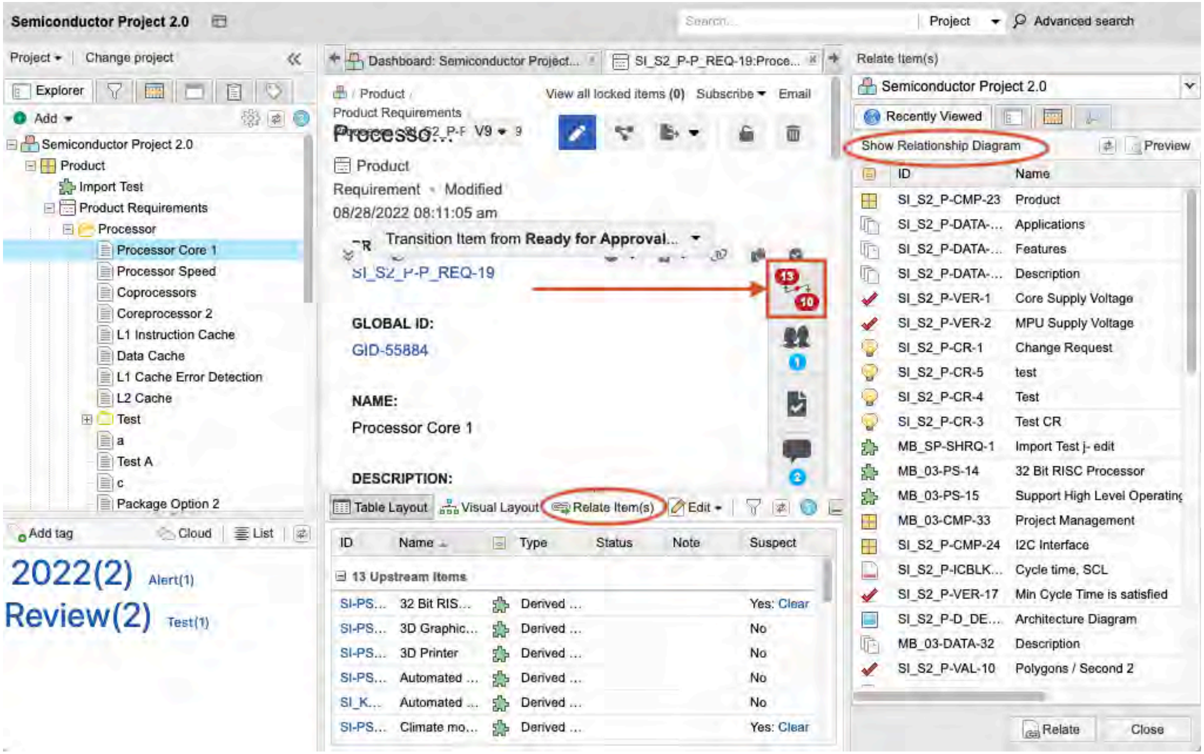
To see a different perspective with links to more rapid actions, you can click **Visual Layout** in the bottom panel.



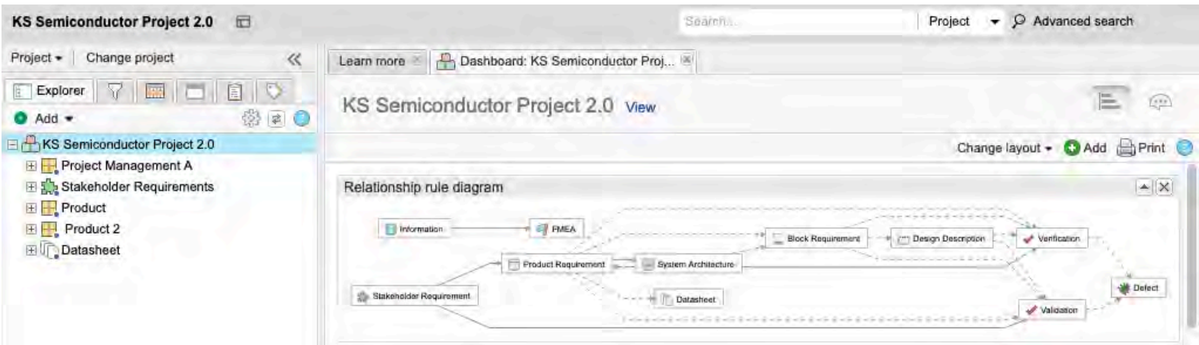
Find relationship rules

Relationship rules are set up by an organization admin [625], but can be viewed by all users in two places.

- In Single Item View, select the **Relationships** widget, select **Relate items** in the bottom panel, then select **Show relationship diagram** at the top of the right panel. The relationship diagram for this project appears in a pop-up window.



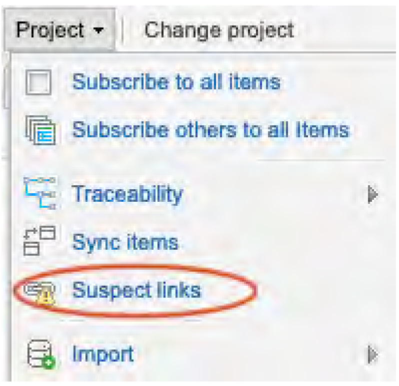
- Display the diagram for a project on the dashboard [379].



Find suspect links

You can find suspect links [293] using one of these methods.

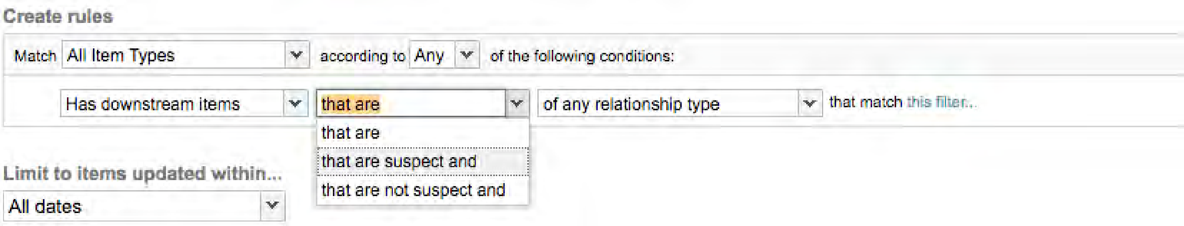
- To view (or clear [293]) all suspect links for a project, select **Project > Suspect links**.



- To view all suspect links for an item, open an item in Single Item View [56] and select **Relationships** in the side toolbar to open the bottom panel.

The **Suspect** column reports if an item is suspect due to upstream changes. You can also clear suspect links [293].

- In List View or Single Item View, view suspect links in the Relationship Status Indicator [285].
- Find suspect links using advanced filters [135].

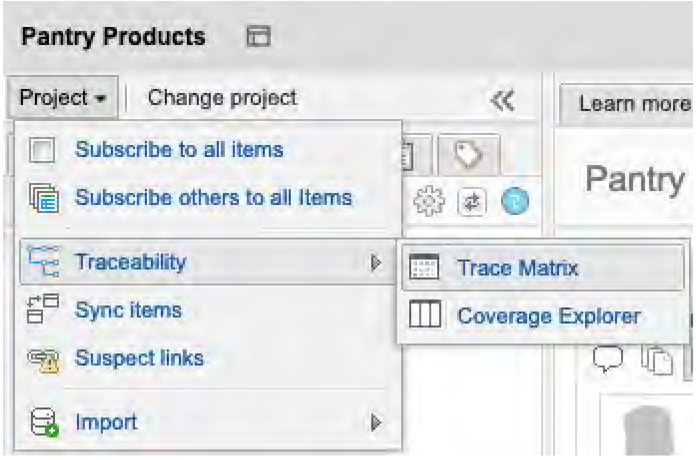


Find the Trace Matrix

The Trace Matrix is a visual representation of relationships between the items in a project.

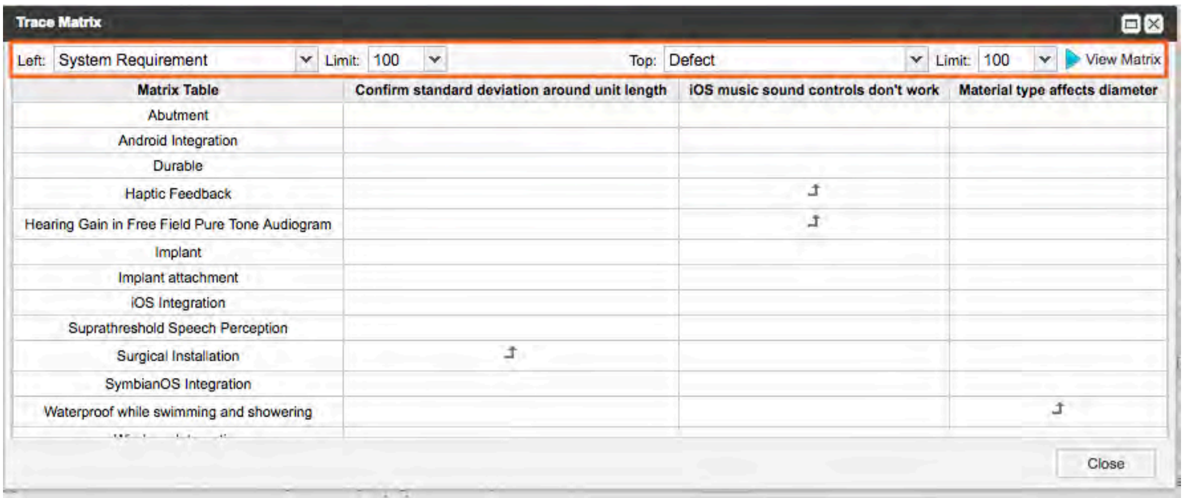
To access the Trace Matrix:

1. Select **Projects** in the header.
2. Select **Project > Traceability > Trace Matrix**.



The Trace Matrix window opens, which provides a visual representation of relationships between the items in a project.

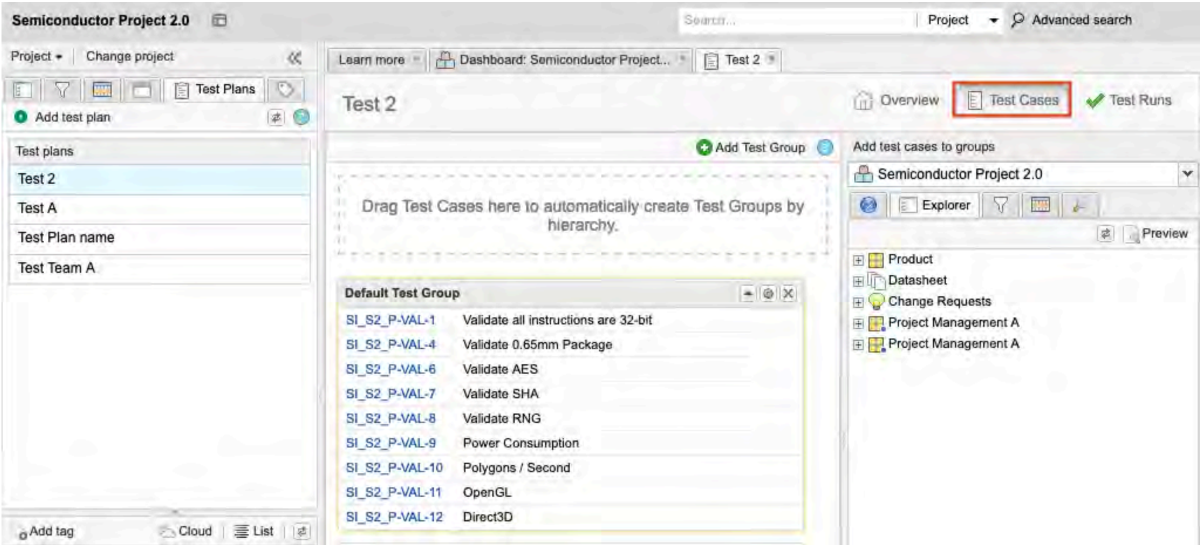
For example, you can select a set of requirements and see which have related test cases.



Find test cases

Use one of these methods to find test cases.

- Explorer Tree [47].
- **Projects > Trace View [55]**, where test cases appear in relationship to items they test, along with associated test runs.
- **Projects > List View** [53], where you can filter by item type name to find test cases.
- **Test Plans > Test Cases**, where you can see them in the test cases section of the plan.

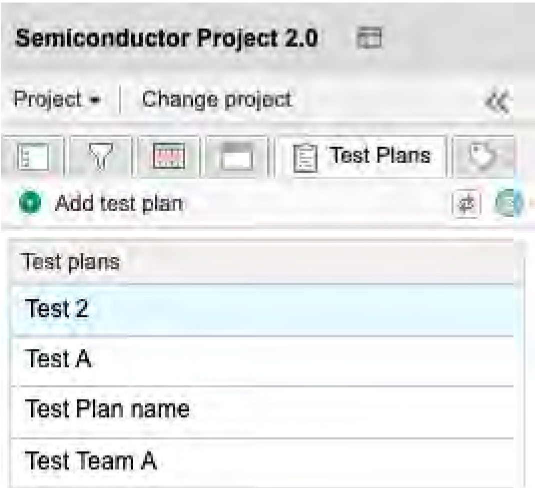


Find test plans

A test plan is an item that documents the overall strategy for validating or verifying that a product or system meets its design specifications and requirements.

Test plans are items but they aren't visible in the Explorer Tree. They are visible on the Test Plans tab.

1. At the top of the Explorer Tree, select the **Test Plans** tab



2. Select the plan you want to use to view details [352] of that plan.
3. View and comment on test plans in review [354], as needed.

> **TIP**
> Although test plans don't appear in the Explorer Tree, you can reveal them with an advanced filter [135].

Reviews in Jama Connect

Reviews play a key role in successful product development. They help ensure that a new project meets stakeholder, market, and compliance requirements.

Jama Connect uses an iterative and collaborative approach for reviewing requirements and other artifacts in real-time, which improves stakeholder alignment, reduces review cycles, and eases the path to compliance.

Your organization administrator configures review center settings [633] to meet the needs of your organization.

Review features include a wizard that streamlines review setup and electronic signatures for coordinated approval and signoff.

Roles for review workflow

Your role determines which tasks you perform in a review.

Moderator — Create, manage, finalize, and close a review. Only moderators can comment on a closed review.

Approver — Provide feedback and approve or reject the item during the review.

Reviewer — Provide feedback.

Review Administrator — See and manage all reviews.

Role	Responsibilities and actions
Moderator	• Initiate a review. • Add and manage review participants. • Modify a review. • Edit an item to incorporate feedback. • Close and reopen a review. • Publish a revised review. • Finalize a review. • Archive a review. • Delete a review. • Recover an archived review. • Transition items based on item workflow. • Remove items.
Reviewer*	• Contribute feedback. • Finish a review as a reviewer.
Approver	• Contribute feedback. • Approve or reject review items. • Delegate approval. • Finish the review as an approver. • Add electronic signatures to a review.
Review administrator	• View a list of all reviews. • Perform administration tasks for all reviews, whether or not they were invited to participate. • Archive and unarchive a review. • Recover a deleted review. • Configure review comments.
All	• Find and view review items. • Compare versions. • Monitor progress. • Vote on items. • Subscribe to items on the page.

* Moderators and approvers can also perform all reviewer actions.

Review lifecycle — Who does what during a review

Action	Moderator	Reviewer	Approver	Review Admin
Initiate a review [159]	X			
Invite participants [164]	X		X	
Add and manage review participants [166]	X			
Modify a review [167]	X			
Delegate approval [182]			X	
Participate as a reviewer [176]	X	X	X	
Find and view review items [186]	X	X	X	X
Contribute feedback [177]	X	X	X	
Finish the review as a reviewer [179]	X	X		
Finish the review as an approver [180]			X	
Electronically sign the review [181]			X	
Incorporate review feedback [168]	X			
Close a review [169]	X			
Mark a review as completed and update workflow status [175]	X			
Compare versions [194]	X	X	X	X
Monitor progress [196]	X	X	X	X
Vote on items [201]	X	X	X	X
Subscribe to items on the page [200]	X	X	X	X
View list of all reviews [157]				X
Perform administration tasks for all reviews [183]				X
Archive a review [171]	X			X
Recover an archived review [171]	X			X
Recover a deleted review [183]				X
Configure review comments [184]				X
Remove or recover items in a review [172]	X			

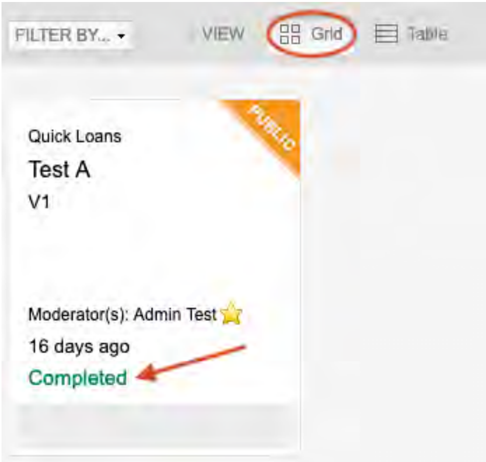
Workflow status for reviews

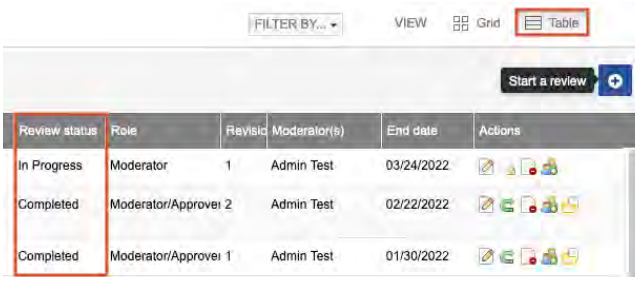
The review status field shows the current workflow stage (status) of a review. This field changes as a result of other operations, like closing and archiving a review.

In Grid and Table View, you can quickly find a review status.

In some cases, the review status value in Grid View is different than in Table View. For example, **In Progress** (Table View) vs **X days left** (Grid View).

Grid View	Table View





Status	Definition	Grid View	List View
In progress	Default status when moderator initiates a review [159] . Status can be changed to “In progress” when the moderator restores a deleted review or marks the review status as "In progress [148]."	No	Yes
Completed	Status displayed when a moderator selects **Close for feedback** or a deadline date is met.	Yes	Yes
Review final-ized	Status when a moderator marks a review as finalized.	Yes	No
Archived	Status when a moderator archives a review [171], or when a review administrator recovers a deleted review or sets the status to "Archived."	Yes	Yes
Deleted	Status when a moderator or review administrator deletes a review [171].	No	Yes

Review Center dashboard views

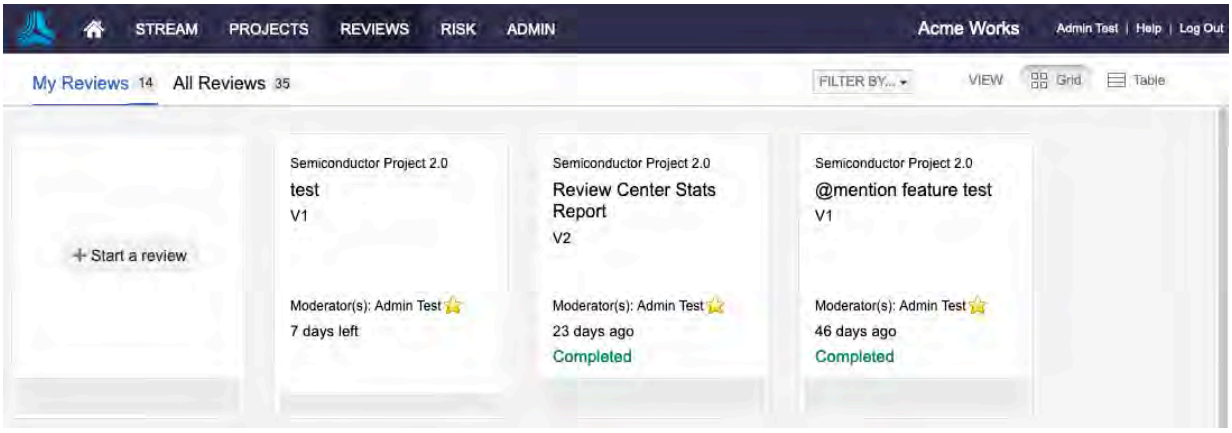
Access reviews from the top navigation by selecting **Reviews** in the header.

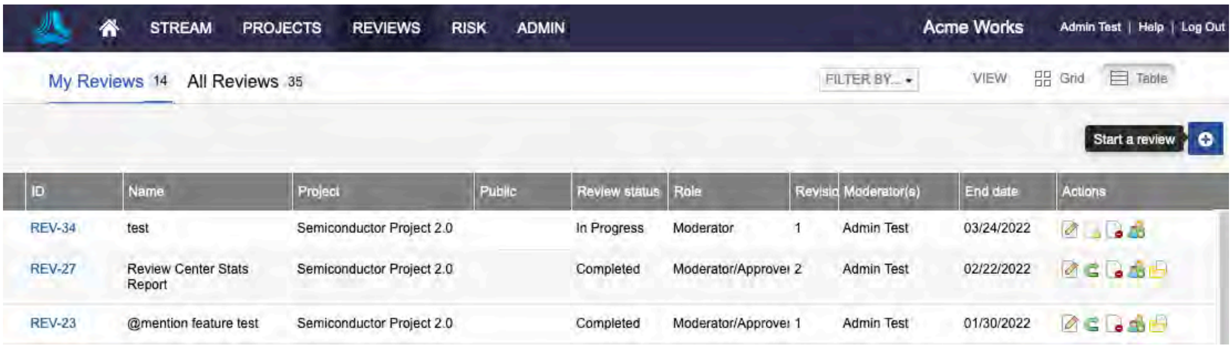
From the header, you have two options:

My reviews	All reviews where you are assigned as a reviewer [176], approver [179], or moderator [158].
All reviews	Reviews that haven't yet been archived.

What you see in the dashboard

What is displayed in the dashboard depends on your role, whether you’ve been invited to a review, and the options you select.





Review administrators — See all reviews.

Users — See only public reviews until they are invited to a review (depends on how your organization administrator and moderator have set public review permissions).

Filter by — Filter reviews by review status or by your role in the review.

Include/Hide archived reviews — See reviews that have been archived or remove them from your results.

The indicator for a pubic review depends on your view:

Grid View

Table View

Moderator tasks

Certain tasks can only be performed by a moderator. Moderators can also be reviewers or approvers, in which case they can perform all tasks for those roles as well as moderator tasks.

- Initiate a review [159]
- Add and manage participants [166]
- Modify a review [167]
- Incorporate feedback for review items [168]

Initiate a review

You can create reviews for any item or group of items that you can access. By default, you are the moderator for any reviews you create.

You can start a review from several places in the interface. Whichever method you use, a wizard opens and guides you through the process.

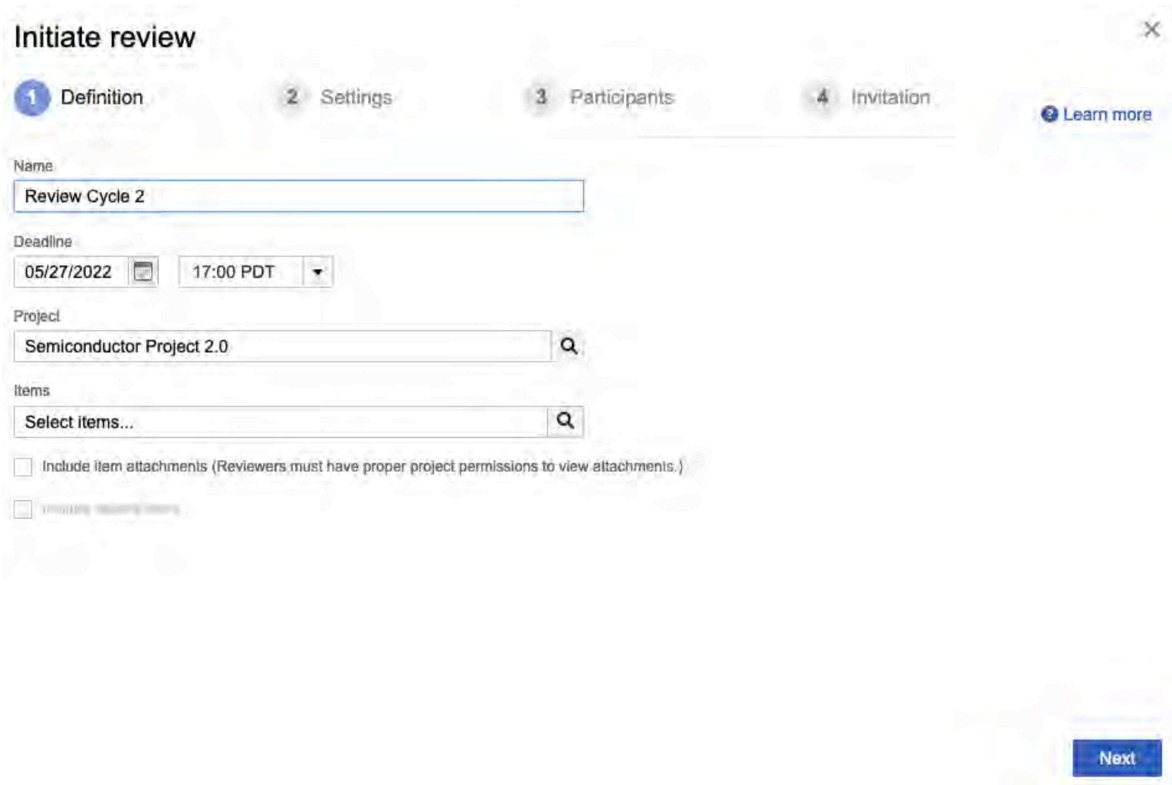
Method/location	Action
Reviews	Select **Reviews** in the top navigation, then select **Start a review**.
Test plan	Select **Test runs > Cycle > Send for review** to send a cycle of test runs to review. **Note**: To send an entire test plan for review, select **Test Plans**, right-click on the test plan, and select **Send for review**.
Projects > Single Item View	Select the item you want to review, then select **Send for review**.
Projects > List View	Select the items you want to review, then select **Send for review**.
Explorer Tree	Right-click on an item and select **Send for review**.
	Filters tab — Right-click on the filter that points to the items you want to review, then select **Send for review**.
	Releases tab — Right-click on the filter that points to the release you want to review, then select **Send for review**.
	Baselines tab — Right-click on the source that includes the baselined items you want to review, then select **Send for review** (reviews the items in their current state, not their baselined state). If all items from an existing source were deleted, you can't select **Send for review** from the baseline tree.

TIP

When you initiate a review, a baseline of the selected reviews is automatically generated [274]. You can find this baseline [274] under the Baselines tab or you can find a link under the Versions tab of any item in this review.

To start a review:

1. Select the items you want to review using one of the methods described in the previous table.



2. **Definition [160]** — Define your review.
3. **Settings [162]** — Configure the settings for your review.
4. **Participants [164]** — Configure who you want to review your items.
5. **Invitation [165]** — Complete the invitation email.

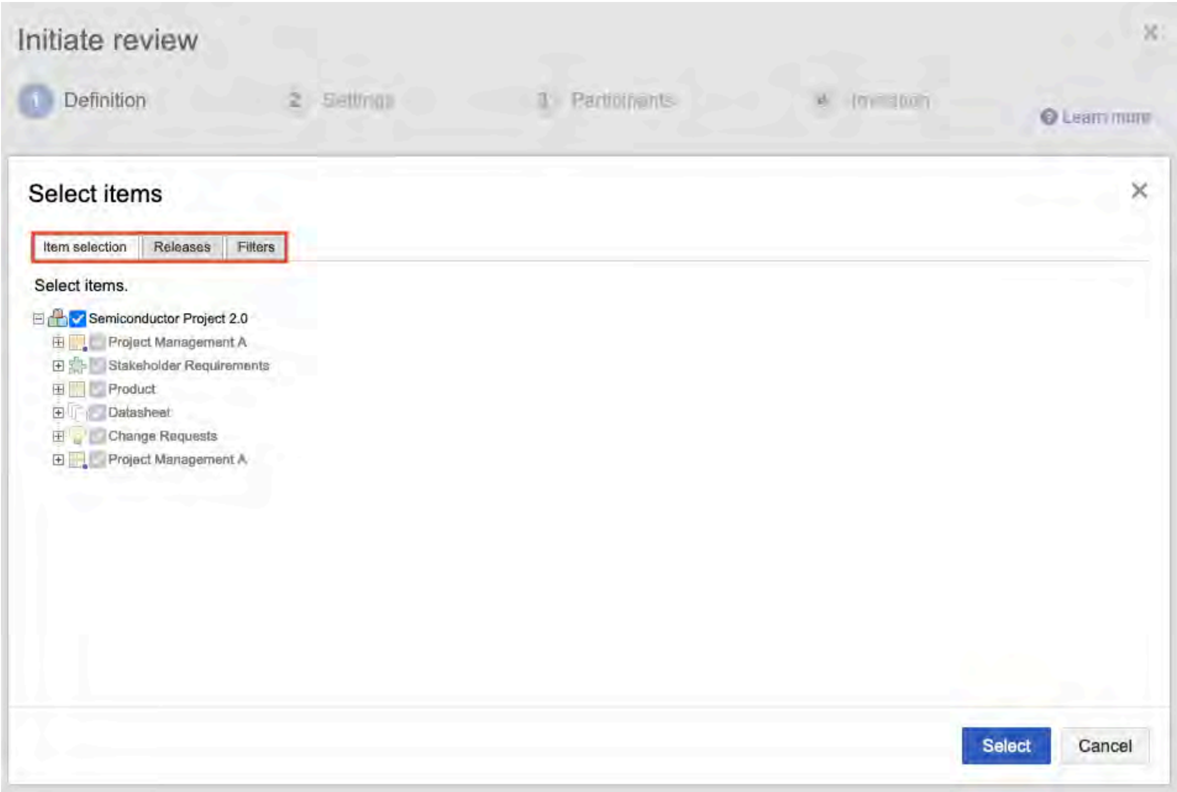
Definition

When you initiate a review [159], the first step is to define the review.

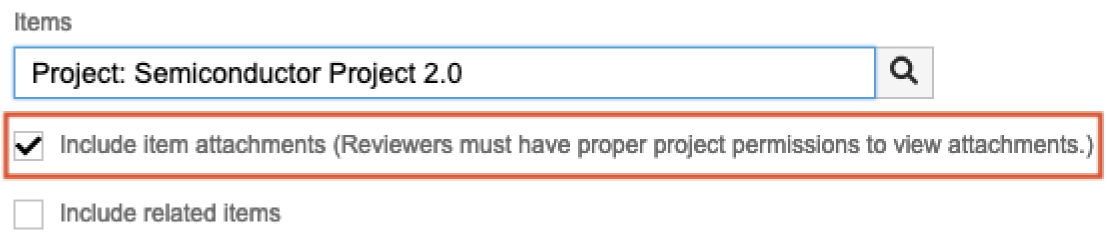
1. If you selected items before initiating the review, the system suggests a name, or select a name for the review.
2. Set a deadline for the review, or the deadline defaults to one week from today.

> **NOTE**
> If you're using Windows, be sure that "Adjust for daylight saving time automatically" is enabled in "Date and time" settings in Windows, so that the time zone is displayed correctly when initiating a review.

3. If you selected items before initiating the review, the **Project** field shows the name of the source project. Otherwise, select the **Project** that contains the items for this review.
4. If you selected items before initiating the review, this field isn't editable. Otherwise, select the items that you want to review.
   You can select whole containers or expand the containers to select individual items. You can also use the **Releases** or **Filters** tab to select a release or filter to send to review. You can't select items from multiple tabs. Use the **Select** button to indicate your choice is complete.

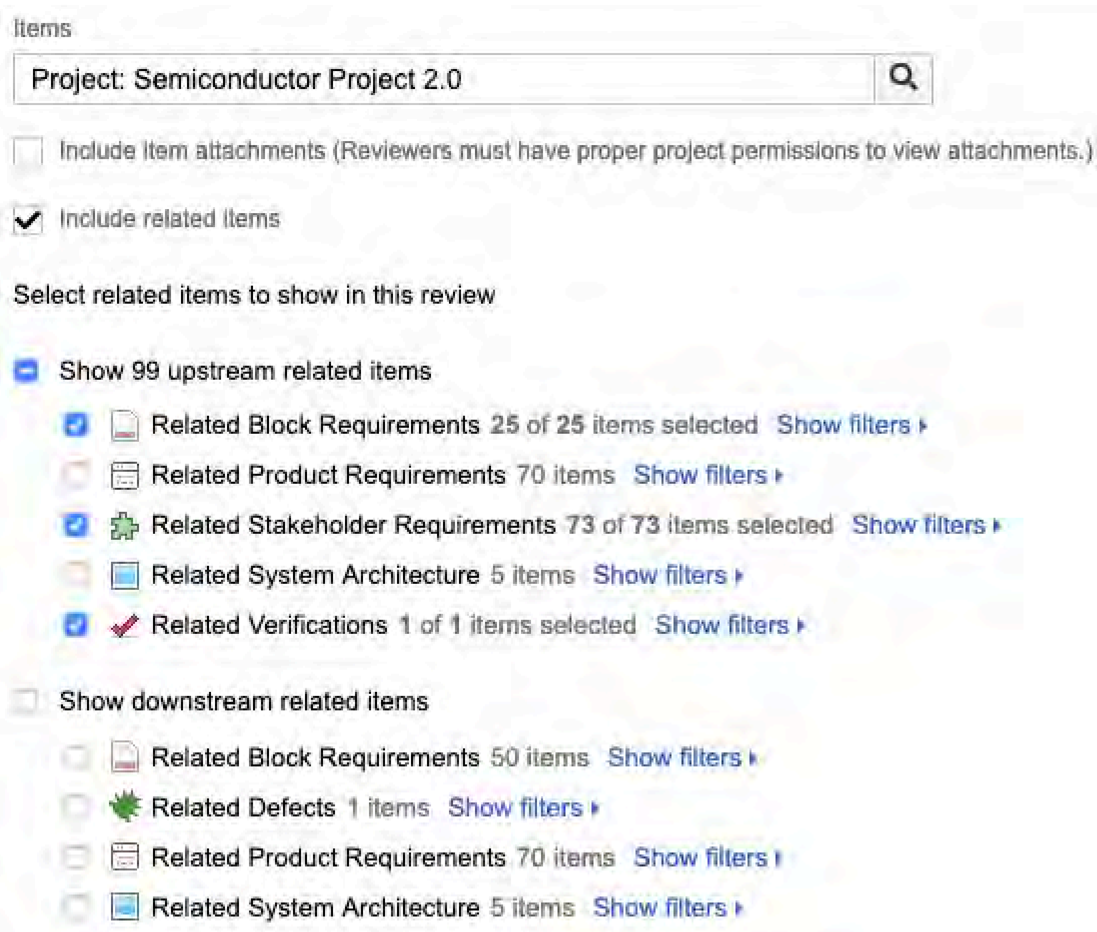


5. Select **Include item attachments** to add item attachments to the review.



When the review is created, you see attachments for the item in each section of the review (if they exist). Select the attachment link to open the latest version of the attachment.

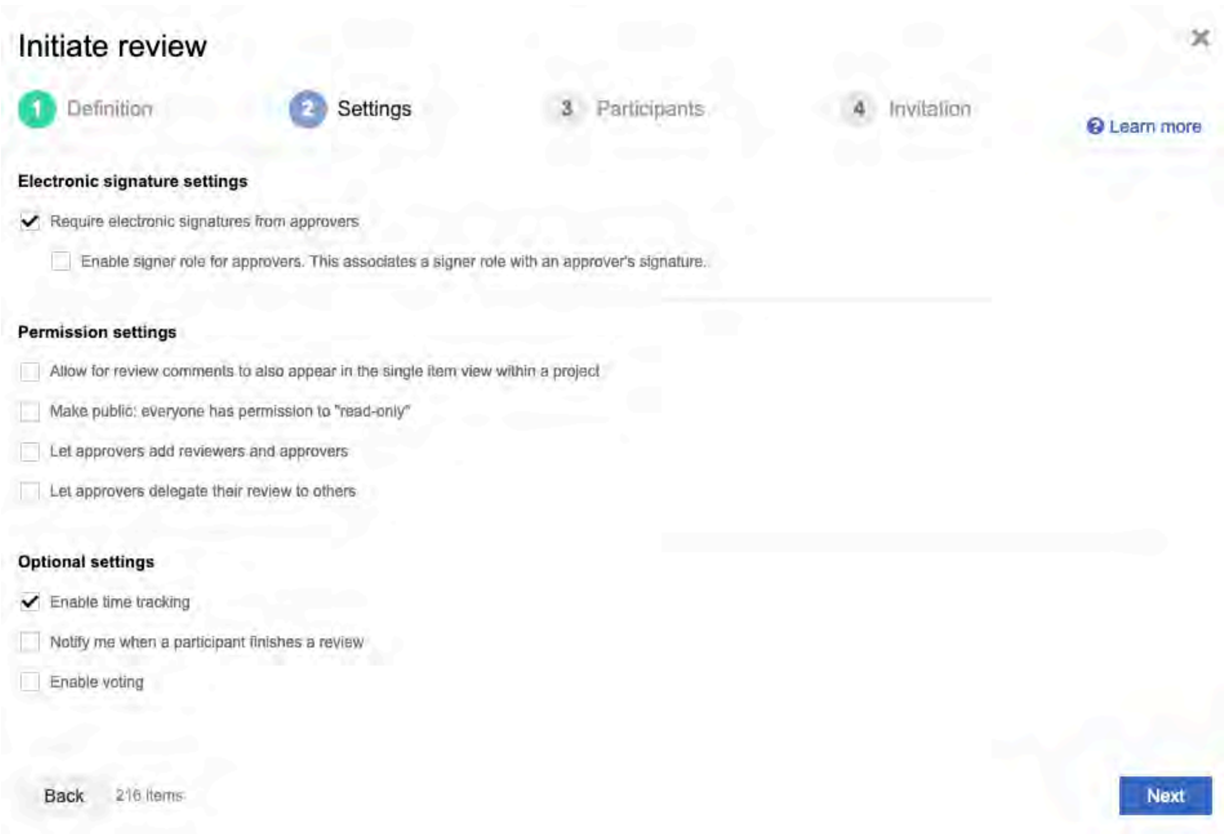
6. Select **Include related items** to see options for making upstream and downstream items visible in the review (as long as such items exist).
You see each item type that's related either upstream or downstream, along with a count of the number of related items.
Select **Show filters** to filter those relationships by relationship type.
Select the related items you want to include in the review.



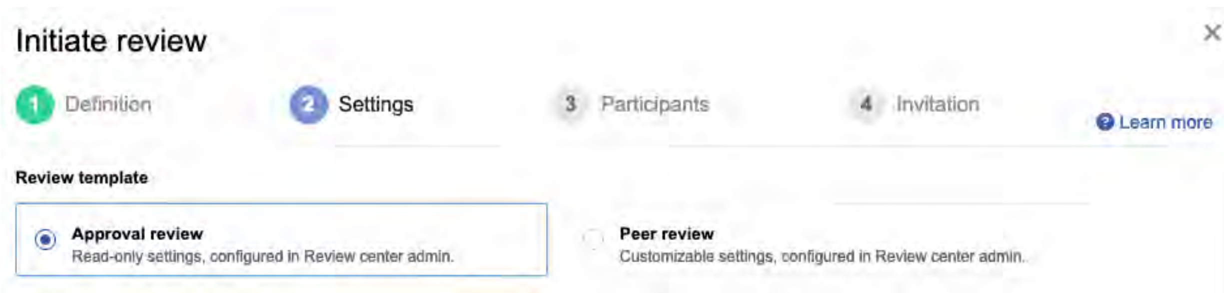
7. Select **Next**.

Settings

When you initiate a review [159], the second step is to choose the review settings. This image shows the default settings. Additional settings are available only if they are configured by an organization or process administrator.



You see the Review template option if it's enabled in Review center by an organization admin. For more information about review templates, see Item workflow for Approval Reviews [635].

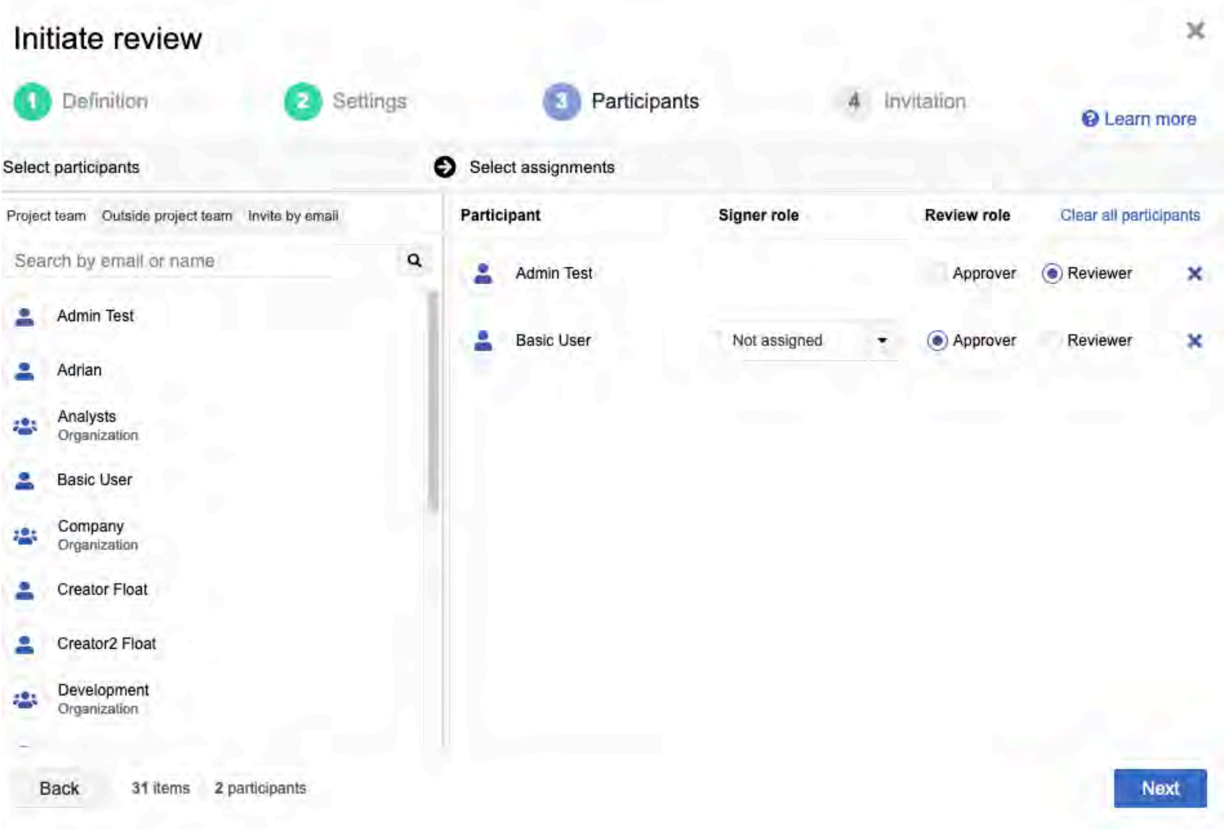


1. Select electronic signature settings.
   If you select **Require electronic signatures from approvers**, all approvers must sign the review in order to approve it. Select **Enable signature group for approvers** if you want your review signatures to have a particular signer role. Find out more about how electronic signatures work [245].
2. Select permission settings.
   Allow for review comments to also appear in the single item view within a project: Administrators must first enable this option in the **Review Center Settings** for this option to appear.
   Make public: This option makes the review visible beyond those invited to participate. An organization administrator determines whether public reviews [633] can be seen by anyone with access to reviews, or only by those with permission to ALL items in a review.
   Let approvers add reviewers and approvers: Select to allow approvers to add others to the review.
   Let approvers delegate their review to others: Select to allow delegation of the approver role. If an approver is assigned a signer role, and they delegate their approver role, the signer role is also delegated.

3. Select optional settings.
   Enable time tracking: Check this box to track the amount of time each reviewer spends within the review. The clock that tracks the time is visible to all participants in review statistics [196].
   Notify me when a participant finishes a review: Check this box to send notification emails [216] to the moderator when a reviewer marks a review complete or when a participant requests a new version.
   Enable voting: Check this box so participants can provide input on priority or other issues the moderator needs to resolve. Read more about voting [201]. If you select this box, you are asked to designate the number of votes per user and a label for what the vote means.
4. Select **Next**.

Participants

When you initiate a review [159], the third step is to choose review participants.



> **IMPORTANT**
> Inviting anyone to a review gives them read access to the entire content of the review, even if they don't have permission to the underlying items.

1. Using the left column, select participants for this review.
   Use the tabs at the top of the column to select from users on the **project team**, or from **outside the project team**.
   You can select individuals or groups. Search by name or email using the field at the top of the list. If you select a group, you can add all users or select individual users from the group.
   Select the **Invite user by email tab** to invite users from outside of Jama Connect. Those users receive an email invitation with a link to the review. When they select the link, they are given a

reviewer license (as long as there are floating reviewer licenses available) and are asked to set up an account. They can only access the review you invite them to.

> **IMPORTANT**
> An organization administrator can disable this function or can restrict the domains for which outside review invitations are allowed. [633]

2. Selected participants appear in the right panel. Select a review role for each participant (approver [179] or reviewer [176]).
   If you enabled signer roles [162], you can also assign a signer role to each approver.
   Signer roles are based on groups. If you select a group name, then select **All users**, the signer role for those users defaults to the group name.
3. Select **Next**.

Invitation

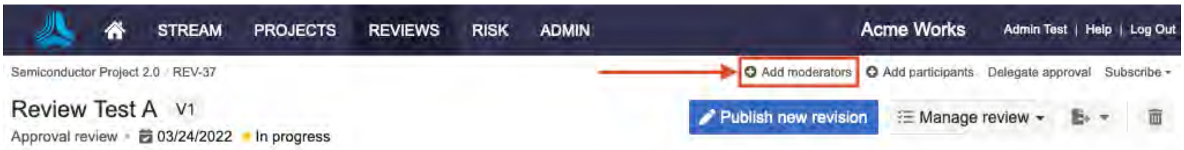
When you initiate a review [159], the final step is to complete the invitation.

1. You see a draft of the email that's sent to **participants**. At the top, it shows the total number of participants who receive the email and their roles.
   Fields for the email **subject** and **message** are the only two fields you can modify in this panel.
   The email also shows the **review role** and **signer role** as determined in the participants panel [164]. For reviews that have participants with different reviewer roles, light gray text shows information that might vary for each participant.
   The **signature meaning** is the same for all reviews and defaults to "I approve this review" and can't be modified.
   The email includes a **link to the review** and the **deadline**.
2. Select **Initiate review** to receive a confirmation that your email was sent.

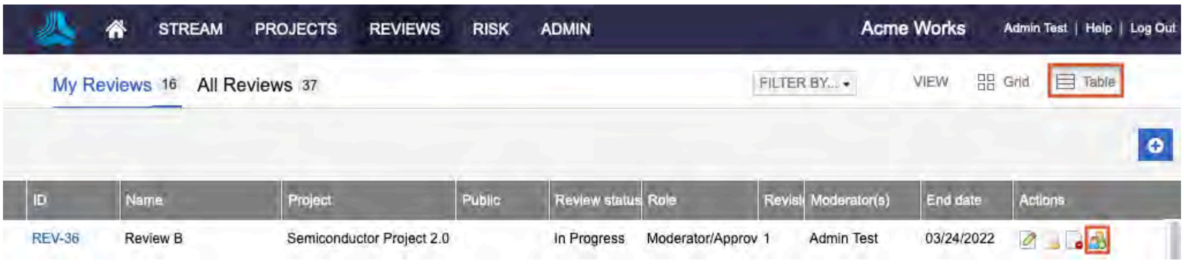
Add and manage review participants

As a moderator, you can add or remove moderators from your review.

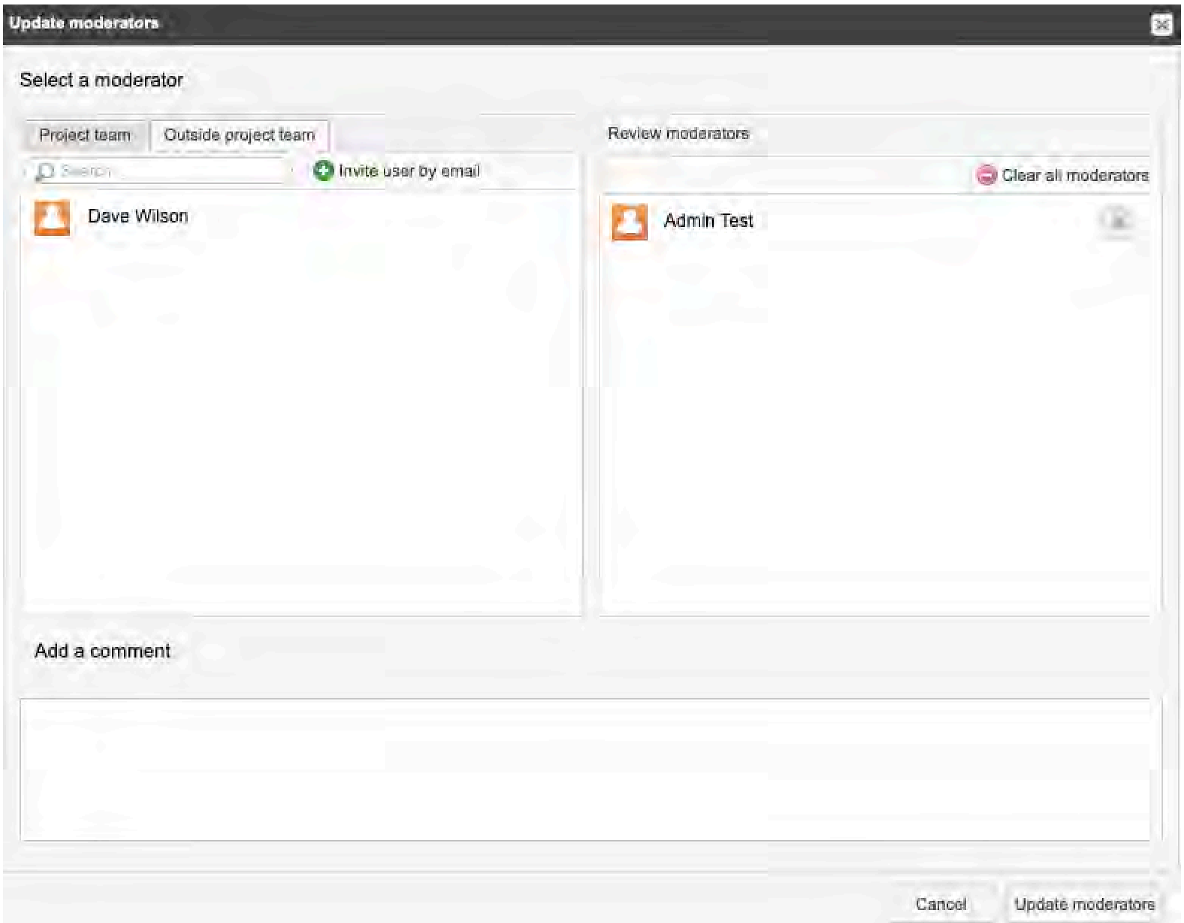
1. In a review, select **Add moderators**.

   If you are viewing multiple reviews in the Table view, select **Update moderators for this review**.

   The **Update Moderators** window opens.

2. Add moderators from your team (**Project Team** tab) or from outside your team/Jama Connect (**Outside Project Team** tab).
3. To remove a moderator, select the **X** next to the name in the Review Moderators panel.
4. (Optional) Add a comment about the changes you made.
5. To finish, select **Update Moderators**.

Important considerations

- If you remove yourself from a review, you no longer have access to that review. All added and existing moderators receive email notifications for changes to the list of moderators during the review.
- Moderators can be added to a review regardless of their access rights to the items in the review. However, when a new revision for the review is published, it includes only items that moderators have write access to. This can have unexpected consequences for reviews sent from filters, such as missing or extra items in the new revision.

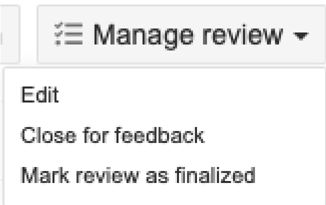
Modifying an "In progress" review

You might want to change the content that's included in a review, the due date, or the participants. You can also close a review so that feedback is no longer allowed.

Only a moderator [158] or a review administrator [183] can change a review.

You can change a review from different locations and views in Jama Connect:

- In a review, use the **Manage review** drop-down menu.



- In **Reviews > Table View**, use the **Actions** column.

ID	Name	Project	Public	Review status	Role	Revisio	Moderator(s)	End date	Actions
REV-107	test review	Quick Loans	✓	In Progress	Moderator/Approve	1	Admin Test	12/06/2020	
REV-105	Test	Quick Loans	✓	Completed	Moderator	1	Admin Test	11/27/2020	
REV-106	Test A	Quick Loans	✓	Completed	Moderator/Approve	1	Admin Test	11/17/2020	

The icons in the **Actions** column are:
Edit — Open the wizard where you change the deadline, invite new reviewers, or change an approver's status (role).
Reopen — Open a review that was closed.
Delete — Remove a review permanently (only a review administrator can recover a deleted review).
Update moderators — Add to or remove moderators from your review.
Archive — Remove the review from the list that appears to users.

Modifying a "Closed" review

A review closes automatically on the end date and time or it can be closed manually by the moderator. When a review is closed, reviewers can no longer add comments.

Important considerations

- As the moderator, you might want to reopen a closed review to allow more feedback, archive the review, or publish a new version.
- Only a moderator or a review administrator can edit a review.
- When viewing a closed review, you see a blue status bar at the top of the review, which notifies participants if a review is closed.

Use these buttons to do the following with a closed review:

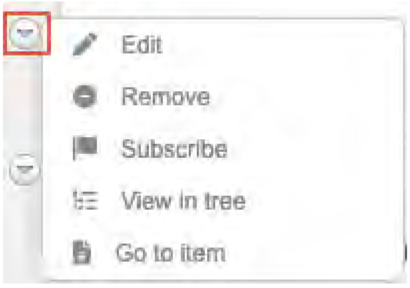
- **Archive** — Remove a review from the primary list of reviews.
- **Recover** — Recover a review that was archived or deleted. No item updates are published.
- **Publish new revision** — Publish a new version of the review that includes any changes made to the original items, and change any options for the review itself.

Incorporate review feedback

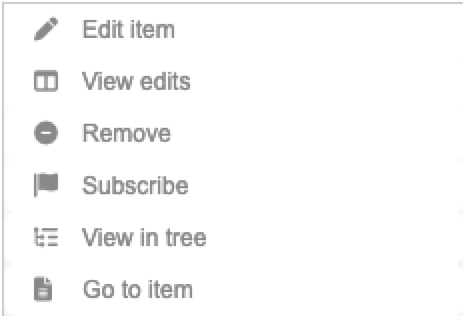
A moderator can incorporate feedback by editing an item directly from the review.

1. From the header, select **Reviews**, then open the item using one of these menus:

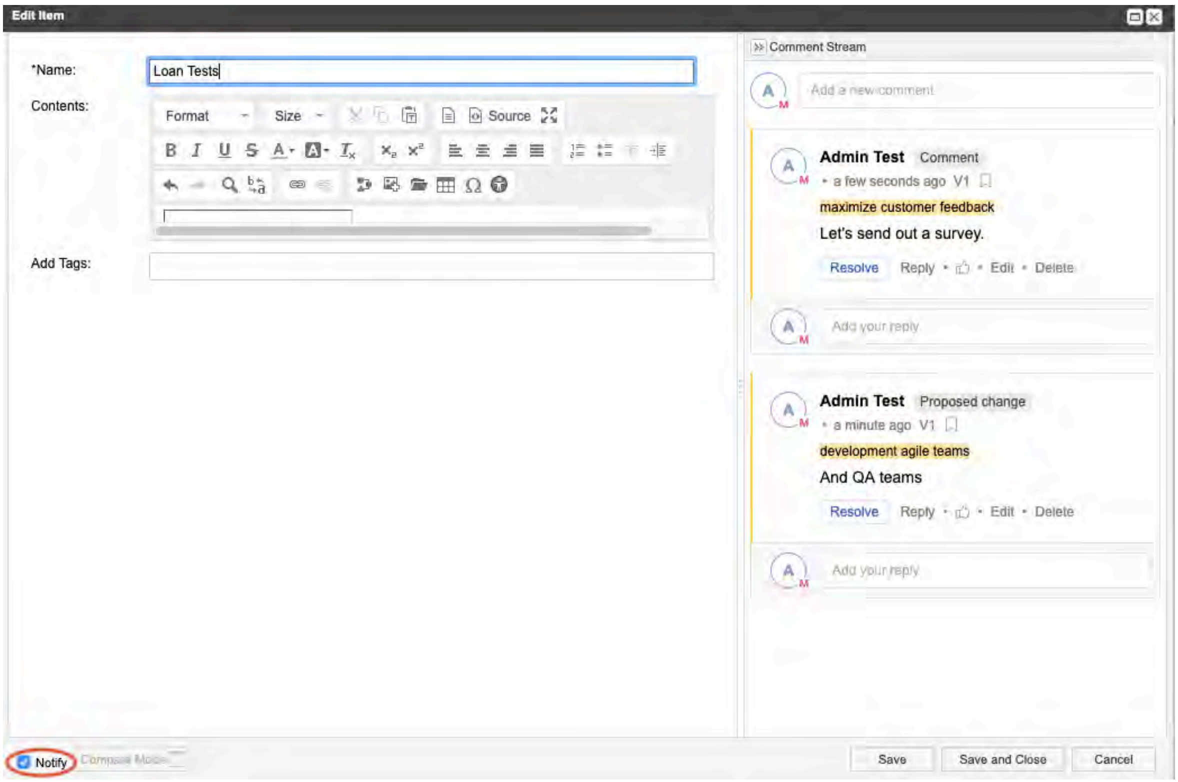
Triangle drop-down menu



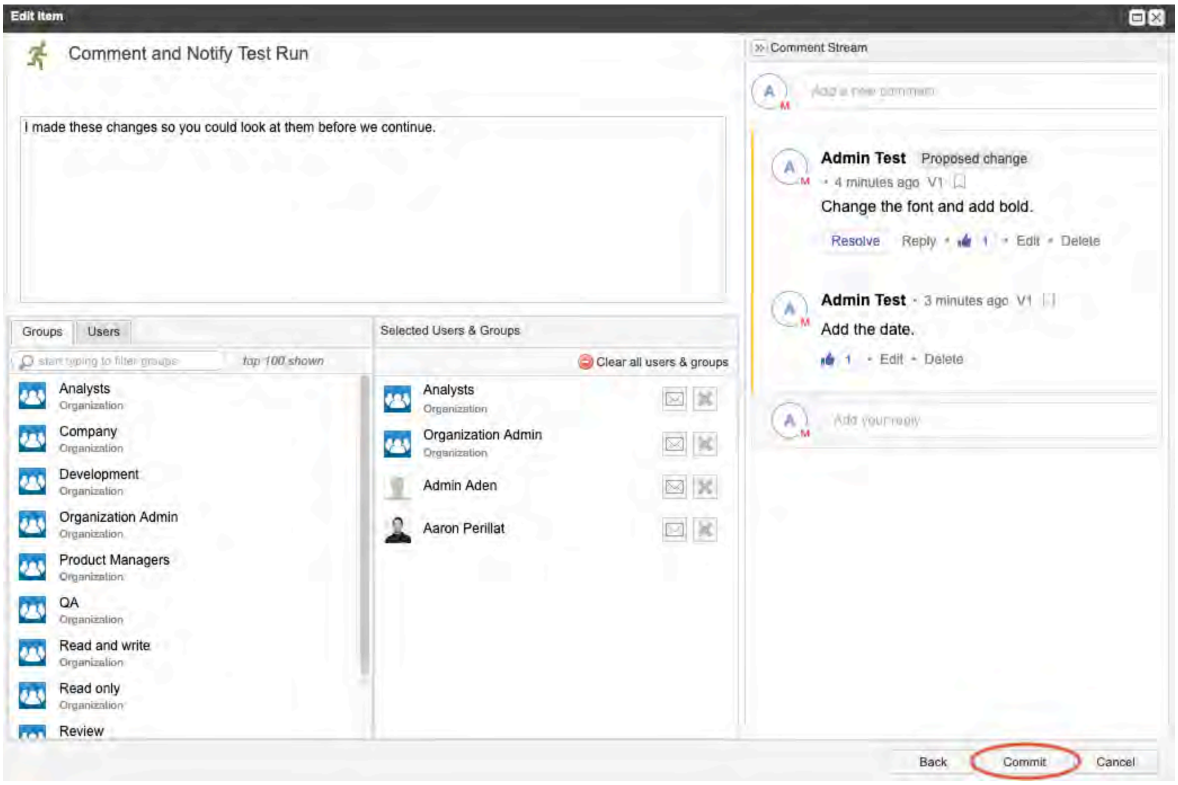
Menu next to item's name



   You can also select the name of the item you want to edit to open it, then select **Edit item** from the menu on the right.
2. In the window that opens, make the changes you need.



3. (Optional) Select **Notify** to designate people or groups you want to inform about this change, then choose the people to be informed.



Your changes are saved in the project, but *not in the review*.

Any time an update is made to an item that's in review, a blue status bar appears at the top of the review. The review remains unchanged until the moderator publishes a new version.

4. Select **Commit**.
5. To update change in the review click **Publish new revision**.
6. In the window that opens, select one:
   - **Publish** — Update the review for all participants.
   - **Modify review** — Make further changes to the review itself in the wizard.

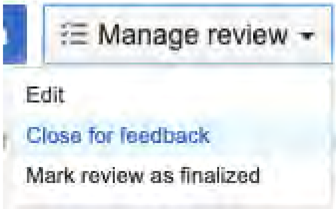
Participants receive an email notifying them about the new revision.

Close an "In progress" review

A review closes automatically when its deadline is reached. A moderator might want to close a review manually before the deadline if, for example, all reviewers already provided feedback.

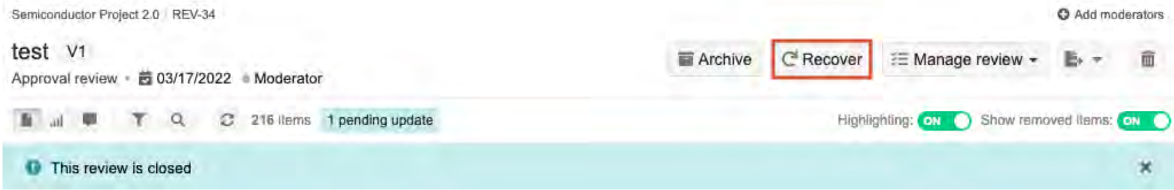
Once a review is closed, a moderator can recover it by changing the status back to “In progress.”

1. To close a review manually that you are currently viewing, select **Manage review > Close for feedback**.



The closed review now displays the message “This review is closed” in the blue status bar.

2. To reopen a closed review, select **Recover**.



The blue status bar no longer appears when the review is reopened.

Publish a revised review

When changes are made to the original review items, you can publish a new version of the review that includes the changes.

1. Open a review that includes changes. The text in highlighted in blue indicates the number of pending updates.

2. Select **Publish new revision** to include these changes in the review.
3. Select an option:
   - **Publish** — Publish the revision immediately (available only when a new version of an item is created).
   - **Modify review** — Change more options for the review in the wizard.

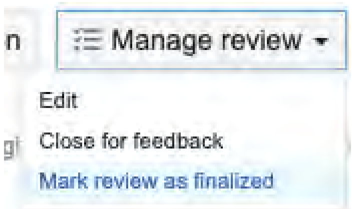
Finalize a review

When you’re satisfied that your review is complete — that all items have been reviewed and approved and that all comments have been resolved — the next step is to finalize the review.

Important considerations

- When you finalize the review, the review workflow tool automatically updates the status of the review items. For example, at the end of a review, a moderator can trigger the status of reviewed items to change from "In review" to "Approved."
- If workflow is assigned to an item type in your Approval review [635], the item will transition. If you don't use a template, the review is marked as finalized.
- When you reopen a finalized review, items are transitioned to their previous review status.

1. In the review, select **Manage review > Mark review as finalized**.



2. In the window that opens, select **Finalize review**.

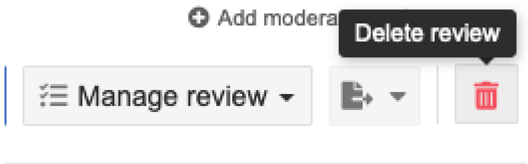
This action automatically triggers Review Status Workflow, which updates the status of the review.

Delete a review

You can delete a review, but not if it includes electronic signatures. However, if an entire project is deleted, all reviews in that project are also deleted, even if they include electronic signatures.

Once a review is deleted, only a review administrator can recover it.

1. From the header in the review, select **Delete review** (trash icon).



2. When prompted to confirm, select **Yes**.

Now, when a user selects **Reviews**, the review that you just deleted is no longer listed with other reviews.

Archive a review

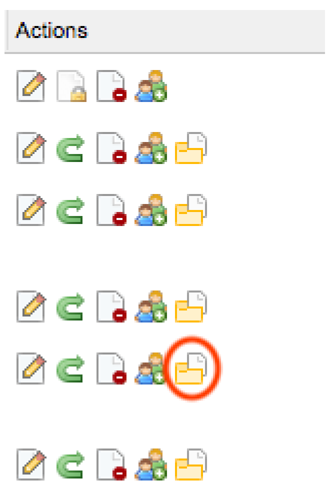
When a review is archived, it's no longer visible in the list that's displayed when users select **Reviews** in the header.

Reviews can only be archived by moderators and review administrator, and only if their status is "Closed."

As the moderator, you can control which reviews are visible to your participants:

- Select **Filter by > Include archived reviews**.
- Select **Filter by > Hide archived reviews**.

1. From the header, select **Reviews > Table**.
2. In the **Actions** column of the review you want to archive, select the folder icon to archive the review, then confirm when prompted.



Recover an archived review

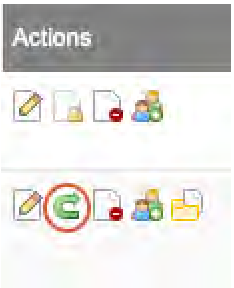
A moderator or review administrator can recover a review that was archived [171].

When an archived review is recovered, the participant roles and contributions are unchanged. For example, if an approver signed and approved a review before it was archived or deleted, it remains the same after the review is recovered.

If items were edited after a review was archived or deleted, they don't appear in the recovered review until the moderator publishes a revised review.

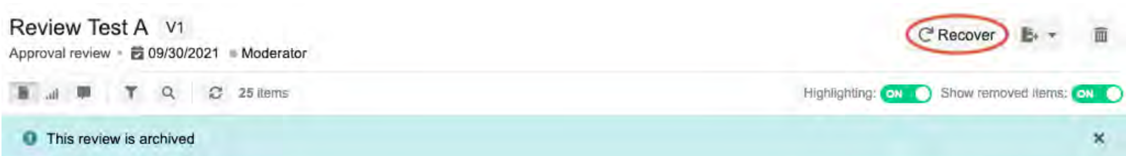
You can recover an archived review from the review's Actions column or from its blue status bar.

1. **To recover an archived review from the Actions column:**
   1. From the header, select **Reviews > Table**.
   2. In the row with the review you want to recover, select the **Reopen** icon from the **Actions** column.



   3. In the window that opens under **Select review status**, use the drop-down menu to select "In progress," select a new end date and time, then select **Save**.

2. **To recover an archived review from the review's blue status bar:**
   1. Open a review that was archived.
   2. From the header, select **Recover**.



Remove or recover items in a review

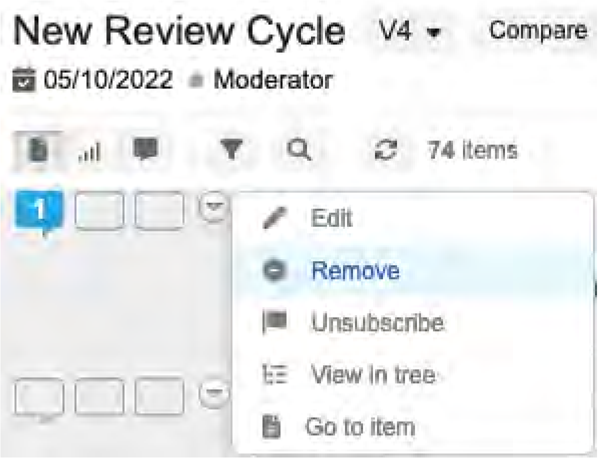
A moderator can remove or recover items in a review, and can perform either of these actions without altering the source in the project.

Important considerations

- When you pair these actions with the Approval workflow, those items remain in their original state and aren't updated when the review is finalized.

To remove items from a review:

1. In the review with the item you want to remove, select the triangle drop-down menu, then select **Remove** next to the item.

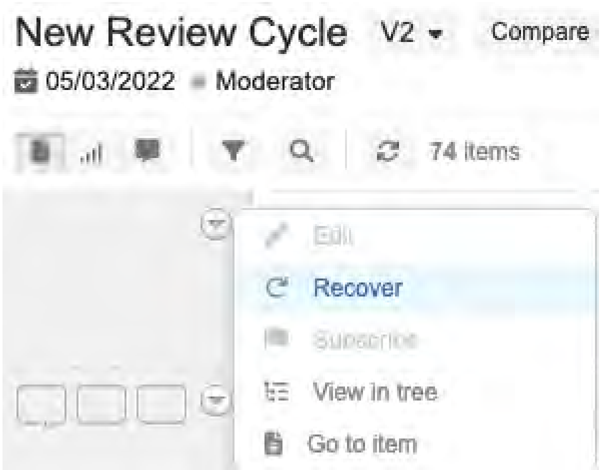


   The "Tagged for removal" label appears.
2. Click **Publish new revision** to remove the item from the review.

3. In the Publish new revision window, click **Publish**.
   A label appears with the version the item was removed in.
   Anyone who has access to the review can see items that were removed.

To recover items in a review:

1. From the triangle drop-down menu, select **Recover** to recover the item you removed.



The "Tagged for recovery" label appears.

2. Click **Publish new revision** to recover the item in the review.

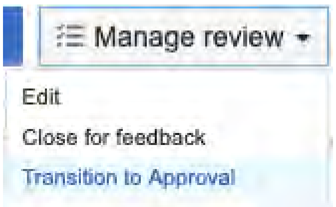
Transition a Peer review to an Approval review

When reviewers are done looking over a Peer review, the moderator can transition a review to an Approval review.

Important considerations

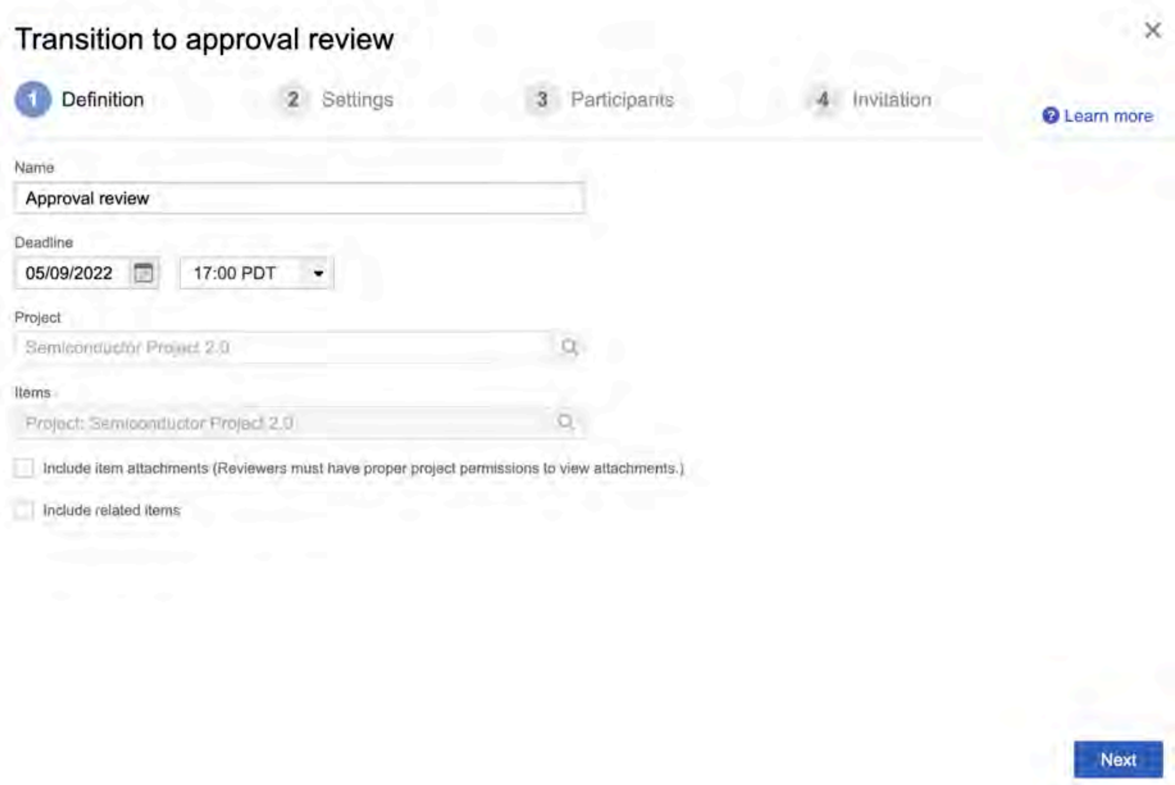
- Both templates must be enabled [635] by an organization administrator.
- When an item is tagged for removal or recovery, and you want to transition to an Approval review, those items are automatically updated.

1. In the review, select **Manage review > Transition to Approval**.

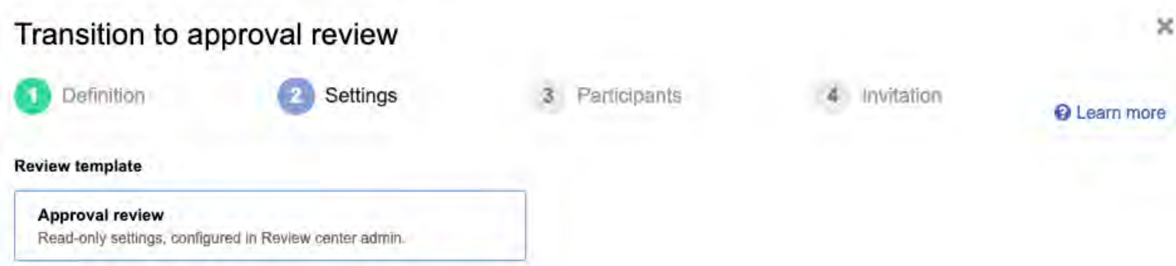


The Transition to approval review wizard opens.

2. On the Definition page, make your changes, then click **Next**.



3. On the Settings page, confirm you're using the approval template, then click **Next**.



4. On the Participants page, make your changes, then click **Next**.
5. On the Invitation page, update the subject and message as needed, then click **Transition review**.

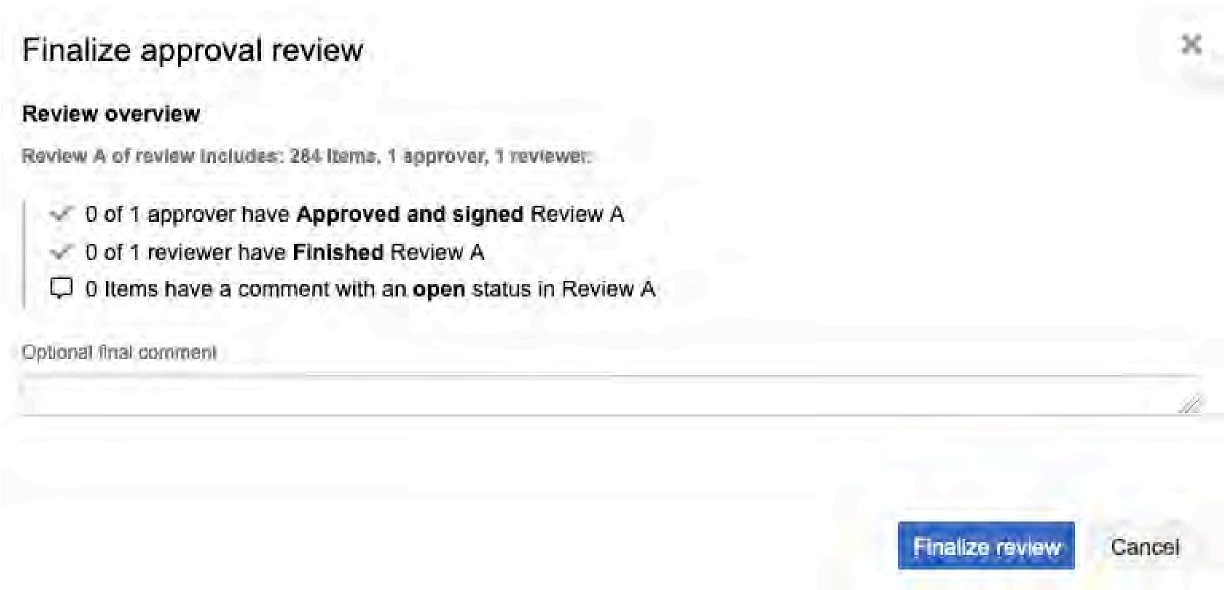
A revision is created and an email notification is sent to reviewers.

Close and finalize Approval review

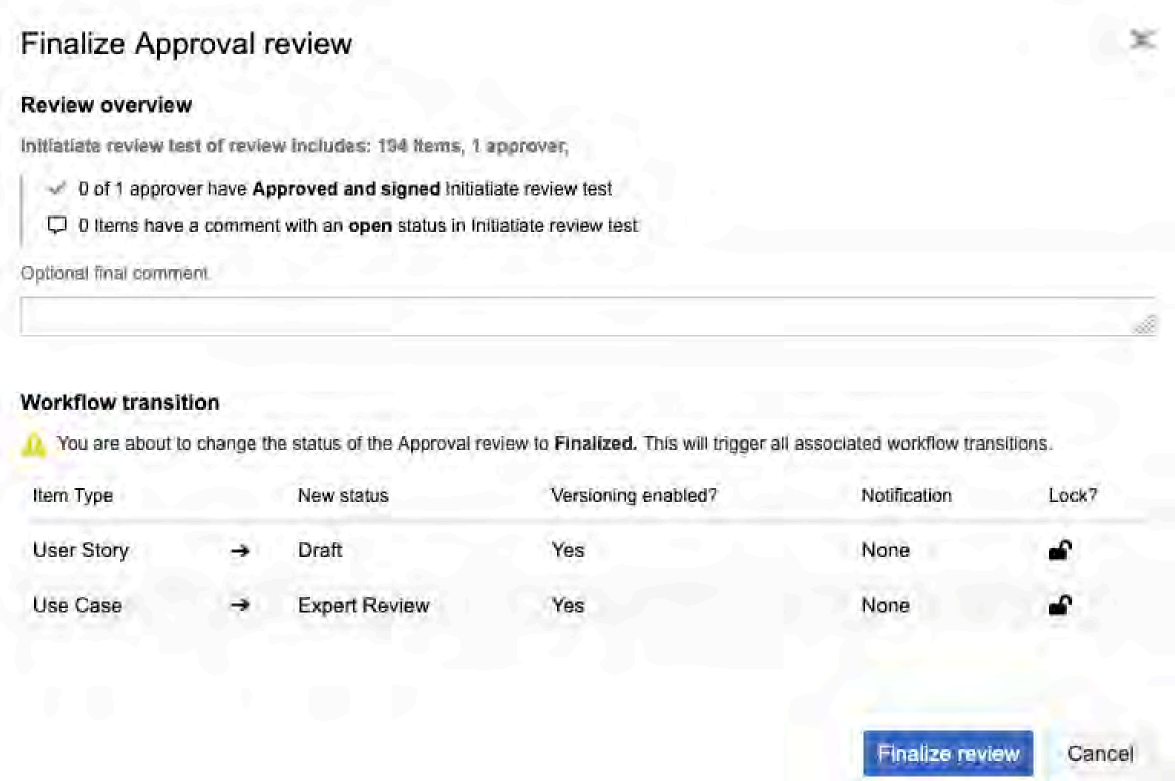
After the review is approved, the moderator closes and transitions items to their approved state. You don't need a Peer review to finalize an Approval review.

Workflow must be enabled [33] in **Admin > Organization** for the items in the review, or the option to **Close and transition items** won't appear when you finalize a review.

Example with workflow disabled



1. In the review, select **Manage review > Finalize approval review**.
   Wizard opens. You can change the name, deadline, and participants.
2. View the review overview and workflow transitions, then click **Finalize review**.



The review is now closed.

Reviewer tasks

- Contribute feedback [177]
- Finish a review as a reviewer [179]

Reviewers can also perform tasks that are available to all review roles.

For example:

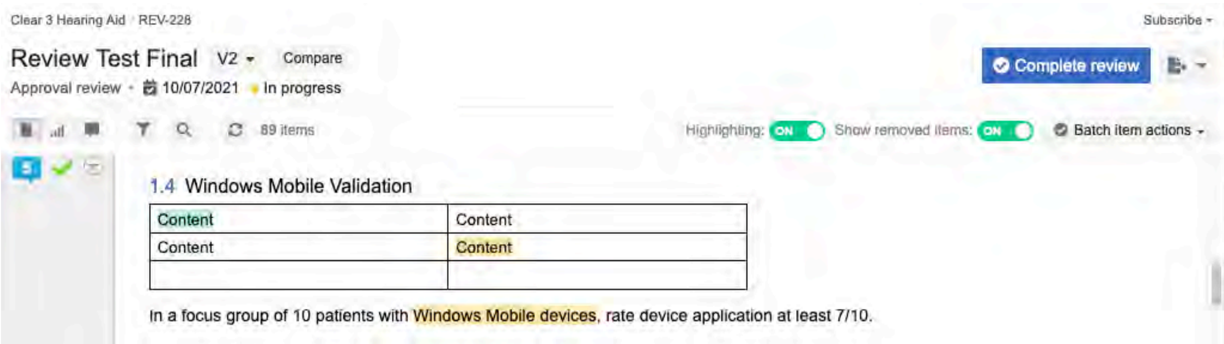
- Find and view review items [186]
- Compare versions [194]
- Vote on items [201]
- Subscribe to items on the page [200]

For details, see Tasks for all review roles [186].

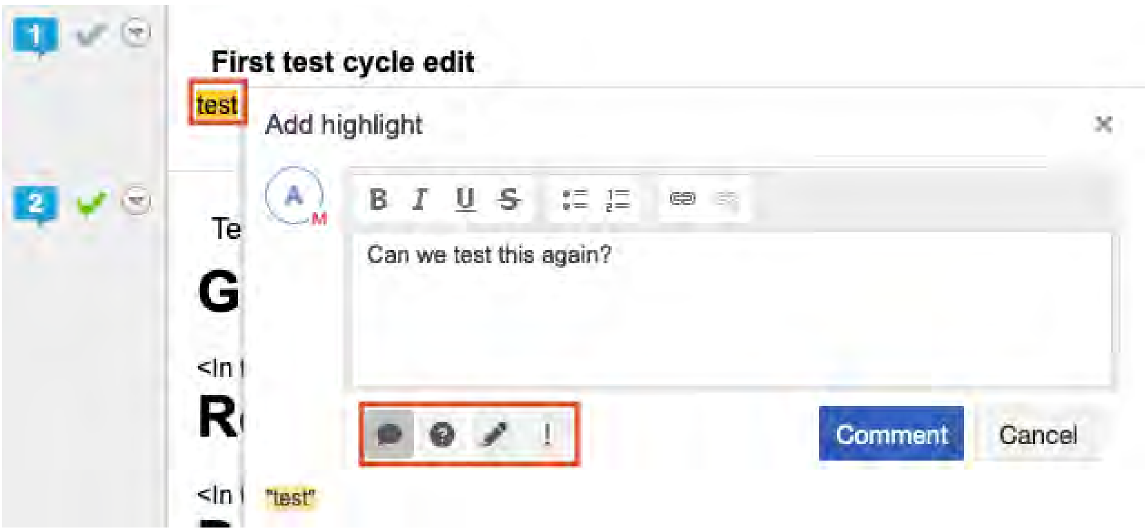
Contribute feedback

Once a review is created, all participants can read through the items, make comments, and ask questions.

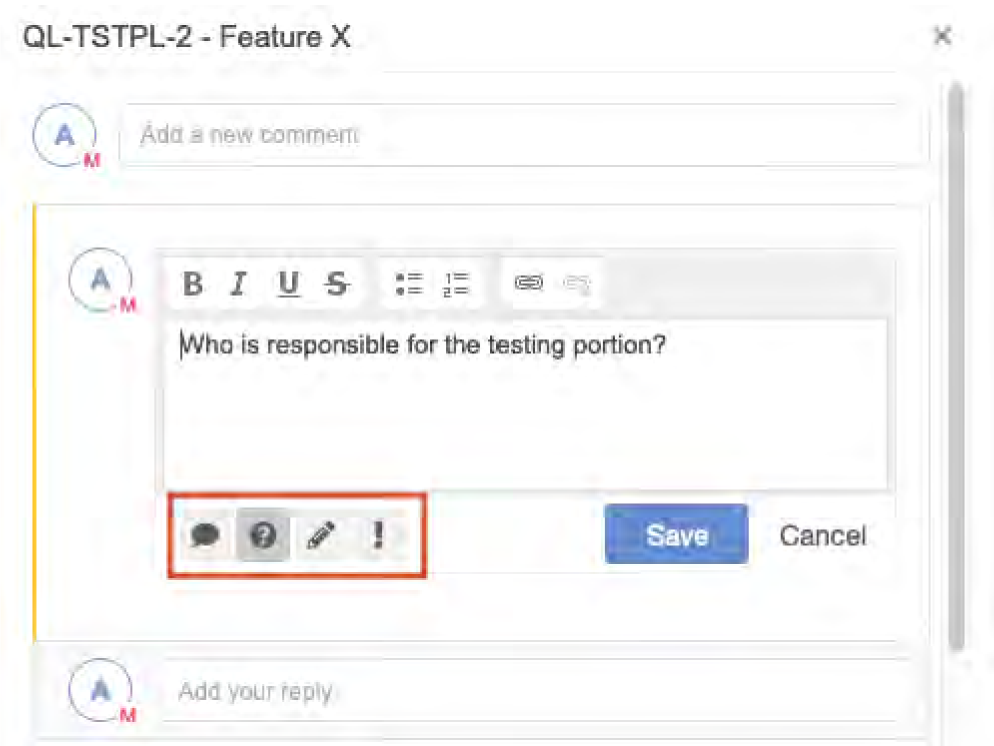
By default, you see only comments made in a specific version. For example, comments made in version 2 only appear in that version.



1. From the review, open the Comment window using one of these methods:
   - Select the Comments icon next to the item.
   - Select the text you want to comment on.



2. Type your comment.
3. (Optional) Apply a category to your comment to help participants understand and track key feedback.



Category	Outline color	Meaning
Comment / Speech bubble	Yellow	Open
	Green	Acknowledged by Moderator
Question mark	Yellow	Open
	Green	Answered by Moderator
Pencil / Proposed change	Yellow	Open
	Green	Accepted by Moderator
	Red	Rejected by Moderator
Exclamation / Issue	Yellow	Open
	Green	Resolved by Moderator

4. Select **Submit feedback** to save the comment.

Additional ways to collaborate with your team

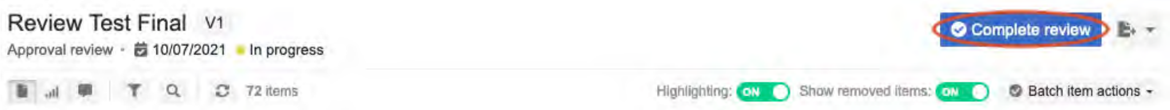
- Use the like icon when you agree with a comment and want to track how team members vote on a decision.

Finish a review as a reviewer

When you complete your work as a reviewer, the next step is to “finish” the review. This action lets the moderator know you're done with your work (if notifications were set up) and updates the overall review progress in review statistics [197].

If the review is closed before you finish the review, the blue status bar includes a message: “This review is closed.”

1. From the review, select **Complete review** on the toolbar.



2. In the review summary window, add any final comments, select **Finish**.
3. If you need to make more comments after finishing the review, select **Reopen review** from the toolbar, as long as the moderator hasn’t yet closed the review.

Approver tasks

- Approve or reject review items [179]
- Finish a review as an approver [180]
- Add electronic signature to a review [181]
- Add reviewers [182]
- Delegate approval [182]

IMPORTANT

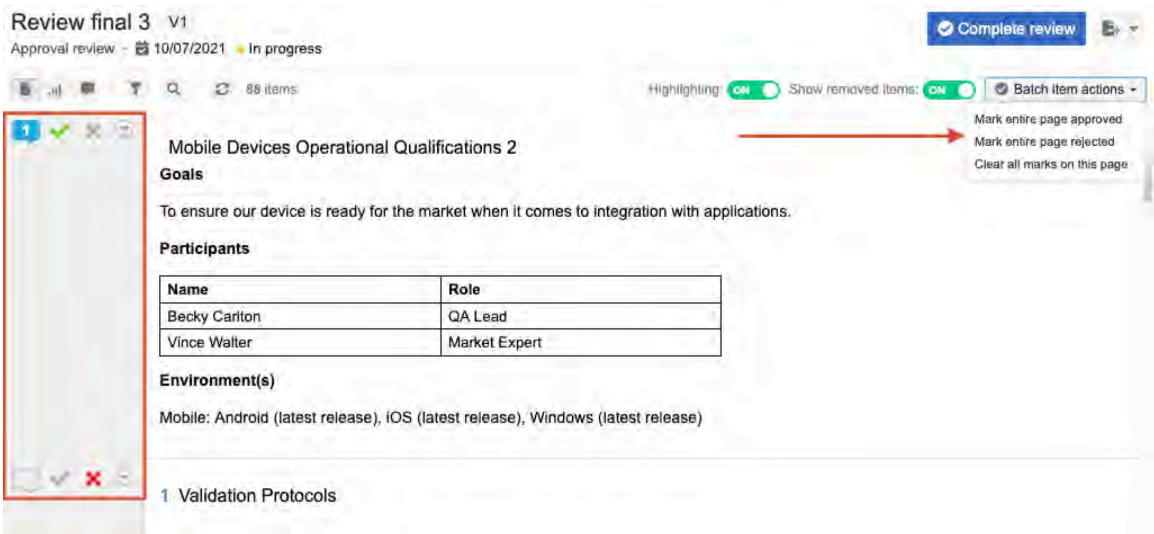
After delegating approval, you are no longer an approver, but you remain a reviewer for the current review. If you delegate approval, all new approvers receive an email notification.

Approve or reject review items

During a review, you can view items and their comments, approve or reject individual items, and approve or reject an entire review.

If you don't see a checkmark or X, you don't have Approver status. Contact your Moderator if you need Approver status.

1. To mark an individual item, select an icon next to its name:
   - **Checkmark** = Item is approved
   - **X** = Item is rejected



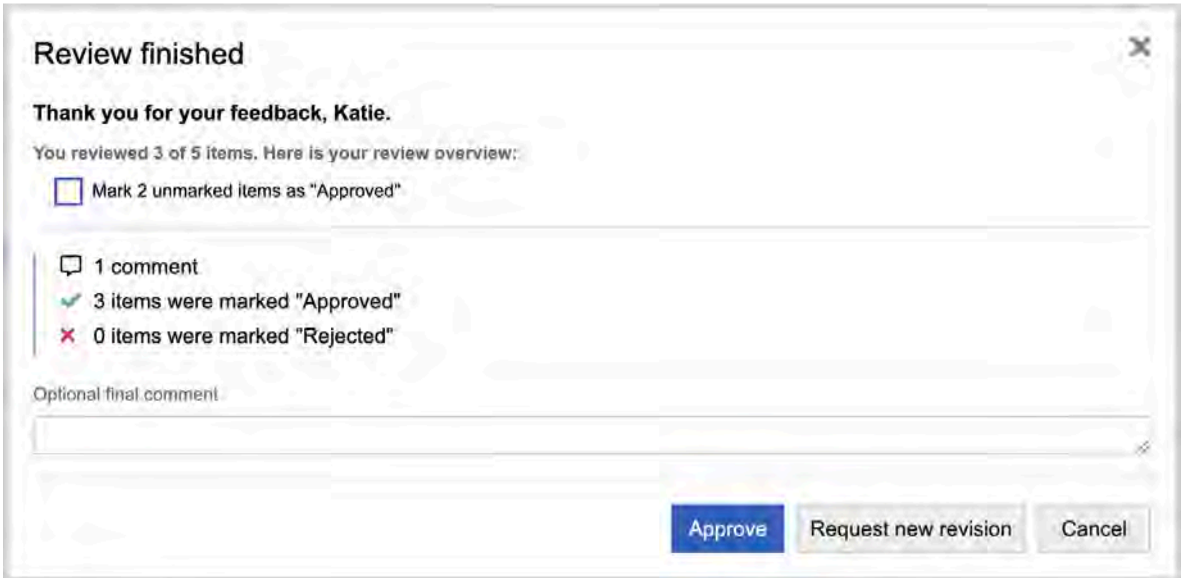
2. To mark all items on the page, use the Batch item actions pull-down menu:
   - **Mark entire page approved**
   - **Mark entire page rejected**
3. If your review contains more than one page of items, repeat this action for each page.

When you're done, the blue status bar includes the message “You’ve marked all items in the review.” You can then finish the review as an approver and electronically sign the review.

Finish a review as an approver

1. When you're finished with a review, select **Complete review** from the toolbar.

2. In the **Review finished** window, you can mark any remaining items "Approved" and add a final comment. These comments are visible under **Reviews > Feedback** in the top-right menu, or in an email sent to the moderator if email notifications are enabled for this review. If this review requires an electronic signature [181], you can also add that here.



3. Select **Request new revision** or **Approve** (or **Approve and sign** if you're using an electronic signature).

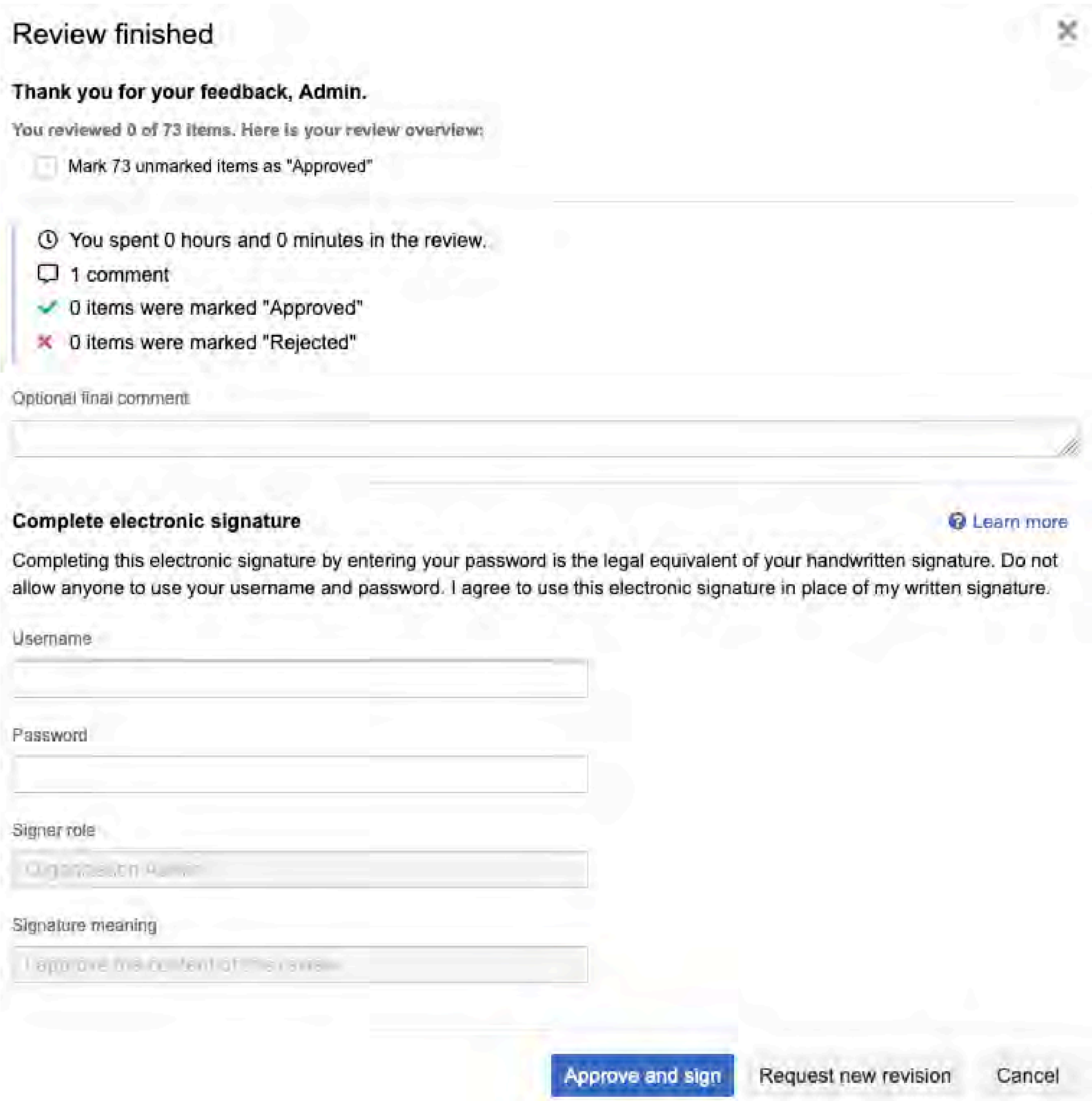
NOTE

If you change your mind and want to reopen your review after finishing a review as an approver, you can select **Reopen review** to re-open it, as long as the moderator hasn't closed the review. If you're using an electronic signature [245], opening a review revokes it.

Sign a review electronically

If a review requires an electronic signature, you are asked to add a signature when you finish a review as an approver.

1. In the **Review finished** window, enter your username and password as your electronic signature.
   If your organization uses SAML, the SAML authentication window opens, where you enter your username and password.
2. Select **Approve and sign** to complete the review.

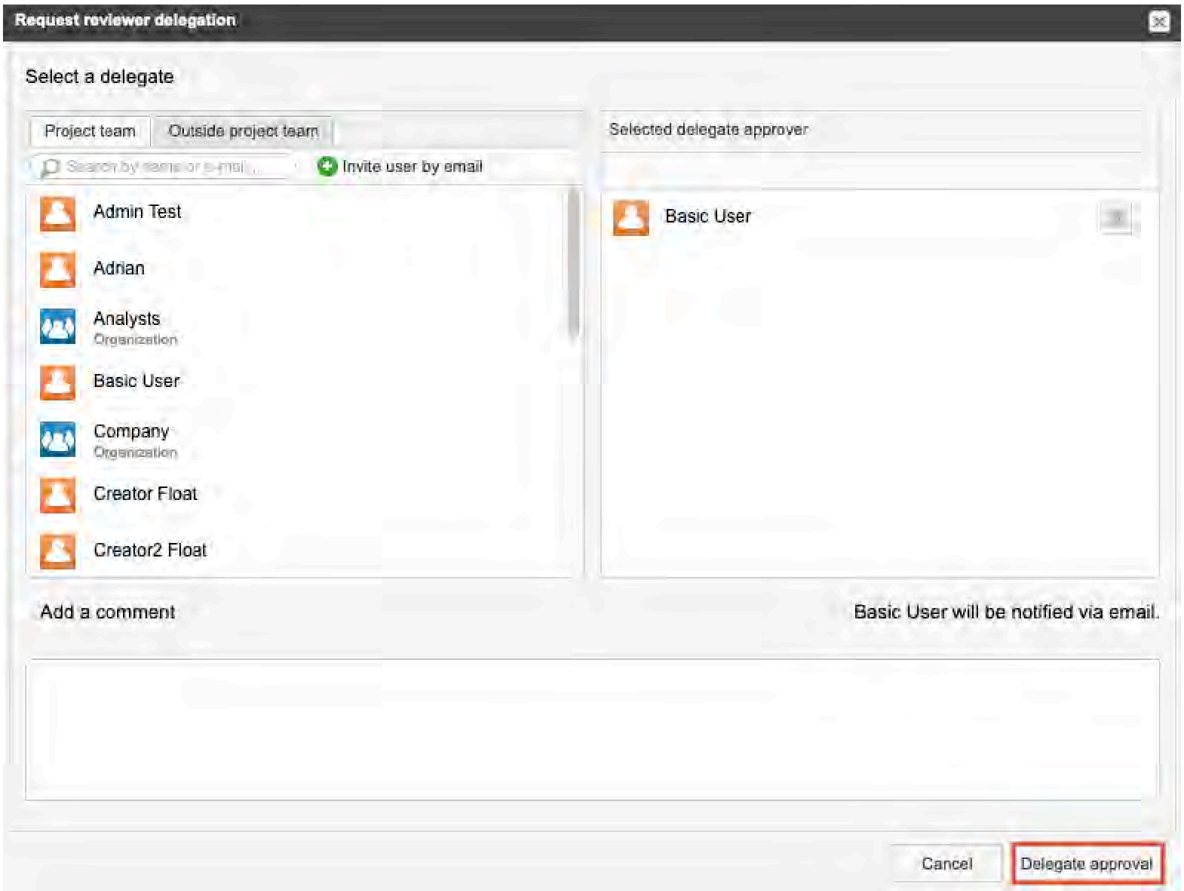


Delegate approval

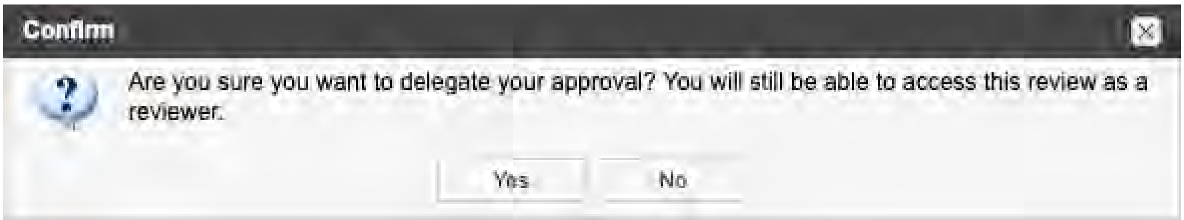
Assign approval to another team member if you're away when a review needs to be approved or someone else is a better fit.

1. In the review, select **Delegate approval** from the toolbar.

2. In the **Request reviewer delegation** window, select a delegate.



3. Click **Delegate approval**.
   A confirmation message appears.



4. Click **Yes** to confirm.

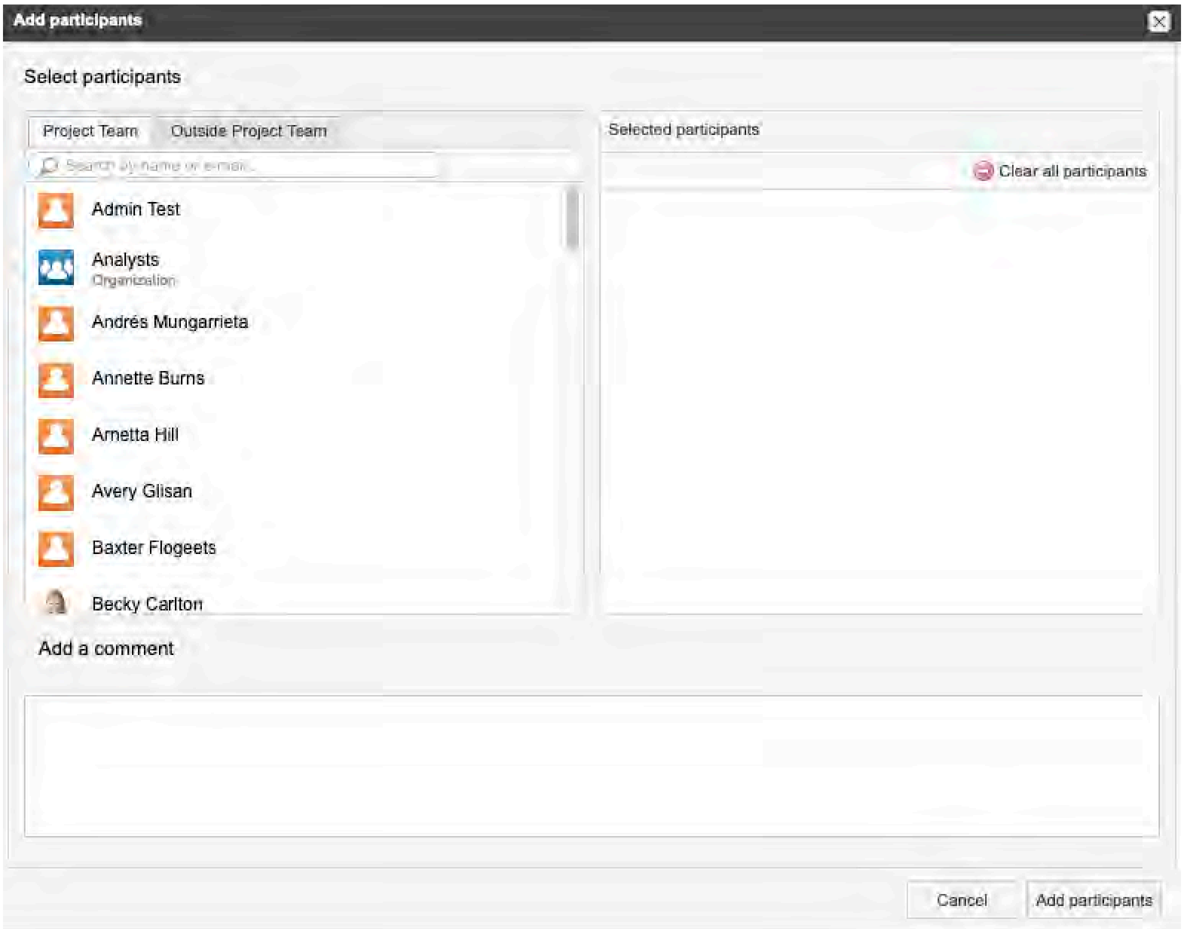
An email is sent to the new approver notifying them of the request.

Add reviewers

You can add reviewers to a review at any time.

1. In the review, select **Add participants**.

2. In the window, select the review participants you want to add.



3. Click **Add participants**.

An email is sent to the reviewers notifying them of the request.

Review administrator tasks

- Recover a deleted review [183]
- Configure review comments to appear in projects [184]
- Recover an archived review [171]
- Modify a review [167]
- Make a review public [162]

Important considerations

- Permissions for a review administrator must be assigned by an organization administrator.
- As a review administrator, you can access a review's content when the review is public; when you are also a reviewer, approver, or moderator in the review; or when you add yourself to the review.

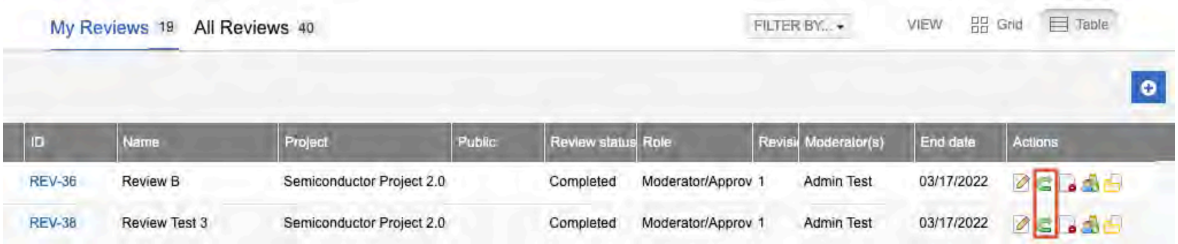
Recover a deleted review

Only a review administrator can recover a review that was deleted.

When a deleted review is recovered, the participant roles and contributions are unchanged. For example, if an approver signed and approved a review before it was deleted, it remains the same after the review is recovered.

If items were edited after a review was deleted, they don't appear in the recovered review until the moderator publishes a revised review.

1. From the header, select **Reviews > Table**.
2. In the row with the review you want to recover, select the **Reopen** icon in the **Actions** column.



3. In the **Recover review** window, select the new end date for the review.

4. Click **Save**.

The table is refreshed and the review is now open.

Configure review comments to appear in projects

Comments made during reviews can provide valuable context, whether you're reviewing a requirement, lower-level feature, or test item. A record of those comments offers enhanced traceability, so you can make informed decisions over the course of the item's lifecycle.

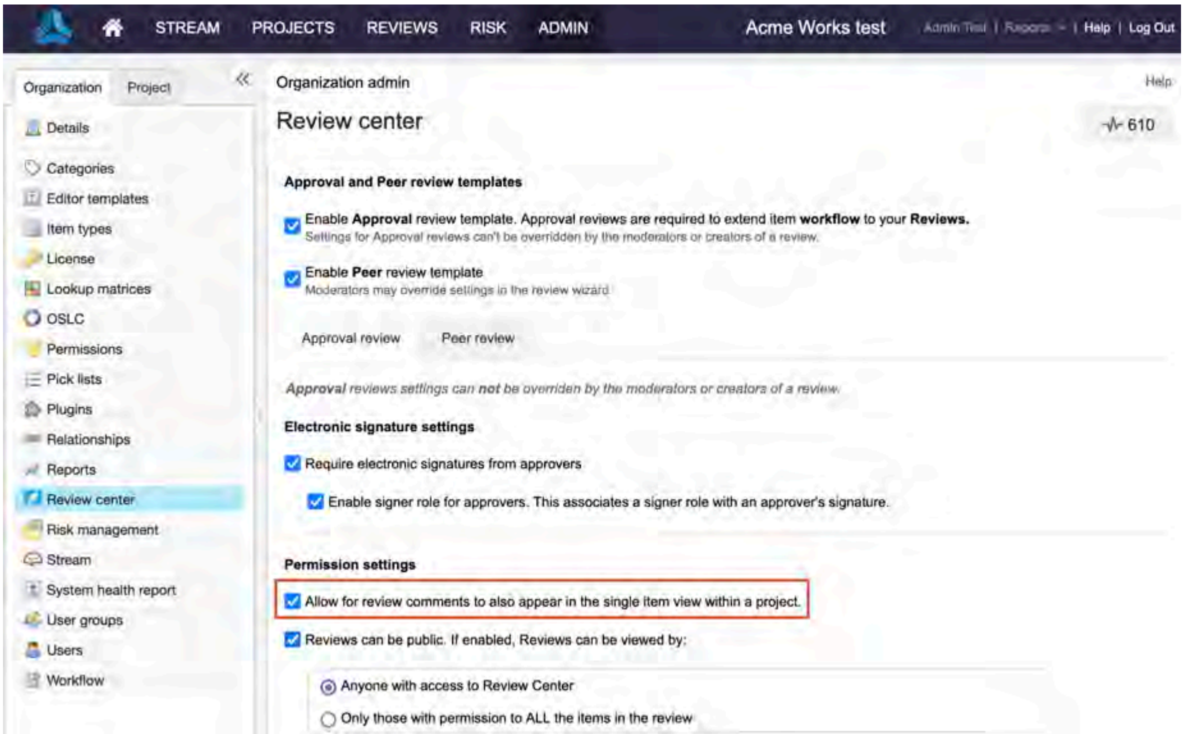
The review moderator can allow comments from a review to appear in the project view for that item.

When enabled, the **Review comments** widget appears in Single Item View. Select it to see the review comments for that item.

This option needs to be enabled in two places for it to take effect. The organization administrator must enable it in the Review Center Settings and the moderator must enable it when creating a review.

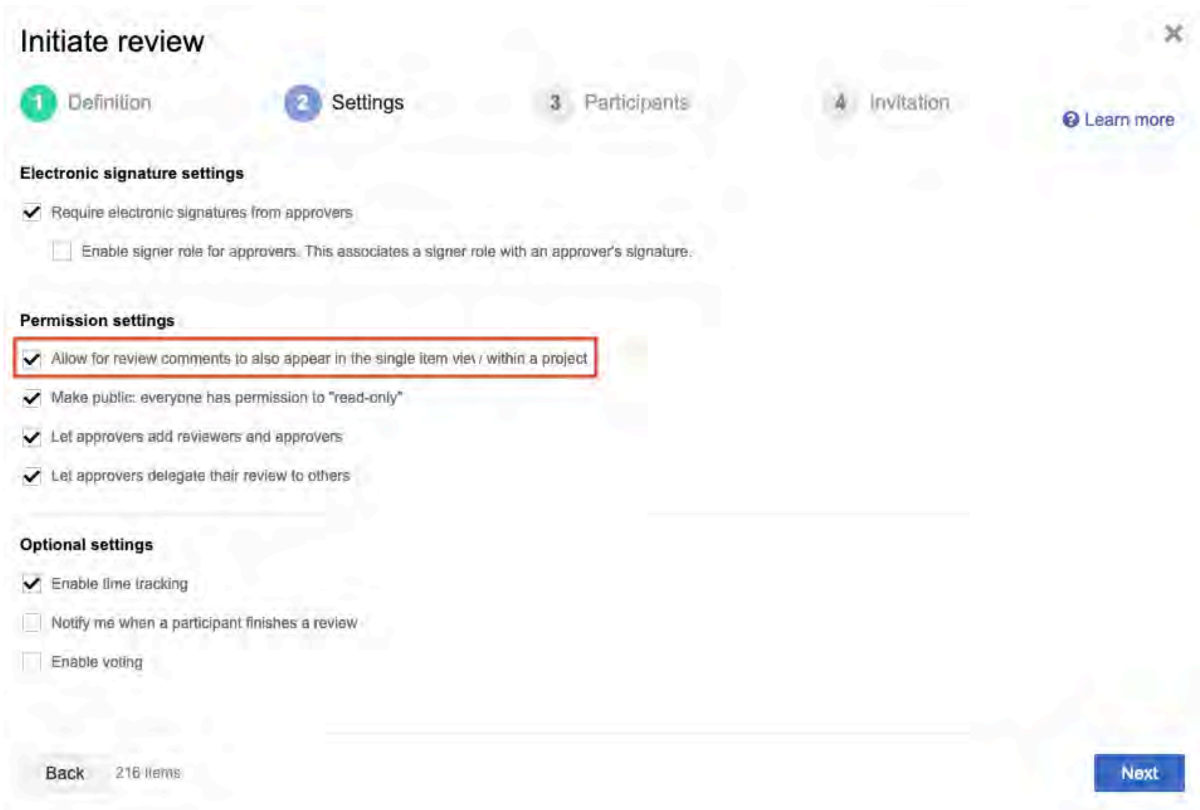
For the administrator

1. Select **Admin > Organization > Review center**.
2. Under Permission settings, select **Allow for review comments to also appear...**, then click **Save settings**.
   This option is now available and visible to review moderators when they create reviews.



For the review moderator

- When creating a review, select **Allow for review comments to also appear in the single item view within a project**.



Once enabled, comments are grouped by review and sorted with the latest comments at the top.

Tips and more

- *Why aren't comments appearing?* For review comments to be visible within a project, this setting must be enabled for each review.
- *How do I see comments from older reviews?* For reviews created without this setting, you can go back and change this setting to include review comments.
- **View More** — Appears if there are more comments from that review that haven't loaded.
- **Load More** — Provides comments from older reviews that haven't loaded, including comments that might have occurred since the page loaded.

Tasks for all participant roles

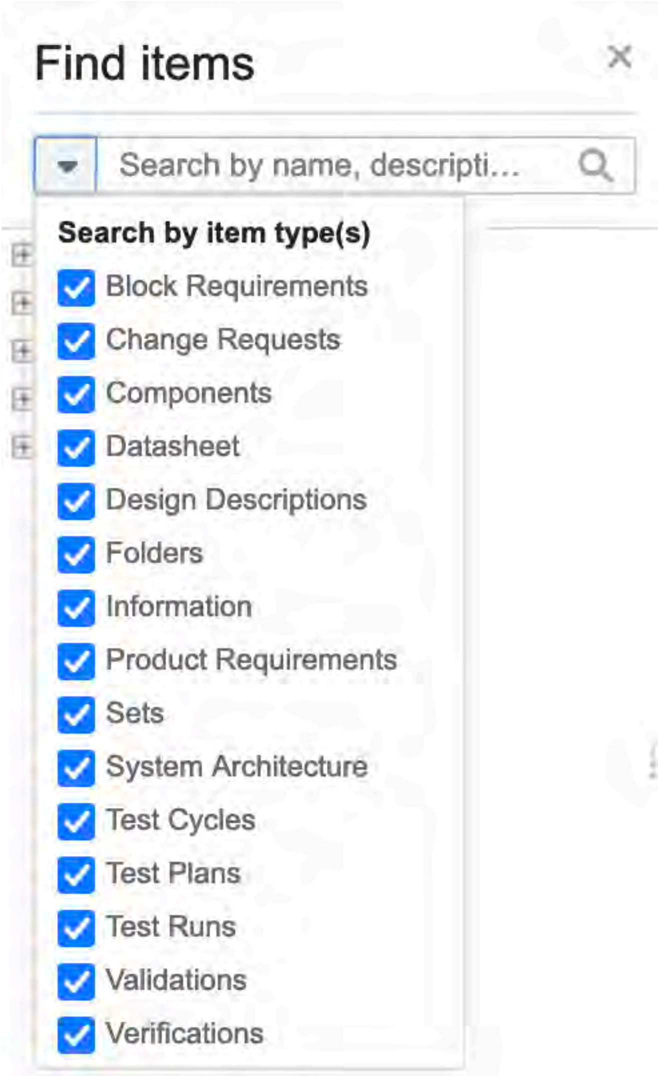
Find and filter items in a review

All user roles can search for and filter specific items in a review.

You can navigate to different areas of the review workspace without losing your filter or search selection. For example, if you make a filter selection and go to another view, your filter selection is saved when you navigate back to the review.

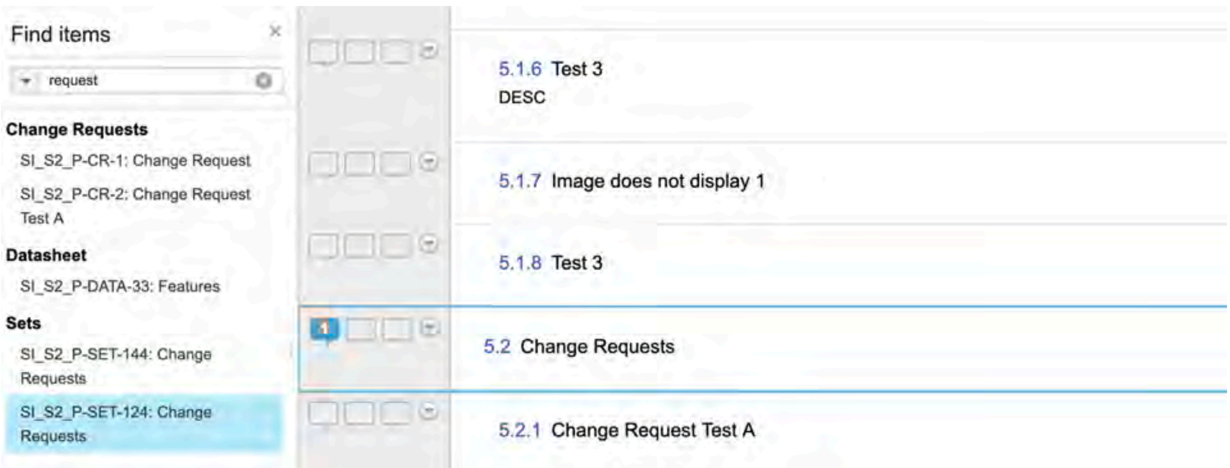
Find items in a review

- Enter text in the Search field, then expand the **Choose item types** drop-down menu to filter your search.

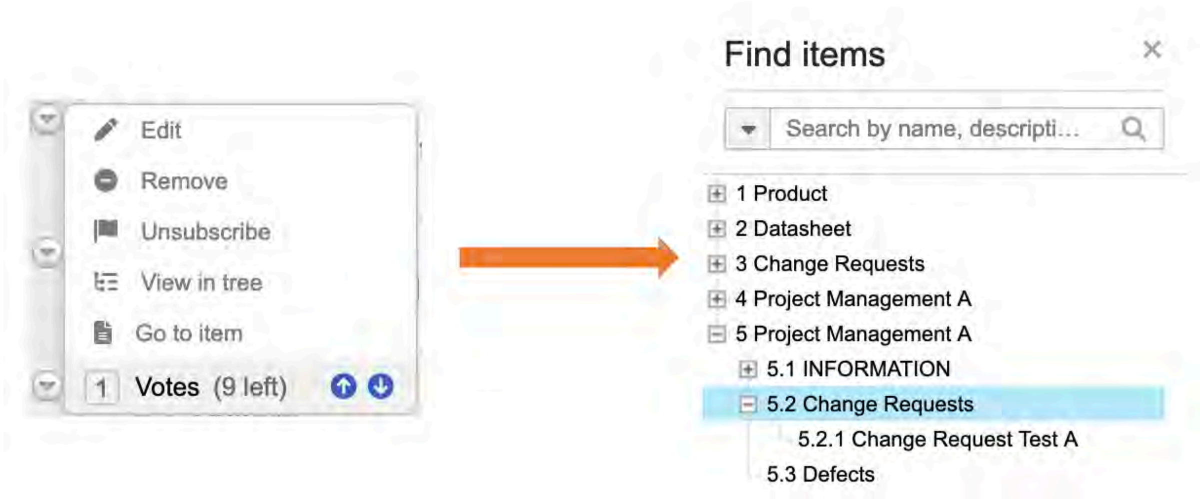


- Select the item type, then enter text in the **Search** field.

When you select an item from the search results or table of contents, the item is selected and outlined in blue. In the **Find items** panel, you can refine your search based on the filtered results.



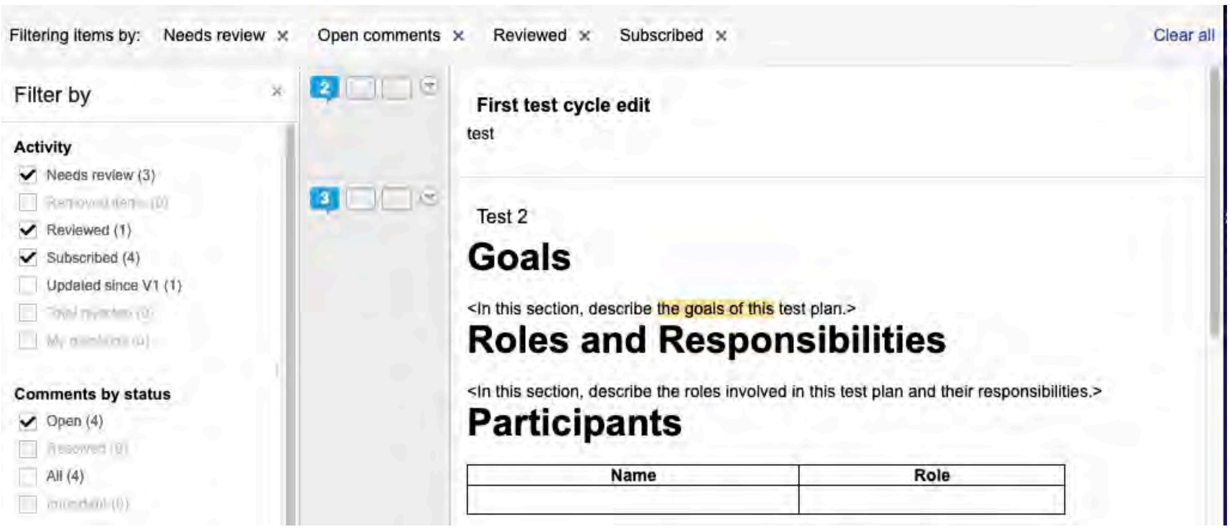
- From the drop-down menu in the left panel of the review, select **View in tree** to open the Find item panel and view the item in the review hierarchy. You can also resize the panel as need.



Filter items in a review

Use filtering to view items and comments that need your attention.

All review participants can filter items to find comments by status, version, author, or activity.



All review participants can filter items to find comments by status, version, author, and activity.

All review participants can filter review items by **Activity**, **Comments by status**, **Comments by version**, and **Comments by author**. Selecting and applying filters in a specific category is additive and applies ADD statements to each selection. If you apply filters that span multiple filter categories, it becomes an OR statement.

Highlighting review comments

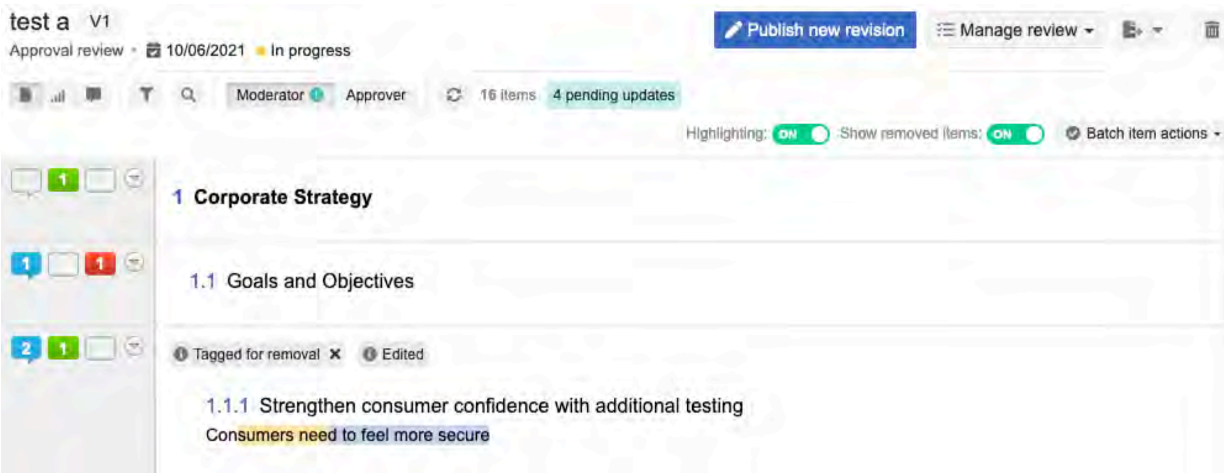
You can organize and find comments based on their status: Open, Resolved, or Rejected. Comments of each status type are highlighted by a different color (highlighting is turned on by default).

For example, a comment highlighted in yellow lets review participants know that it's open, while a comment highlighted in red indicates that a proposed change was rejected.

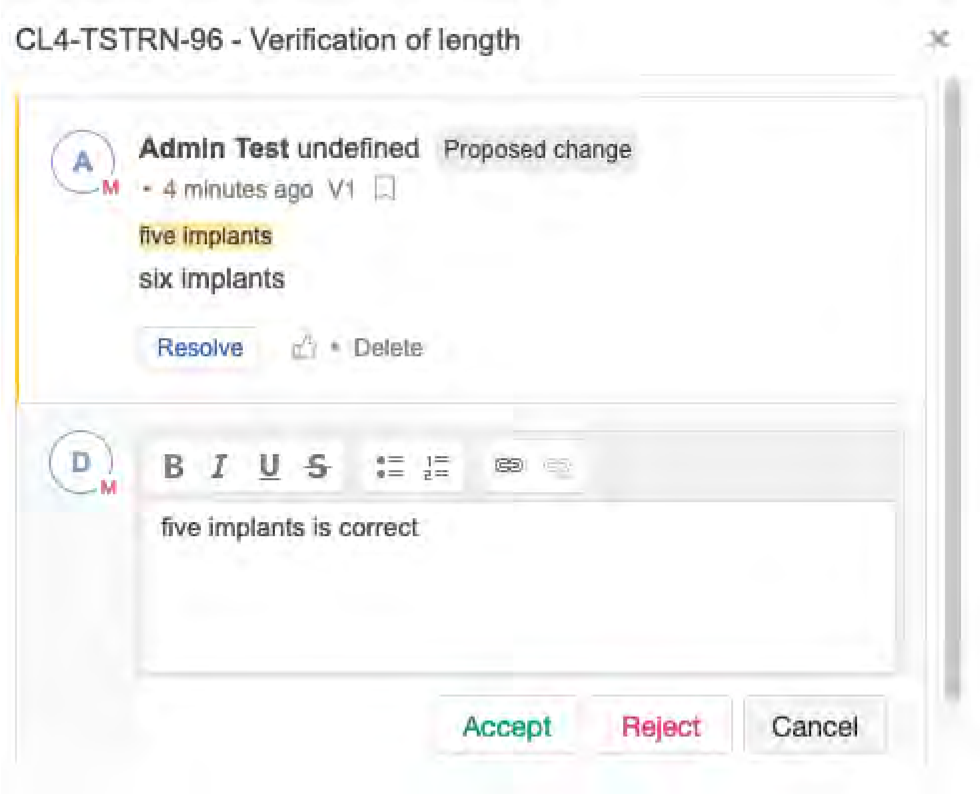
Color	Comment status
Yellow	Open
Green	Resolved
Red	Rejected

By default, the review version that you're looking at shows only highlighted comments that are open, resolved, or rejected.

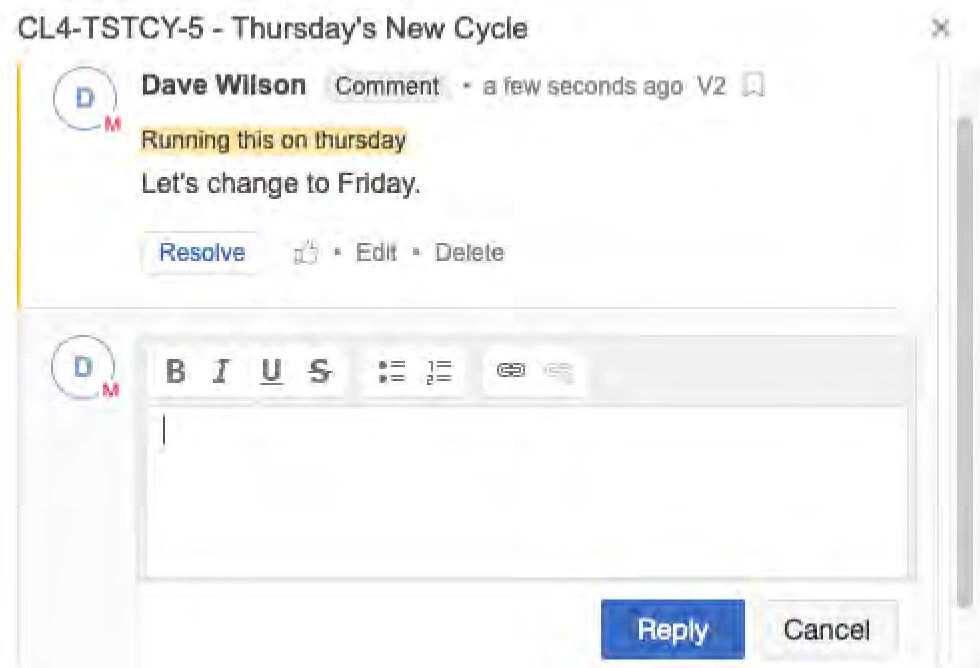
When two highlighted comments overlap, that text is highlighted in light blue.



You can only reject comments that propose a change.



Moderators resolve an open comment: select it, (optional) type a response and click **Reply**, then click **Resolve**.



The comment box and highlighted text changes to a resolved status (green).

Apply @mention to review comments

Use the @mention feature to direct comments to a subject matter expert. This is useful when you have several reviewers and need to direct a question to a specific reviewer.

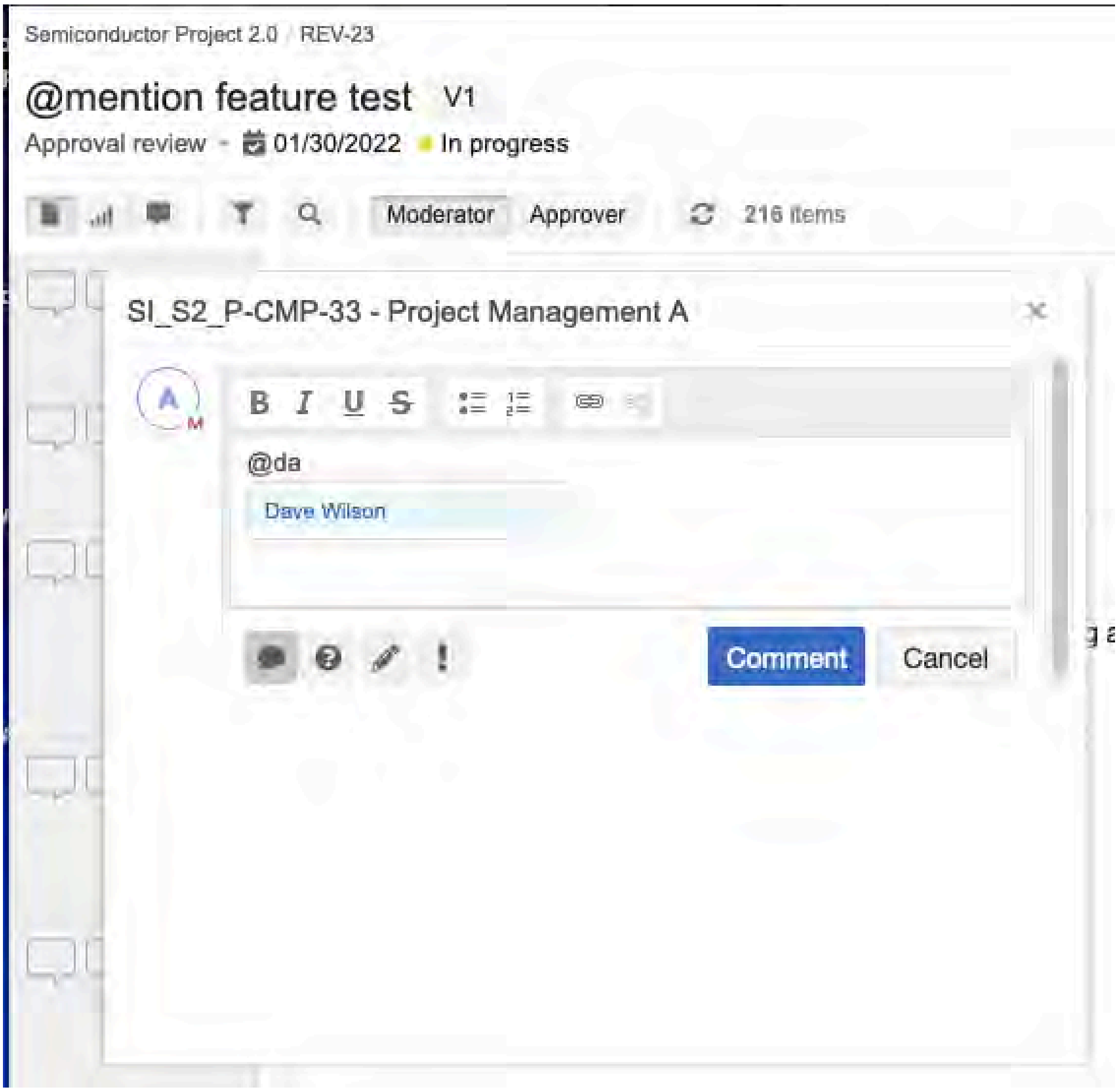
Important considerations

- Comments that include @mention are highlighted by color, based on whether you or another review is tagged. Light yellow = comment for you. Light blue = comment for another reviewer.

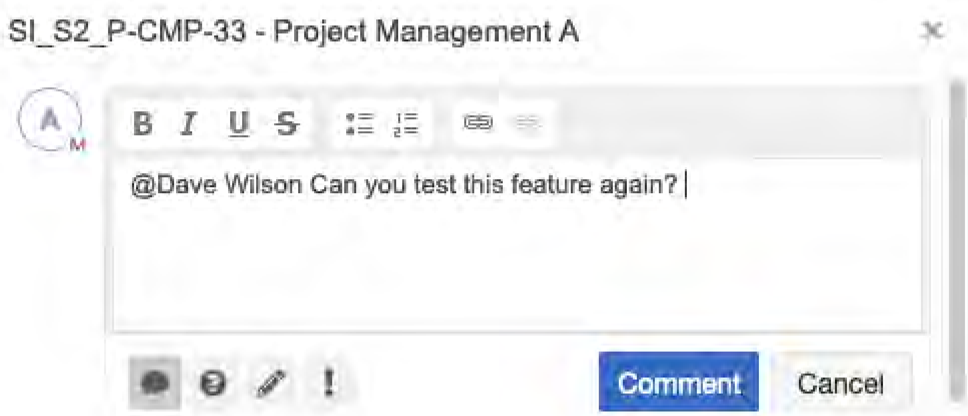
- Only users participating in the review appear in the list of possible reviewers who can be tagged with @mention. You can modify the review [167] to add participants.
- Anyone who is participating in the review can @mention other participants.

To use the @mention feature:

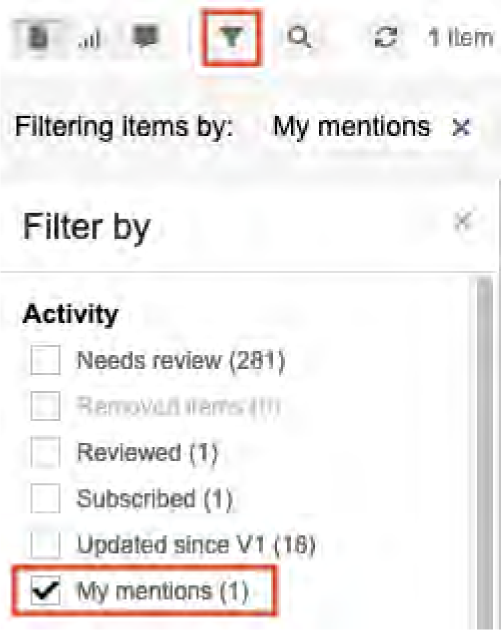
1. In a review, select the comment icon and type **@** followed by the name of the reviewer.
   Repeat for each reviewer you want to mention.
   Only the names of the people you included when you created the review [159] appear in the list.



2. Type your message, then click **Comment**.



3. (Optional) To display only items where you are mentioned, select **Filter items > My mentions**.



An email notifies the tagged review participant with the review name, items, and comment.

Compare versions

Whenever a published review has more than one version, you can compare two versions.

Important considerations

- If you want to make other fields visible in the review, an organization administrator can configure item type views [620] for Reading View or Single Item View to show those fields.
- Typically, item fields contain fewer than 10,000 characters (2,000 words). When you compare review versions, the applications might skip fields with lengthy content.
- The date and version a comment was added appears in the comment.

1. From the review with the versions you want to compare, click **Compare**.

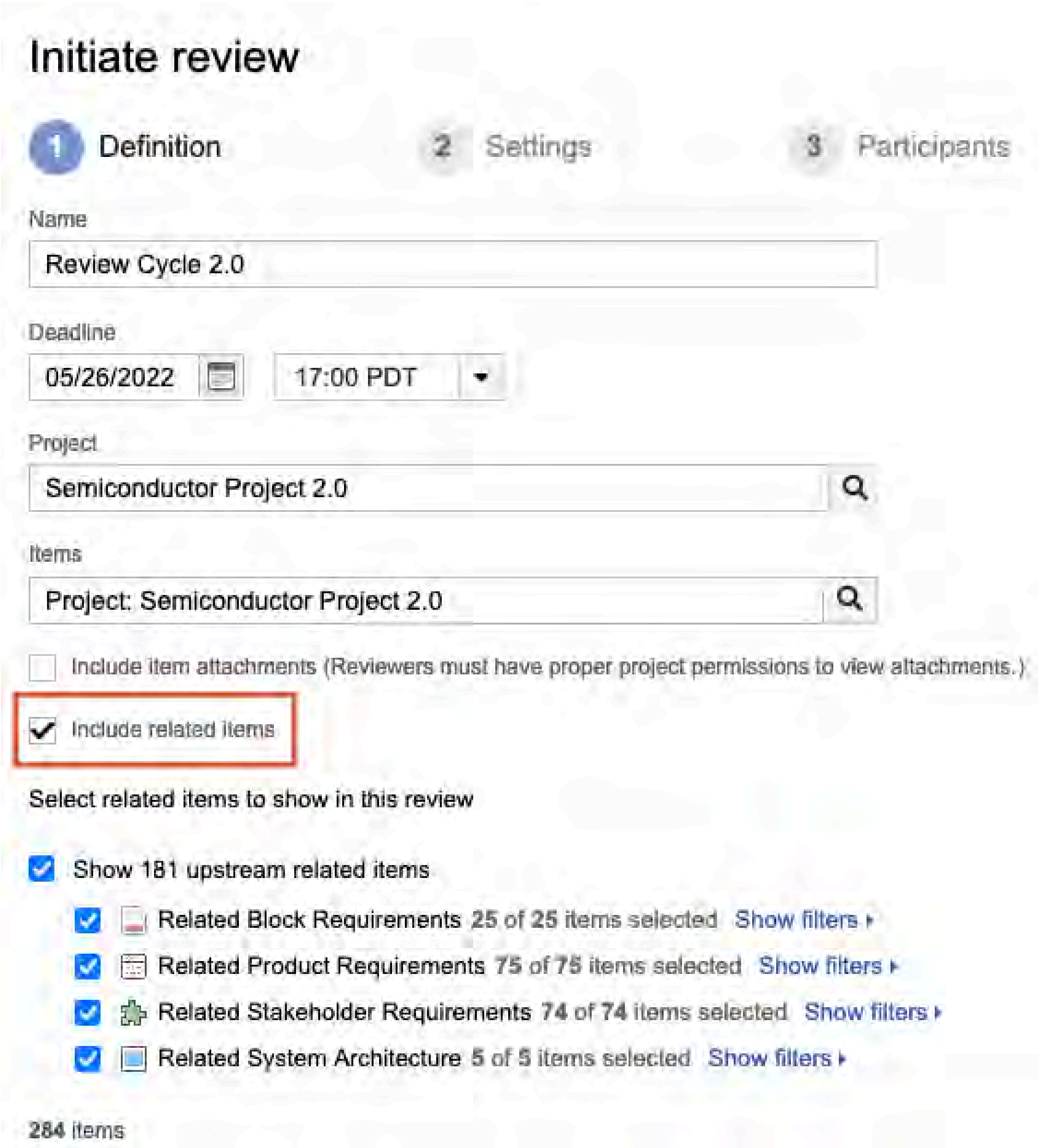
2. Select the versions drop-down menu near the review title to select the version you want to compare to the current review.

Changes are displayed inline. Deleted text is red and highlighted. Added text is green and underlined.

The "compare view" displays inline changes for most field types. If the field can't be compared, you see the message: *Not available for reviews*.

Show related items in a review

Including related items in a review gives reviewers context and helps them understand the coverage of items in a review. Related items are visible only if the moderator selected the option **Include related items** when the review was created.



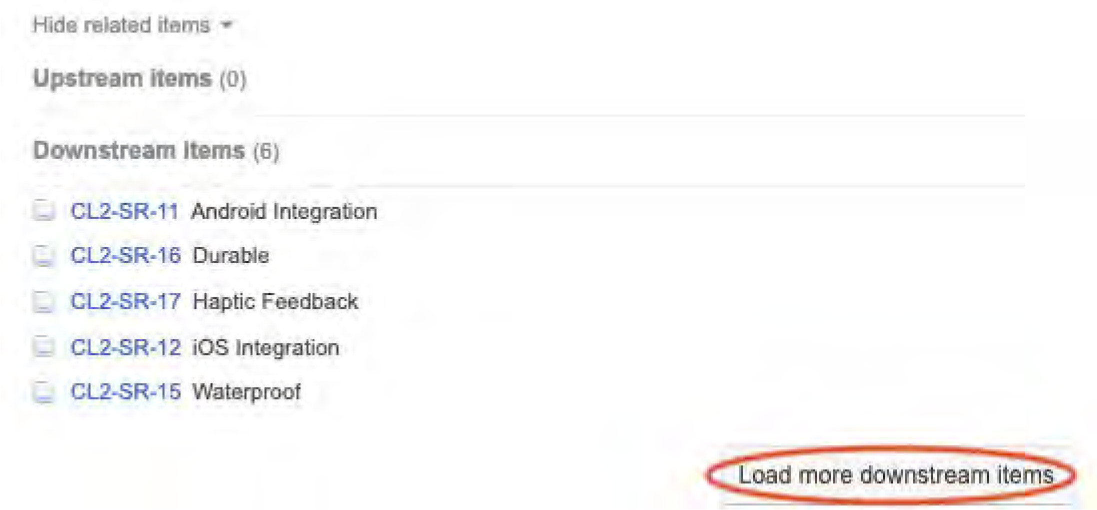
If you don't have permissions to view a related item, you see an item type icon and the text *This item is outside the scope of this review*.

To view items directly related to a review item:

1. In the review, select **Show related items**.

Initially, up to five upstream and downstream items are displayed.

2. To view additional related items, select **Load More Downstream Items**.



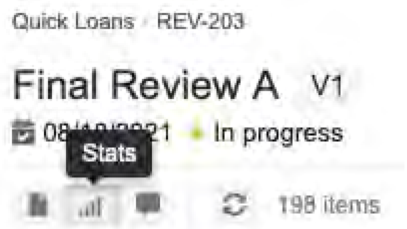
3. Select a related item to see more details.

View participant progress

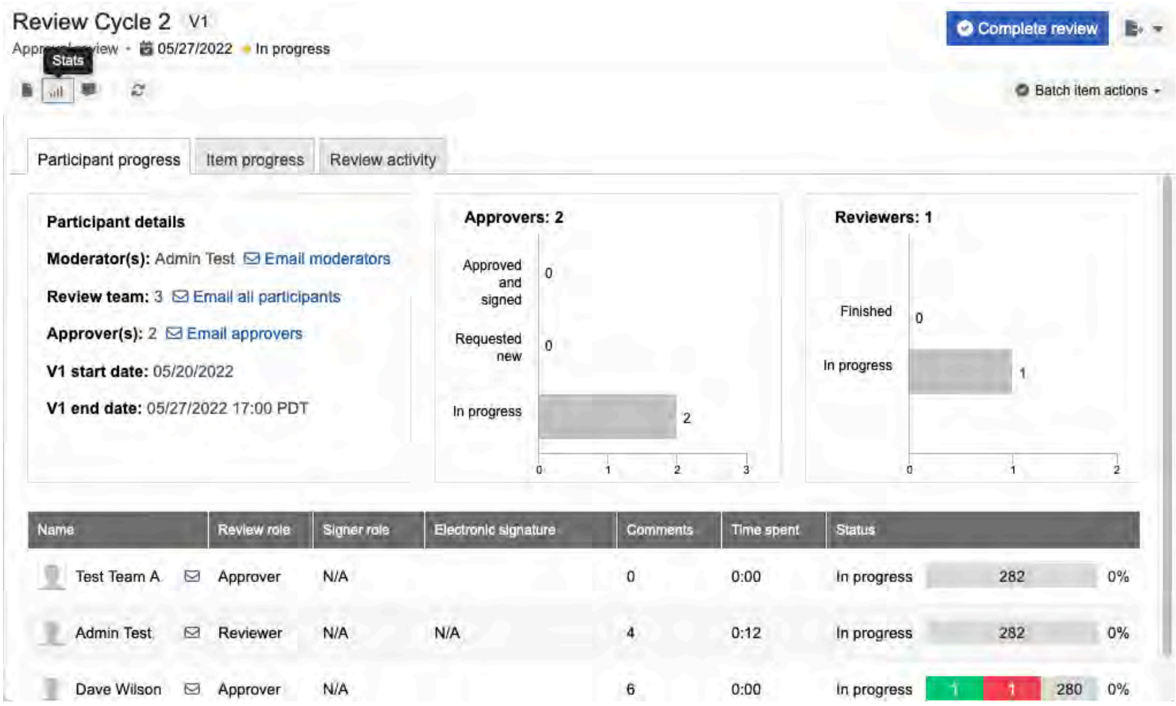
As a review progresses, you can view statistics about the participants' progress. This information is unique to the current version of the review.

In separate tabs, you can see item progress [197] for this version, or review activity [198] across versions.

1. From the review with stats you want to view, select **Stats**.

2. Under the **Participant progress** tab, you can see a panel with participant details and links to email participants.
   Next to that, bar charts show overall progress for the review for approvers and reviewers who have finished the review. For approvers the chart shows how many items they marked approved or rejected. For other reviewers it shows how many items are marked read. Reviewers' time spent.
   Below that, each participant is listed with their review role, signer role, signature information, comment count, time spent shown in hours:minutes, and a progress bar showing their completion level.

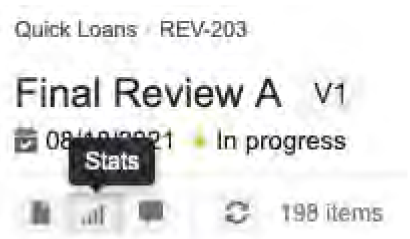
> **NOTE**
> Time is logged if a tab with the review is left open by a reviewer.

View item progress

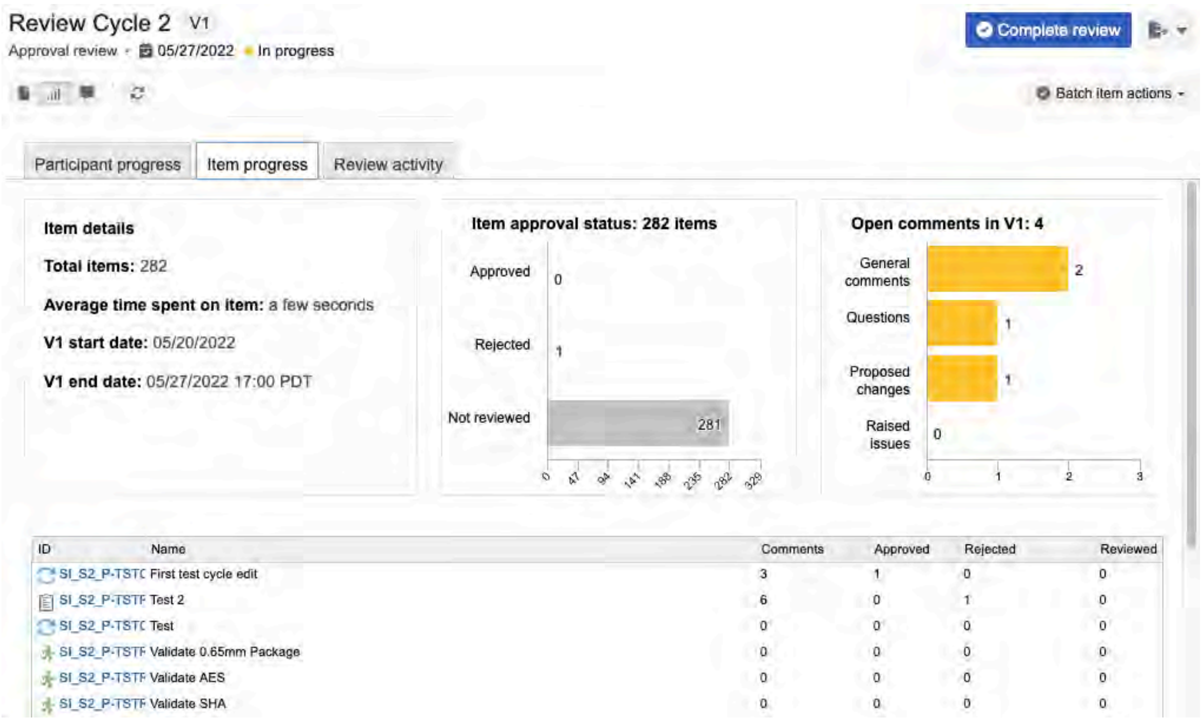
As a review progresses, you can view statistics about the progress of the items in review. This information is unique to the current version of the review.

In separate tabs, you can see participant progress [196] for this version and review activity [198] across versions.

- From the review with the items you want to view, select **Stats**.



Under the **Item progress** tab, you see an overview with the total number of items in the review, their item types, the start and end dates for this version of the review, the current approval status for all items (if this review uses approvers), and a summary of open comments in the review.
Below that, is a table showing item fields along with the number of votes, as well as the number of participants who marked the item approved, rejected, or reviewed.



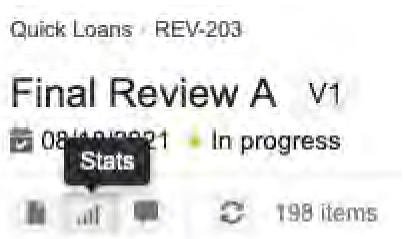
For reviews with multiple approvers, the item approval status count increases when *all* approvers approve the item. However, it only takes one approver to reject an item for the rejected count to increase. Items that aren't marked as approved or rejected are considered not reviewed. Items that aren't marked as approved or rejected are considered not reviewed.
If you're a moderator, you see the preset filters to filter the list by item type, folder, or set. You can use **Views** to configure which fields are visible in the table. You can use **Actions** to batch update items [72].

View review activity

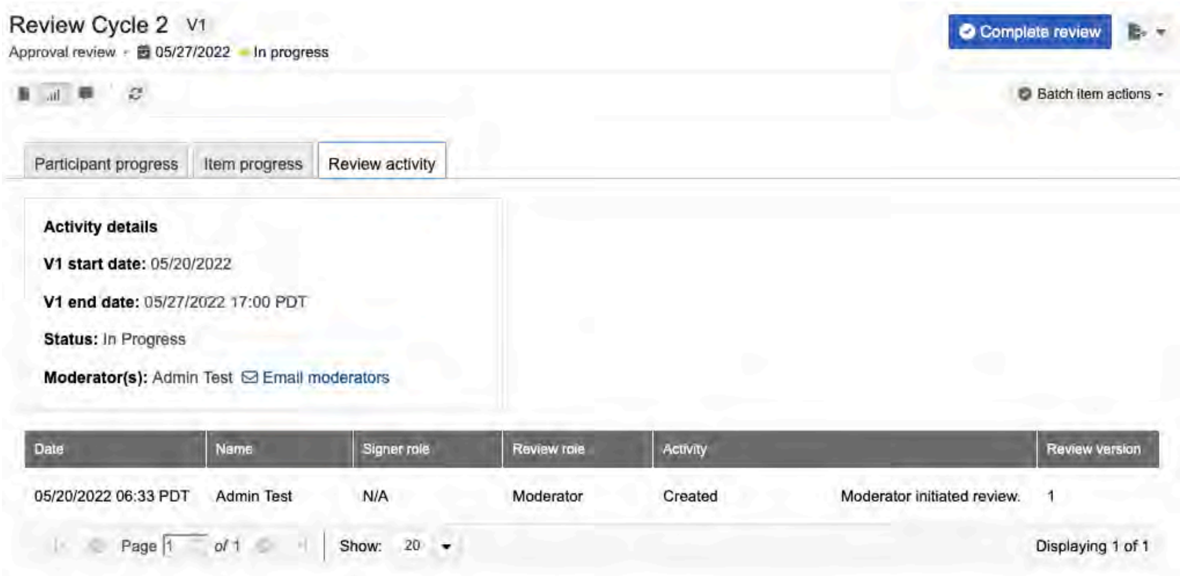
You can see all activities for a review across versions, including when reviews were opened, closed, when new versions were published or when signatures were added. This can be useful for collecting electronic signature [245] information for FDA 21 CFR Part 11 compliance.

You can also see item progress [197] and participant progress [196] for each version of the review.

1. From the review with activities you want to view, select **Stats**.



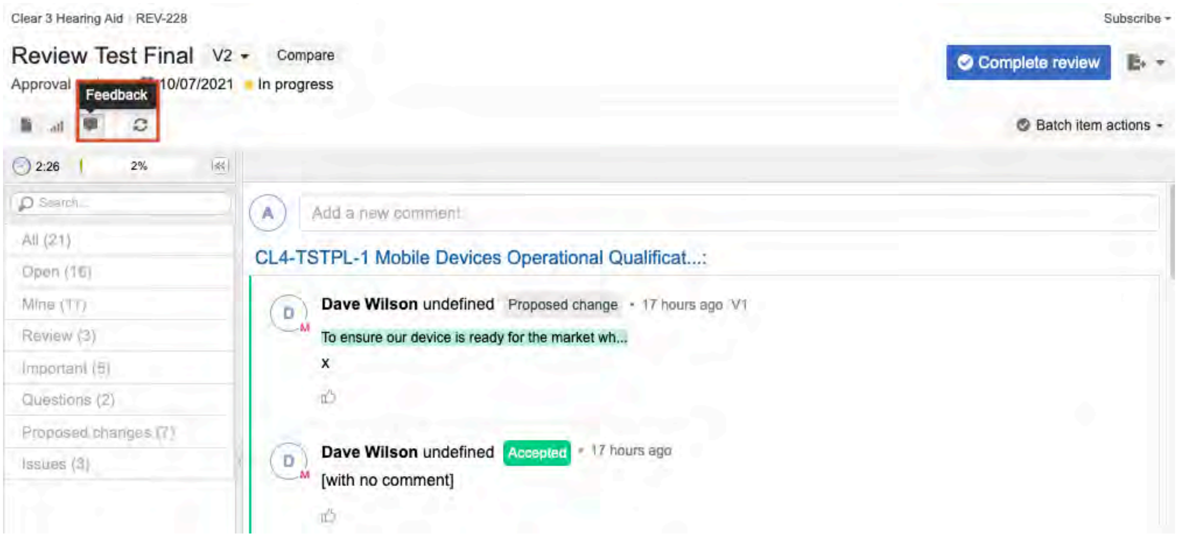
2. In the page that opens, select the **Review activity** tab.
   The table shows activity for all versions since the review was created.



Filter review comments

You can view and filter comments for all the items in a review to find only the comments you want to see.

1. From the review, select **Feedback** to see all the comments for the review, with a filter panel on the left.
   You can read and reply to comments here.



2. (Optional) You can also use the filters in the filter panel to search for comments by category or keyword. Available categories are:

All	Every comment from the review.
Open	Comments the moderator hasn't acknowledged or responded to
Mine	Your comments
Review	Comments sent to participants about the review by email
Important	Comments flagged as important by a moderator
Questions	Comments that are questions to be answered
Proposed changes	Comments that suggest changes
Issues	Comments that raise issues

Subscribe to a review

If you're a review participant, you can stay up-to-date on review comments with email notifications in reviews where you're a participant.

To receive notifications, you must first configure your review subscriptions [42] in your profile. You can also configure your profile so that you automatically follow an item when you comment on it.

1. Open the review with the items you want to subscribe.
2. Select **Actions > Subscribe to the items on this page**.

IMPORTANT

Some reviews contain multiple pages of items. To subscribe to all the items in a large review, you must subscribe to items on multiple pages.

Export reviews

You can export reviews as a Word document or a PDF by selecting **Export** anywhere in **Reviews**.

You have two export options:

- **Export activity review** — Includes all review activities [198] across versions (for example, when the review was created, versioned, closed, marked as finalized) along with the date, name, and role of the person responsible.
- **Export version review** — Includes an overview of the review, a list of participants with their review role, signer role, signature meaning and status, as well as the content of the review and the comments.

To download an export to your desktop:

1. In the review you want to export, select **Export** in the top right toolbar.
2. Select the type of export and format.

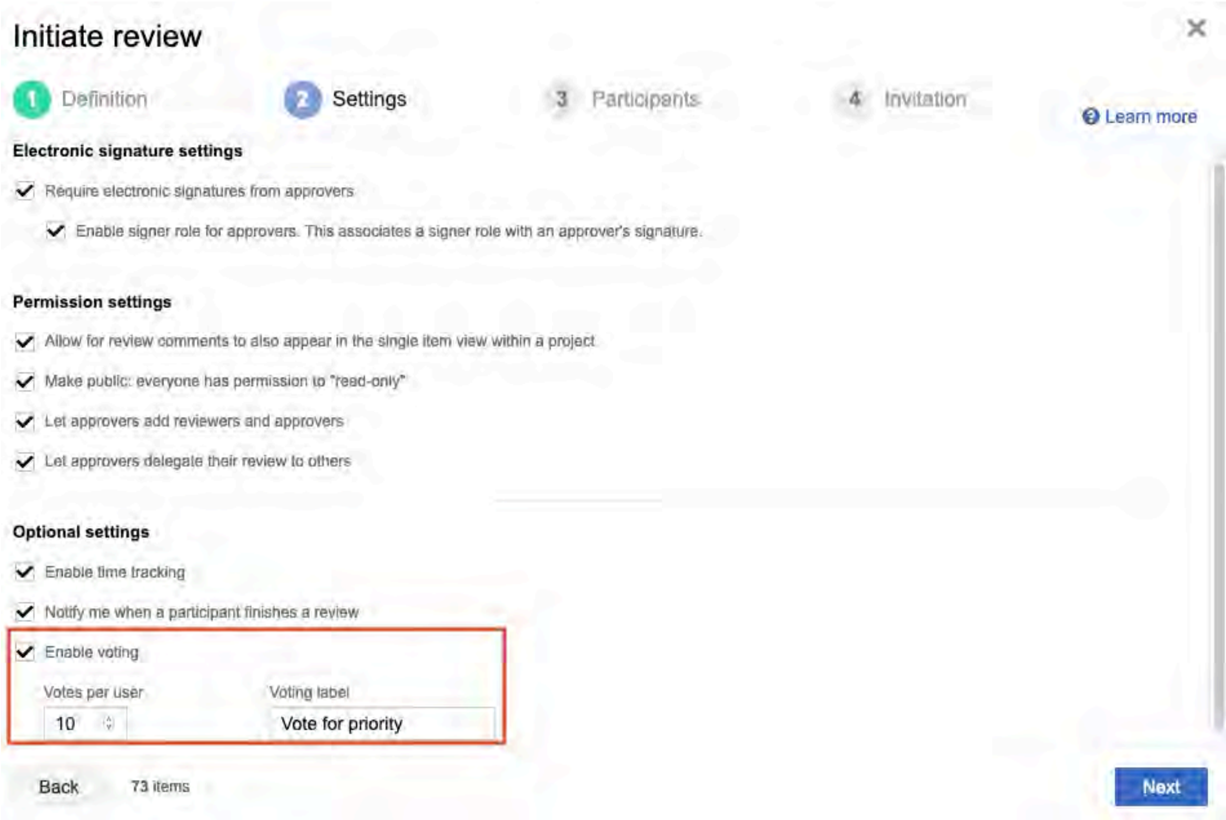
3. In the window that opens, choose how you'd like to open the file, then click **OK**.

The file opens in a new tab.

Voting

With voting, your team can prioritize items or rank them based on a topic proposed by the moderator. Each participant has a certain number of votes. Participants can give multiple votes to a single item.

Moderators can enable voting in the settings [162] when they initiate a review.



You can apply votes as a participant using one of these methods:

- Select the up arrow to add a vote or the down arrow to subtract votes. The box on the left displays the number of votes you used on that item. You also see how many votes you have left to use.

- Participants can also apply votes while viewing an item's detail.

Categories

In Jama Connect, the *Categories* feature allows you to organize and view cross-project items based on classifications. Examples of classifications include configurations, allocations, releases, and features.

You can use the Categories feature to assign cross-project items like requirements, test cases, and use cases to customer-defined groupings. According to your project needs, you can assign a single category or multiple categories.

The Categories feature is disabled by default. The organization admin must enable it before the option appears in Jama Connect. Once the feature is enabled, users with read/write permissions can make edits. For more information, see Enable categories [206].

TIP

If you prefer to hide the Categories tab for a project, go to the Page layout settings (**gear icon > Change layout**).

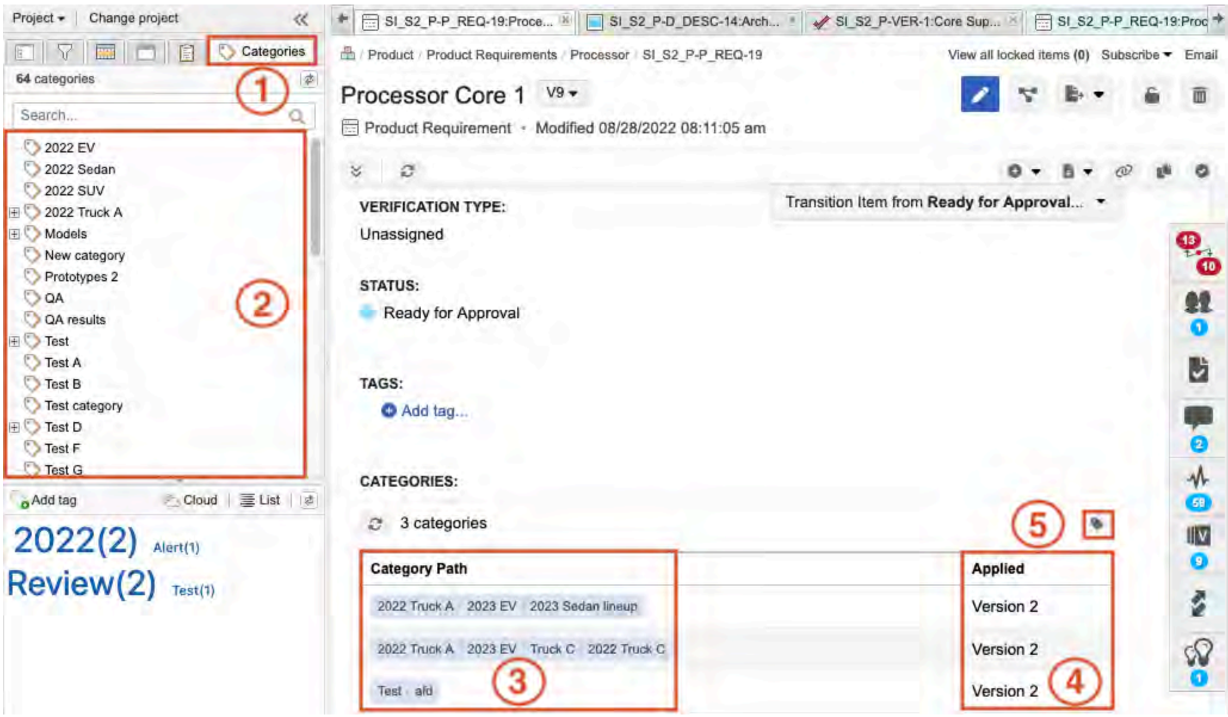
Your role determines your interactions when you use the Categories feature.

Role	Responsibilities and actions
User with read permissions	• View categorized items in the Category tree. • See a list of cross-project items. • View category Path. • View Category Path ID.
User with read/write permissions	• Organize your requirements across projects. • Apply a category to items from Single Item View, List View, or Reading View. • View categorized items in the Category tree. • See a list of cross-project items. • View Category Path. • View Category Path ID.

Organization admin	• Control and manage the Category admin tree:
	  • Add, move, copy, and merge categories.
	  • Edit and delete categories.
	• See category details like description and when it was created.
	• View Category Path.
	• View Category Path ID.
	• View Category ID.
	• Clean up categories.
	
	Changes to the Categories admin tree affect any allocated items in your projects.

Managing categories in projects (users)

The interface for the Categories feature consists of multiple parts and depends on your view: List View, Reading View, or Single Item View.



1. **Categories** tab in the Explorer Tree — Select it to open the Categories UI.
2. **Category tree** — Select a category to view specific details about a category like the Category Path. You can also expand the tree to see how your organization admin organized the hierarchy for the categories they created.
3. **Category Path and list of variations** column — Displays the category variation paths and Category Path IDs.
4. **Applied** column — Displays the version history, which allows you to see which version the item was at when the category was applied. When you view an older version, you can see which categories were applied or unapplied.
5. **Manage categories** button — Select it to open the Manage categories window where you can apply and unapply categories.

Apply or unapply categories

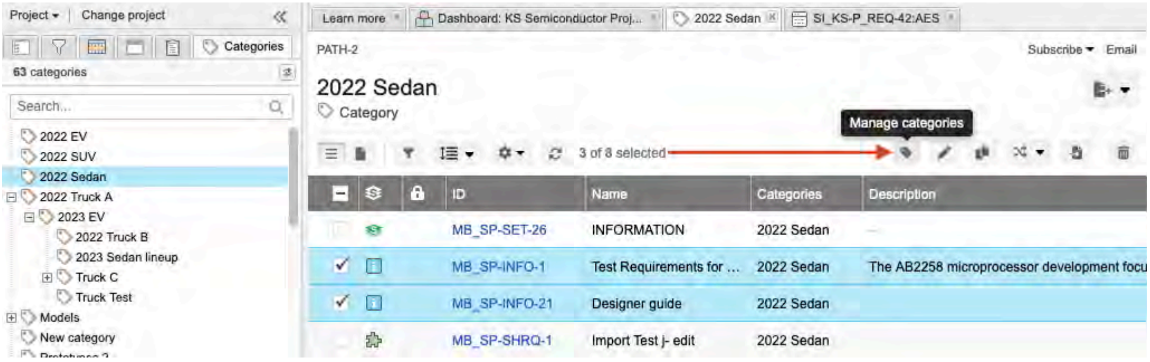
When the Categories feature is enabled by the organization admin, you can apply categories to items or unapply them as needed.

Important considerations

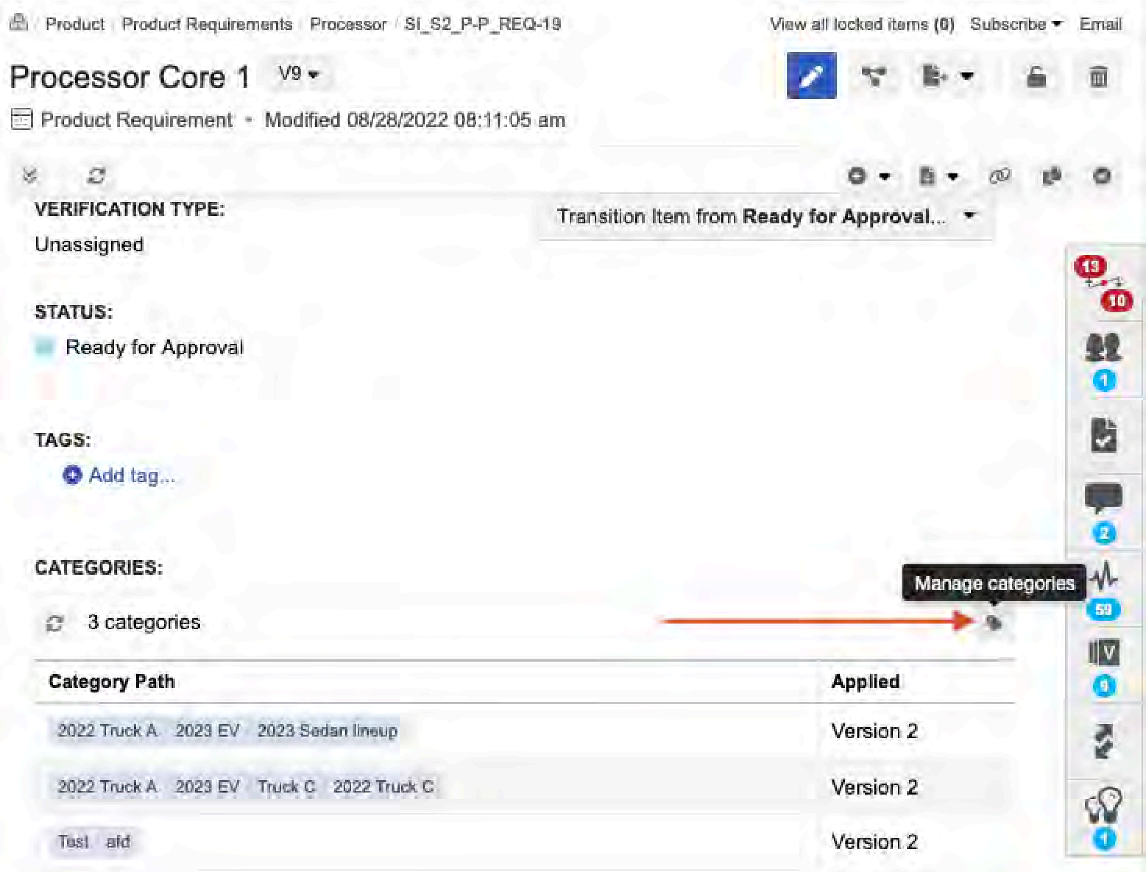
- You must have read/write permissions to use the Categories feature.
- You can select a maximum of 50 items at a time.
- Organization admins can allow users to manage categories on system-locked and user-locked items. When enabled, users with read/write access can manage categories on locked items. For more information, see Enable category management for locked items [207].
- Managing access will have an impact on cross-project use of categories. When a user is working with a cross-project list in Reading View and they click **Manage categories**, the displayed categories are limited to Global categories and categories that intersect with the selected projects.
- When you view an older version, you can see which categories were applied or unapplied.

To apply and unapply categories:

1. Select the items where you want to apply or unapply categories.
2. Open the Manage Categories page depending on your view.
   - **List View or Reading View** — Select the **Manage categories** button from the header.



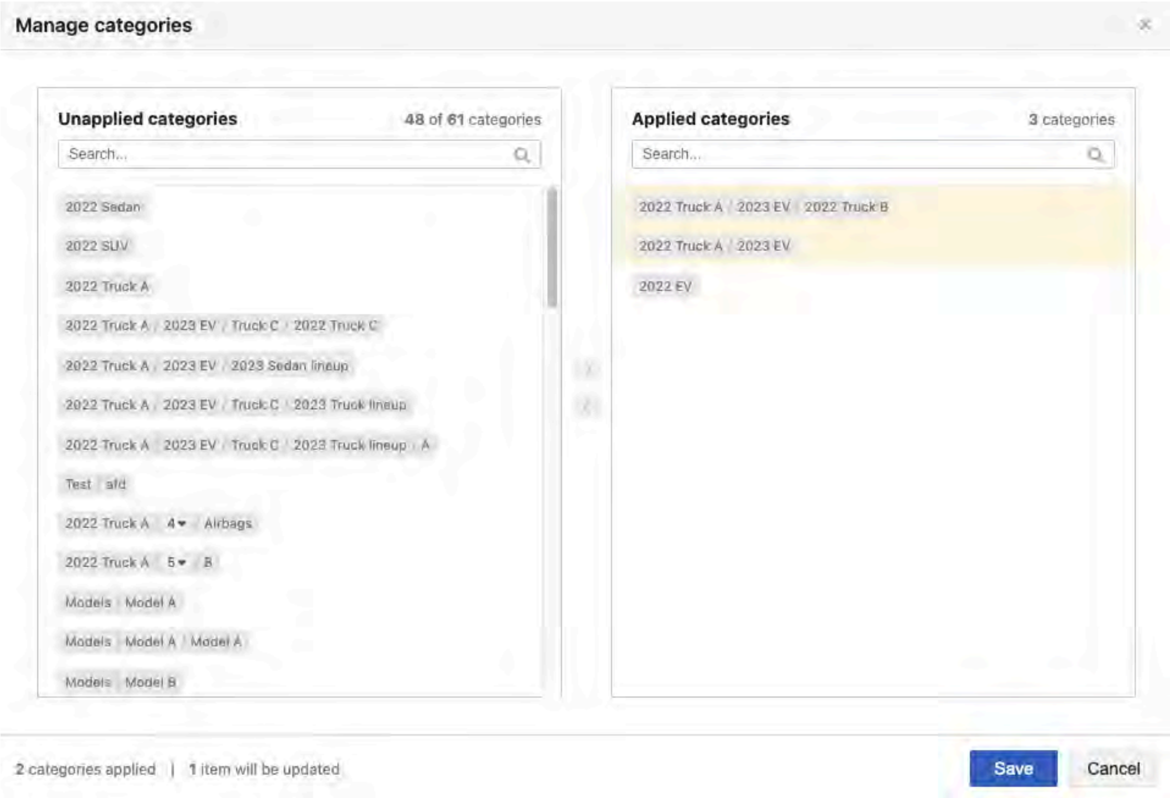
   - **Single Item View** — Select the **Manage categories** button from the Category Path table.



On the Manage Categories page that opens:

- **Categories** column lists available categories to apply to selected items.
- **Applied categories** column lists categories already applied to the selected items.

3. From the **Categories** column, select the categories you want to apply: double-click a single category or select multiple categories and use the arrows to move them to the **Applied categories** column.

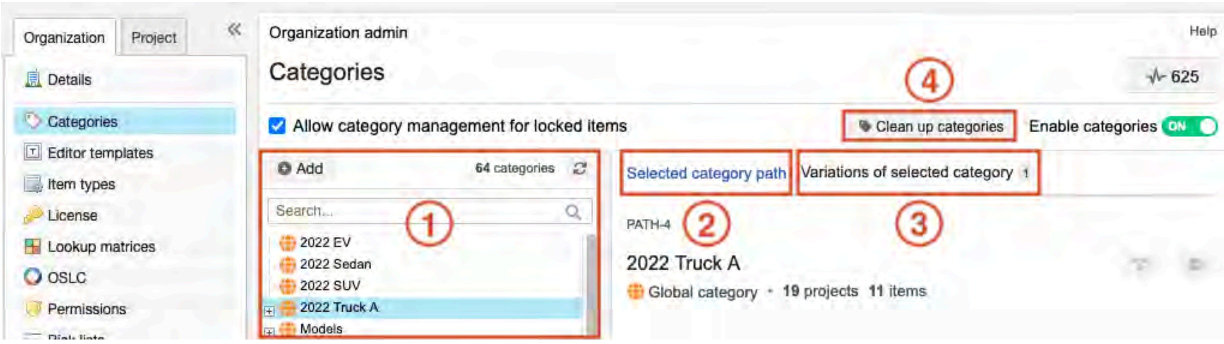
   The selected categories are highlighted in yellow until you save your changes.
   The bottom of the page lists the number of categories that will be applied and the number of items that will be impacted.
4. To unapply a category, select it in the **Applied categories** column: double-click a single category or select multiple categories and use the arrows to move them to the **Categories** column.
   The selected categories are highlighted in yellow until you save your changes.
5. Click **Save** to apply your changes.

Controlling the Categories feature (organization admins)

The Categories feature allows users to organize and view items in a cross-project hierarchy. It allows users to see how items and components can build a final product.

The Categories feature is disabled by default. As the organization admin, you must enable it for the option to appear in Jama Connect and be available to users.

When this feature is enabled, organization admins can interact with:

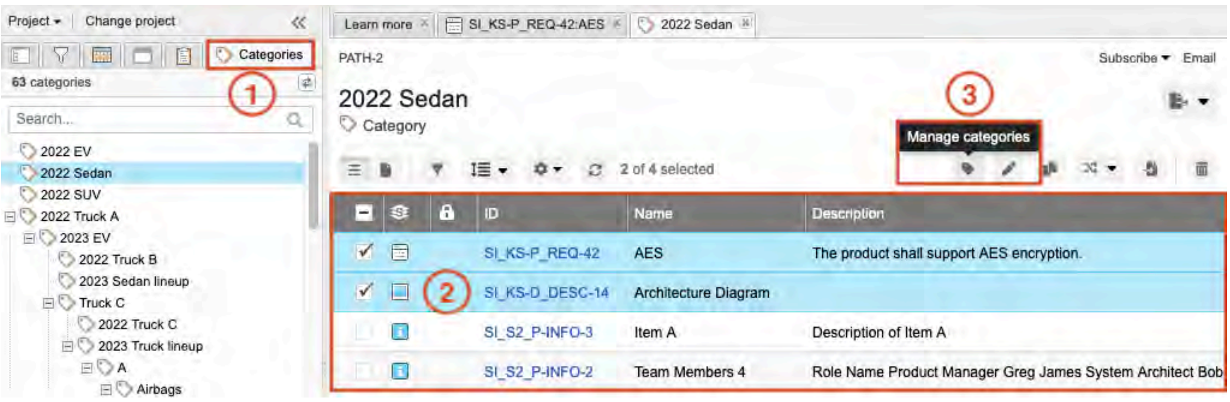


1. **Categories** admin tree
   - Create a hierarchy that is specific to your company's workflow.
   - Add, move, copy, and merge categories.
2. **Selected category path** option
   - View category details like description and when it was created.
   - Remove category.
3. **Variations of selected category** option
   - Edit and delete a category.
   - View category paths, associated variation path, and category IDs.

Example Category ID: CAT-123 Category ID encompasses all variations of a category
Example variation path ID: PATH-123 Variation path ID is specific to each path

4. **Clean up categories** option
   - Perform a manual update to applied categories on current and historical items.

When enabled, users with read/write permissions can interact with:

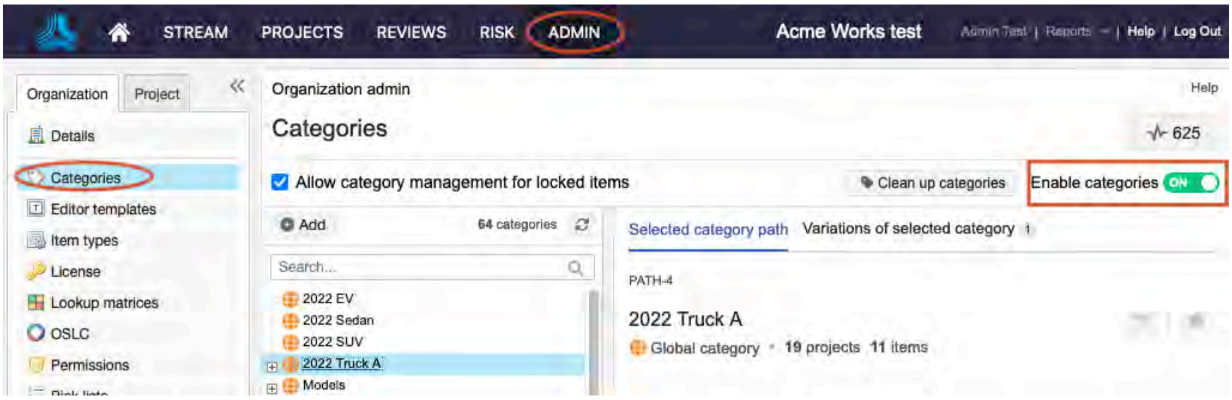


1. **Categories** tab in the Explorer Tree
2. **Categories** table in Single Item View
3. **Manage categories** button in Single Item View, Reading View, and List View

Enable the Categories feature

You must enable the Categories feature before users with read/write permissions can apply categories to items. By default, this feature is disabled.

To enable Categories:



1. From the Jama Connect header, select **Admin > Categories**.
2. Next to **Enable categories**, select **On**.

The Categories option is now visible in Jama Connect and available to users.

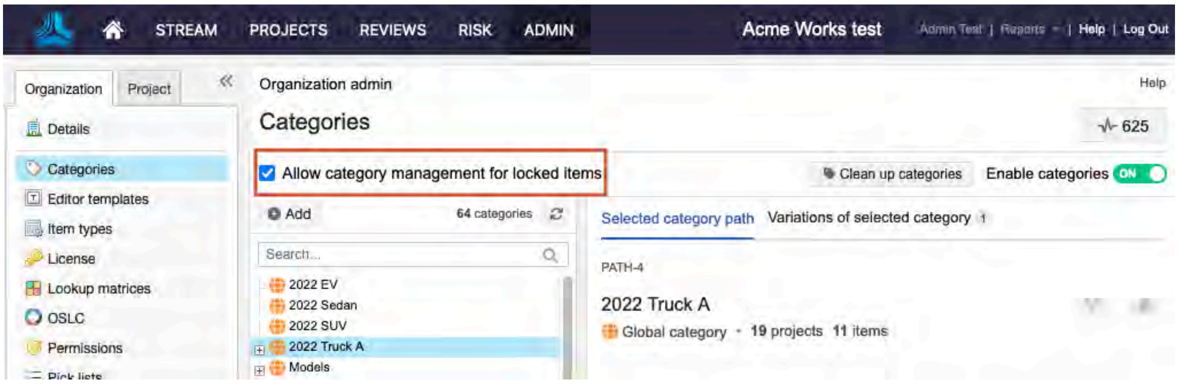
Enable category management for locked items

Organization admins can allow users to manage categories on system-locked and user-locked items.

Important considerations

- This option is disabled by default.
- When enabled, users with read/write permissions can manage categories on locked items.
- When you enable or disable this option, a message appears in the Admin Activity stream.

1. From the Jama Connect header, select **Admin > Organization > Categories**.
2. Select **Allow category management for locked items**.



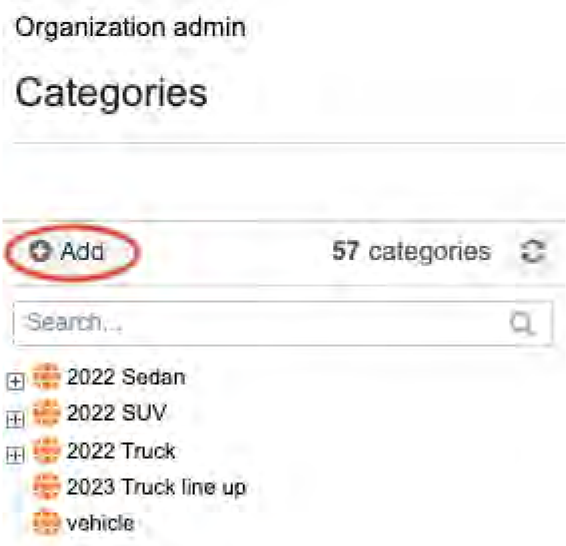
The ability to manage locked items is now available to users.

Add a new category

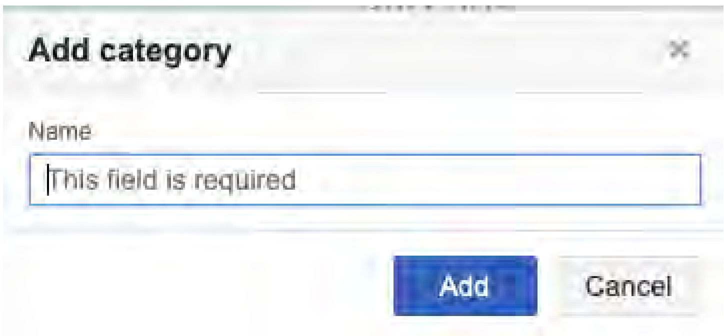
Create a hierarchy or a list of categories that users can apply to organize project requirements.

To add a new category:

1. From the Jama Connect header, select **Admin > Organization > Categories**.
2. In the Categories admin tree, click **Add**.



3. In the Add category window, enter a name, then click **Add**.



Your new category appears in alphabetical order in the tree and is immediately visible in all Jama Connect projects.

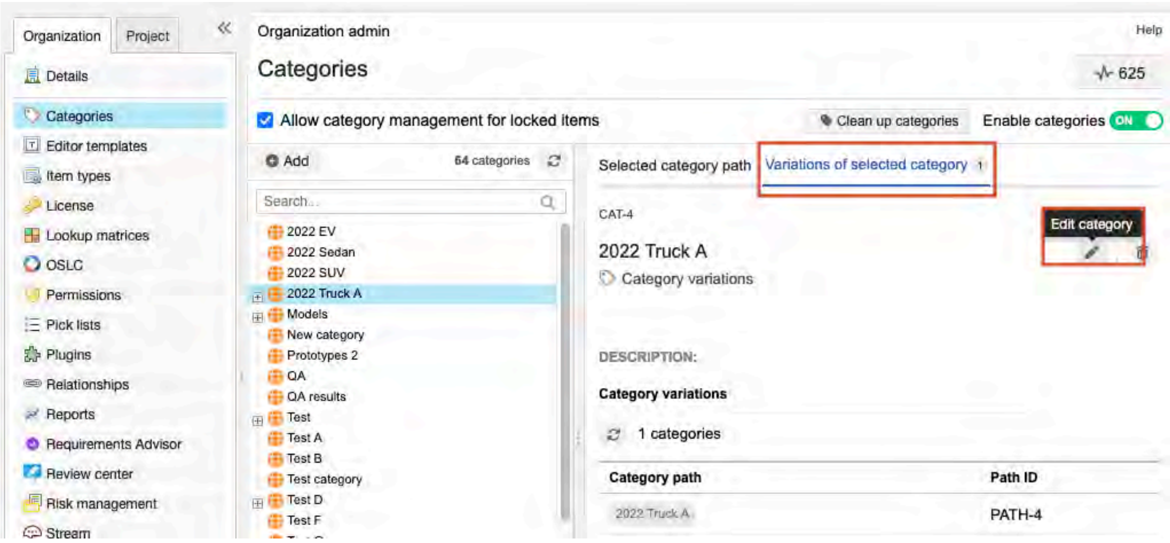
Edit category properties

You can change the name of an existing category.

When you edit a variation of a category, all variations are changed and add an optional description.

To edit category properties:

1. From the Jama Connect header, select **Admin > Organization > Categories**.
2. In the Category admin tree, select the category that you want to edit.
3. Click **Variations of selected category**, then select the **pencil** button.



4. In the Edit category window, enter a new name or description, then click **Save**.

The change appears in the Category admin tree and is immediately visible in all Jama Connect projects.

Remove a category variation

To disassociate requirements related to a category or to update the hierarchy, you can remove a category variation.

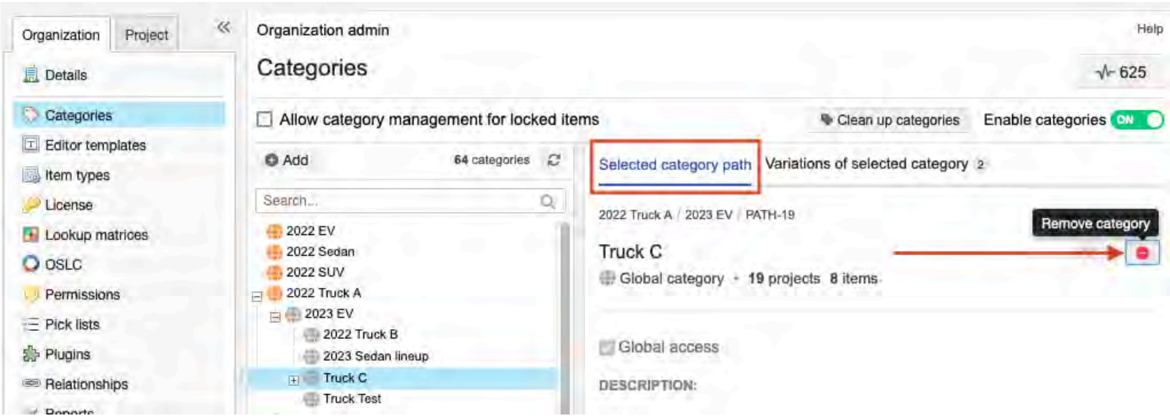
Removing a category variation removes only that single variation. For example, if you have two variations of a category called "Transmission," you can remove the variation that is no longer needed, and the other variation remains unchanged. To remove all variations of a category, see Delete a category [210].

Important considerations

- Categories that no longer belong to a variation are deleted.
- Nested categories are removed.
- Nested categories that are orphaned are deleted.
- Organization admins must delete a category [210] with only one variation. When you delete the only variation of a category, the Category ID is deleted along with the remaining Category Path ID.
- All items, including locked items, are updated to reflect the category changes made by the organization admin.

To remove a category variation:

1. From the Jama Connect header, select **Admin > Organization > Categories**.
2. From the Category admin tree, select the variation you want to remove.
3. Click **Selected category path**, then select the **minus icon**.



4. When prompted to confirm, click **Yes**.

The selected category is removed. Nested categories are removed and descendant categories that are orphaned are deleted. All items associated with these categories are updated.

Delete a category

When you delete a category, all variations of that category are also deleted.

For example, if you have two variations of a category called "Transmission," and you delete either variation, both variations are deleted from the Category admin tree along with the associated Category ID.

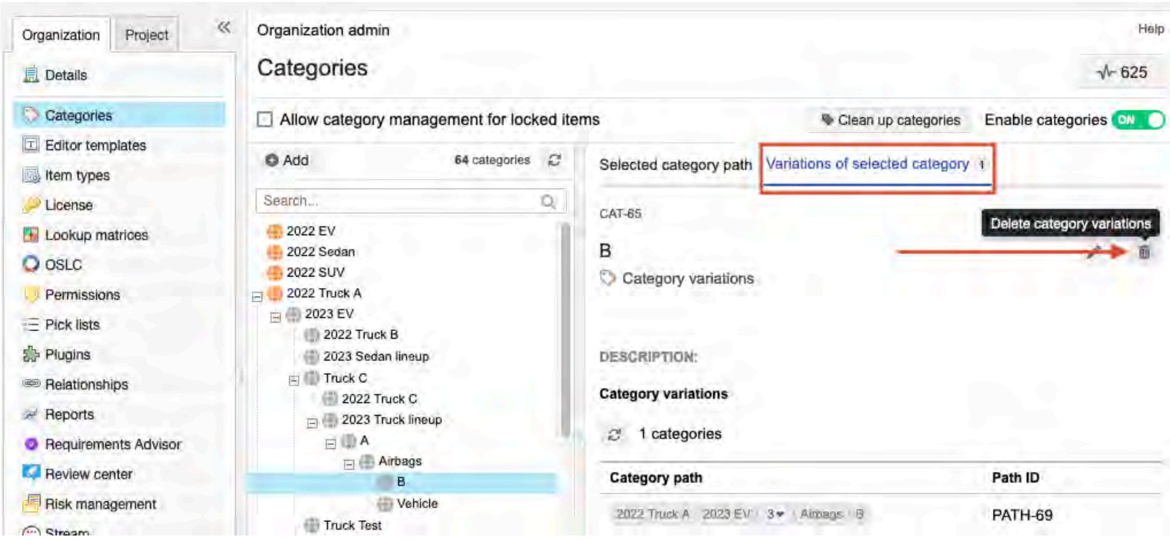
To remove only one variation of a category, see Remove a category variation [209].

Important considerations

- Deleting a category affects all variations of a category and can have a widespread impact on your category hierarchy.
- Nested categories are deleted.
- Nested categories that are orphaned are deleted.
- Categories that no longer belong to any other variation are deleted.
- All items, including locked items, are updated to reflect the category changes made by the organization admin.

To delete a category:

1. From the Jama Connect header, select **Admin > Organization > Categories**.
2. In the Category admin tree, select the variation that you want to delete.
3. Click **Variations of selected category**, then select the trash icon (**Delete category variations**).



4. When prompted to confirm, click **Yes**.

The selected category and all variations are deleted. Nested categories are removed and descendant categories that are orphaned are deleted. All items associated with these categories are updated.

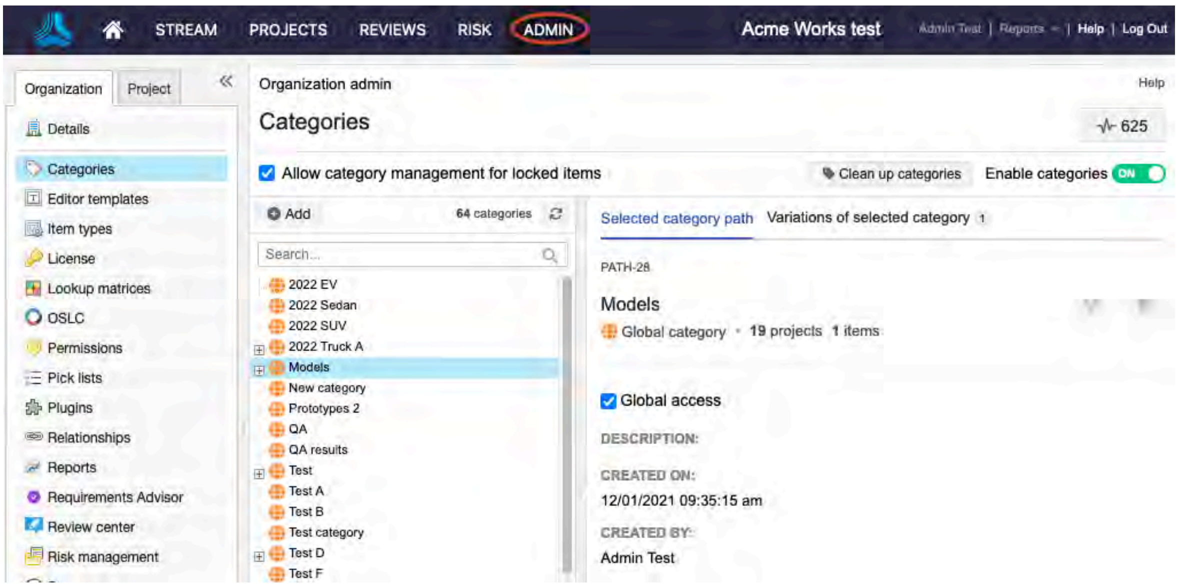
Organize the Category admin tree

You can organize the Category admin tree to reflect how your items are structured. After completing a move, copy, or merge, items with those applied categories are updated to reflect the new hierarchy.

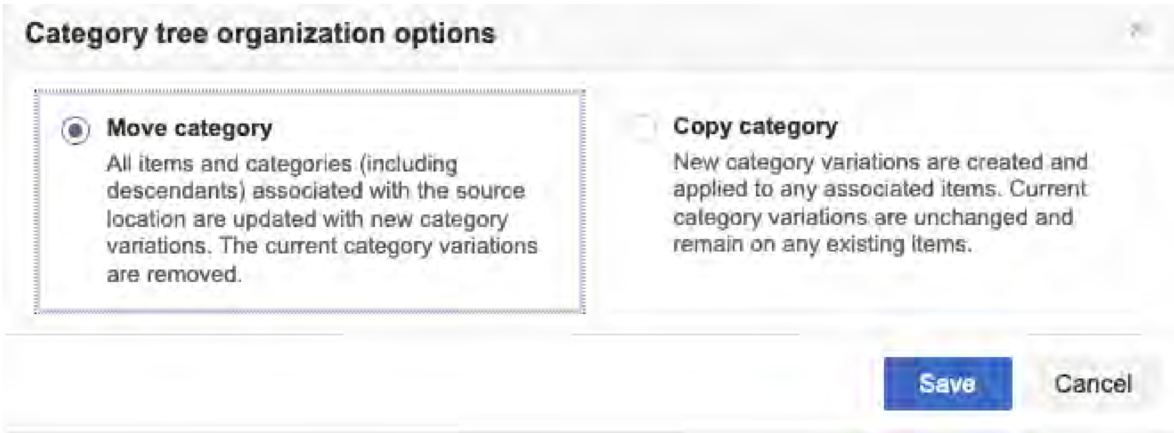
Important considerations

- When you drag a category to an existing category, it is nested under the category you selected. A new variation is created. Items with those categories are updated to reflect the new hierarchy.
- Copying a category duplicates it and its nested categories to the area you selected in the Category admin tree. New variations and Category Path IDs are created. Items with those categories are updated to reflect the new hierarchy.
- Merging two categories, from the move or copy actions, duplicates the selected categories and its nested categories to the area you selected in the Category admin tree. New variations and Category path IDs are created. Items with those categories are updated to reflect the new hierarchy.

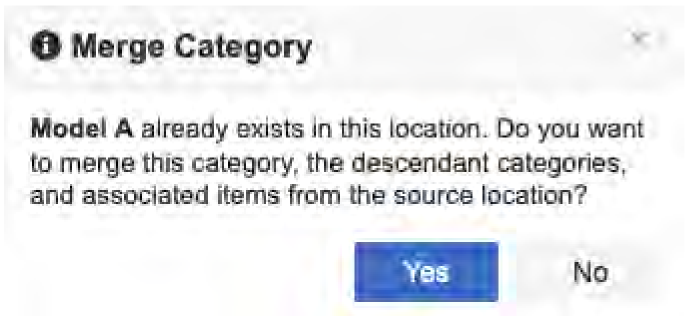
1. From the Jama Connect header, select **Admin > Organization > Categories**.

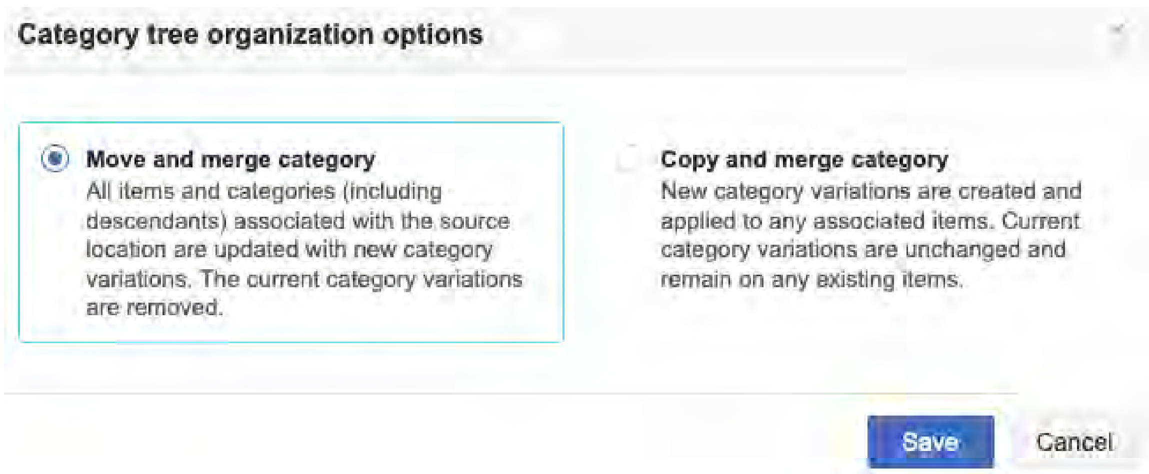


2. From the Category admin tree, select the category you want to update, then do one of the following:



- **Move** — Drag and drop it to the new location in the Category admin tree, then select **Move category**.
  If a duplicate category exists in the location you selected, you have the option to merge them.
- **Copy** — Drag and drop it to the new location in the Category admin tree, then select **Copy category**.
  If a duplicate category exists in the location you selected, you have the option to merge them.
- **Merge** — Click **Yes**, then select **Move and merge category** or **Copy and merge category**.





3. Click **Save**.

All items associated with these categories are updated.

Managing category access to projects

Organization admins can configure a category's visibility to hide or show one, many, or all projects.

Important considerations

- When an item is deleted and restored, associated categories are not restored.
- If a project is archived and restored later, associated categories are not restored.

Category access types

	Unassigned access: Not visible in projects.
	Project access: Visible in one or more projects.
	Global access: Visible in all organization projects. As projects are added to the organization, visibility is applied automatically.

Unassigned categories — Unassigned categories are not visible in any of the organization's projects. This includes project views, List View, Reading View, Single Item View, tree views, and the Manage categories window. When new categories are added, users don't have access by default, so that the organization admin can configure new categories without disrupting existing work or revealing categories to the entire organization.

Project access — Project access categories can only be seen and used in specific projects set by the organization admin. The organization admin manages access and makes any necessary changes.

Global access — Global access gives all projects the visibility to a category. Select **Global access** to enable or disable this option at any time. When enabled, all active organization projects can see that category. The **Manage access** option is disabled because all projects are set to **Visible**.

NOTE

If the user disables **Global access**, the category is converted to a **Project access** category and the visible projects are still accessible. The user can choose to manage access and make any necessary changes.

Configure access to projects

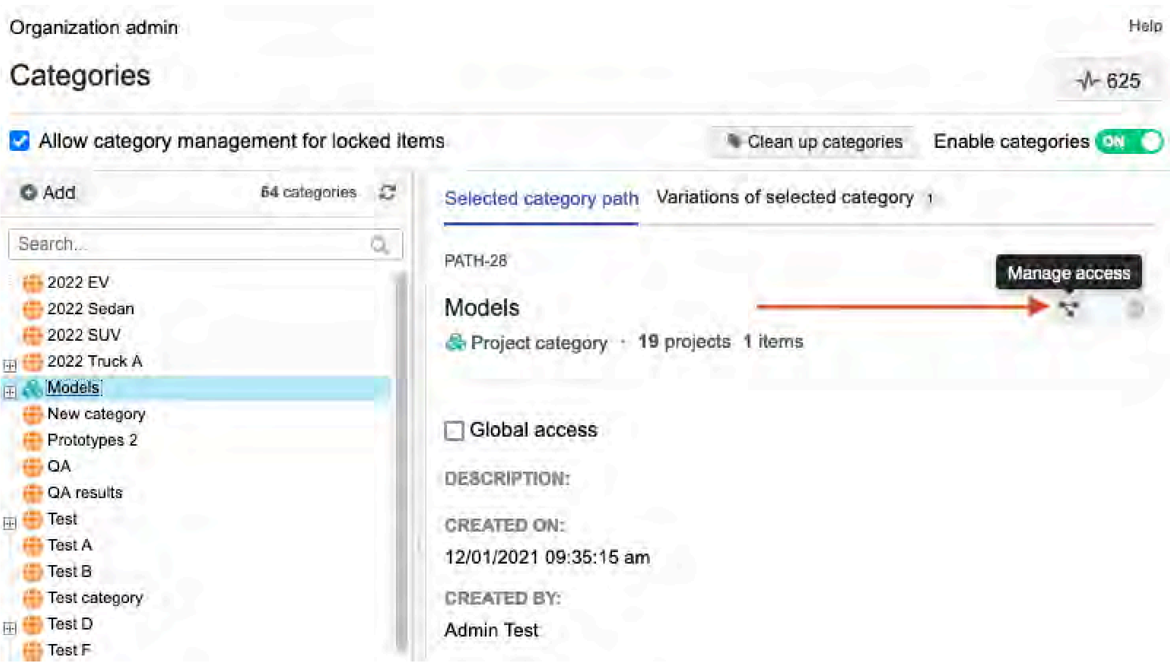
Access to a project can only be managed on one non-global category at a time. Organization admins can hide or display any projects that are active in the organization.

Important considerations

- You can only edit access to projects on top-level parent categories. All child categories inherit the top-level (parent) access to projects. This action also affects all move, copy, and merge actions.
- Organization admins can’t edit category access when categories are applied to items in the project they are trying to remove. Applied categories must be unapplied from all items in the selected projects before category access can be hidden. This action also affects all move, copy, and merge actions.

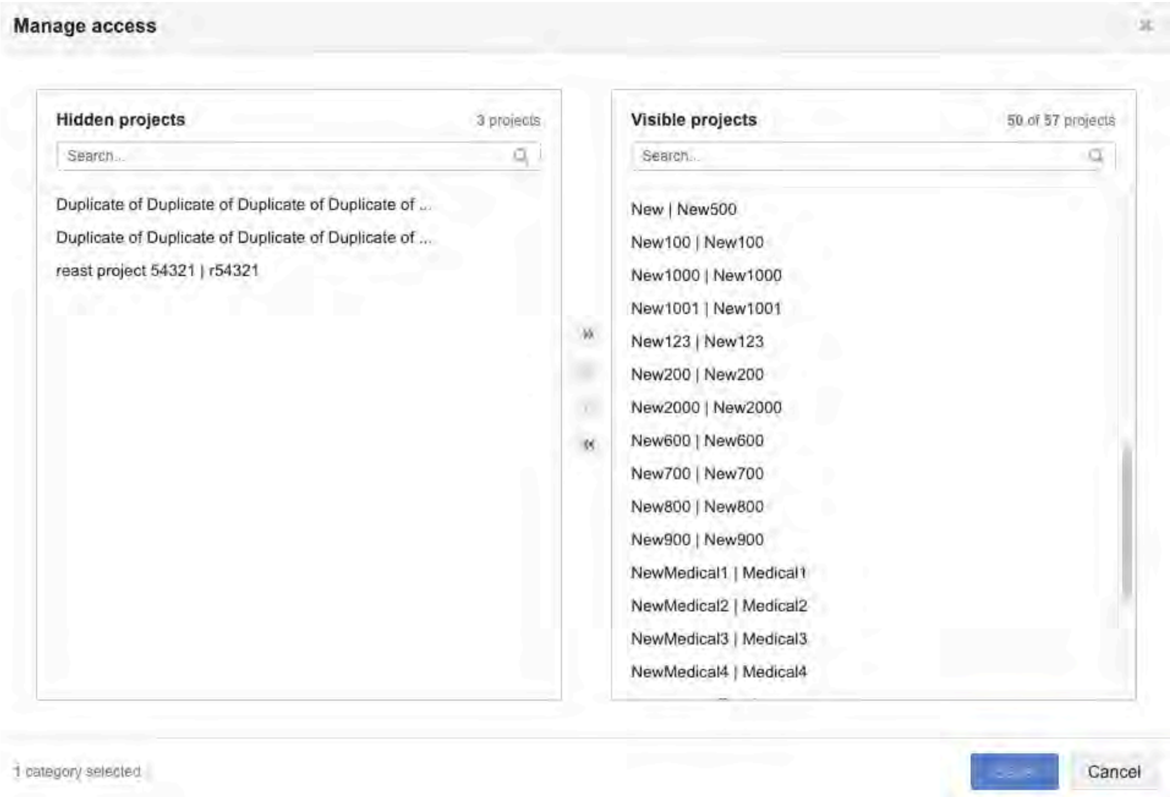
To configure access to projects:

1. From the Jama Connect header, select **Admin > Organization > Categories**.
2. In the Categories admin tree, select the Project category you want to update, then click **Manage access**.



The Manage access window opens.

3. From the **Hidden projects** column, select the projects you want to be visible: double-click a single project or select multiple projects and use the arrows to move them to the Visible projects column.



The selected categories are highlighted in yellow until you save your changes.

The bottom of the page lists the number of projects that will be hidden or visible and the number of categories that will be impacted.

4. From the **Visible projects** column, select the projects you want to hide: double-click a single project or select multiple projects and use the arrows to move them to the **Hidden projects** column.

The selected categories are highlighted in yellow until you save your changes.

The bottom of the page lists the number of projects that will be hidden or visible and the number of categories that will be impacted.

5. Click **Save** to apply your changes.

Collaborating with your team

For companies to turn today's research into tomorrow's products, teams must stay connected and synchronized. Jama Connect equips teams to track decisions and ensure quality of the product they set out to build.

Jama Connect links globally distributed team members and facilitates collaboration in the product development lifecycle. It allows you to provide and capture feedback, decision making, and approval for requirements and all product aspects under review.

Jama Connect enables efficient sharing of data, documents, files, information, and knowledge within and across teams in your organization.

Use these features to work with your team, document conversations, and track decisions.

- **Reviews [155]** — A method to help teams, stakeholders, and customers discuss, evaluate, revise, and approve items in the development process. For details, see Reviews in Jama Connect [155].
- **Workflows [218]** — An automated set of transitions, from one status to another, over the course of an item's lifespan.
- **Notifications [216]** — Optional emails sent to groups or individuals to alert you when changes to items are made.
- **Stream [224]** — A collection of the most recent comments and activities in the project.
- **Electronic signatures [245]** — A method for getting approval on electronic documents or forms.

Email notifications and subscriptions

Users can configure email and notification settings in their profile [41] to stay up to date with activity in their projects.

> **IMPORTANT**
> To receive notifications in Jama Connect, your SMTP must be enabled by your system administrator.

You can sign up for notifications to be sent to you automatically from several places in Jama Connect.

Notifications from...	Sent to you...
Review [159]	When you're invited to participate When someone replies to your comments in a review
Workflow [654]	When status of an item changes
Stream [235]	When you're mentioned in the stream
System Health Report [563]	With updates on license usage

Your Jama Connect administrators control what you can do with subscriptions. For example:

- **Organization administrators** — Can allow users to subscribe others and to mute subscriptions.
- **Project organization administrators** — Can unsubscribe groups or individuals from any of their subscriptions.

As a user, you can:

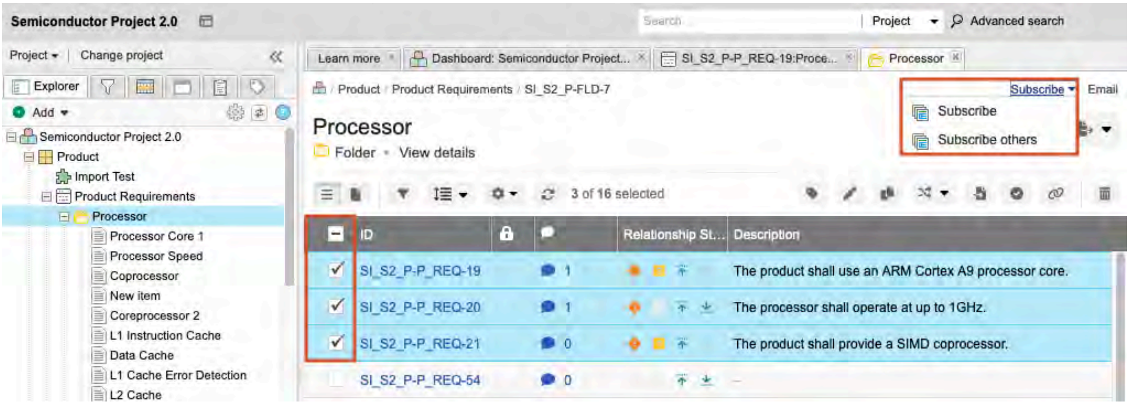
- Set up notifications for a single item in a project or for an entire project.
- Configure email notifications and subscriptions.

Subscribe to emails for yourself

You can subscribe to a single item, to multiple items, or to an entire project.

1. To subscribe to a single item, select the item in Single Item View, then select **Subscribe**.

2. To subscribe to multiple items:
   1. Open the items in **Project > List View**.
   2. Select each item you want to subscribe to.
   3. Select **Subscribe**.



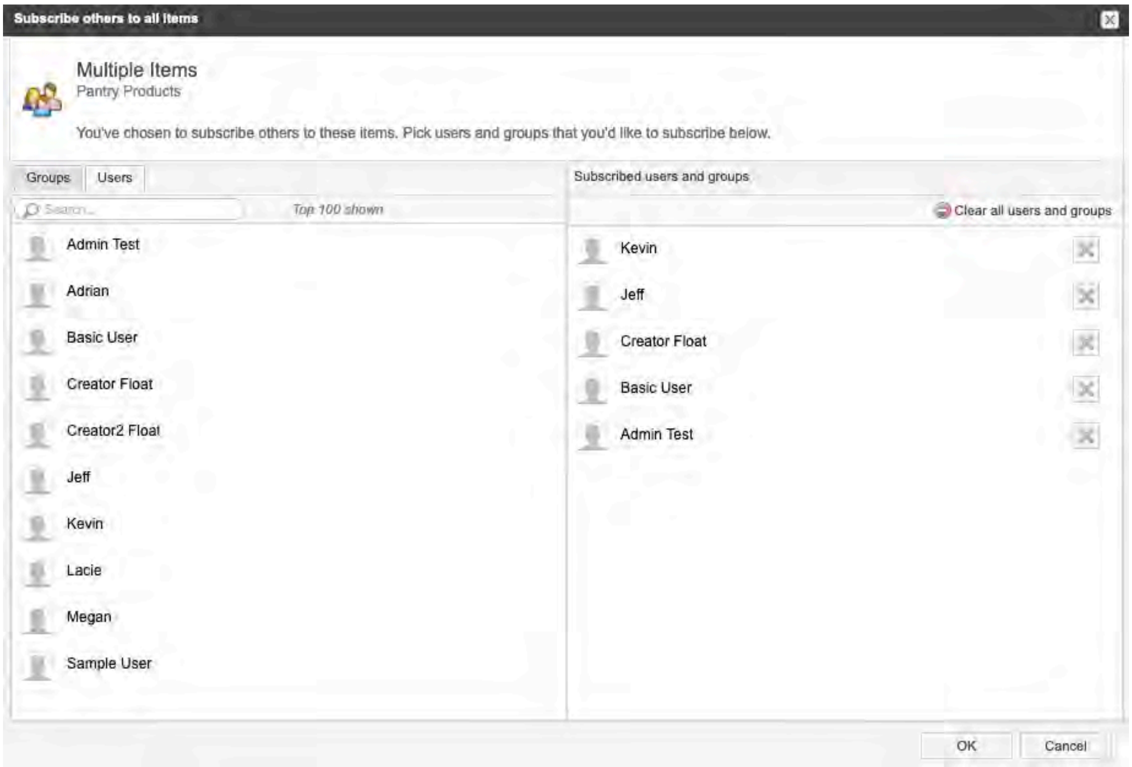
A confirmation message appears below the toolbar.

Subscribe other users to email notifications

You must be a system, organization, or project administrator to subscribe others to all items at a project level.

1. To subscribe others to a single item, select the item in Single Item View, then select **Subscribe > Subscribe others**.

2. To subscribe others to multiple items:
   1. Open the items in **Projects > List View**.
   2. Select each item you want to subscribe to.
   3. Select **Subscribe > Subscribe others**.
   4. In the Subscribe others to all items window, select the groups or users that you want to subscribe to this item.



5. Click **OK**.

Workflow

A workflow is a set of transitions from one status to another, over the course of an item's lifespan.

All workflows must be set up by an organization or process administrator before they can be used.

Workflow can be used in these scenarios:

- Project items [218] — Creates a common pathway for items to follow.
- Review items [635] — Allows organizations to configure items to transition to a specific workflow state following the review process.

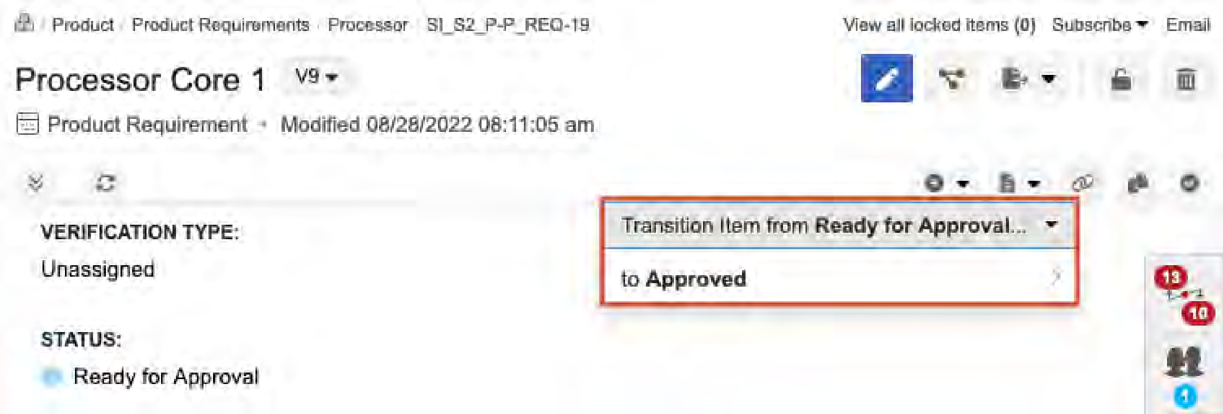
Using workflow in Projects

You can set up a workflow for Project items, so that users at your organization can move items in your project along a similar path as they progress.

Workflow in Projects allows you to:

- Update status for an item or group of items. Items must be the same type and in the same workflow state.
- Transition items from one status to the next, either for a single item or as a batch transition for a group of items.

If workflow is configured by an organization [654] or process admin, use the drop-down menu in Single Item View to move the status of an item along the workflow and activate any related actions or notifications.



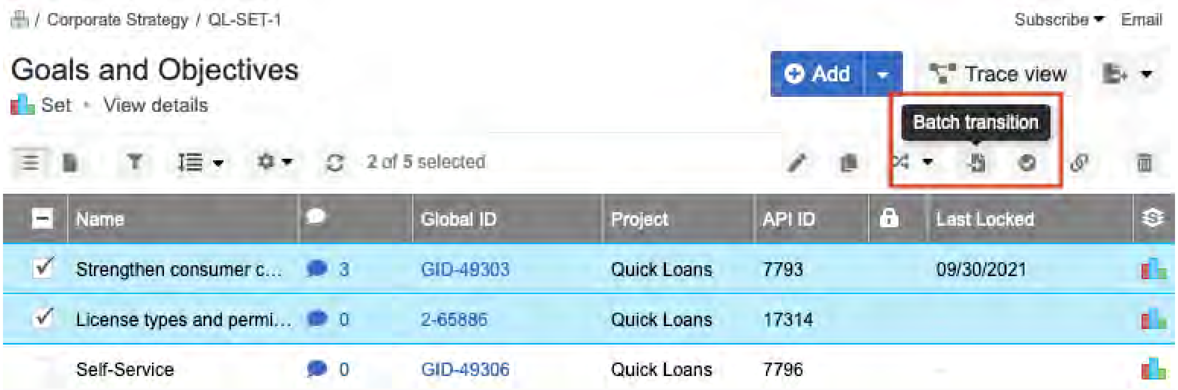
Use workflow to batch transition items

With batch transitions, you can select multiple items of the same item type and transition them to a different workflow status.

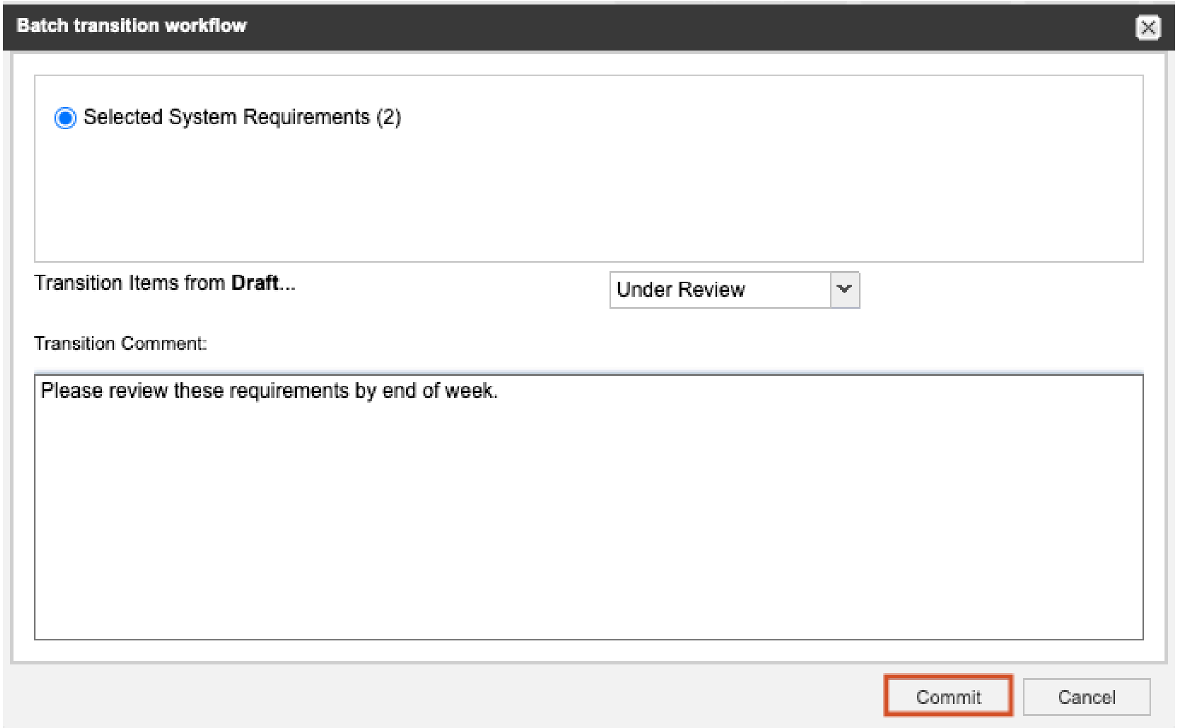
Important considerations

- All items that you transition must be in the same state. For example, you might batch transition all "In Progress" items to a "Complete" status, but you can't select both "In Progress" and "Proposed" items for batch transition.

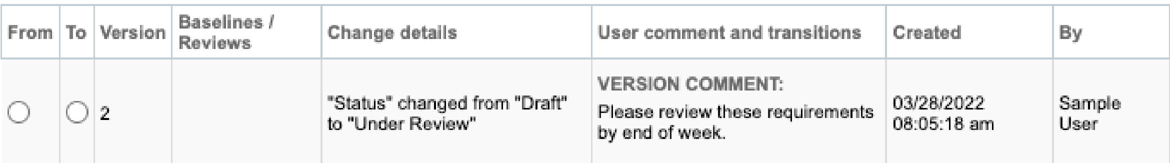
1. Select the project, folder, or set that contains the items you want to transition and view them in **List View**. Select the items you want to transition, then select **Actions > Batch transition**.

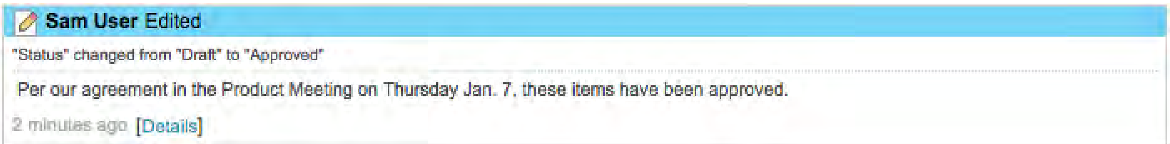


2. In the Batch Transition Workflow window, confirm your item selection, choose the status, add a comment, then click **Commit**.

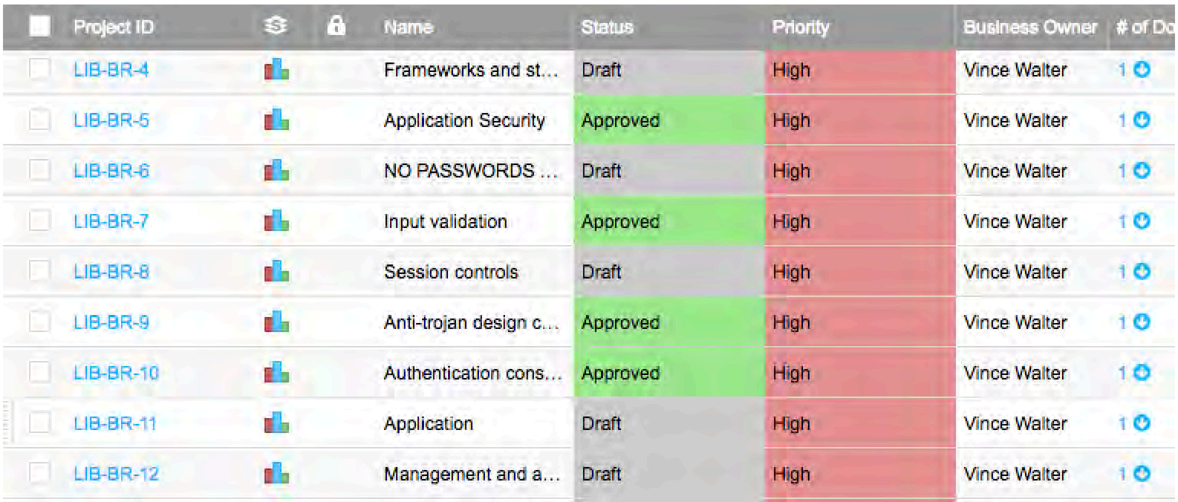


Your comment appears in the version history of the item and as an activity in the stream. A batch transition is the only way to add a version or notification comment.





3. The status change is shown for each item you transitioned.



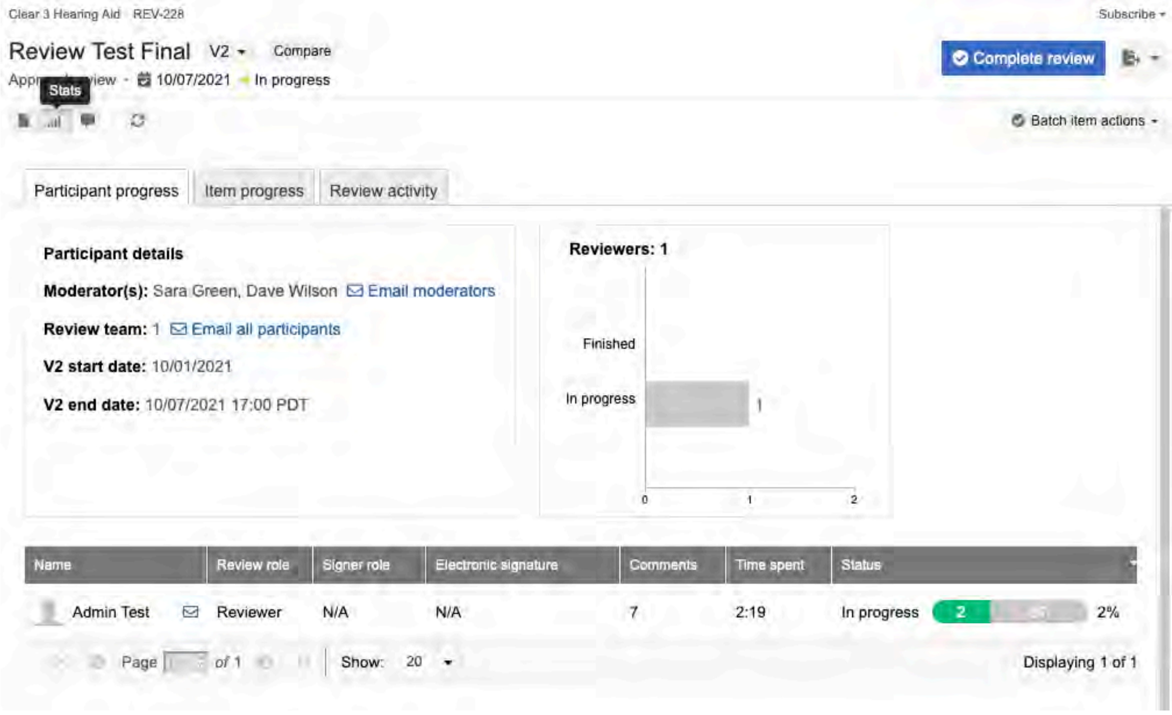
Use workflow to batch transition items in Reviews

With batch transitions, you can select multiple items of the same item type and transition them to a different workflow status.

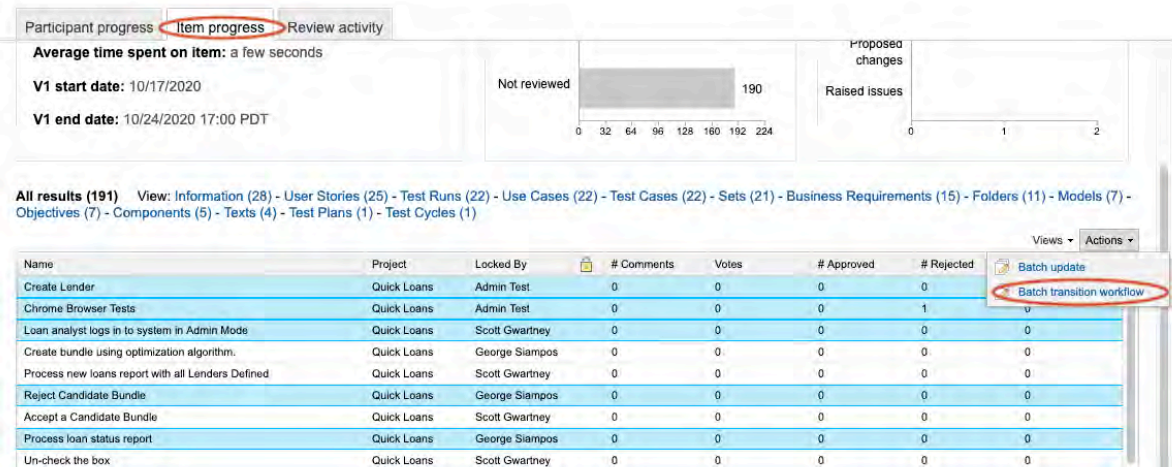
Important considerations

- The items you select for transition must be the same item type and workflow state.

1. When you're in a review, select **Stats**.

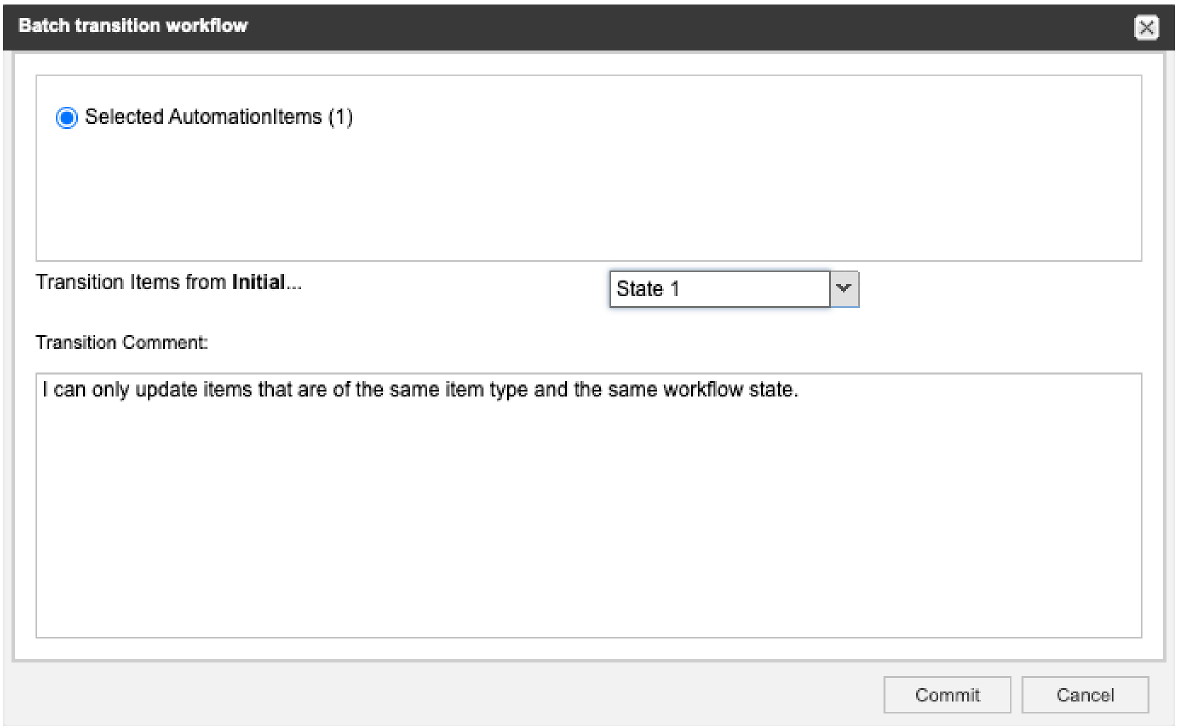


2. Scroll to the bottom of the page and select items of the same item type and workflow state that are to be transitioned. You can select multiple items by using **Shift** or **Ctrl** keys. Select **Actions** > **Batch transition workflow**.



> **NOTE**
> You can also batch update non-workflow fields, but you can't batch delete from here.

3. In the Batch transition workflow window, select the set of items you want to update and the intended workflow transition, then click **Commit**.



If the workflow doesn't have another transition state to select, you don't have permission or the item is locked. A pop-up window displays a warning that you can't proceed.

Lock items in a workflow

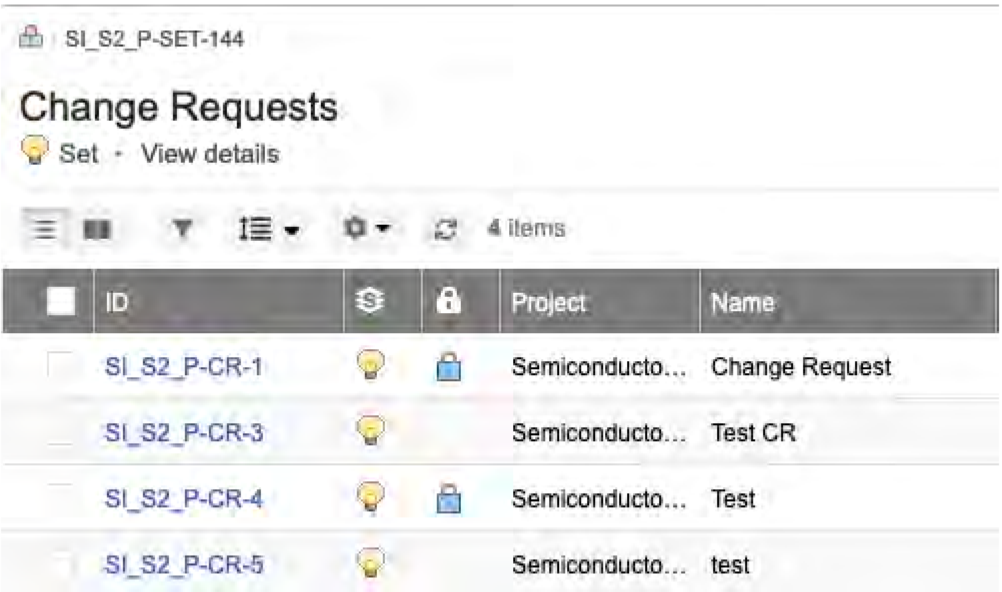
Locking items in a workflow can help avoid unwanted changes. For example, a project administrator might want to leave items unlocked while in "draft" status, but lock them when they reach "approved" status.

NOTE

You must have organization or project administrator permissions to configure workflow.

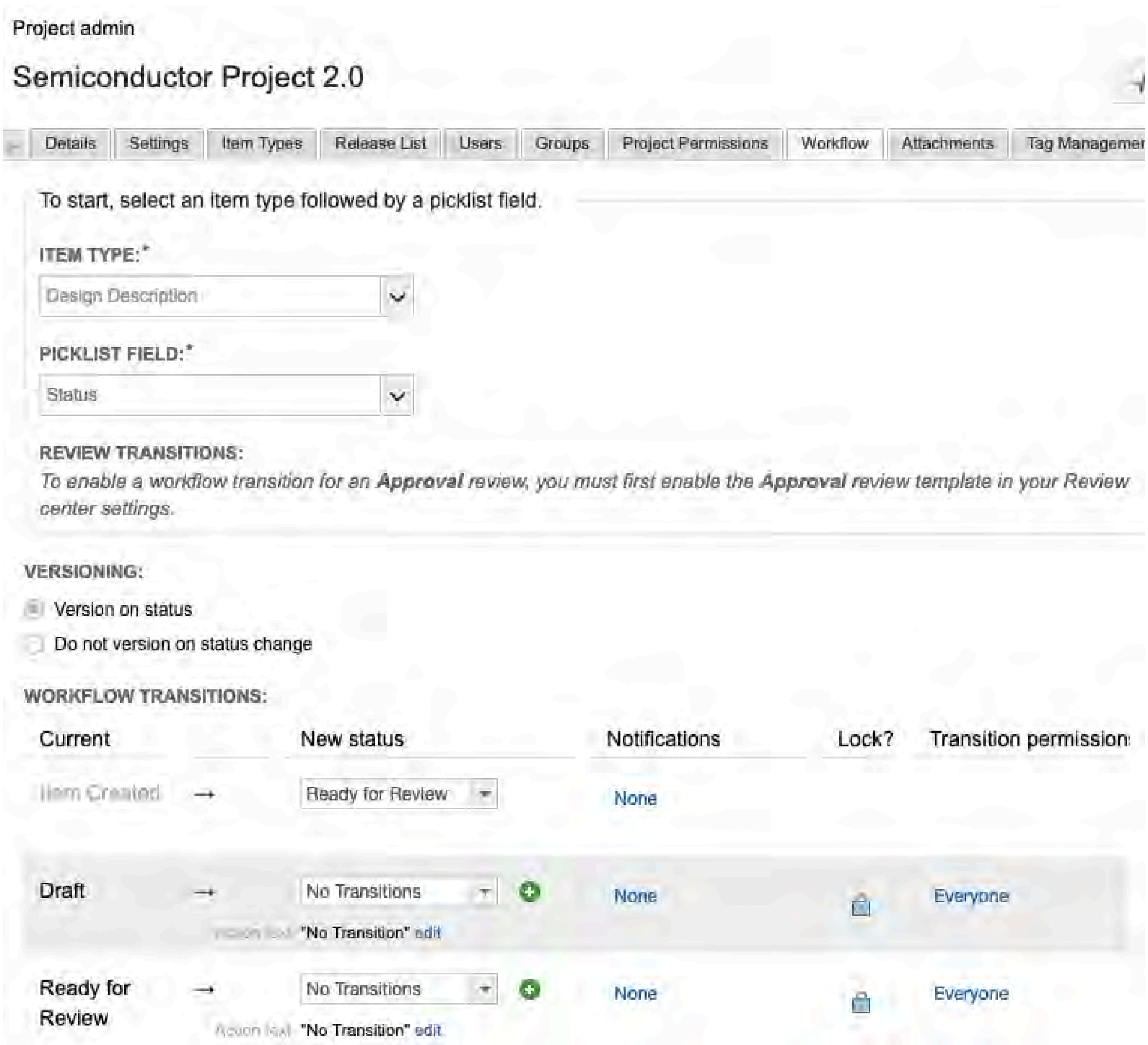
Items can also be automatically locked by the workflow [218]. These items show a gray lock after their name and a blue lock in List View.

System-locked items unlock when transitioned through the workflow or by an organization or project administrator.



To add an automatic lock to the workflow:

1. Select **Admin > Project > Workflow**.
2. For the item you want to lock, select **Override**.
3. In the **Lock?** column, select the lock icon to include (or remove) an automatic lock in the workflow.



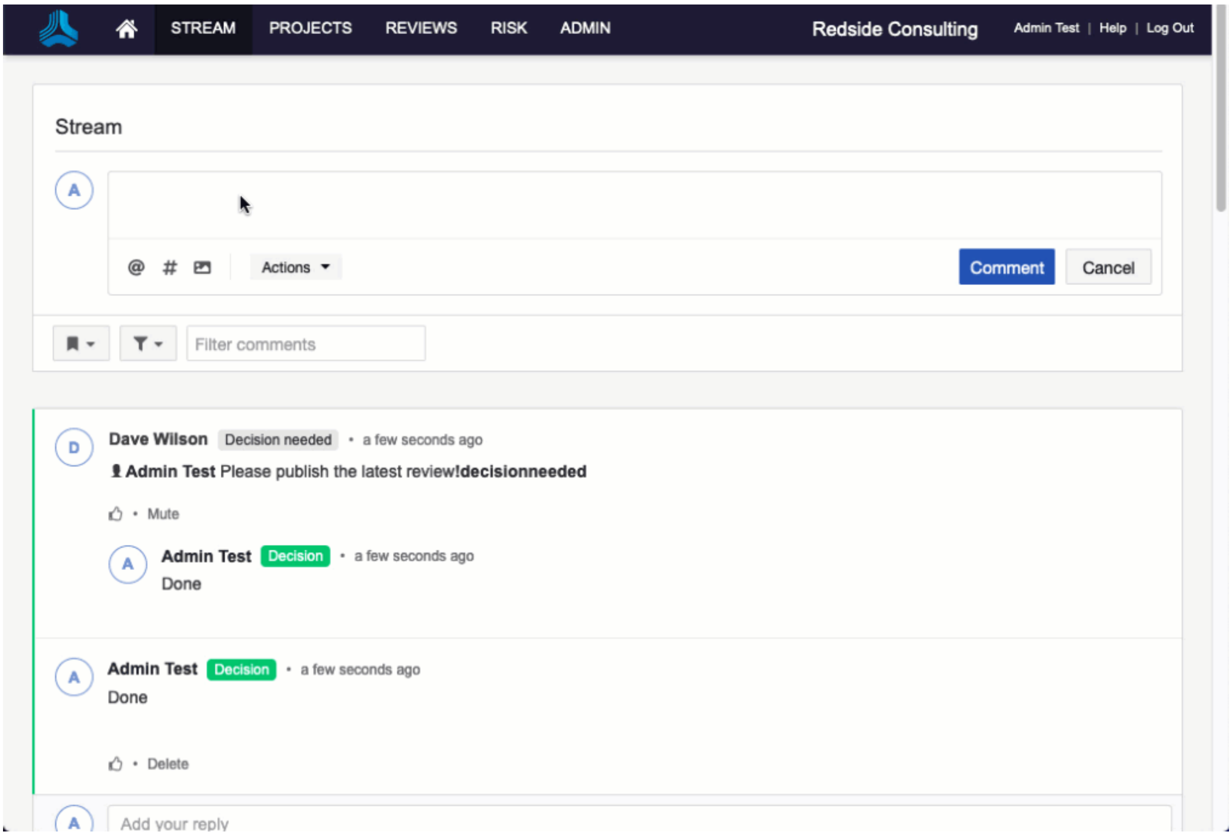
4. Click **Save settings**.

Stream — Staying connected

The stream is where you can see the most recent comments and activities of your Jama Connect project.

The stream is built on three basic activities:

- **Connect**
- **Communicate**
- **Collaborate**



Working with the stream

With everyone having the most up-to-date information through the stream, stakeholders stay informed and aligned.

You can:

- Include stakeholders in a conversation [233] by name or email.
- Keep up to date on the latest activities [230] for a project or item.
- Clarify conversations by using actions [237] like questions, decisions, or issues.
- Include whiteboards, prototypes, or other images [236].
- Filter the stream [239] to include only comments or activities that refer to a specific project, item, or person.
- View the stream across projects [244], at an item level [241], or at a project level [243].

Types of streams

Jama Connect includes streams for specific types of collaboration and activity.

Global Stream [226] — At this level, you see a collection of the most recent comments and activities.

Project and Item Activity Stream [226] — At this level, you see comments and activities for the entire project.

Item Collaboration Stream [227] — At this level, you can see comments and connected users related to a specific item.

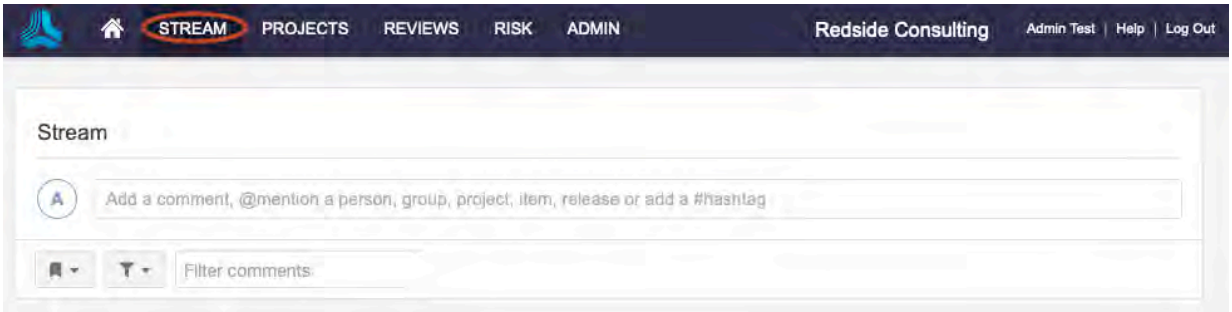
Baseline Activity Stream [228] — At this level, you can monitor activity, quickly find a baseline ID, or see if a signature is revoked.

Review Activity (Stats) [229] — At this level, you can see all activities for a review across versions, including when reviews were opened, closed, when new versions were published, or when signatures were added.

Admin Activity Stream [555]— At this level, you see an audit trail of updates made by organization and project administrators.

Global stream

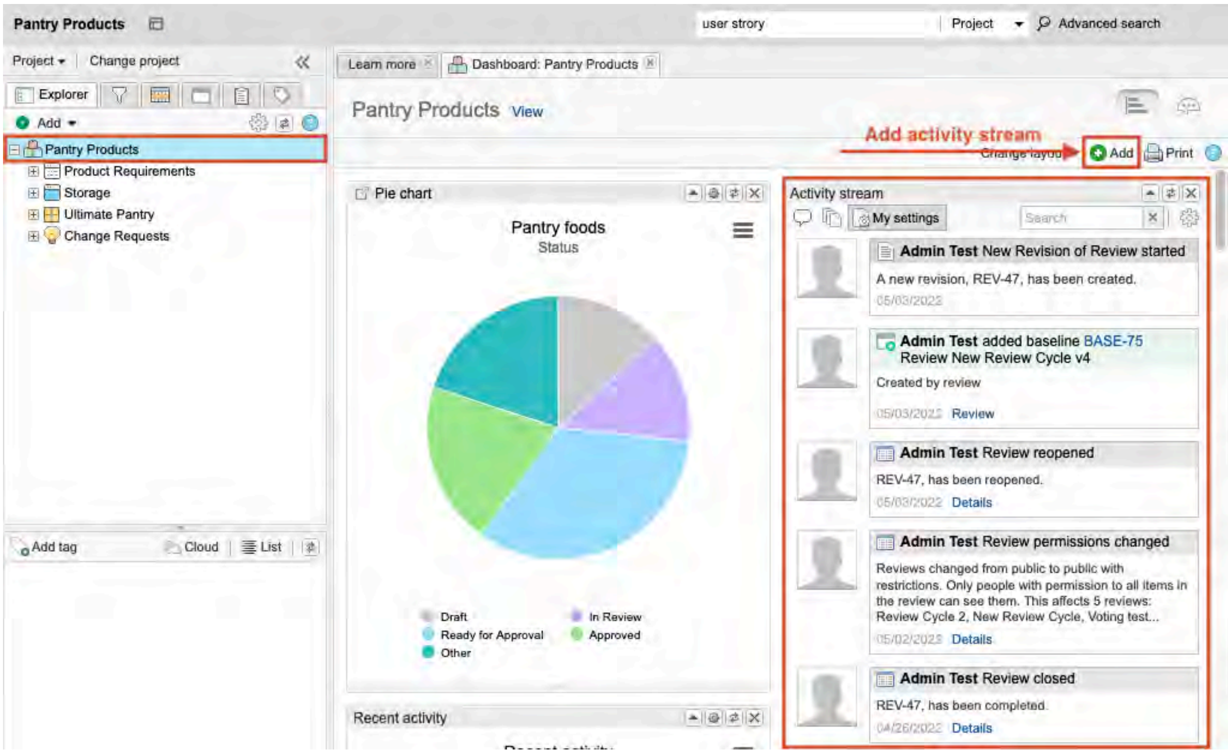
At this level, you see a collection of the most recent comments and activities.



How to access	From the header, select **Stream**.
What you can do	See the most recent comments related to an item.

Project activity stream

At this level, you see comments and activities for the entire project.



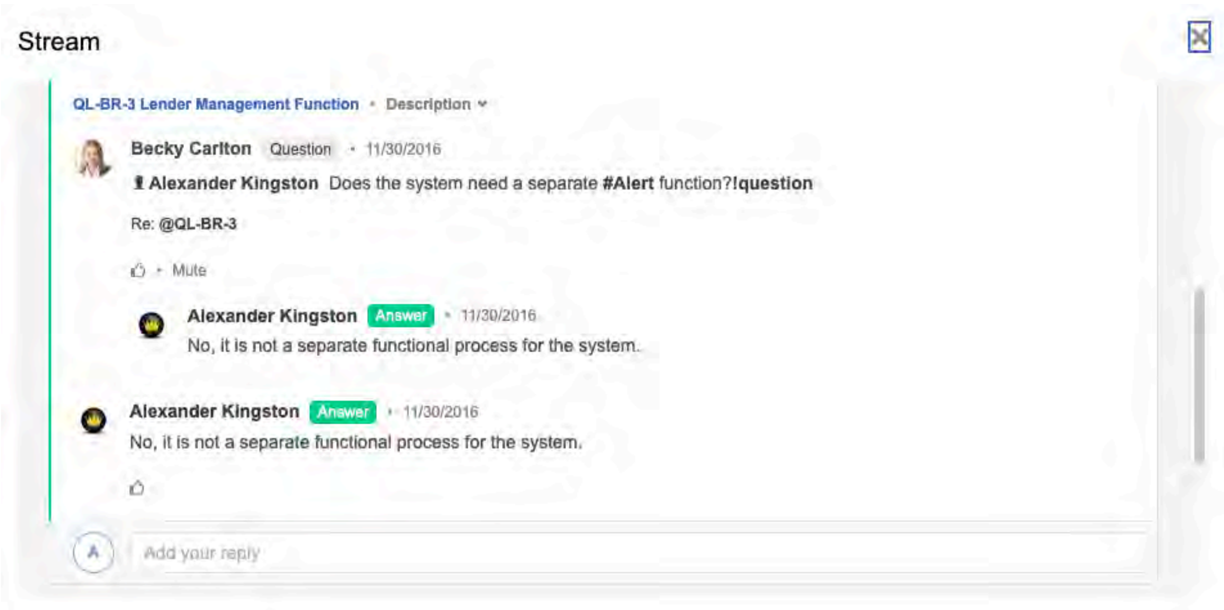
How to access	Select the project name to open the Activity Stream. If you don't see the Activity Stream, select the green **Add** button. In the window, select Activity stream, then click **Add**. You must have Project Admin permissions to do this.
What you can do	• See comments and activities for the entire project.

- See changes to items — Adding, editing, or deleting content from item fields, commenting on an item; using features like releases, baselines, or reviews that impact the item.
- Find out when a review is opened, revised, closed, reopened; when signatures are added or revoked.
- View items that are reused and synchronized and reuse details that appear in the activity stream. Users with read permission can view details about reused items and can select a link to view newly copied and synchronized items.
- From a project, select the Collaboration **Stream View** icon to see information only for that project.

Item collaboration stream

At this level, you can see comments and connected users related to a specific item.

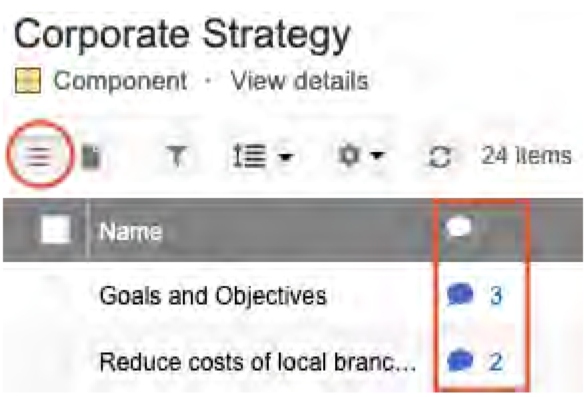
Here's an example of what the stream looks like in List View and Reading View:



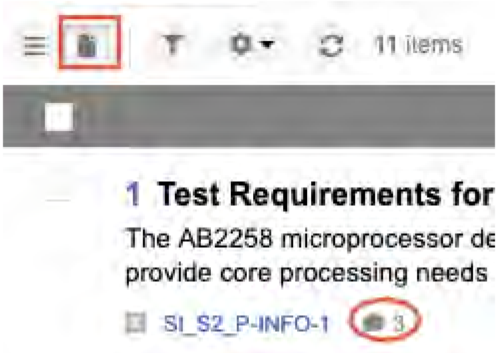
How to access

There are several ways to view the stream at the item level.

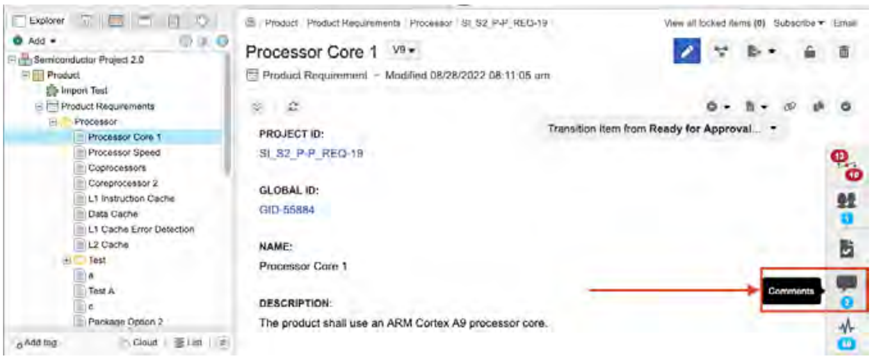
In **Project > List View**, select the speech bubble icon.



In **Project > Reading View**, select the speech bubble icon.



In **Project > Single Item View**, select the speech bubble icon.

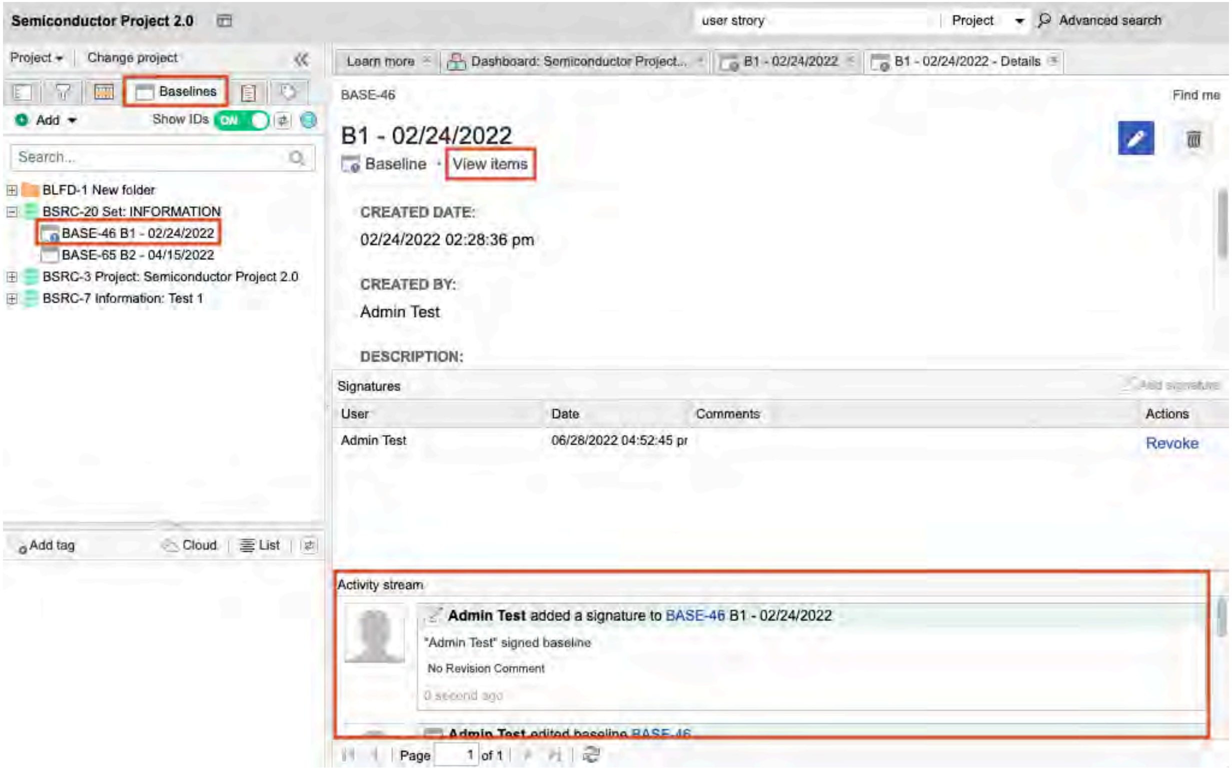


What you can do

- See comments and connected users related to a specific item.
- See changes to items — Adding, editing, or deleting content from item fields, commenting on an item; using features like releases, baselines, or reviews that impact the item.
- View items that are reused and synchronized and reuse details that appear in the activity stream. Users with read permission can view details about reused items and can select a link to view newly copied and synchronized items.

Baseline activity stream

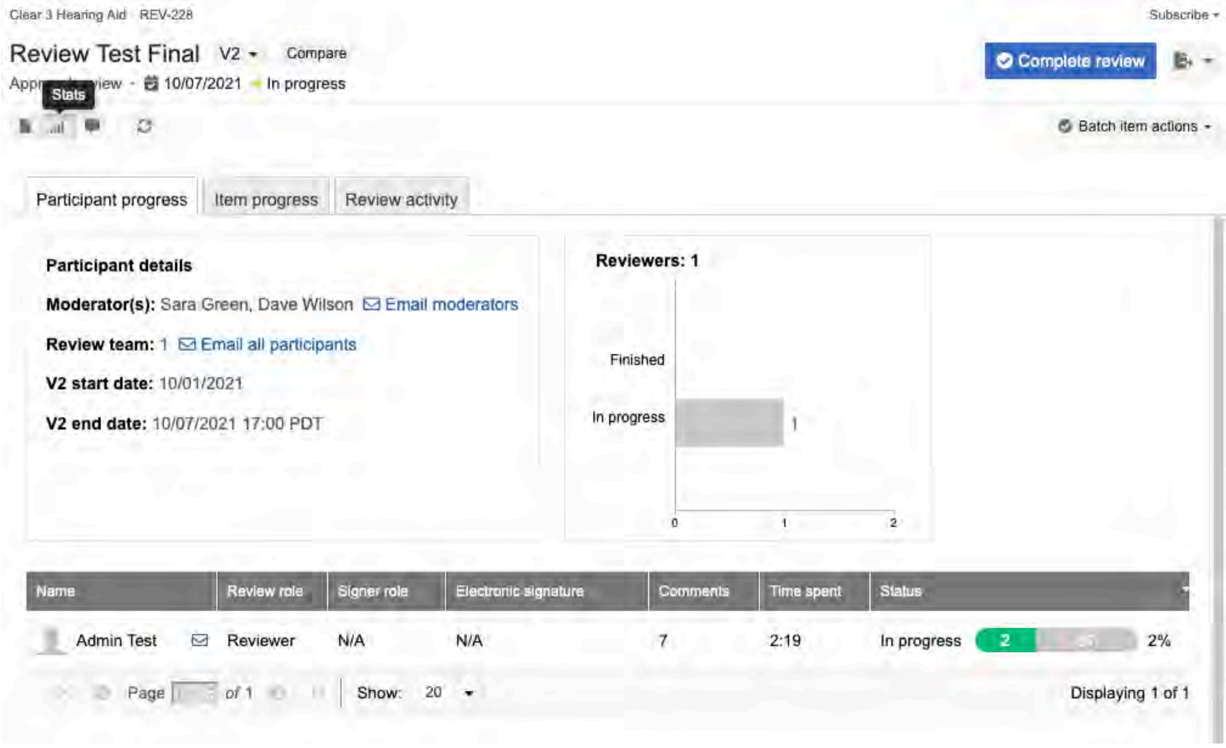
At this level, you can monitor activity, quickly find a baseline ID, or see if a signature is revoked.



How to access	Select the **Baselines** tab, baseline name, and **View details** (which changes to View items) to open the Activity stream.
What you can do	• Monitor activity, quickly find a baseline ID, or see if a signature is revoked. • View changes to baselines — Adding (manually or automatically with a review), editing, or deleting* baselines or sources. Visible to users with read-only permission. Baseline activity streams. *Deleting requires admin permissions. Baselines with e-signatures can't be deleted.

Review activity (stats)

At this level, you can see all activities for a review across versions, including when reviews were opened, closed, when new versions were published, or when signatures were added.



How to access

In the review, select **Stats** to open the activity page.

What you can do

- See all activities for a review across versions, including when reviews are opened, closed, when new versions were published, or when signatures were added.
- Find out when a review is opened, revised, closed, reopened; when signatures are added or revoked.
- See when items are sent for review.
- See all activity for a single review across revisions in the Review activity tab.

Activity stream

Activities are the recorded changes made to an item, including editing, commenting on, relating to other items, deleting, and restoring.

You can view activities at an item level [241] or a project level [243]. You can also view activities specific to different parts of Jama Connect, such as reviews [198] and baselines [274].

These are the types of activities that appear in the stream.

Activity type	Definition	Visible in...
Changes to items	Adding, editing, or deleting content from item fields; commenting on an item; using features like releases, baselines, or reviews that impact the item.	Project activity stream Item activity stream
Changes to baselines	Adding (manually [268] or automatically with a review [271]), editing, or deleting* baselines or sources. Visible to users with read-only permission. Baseline activity stream [274] shows all activity for a baseline.	Baseline activity stream
Reused and synchronized items	When items are reused and synchronized [298], details of reuse appear in the activity stream. Users with read permission can view details about reused items and can select a link to view newly copied and synchronized items.	Project activity stream Item activity stream
Comments	Comments related to an item or project. Review comments aren't included in activity stream.	Collaboration stream
Reviews	When review is opened, revised, closed, reopened; when signatures are added or revoked.	Project activity stream Review activity (stats)
	When items are sent for review, see all activity for a single review across revisions in the review activity [198] tab.	Review activity (stats)

* Deleting requires admin permission. Baselines with e-signatures can’t be deleted.

Comments

Comments are user-created messages that you can see in the stream or in reviews.

Comments are visible:

- At an item level [241]
- At a project level [243]
- In reviews [177]
- Across projects [244]

You can add and delete a comment as well as restore comments that you deleted. You can also add a hashtag (#) to a comment for filtering or add a reference to a specific person, project, or group.

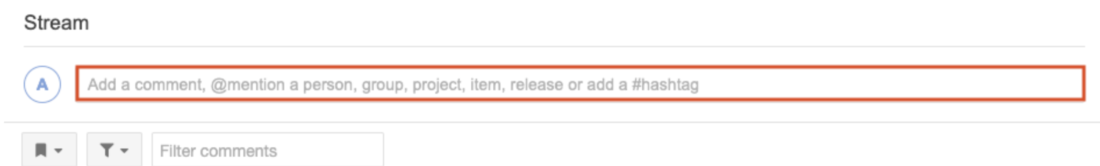
Add, delete, or restore a comment

All comments made in Jama Connect are displayed in the stream. You can see any comment you have permissions to view.

You can add comments, delete comments that you made, and restore comments that you deleted.

You can also restore comment threads or replies that you deleted, but only if they were associated with an item. You can't restore deleted comments that aren't associated with an item.

1. To add a comment to the stream, an item, or a project:
   1. Open the stream at an item level [241], project level [243], or across projects [244].
   2. Enter your comment:
      - **New comment** — In the Stream comment box.
      - **Replying to a comment** — In the reply box below the comment.

   3. (Optional) As needed, you can refer to a particular person, group, project or item [233], request or resolve an action [237], upload an image [236], or add a hashtag [232].

4. Select **Comment**.
2. To delete a comment:
    1. Select **Delete** below the comment.
    2. When prompted, click **Yes**.
3. To restore a deleted comment:
    1. In Single Item View, select the Activities widget to open the bottom panel.

    2. In the deleted comment, select **Restore**.

    3. When prompted, click **Yes**.

    The comment is restored and appears in the My Settings section.

Tips and more

When the discussion gets long, Jama Connect shows only the most recent comments. Select **View all replies** to expand the thread and show all comments. Select **Hide replies** to collapse the thread.

Add a comment hashtag

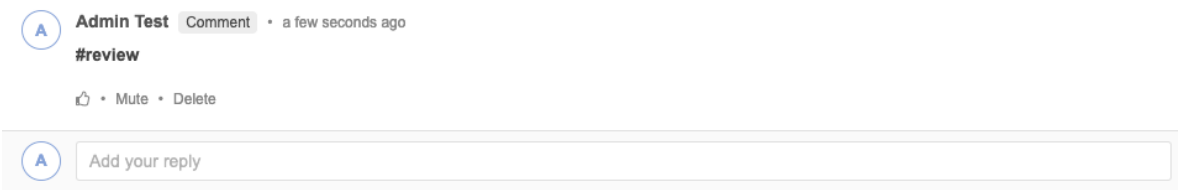
By adding a hashtag to your comments, you can quickly filter the stream by selecting the hashtag itself.

Tags begin with the # character and are lowercase letters with no spaces.

To add a comment hashtag:

1. In the Stream comment box, type **#** followed by the tag.
   For example, #alert or #review.

2. Click **Comment**.



The comment appears in the stream thread.

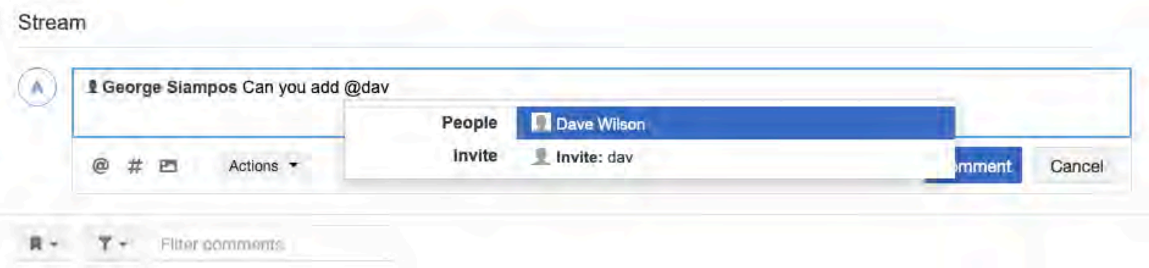
> **NOTE**
> Comment tags are different from item tags. Comment tags are added to comments and can be used to filter the stream, but item tags are added to an individual item and can be used to search or group items.

Use @mention to add a reference

To increase the efficiency and usability of your comments, you can refer to specific items, projects, people, or groups with @mention.

Anyone you include in a comment receives an email notification [235].

1. Open a list of names (items, projects, people, groups) using one of these methods:
   - In the comment field of the Stream window, type **@** followed by the first few letters of the name.



   - Below the comment field of the Stream window, select **@**.

2. Scroll through the list to select the name you want to include in your comment.

The name that you included appears as a bold link in your comment.

Add someone from outside Jama Connect

You can add a commenter who is not part of Jama Connect. They get a temporary license [585] that allows them to view the comment threads to which they were invited. They can also see descriptions of referenced items in the thread.

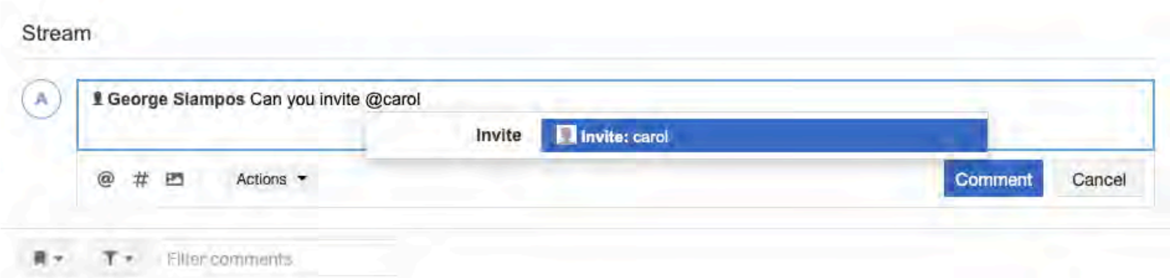
Once you send the invitation, the person can optionally set up a user login and password, which is then available in the @mention drop-down list. The license expires after 30 days —and the user is locked out of Jama Connect — unless it is changed to a permanent one. They can still be @mentioned in stream if the license has expired, but they can no longer access the conversation or items.

NOTE

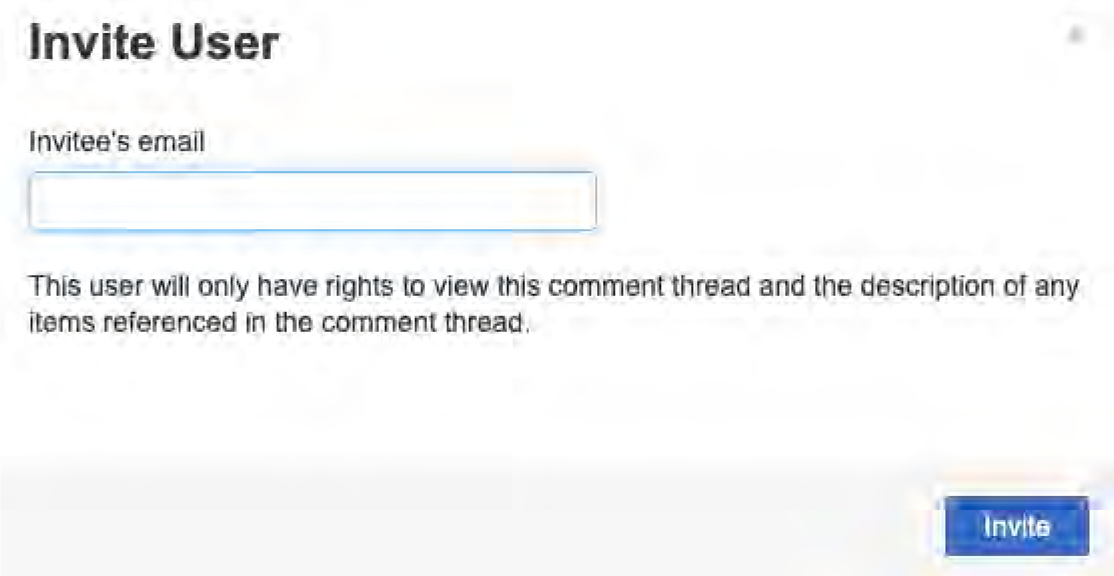
An administrator can grant invited users permission [664] to view additional project data.

To give stream access to someone outside of Jama Connect:

1. In the comment field of the Stream window, type **@** followed by the user's email address to trigger an invitation, then select the blue **Invite bar** that appears.



2. In the **Invite User** window that opens, enter the full email address and click **Invite**.



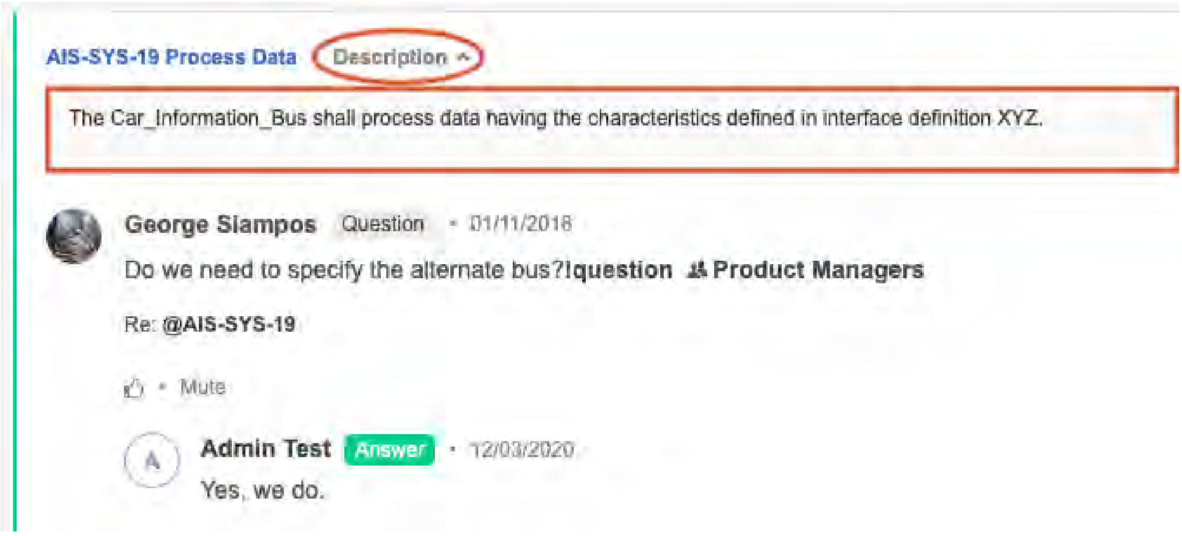
3. Type your note and click **Comment**.

The person you invited now automatically receives stream emails [235].

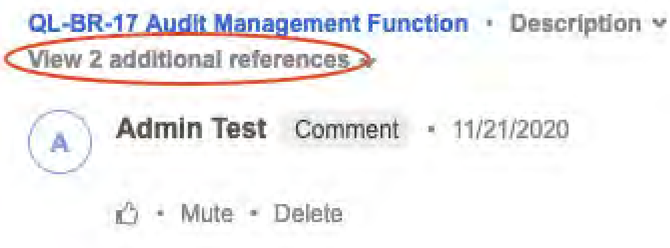
View referenced projects and items

When a project or item is referenced with @mention, you can view it in its activity stream.

1. To view a reference to a:
   - **Project** — Open the project's activity stream.
   - **Item** — Open the item's activity stream in Single Item View.
2. (Optional) In the activity stream, select **Description** to see details about the referenced project or item.



3. (Optional) Select **View additional references** to see more than the first displayed reference.



Email notifications for the stream

Jama Connect includes several types of email notifications, including ones initiated in the stream. This information applies only to stream email notifications.

Adding participants

When you comment on an item or project in the activity stream, you can add people to a comment by using @mention. This includes people who aren't current Jama Connect users.

When you receive stream notifications

Initial email — When your name is added to a comment in the stream.

Update email — When anyone replies to a comment thread where your name was added.

New comments — If you subscribed to the item.

Tips and more

- If you are in multiple groups that are mentioned in a comment, they receive only one email for each comment or reply.
- When participants receive an email because they're mentioned in the stream, they can comment directly to the thread by replying to that email. A copy of the comment is emailed to everyone on the thread.
- Email updates contain links to see the entire comment thread in Jama Connect.

NOTE

Replying to a thread by email works for comment threads in the stream, but not for comments in reviews.

- To stop receiving email notifications for a comment thread where you're mentioned, go to that thread in the stream and select **Mute**. Do this for each thread that mentions you.

NOTE

Once you mute notifications for a thread, you only receive future emails if you're specifically mentioned in a comment or if you're a member of a group that's also referenced.

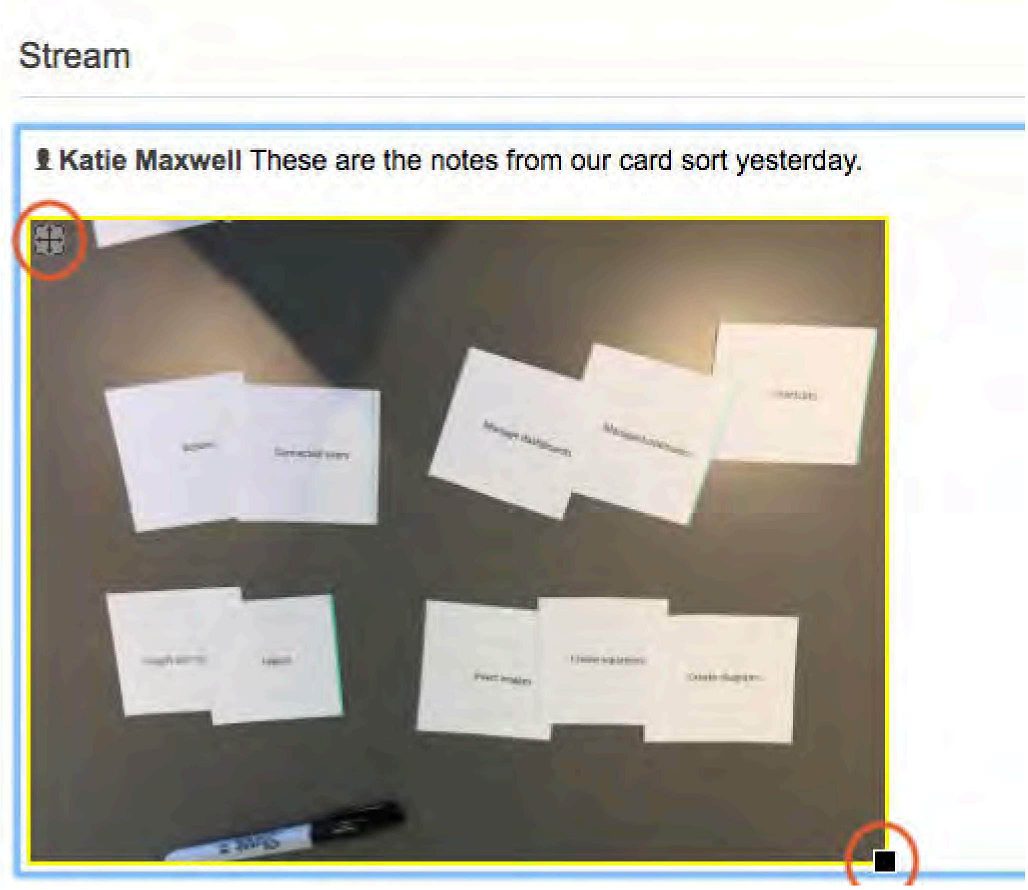
Upload images to the stream

You can include useful photos (meeting notes, white board drawings, or prototypes) in the stream by uploading images.

Here's how:

1. In the Stream window, select the **Image** button.

2. Select the image file you want to upload, then select **Open**.
   The image appears in the stream comment field.
3. (Optional) To resize the image, hover over the bottom right-hand corner of the image, grab the handle and drag the corner to the required size.
4. (Optional) To move the image in the comment, hover over the top left-hand corner of the image and grab the handle. Drag the image to the correct location in the comment.



5. Select **Comment**.

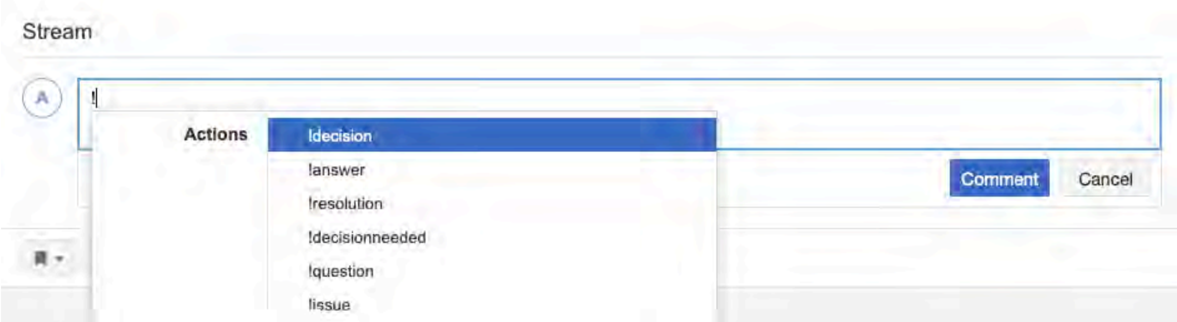
The image you uploaded now appears in the stream.

Request or resolve an action

Actions can highlight important conversations in the stream by identifying a comment as one of three types: decision, question, or issue.

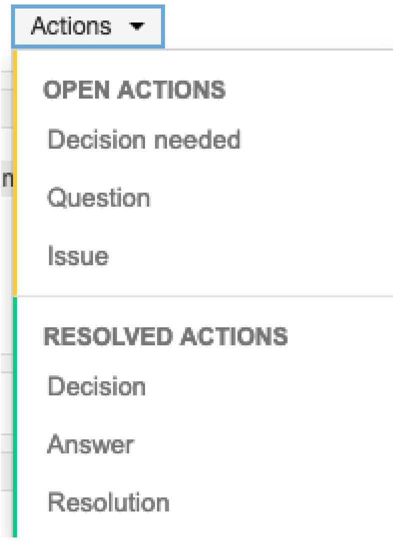
Actions also help clarify your request to someone you include in your comment. You can also filter by actions [239] to see what questions, issues, or decisions need attention.

1. To initiate a request, choose from the **Actions** menu or type a **!** in the comment box and choose an action from the menu that appears.



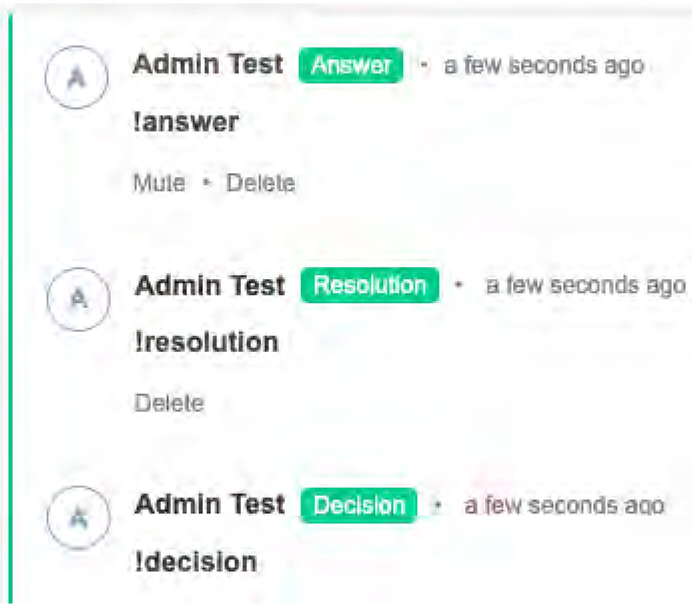
When a comment contains a request action, the left edge of the comment is outlined in yellow and a blue button invites other users to resolve the action (Answer question, Make decision, Resolve issue).

2. To respond to a request, choose from the **Actions** menu: **Decision**, **Answer**, or **Resolution**.

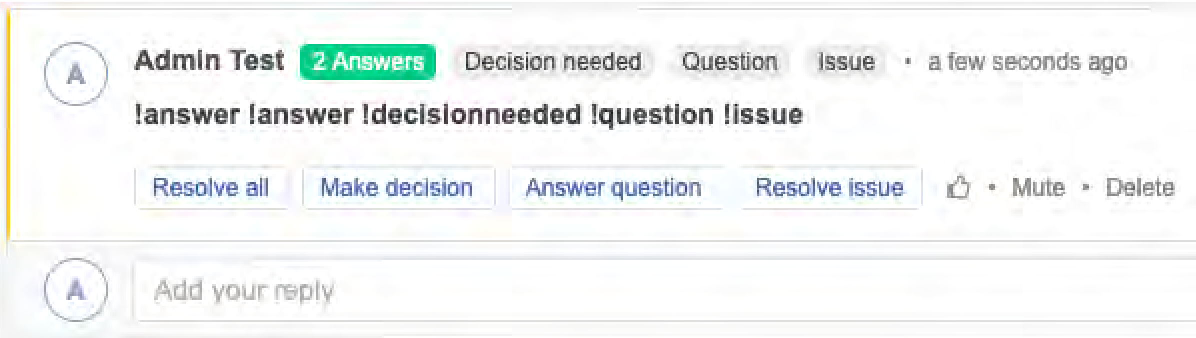


Tips and more

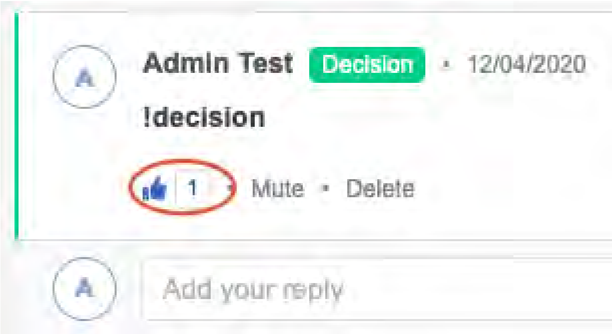
- Resolved actions are displayed in green.



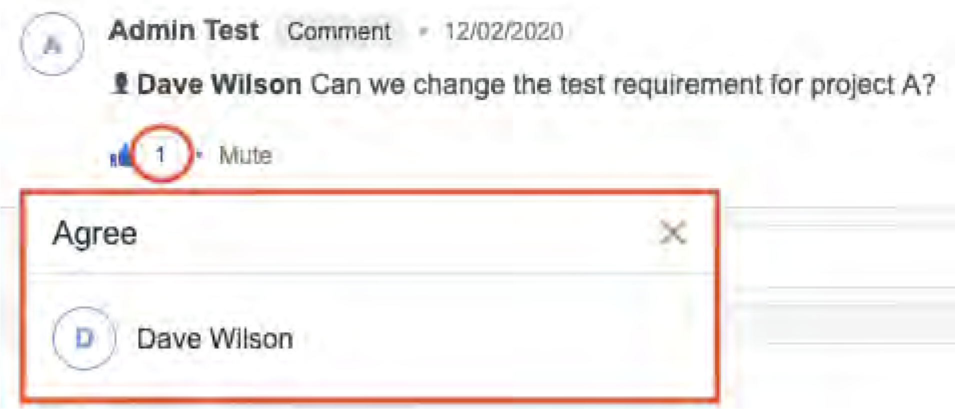
- Open actions are displayed with a yellow border.



- Use the like icon when you agree with a comment and want to track how team members vote on a decision.



- Select the number next to the like icon to see who agreed.



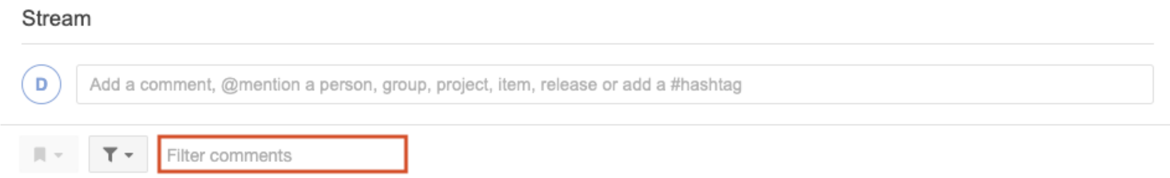
Filter the stream

Filters let you see only comments that matter to you. When you create a filter, it remains active only if the session is active.

If you want to reuse a filter, you can save it. You can also bookmark a filter in your browser to view later.

> **NOTE**
> You can create custom filters [241] at an item level to filter comments or activities in the stream.

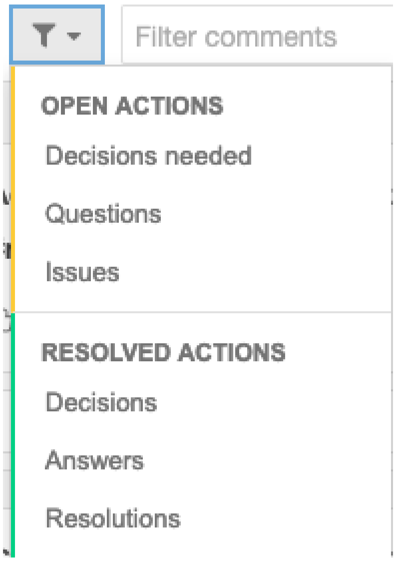
1. Open a Stream window and select the **Filter comments** field.



2. Enter one of the following and select from the displayed menu to create a filter:

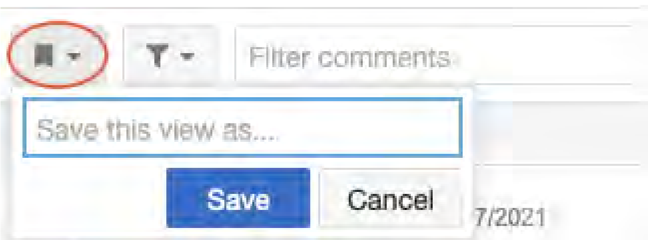
#	Displays a menu of hashtags.
@	Displays a menu of users.
!	Displays a menu of actions.
Keyword	Displays a menu of frequently used names for people, groups, projects, or other content types.

3. Select an option from one of the menus or press **Enter** if you entered a new keyword.
4. (Optional) To filter by actions, select the **Quick filters** menu. These filters are additive so you can filter on multiple actions.



The filters you choose appear below the comment field. The stream is refreshed with each filter you add or delete.

5. (Optional) To save a filter, select the bookmark button and enter a name for the filter, then select **Save**.



6. To set a quick filter from a comment, select people, projects, items, or other boldfaced references in the comment. These filters aren't additive.
7. (Optional) To share a filter with another Jama Connect user, copy the URL of your filtered results and send it through email.

View collaboration stream at an item level

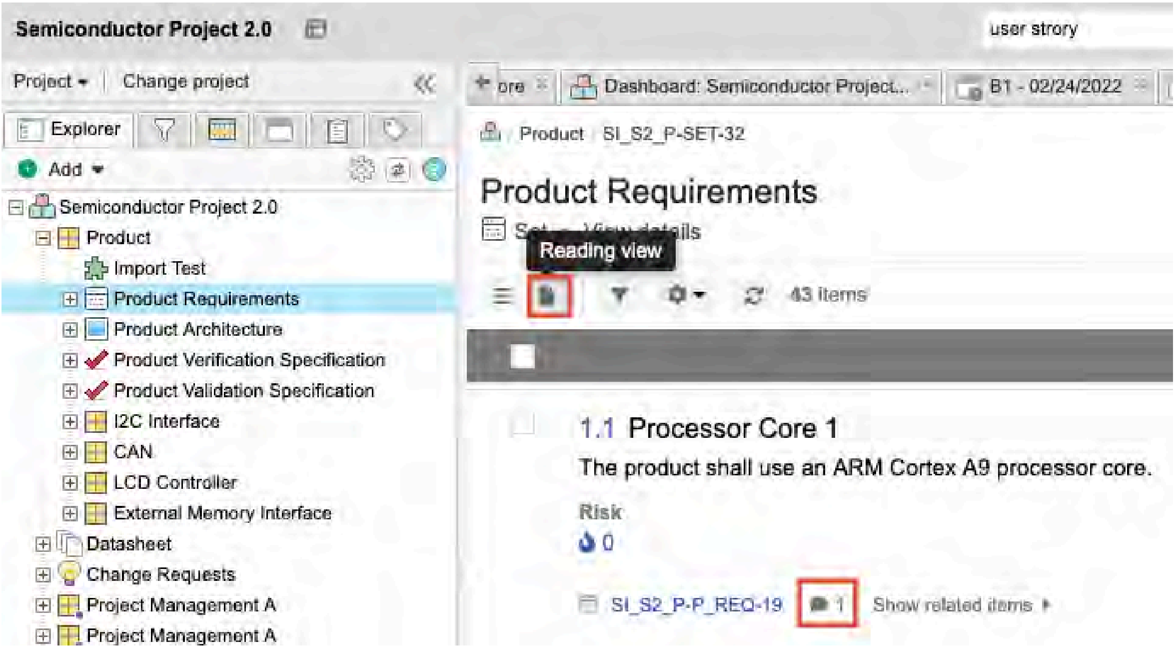
You can view the stream [224] comments and activity for an item, for example, to see all "Open" (unresolved) questions about that item. A speech bubble icon includes a number that indicates how many comments were recorded for that item.

> **NOTE**
> The side toolbar is only visible if it is configured by the organization administrator [599].

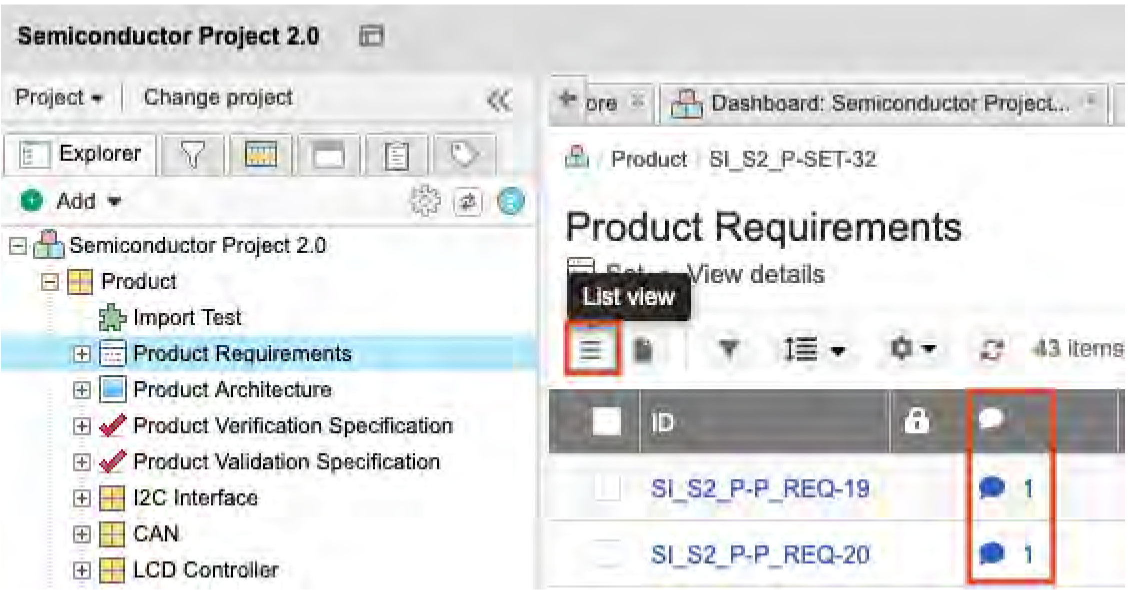
To view comment stream

1. Select an item's speech bubble icon using one of these methods:

   Projects > Reading View

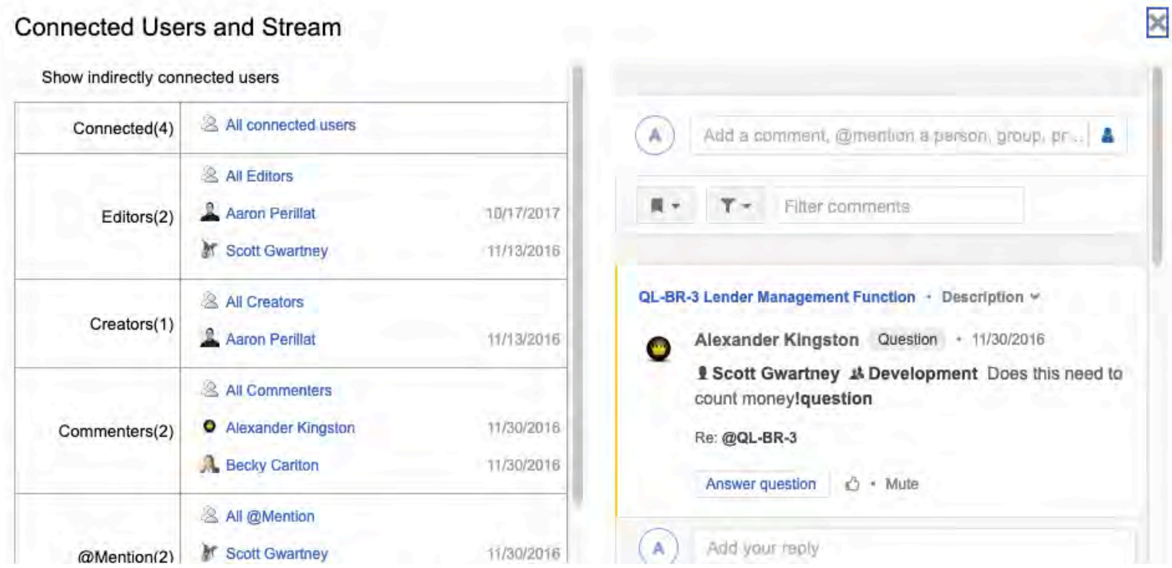


   Projects > List View



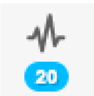
Single Item View > Side toolbar

2. In the window that opens, select the silhouette icon to view comments, add comments, or view connected users.



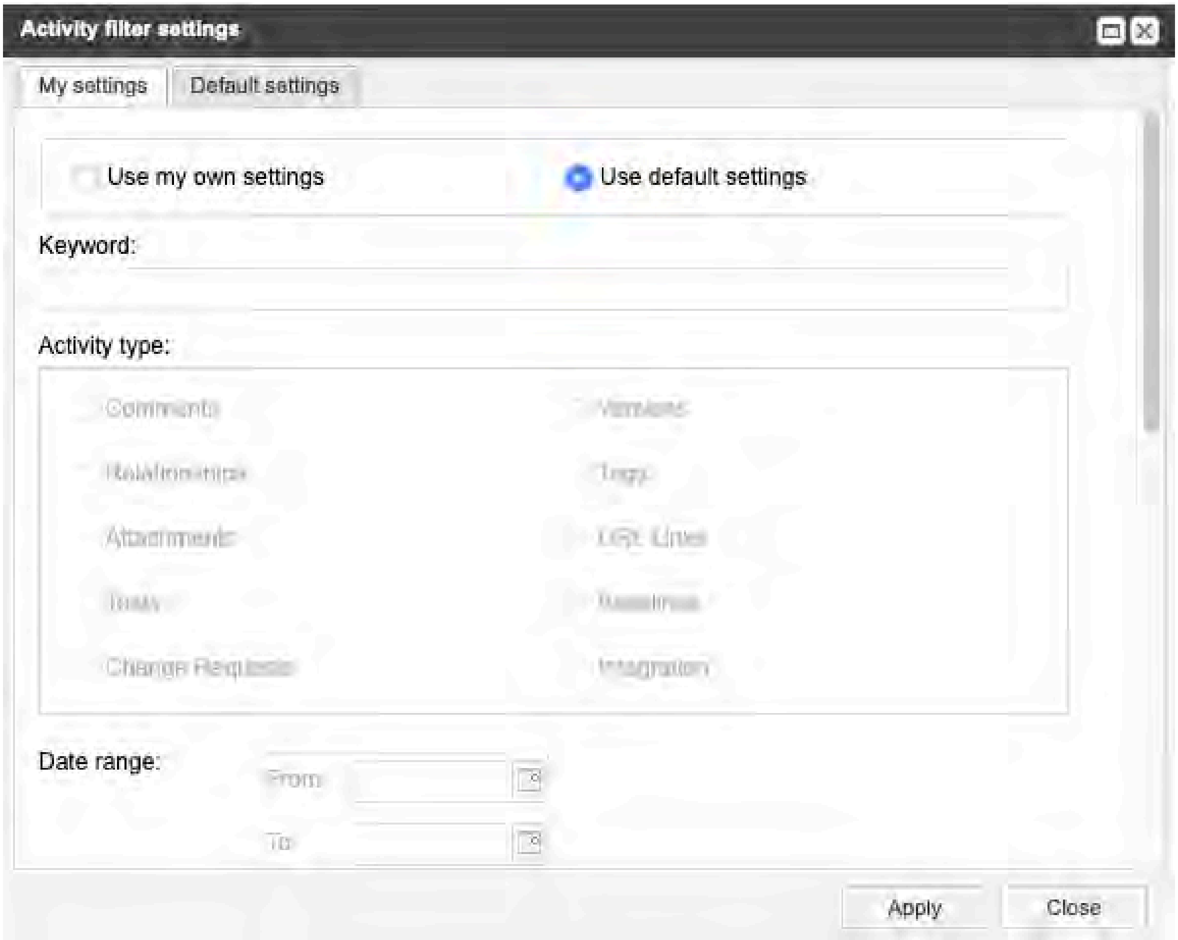
To view comment and activity stream

1. In Single Item View, select the **Activities** button on the side toolbar to see the history of an item. The number on the button indicates the item's activity.



2. The bottom panel displays the stream and all activities (such as edits, reviews, relationships) and comments for this item. From here you can add a comment, search the stream with a keyword, refresh the display, or hide the panel.

3. Use the three buttons in the top left corner of the stream to:
   - **Display active comments**
   - **Display all activities**
   - **Apply a custom filter to activities**
4. Select the settings (gear) icon in the top right corner to open the Activity Filter Settings window.
5. Keep the default settings or customize keywords, activity type, date range, or item type, then select **Apply**. Your custom filters are saved across items.



View collaboration stream at a project level

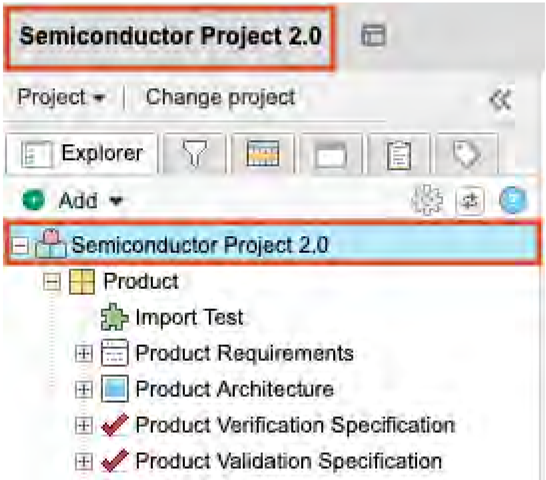
You can view the stream [224] at a project level, you see comments [231] and activities [230] for the entire project in the project dashboard.

Important considerations

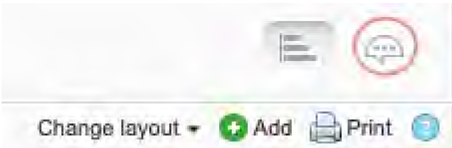
- Any comments you enter at this level automatically refer to the selected project.
- If the stream doesn't already appear on your project dashboard, a project or organization administrator can add it.

Open the project dashboard using one of these methods:

- **Explorer Tree** — Select the main project level in the Explorer Tree or select the name of the project just above the Explorer Tree.



- **Comment bubble** — Select the comment bubble in the upper right navigation.

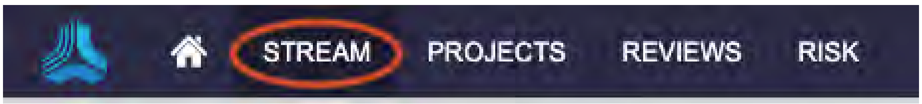


View global stream across projects

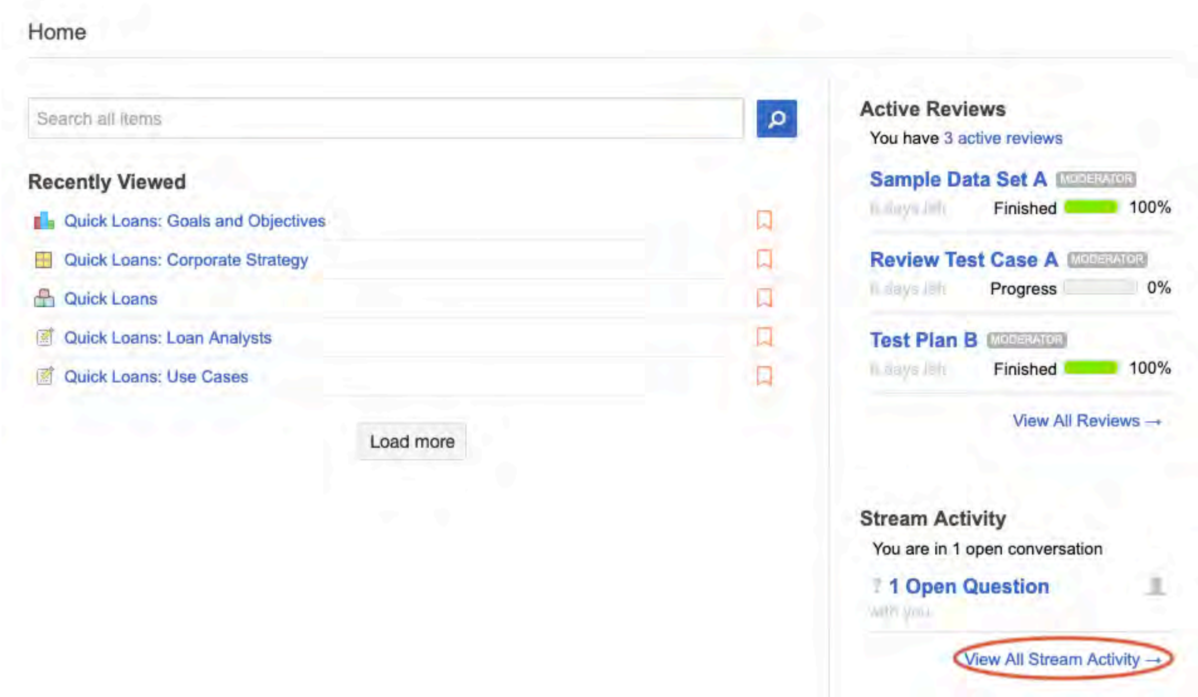
View the stream across projects when you want to do a search or filter projects. For example, if you want to see open questions that are assigned to you for all projects.

To view the stream across projects, use one of these methods:

- Select **Stream** from the top navigation. This displays all comments from all projects, starting with the most recent.



- Select **View All Stream Activity** from the home page to see all comments across projects.



View connected users

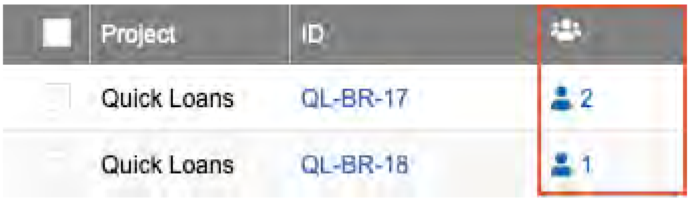
A connected user is a creator, editor, or someone who has commented, subscribed, or been @mentioned on an item.

View connected users to see who is connected to items. For example, if you're changing a requirement and want to see who might be impacted by a change.

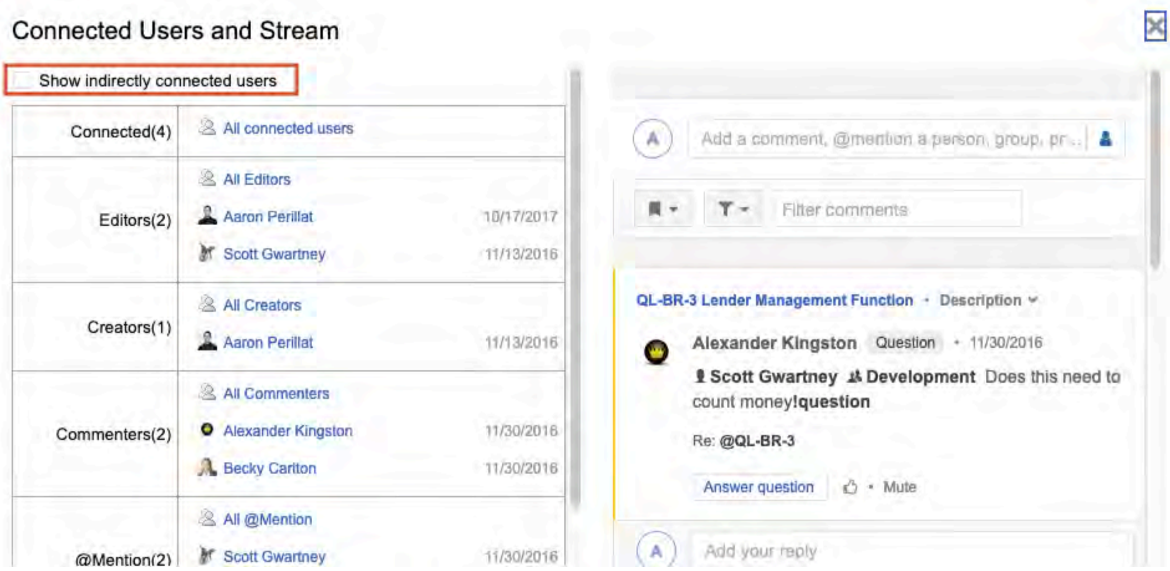
To view connected users:

1. Open the Connected users window using one of these methods:
   - **Single Item View** — Select the connected users icon.

   - **List View** — Select the user icon.



2. Select **Show indirectly connected users** to view users who are interested in items related to this one.



3. (Optional) To toggle the related users on or off, select the circle icons at the top of the list.

You can now view the list of connected users and make comments in the stream.

Electronic signatures

An electronic signature is a way for project participants to virtually approve reviews, baselines, and electronic documents like test plans and requirements.

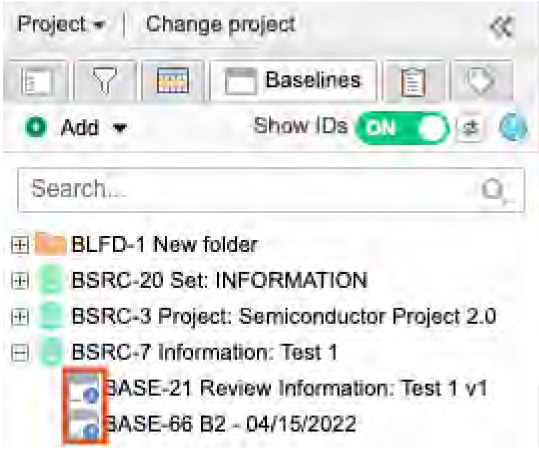
Review moderators can require a signature for a review and add a signer role. All review signatures carry the Signature meaning: "I approve the content of this review."

Electronic signatures consist of a username and password. They are captured with a time and date stamp and an audit trail. Each signature is tied to the individual user, as well as to a baseline or review where the signature was added.

Electronic signatures, time stamps, signer roles, and signature meaning are all visible in review activity [198].

Things to know

- For easy identification, a baseline with an electronic signature includes a blue dot and white exclamation mark in the baseline tree.



- As the moderator, you can add a signer role or a reason for signing to a review signature [181], but not to a baseline signature.
- Signatures are enabled by default, but can be disabled by a system administrator.
- Electronic signatures depend on the authentication system your organization is using. Authentication properties can be configured by a system administrator.
- You can't delete a review with an electronic signature, or a baseline created from a review with an electronic signature.
- You can revoke your signature if it was signed in error or something needed to change. Select **Revoke** to cancel your signature. Only the user who signed the baseline can remove their signature. When revoking a signature, you can leave a reason for revoking, which appears in the activity stream as a comment.

- As an approver, you can reopen a review that you signed, but this revokes your signature.
- To see a review that was signed, look in the participant progress [196] or review activity [198] tab.
- Self-hosted customers can't edit a baseline that is signed.

NOTE

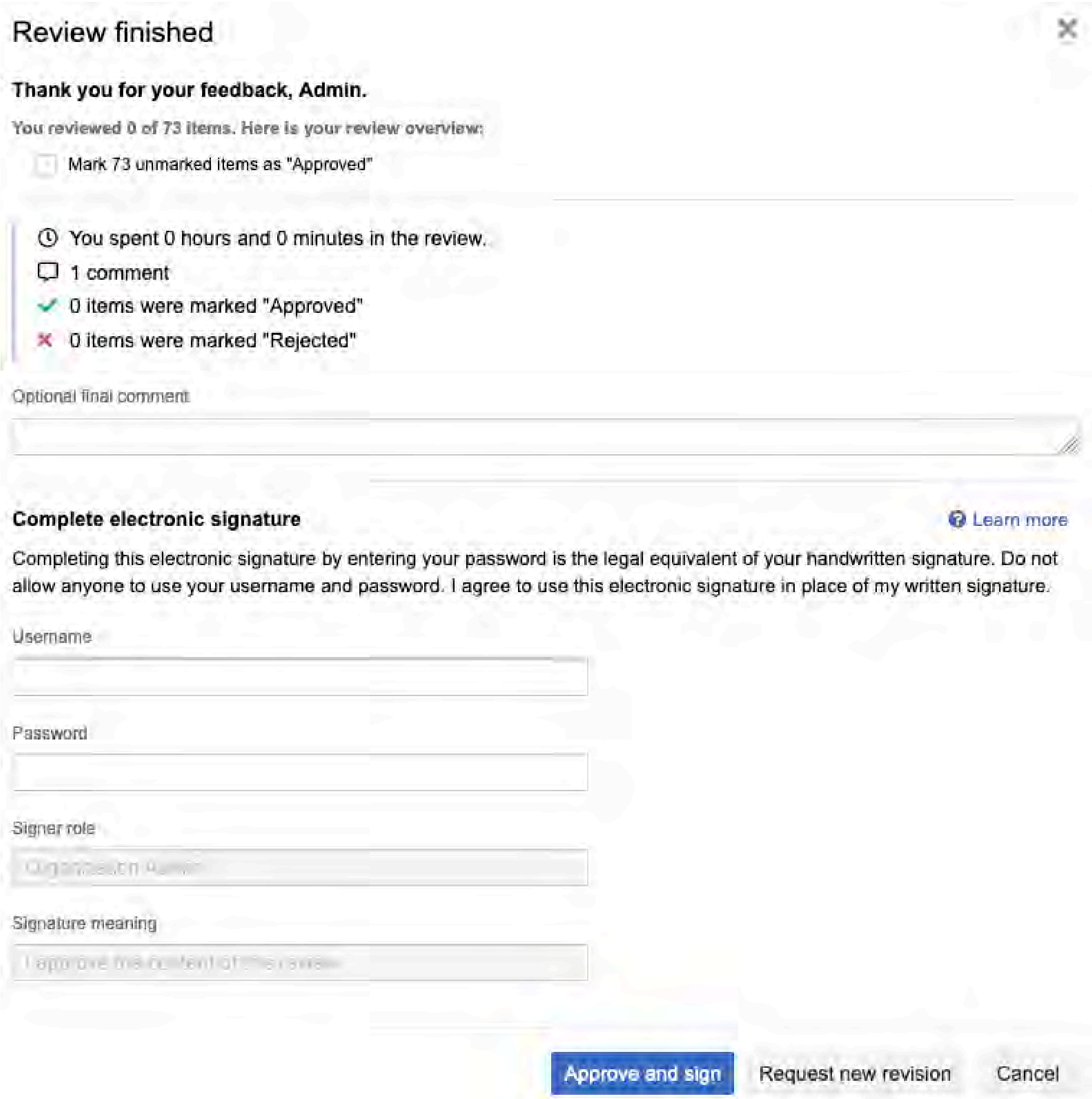
You can't delete a review with an electronic signature, or a baseline created from a review with an electronic signature.

Electronic signatures depend on the authentication system your organization is using. Authentication properties can be configured by a system administrator.

Sign a review electronically

If a review requires an electronic signature, you are asked to add a signature when you finish a review as an approver.

1. In the **Review finished** window, enter your username and password as your electronic signature. If your organization uses SAML, the SAML authentication window opens, where you enter your username and password.
2. Select **Approve and sign** to complete the review.

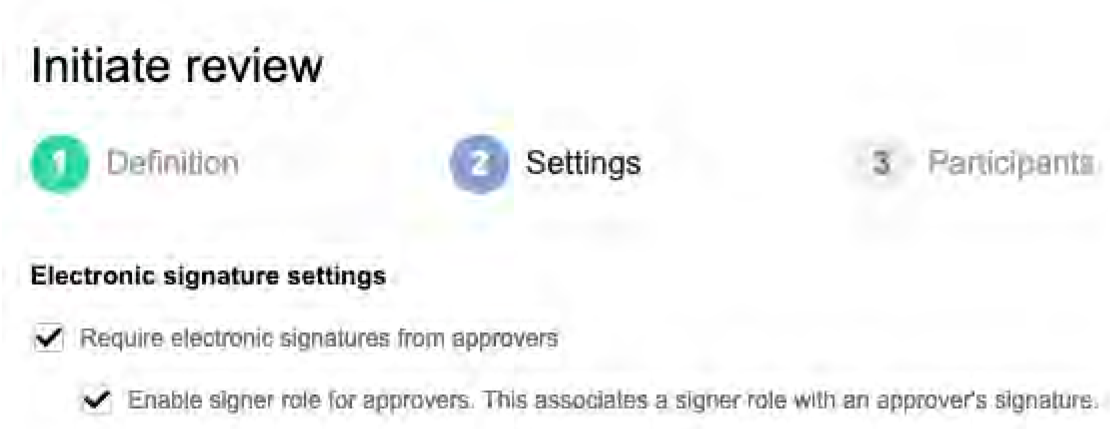


Add signer role

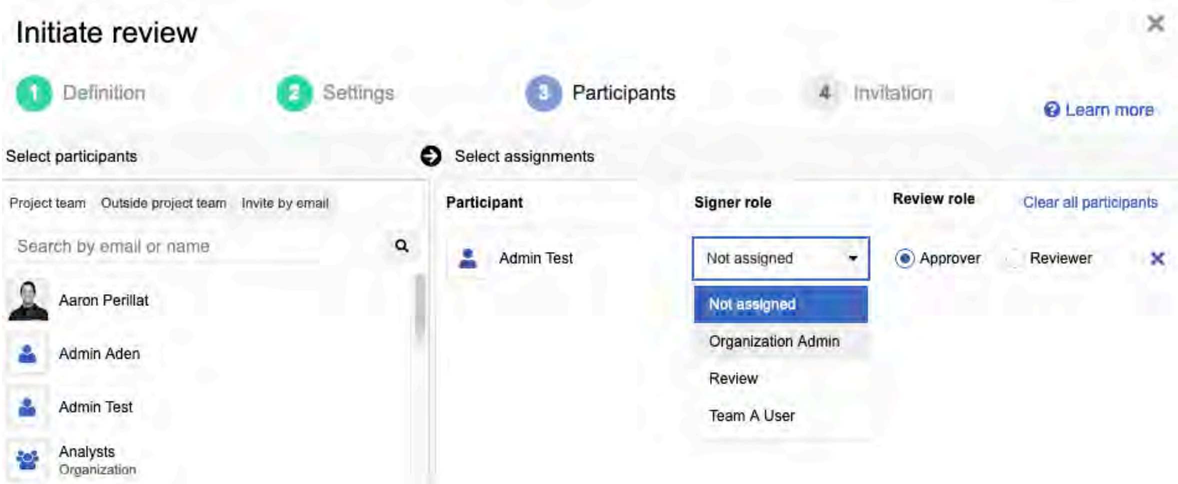
As a moderator, you can enable the signer role for other approvers. This allows them to associate their role with their signature. Signer roles are created from user group names.

If your moderator is inviting a user from outside of Jama Connect, they must log in and register before you can assign them to a group. After your organization or project admin adds them to a group, the moderator can edit the review to give them a signer role.

1. Initiate a review [159].
2. Make sure electronic signatures and signer roles are enabled in settings [162].



3. To invite participants [166], select the user, then use the **Signer role** drop-down menu to assign a signer role.



- If the user belongs to multiple groups, you can choose their role as signer from multiple options.
- If they don't belong to any groups, their role is "Not assigned."
- To add a signer role, create a user group [576] with a name that indicates the role you want to represent (for example, QA, Business Analysts, Security). Be sure the person you want to assign the role to belongs to that group.
- If you select a group in the participants panel, select **Add all users**. The signer role defaults to the name of that group.

4. Click **Initiate review**.

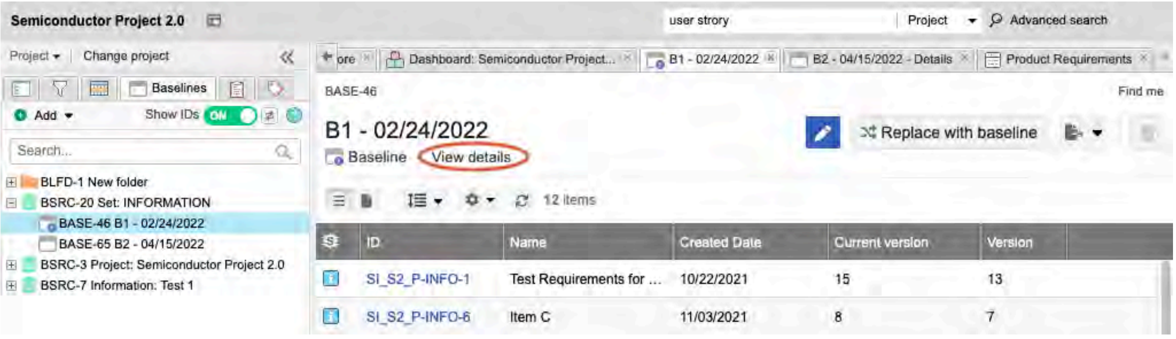
Approvers assigned a signer role are notified of their role in their email invitation [165].

> **TIP**
> After a review is signed, anyone with permission to a review can view signer roles that were used for a signature under review activity [198].

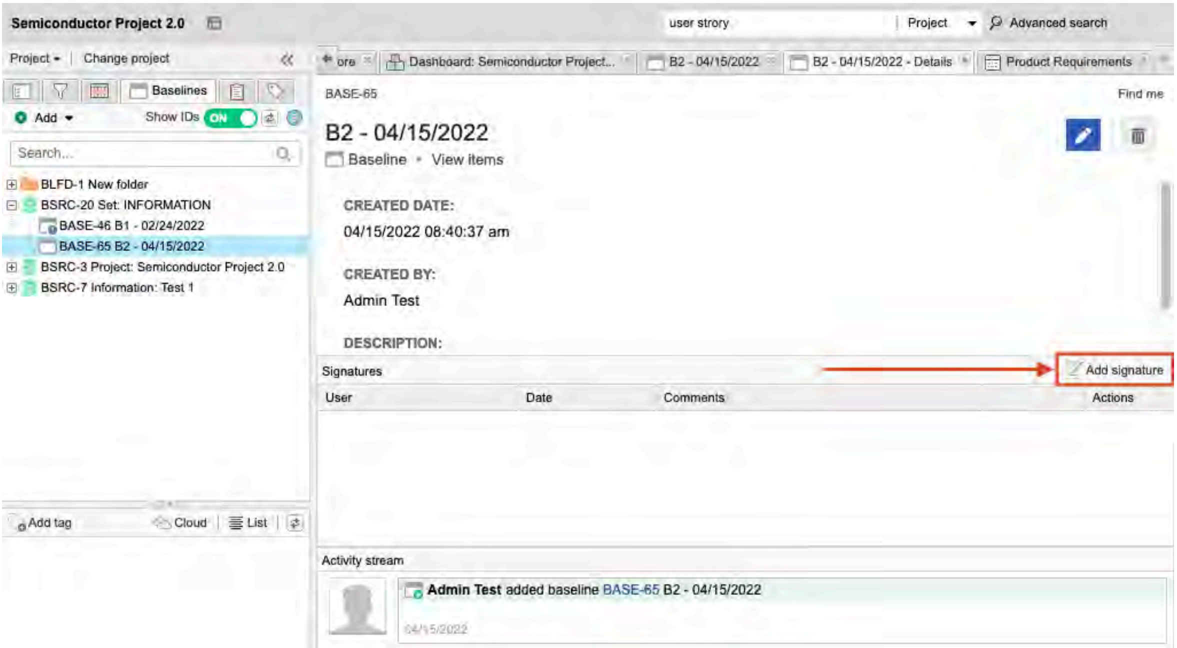
Sign a baseline electronically

If your business process dictates that signatures must be applied to collections of data such as baselines, electronic signatures can be associated directly with a specific baseline. Signatures can also be captured and associated with a baseline if signatures are collected during a review.

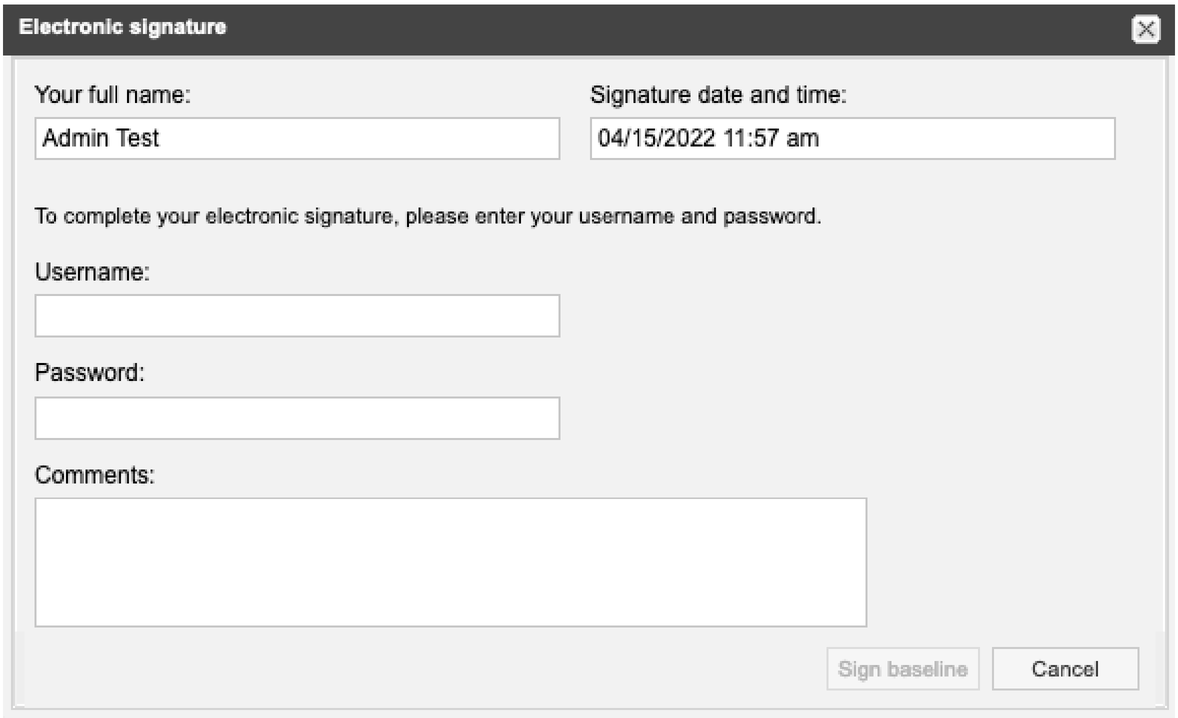
1. In the Explorer Tree under the **Baselines** tab, select the baseline you want to sign, then click **View details**.



2. Select **Add signature**.



3. In the **Electronic signature** window, enter your username, password, and any optional comments, then click **Save**. Username and password must match that of the logged in user.
   If your organization is using SAML for authentication, you are asked to select **Sign baseline**, then enter your username and password to authenticate your signature.


Electronic signature
Your full name:
Admin Test
Signature date and time:
04/15/2022 11:57 am
To complete your electronic signature, please enter your username and password.
Username:
Password:
Comments:
Sign baseline
Cancel

Managing your content

Content in Jama Connect uses an *item-based approach*, where items are the major building blocks for your content. Managing your content includes planning, organizing, and tracking progress and impact.

- Item versions [251] — Each time you change an item, a new version is created. You can compare versions [253] and make a past version current [252].
- Change requests [256] — Change requests are items that call for a change to a product or system.
- Releases [260] — A release is a group of items that are developed together and mapped to a specific completion date.
- Baselines [263] — A baseline in Jama Connect is a snapshot of your project at a point in time.
- Coverage and Traceability [279] — Coverage is the extent to which items are validated by another item. Traceability shows the relationship between items that depend upon and define each other.
- Reuse and synchronization [298] — With reuse [300] you can duplicate supporting information for any item, container of items, or even a project. With synchronization [307] you keep items continuously in sync.
- Exports [321] — Select the data you want to export directly to Word [323] or Excel [324].

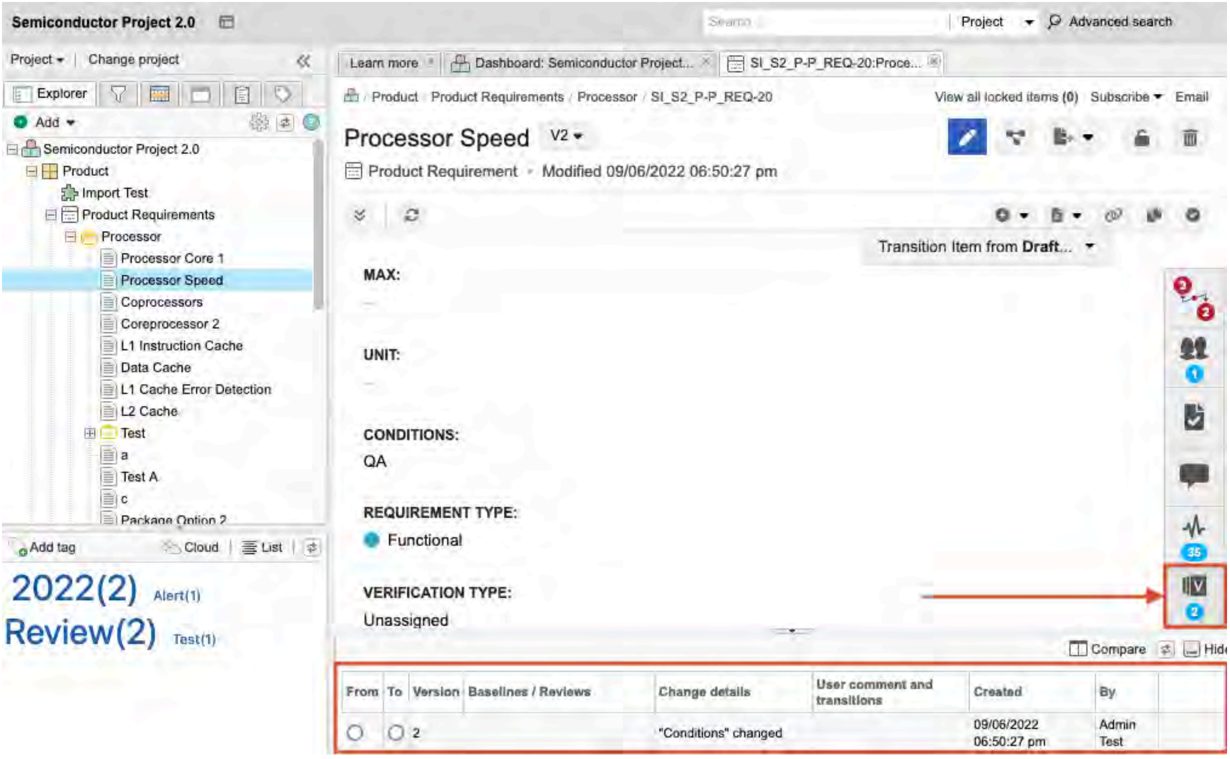
Item versions

A new version of an item is created each time you change a field value for that item.

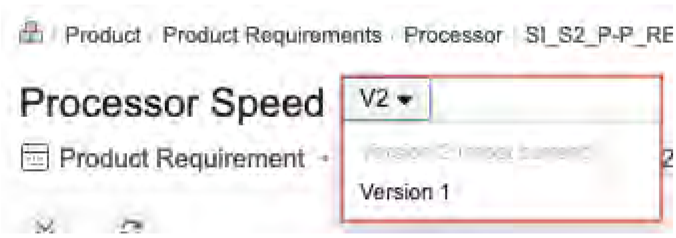
When you view item versions, these details are visible:

- Baselines and reviews that include the specific version of that item.
- Automatically generated change details.
- User comments applied by the person who made the changes.
- Date when the item was changed.
- Name of the person who made the changes.

To view an item's versions, click the **Versions** widget in the side toolbar, which opens the bottom panel. There you can compare versions [253] or make a past version current [252].



The current version number appears next to the item name. From the Version drop-down menu, select the version of the item you want to view.



Change the current item version

When you make a past item current, the system creates a new version with field values identical to the version you chose. This preserves a past version if you need to revert to it.

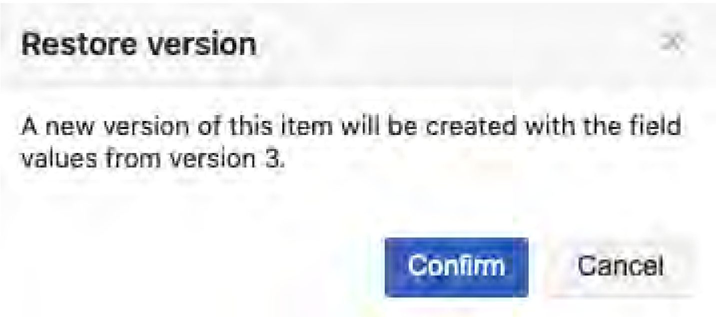
Important considerations

- Past versions of a test cycle can't be made current.
- Pick list values that existed when the previous version of the item was active are restored, even if a value was removed.
- For items that were converted from one type to another, you can't use the **Make Current** option to revert to the previous item type.

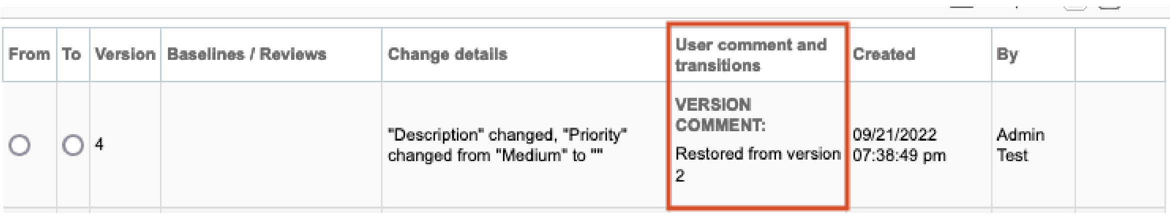
To change the current version:

1. In Single Item View, click the **Versions** widget to open the bottom panel [56].
2. In the row with the version that you want, click **Make Current**.

3. In the Restore version window, click **Confirm**.



The screen is refreshed and a note appears in the column **User comment and transitions**.



Compare versions of an item

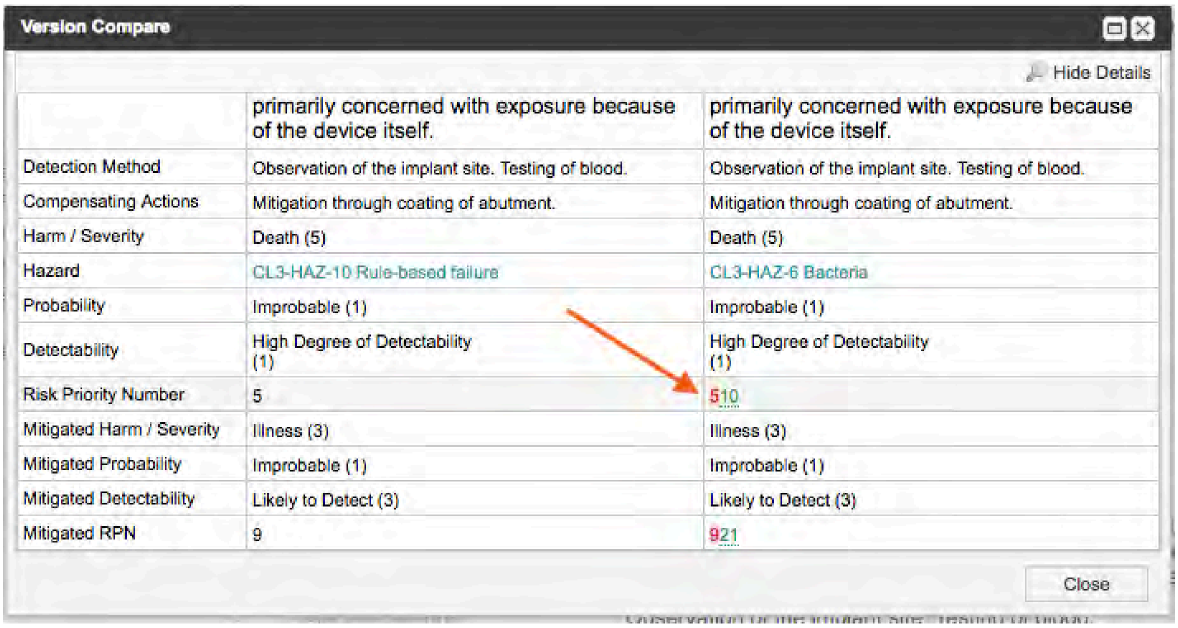
You can compare different versions of an item to track changes.

1. Click the **Versions** widget to open the bottom panel in Single Item View [56].
2. Select the two versions you want to compare, using the buttons in the From and To columns, then click **Compare**.

In the Version Compare window:

- Selected **From** version is on the left.
- Selected **To** version is on the right.
- Changes are displayed inline.
- Deleted text is red and highlighted.
- Added text is green and underlined.

> **TIP**
> Select **Hide Details** to see a side-by-side view of the versions without the colored inline changes. Jama Connect highlights the entire field where the versions differ.



View previous versions of an item

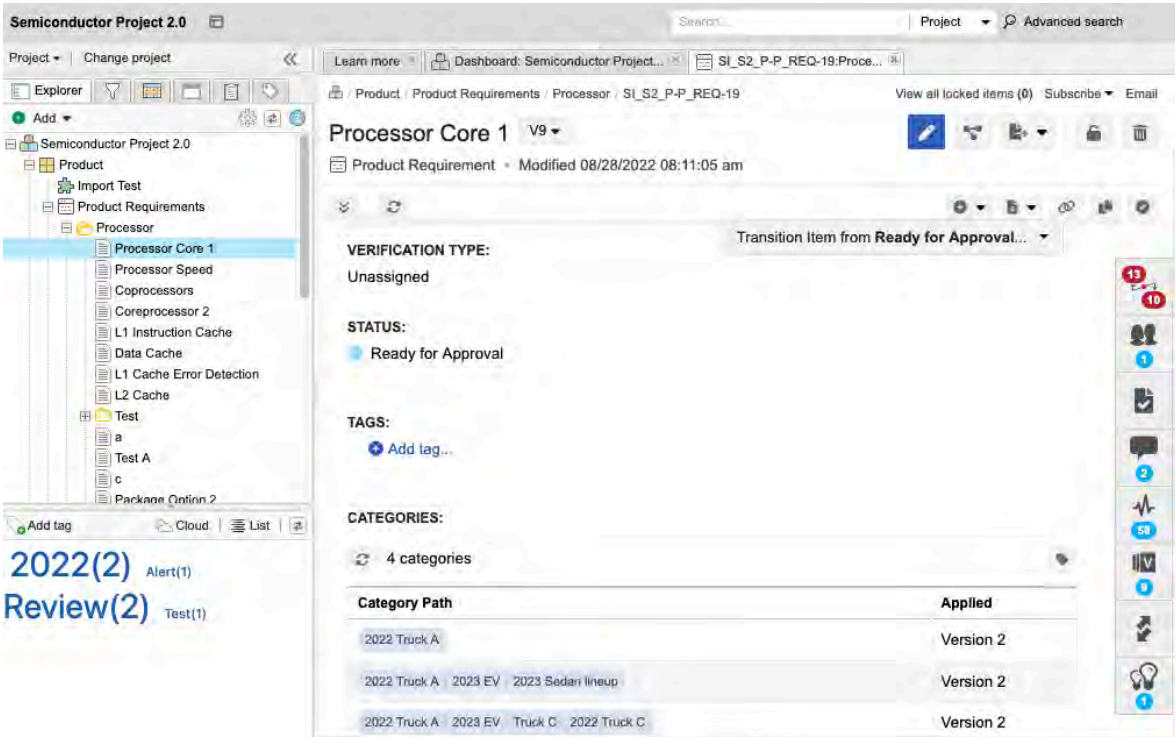
In Single Item View, you can view differences between items that have more than one version. View the history of an item to quickly identify changes and track progress.

Important considerations

- You can only edit the current version of an item.
- The Relationships widget is the only available widget.
- When you view an older version, you can see which categories were applied or unapplied.

To view a previous version of an item:

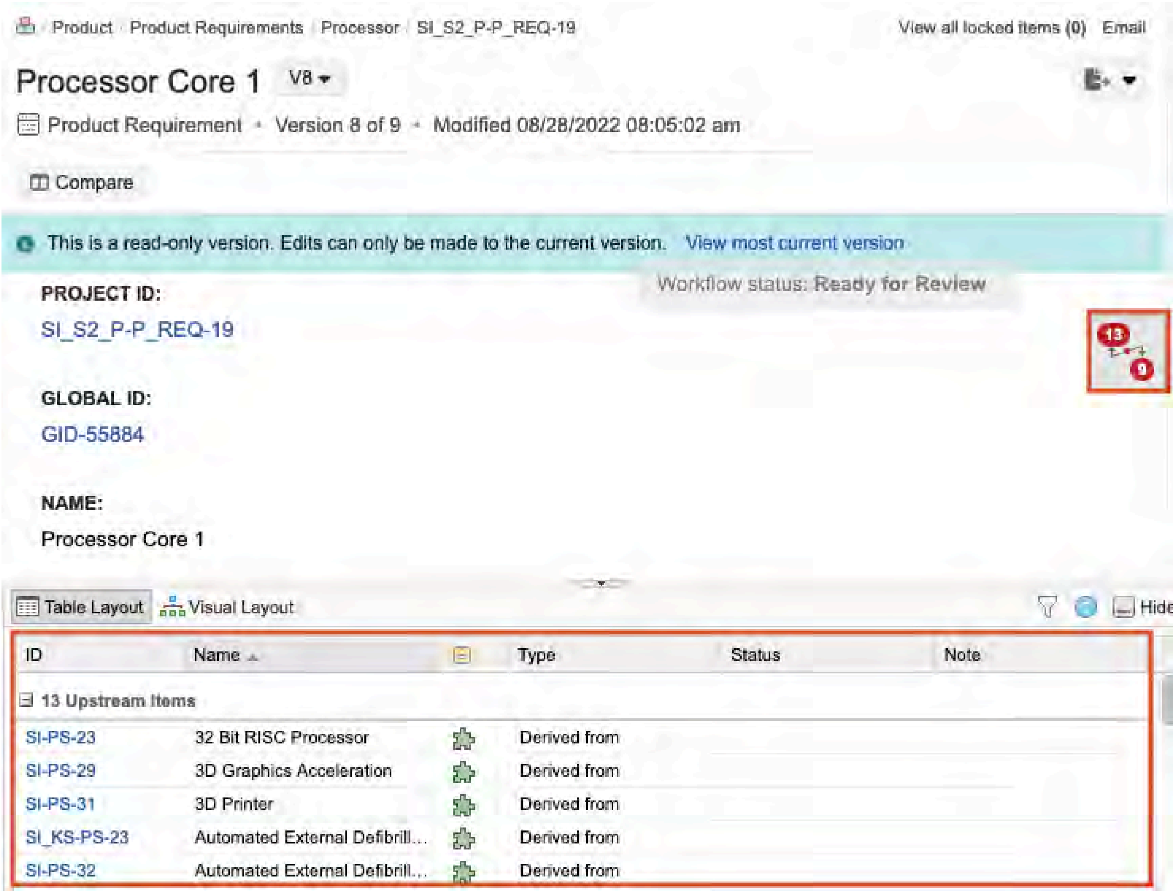
1. From the Explorer Tree, select the item you want to view.
   The item opens in Single Item View.



2. From the Version drop-down menu, select the version of the item you want to view.

The screen displays the information for the version you selected.

3. Select the **Relationships** widget to view all relationships for the version you are viewing. Suspect information doesn't appear in the relationship table.



Change requests

Change requests are items that call for a change to a product or system.

When an item type is activated as a change request [596], you can add new change requests and associate them with other items [256].

With change requests you can:

- Use Associate item(s) [256] to associate the change request with those items directly impacted by the request.
- Use Impact Analysis [259] to determine if and how your change requests affect other items.
- Send a change request to review [159] to gather feedback from stakeholders and determine if the change request is approved or rejected.

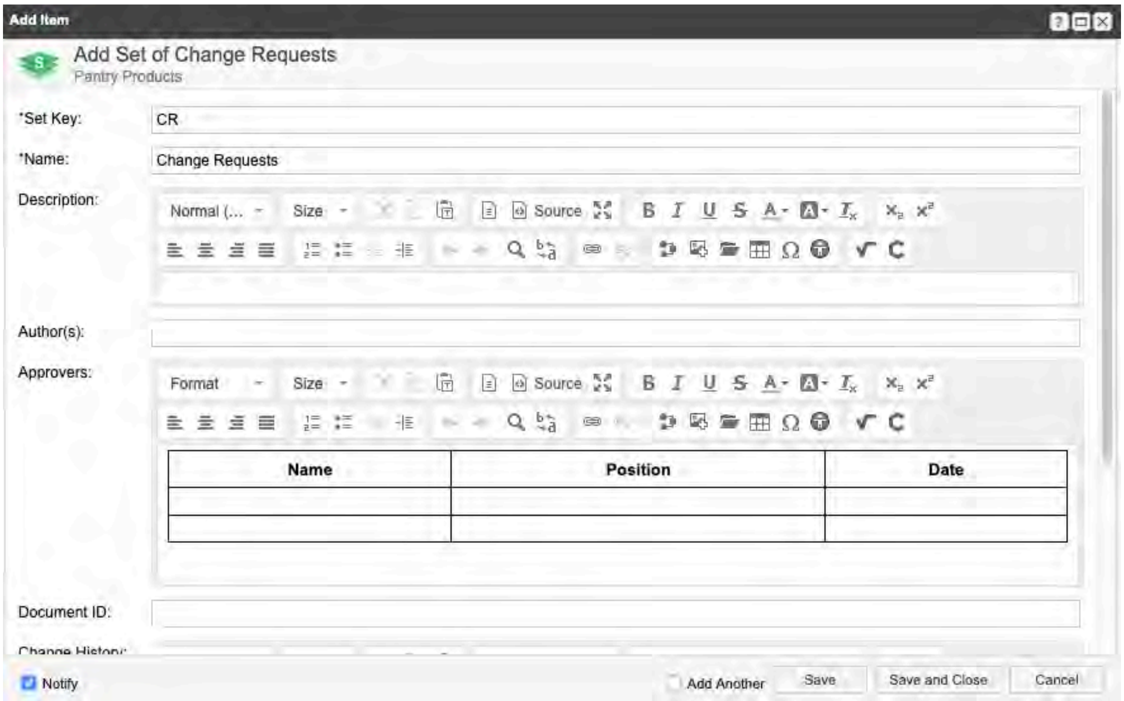
Add a change request and associate items

When an item needs to be altered, you can add a change request, which helps track the requested change.

As the author of a change request, you can capture the details of the requested change, manage the status of the change request, add and update the associated items, and close the change request as item updates are made.

> **NOTE**
> The change request must be an available item type for your project. Available item types are managed by the project admin.

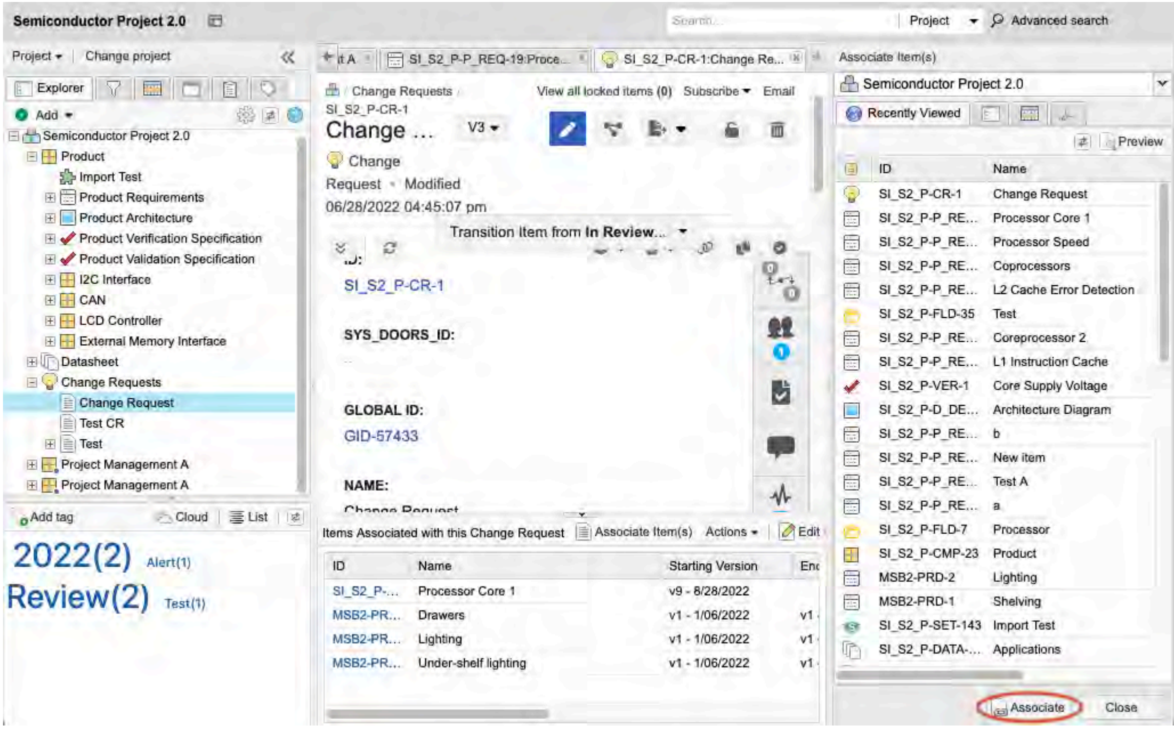
1. Create a new set of Change Requests in your project.
   a. Right-click on the project and select **New item > Set of... > Change Requests**.
   b. In the Add Item window, enter a name for the set, for example, **Change Requests**.
   c. Click **Save and Close**.



2. Add a new item [66] to that set.
3. Select the item, then open the bottom panel by clicking the bell widget (Items to be changed) from the side toolbar. This widget only appears when configured by an organization admin [599].

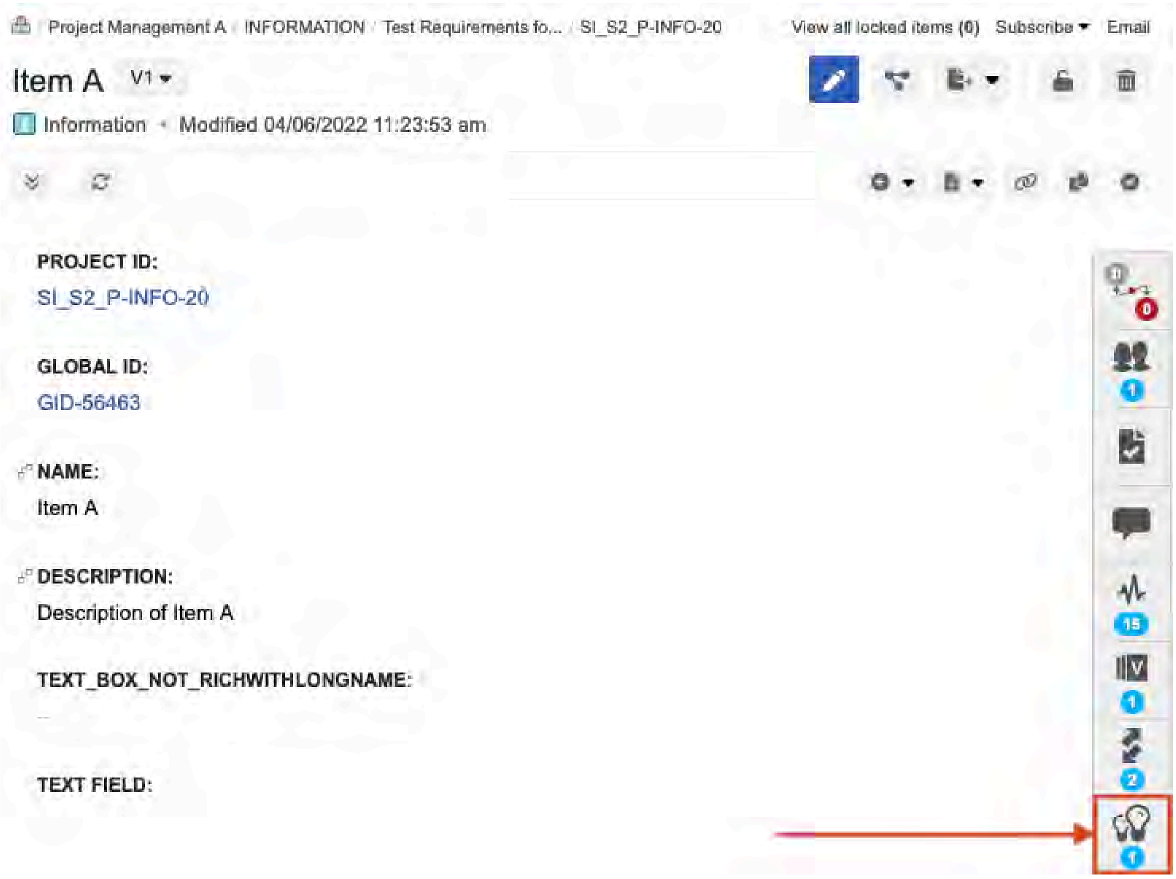
4. Click **Associate Items** in the bottom panel, select the items that apply to this change request, then click **Associate**.

> **IMPORTANT**
> Change request items can't be associated with other change request items.



The associated items appear in the bottom panel with links to those items. Each item includes the starting version (when the change request was introduced) and the ending version, which fulfills the change request.

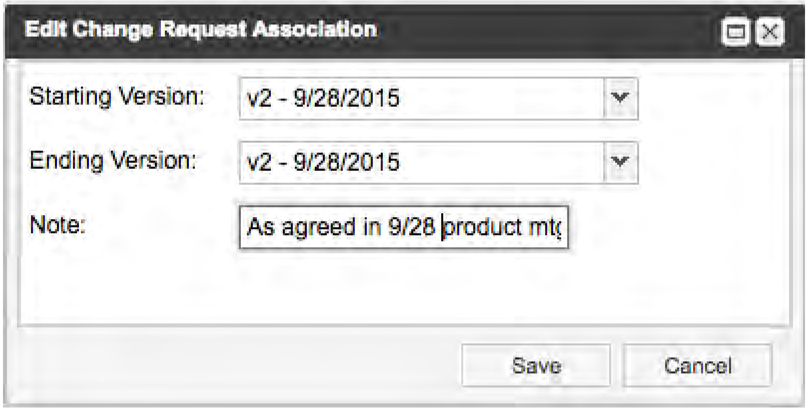
When you view other items that were associated with this change request, you see the same widget in the right toolbar of their Single Item View, as well as any change requests they're associated with in the bottom panel.



Edit a change request association

Edit change request associations to indicate which version is the starting or ending version of a change request.

1. In Single Item View, select **Change Request** to open the bottom panel with a list of associated change requests.
2. Double-click in the row with the item you want to update.
3. In the window that opens, change values for **Starting Version**, **Ending Version**, and **Note** as needed.

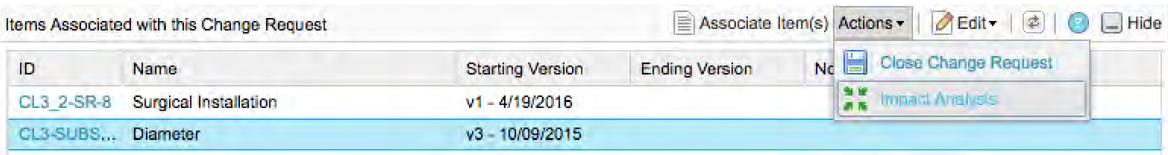


4. Click **Save**.

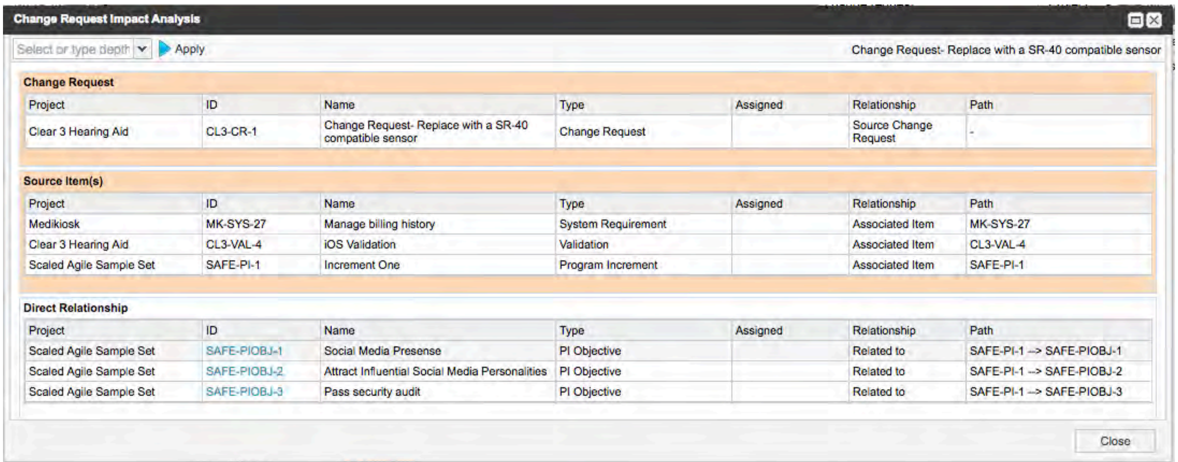
Run Impact Analysis on a change request

Before implementing a change request, you can determine its impact on related downstream items.

1. In Single Item View, select **Change Request** to open the bottom panel with a list of associated change requests.
2. Select the item you want to know more about, then select **Actions > Impact Analysis**.



The Impact Analysis is displayed as a highlighted table, listing all items directly associated with the change request. Also, any items that are downstream from directly associated items are shown with their degree of separation from that item.

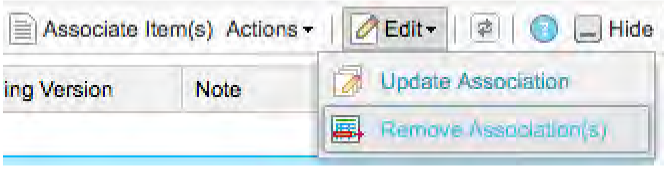


Jama Connect provides the visibility of the potential impact of a change request. The impact is then used to analyze the requested change to determine if any impacted items need to be updated.

Delete change request associations

If you included an item in a change request and later determine that the item isn't impacted by the change, you can remove or "disassociate" the item from the change request.

1. In Single Item View, select **Change Request** to open the bottom panel with a list of associated change requests.
2. Select the row with the item you want to update, then select **Edit > Remove Association**.

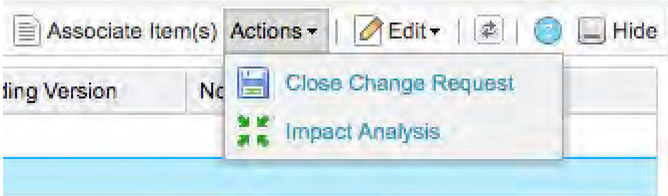


The screen is refreshed, and the associated item is removed.

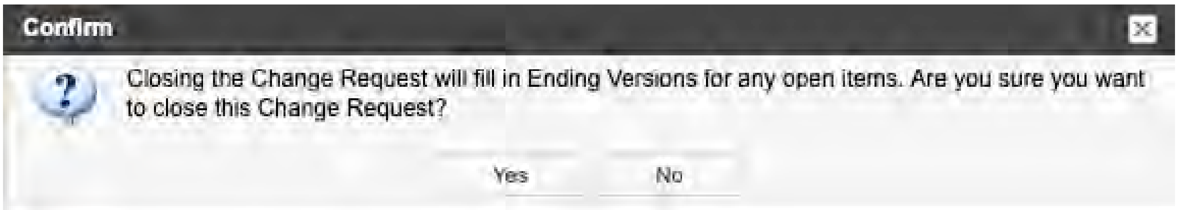
Close a change request

A change request records the current version of each associated item, which is the starting version. Closing a change request records the end version of each item being changed.

1. In Single Item View, select **Change Request** to open the bottom panel with a list of associated change requests.
2. Select the change request you want to close, then select **Actions > Close Change Request**.



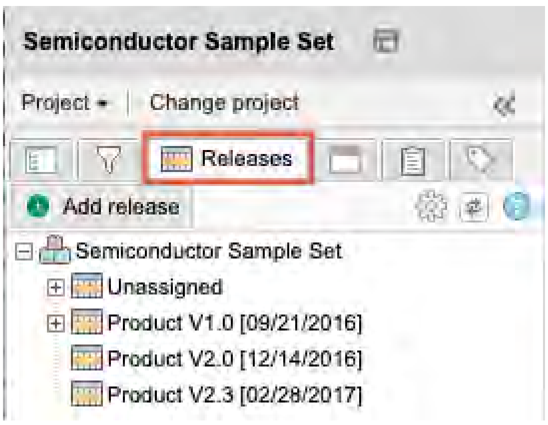
3. When prompted, click **Yes** to confirm.



Releases

A release is a group of items that are developed together and mapped to a specific completion date.

To see all the releases listed for this project, select **Releases** at the top of the left panel. Select a specific release to see the items assigned to it.



If you include items in a release, you are assigning them to that release. If the release field [261] is visible, you can use Reading View or List View to see the name of the release where an item is assigned.

Assigning an item to a release

When you assign an item to a release, the item appears under the Releases tab, and the action is noted in the version history.

> **IMPORTANT**
>
> Admins only — You can only use the system predefined Release field to show items in the Releases tab. If you use a custom Release field to designate an item to a release, that item doesn't appear in the Releases tab.

Before you can assign items to a release, a project or organization admin must first create the release. Once the release is created, you can assign an item to that release in several ways:

- Locate the release field [261] (if it is visible [620]) in Single Item View or List View and select the release name you want from the drop-down menu.
- In the List View or Reading View of your project, select the items you want to add to the release. Select the **Releases** tab at the top of the left panel and drag the items into the release.
- Use batch update [72].
- Use round-trip import and export [117].

Release field

The release field is a predefined field [609] with a picklist that contains all the releases created in a particular project.

> **IMPORTANT**
>
> You can only use the system predefined Release field to show items in the Releases tab. If you use a custom Release field to designate an item to a release, that item doesn't appear in the Releases tab.

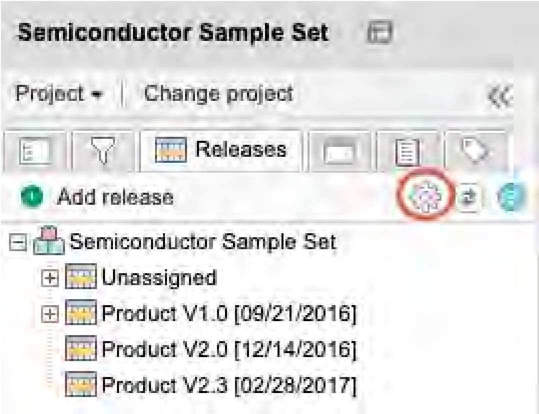
If you don't see a Release field in the item type you are using, an organization admin can edit the fields for that item type [605]and make it visible [620].

A project admin must also configure pick list values [614] for each release.

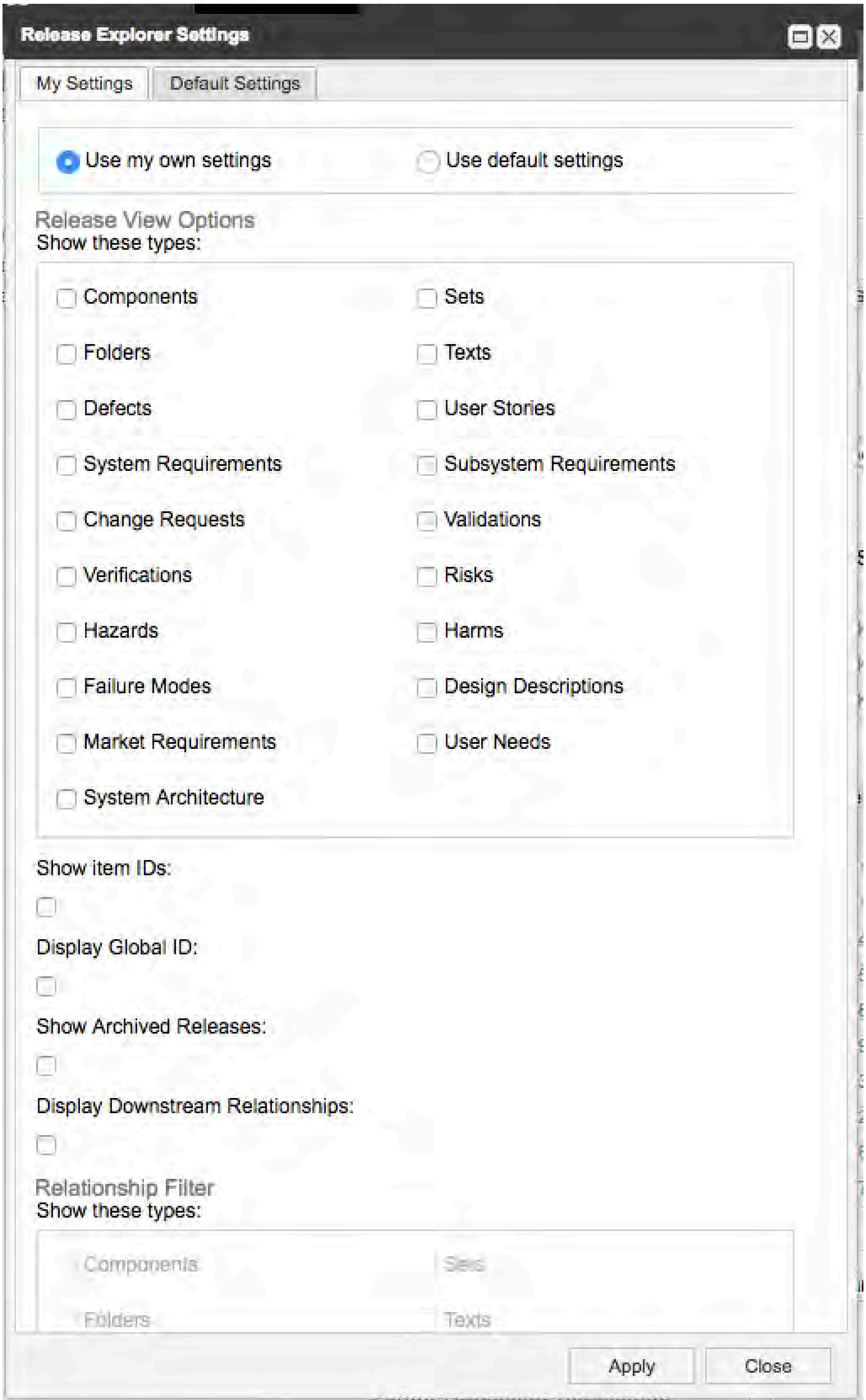
Customize the Release settings

You can determine what you'd like to see under the Releases tab for your project, whether it is the default settings or your personal settings.

1. Select **Projects > Project**, then select the **Releases** tab.
2. Click the Configure release explorer (gear) icon.



3. In the Release Explorer Settings window, determine what you want to see on the Releases tab:
   - Select **Use my own settings** or **Use default settings**.
   - Select the item types, types of IDs, archived releases, and relationships that you want to see.



4. Click **Apply**.

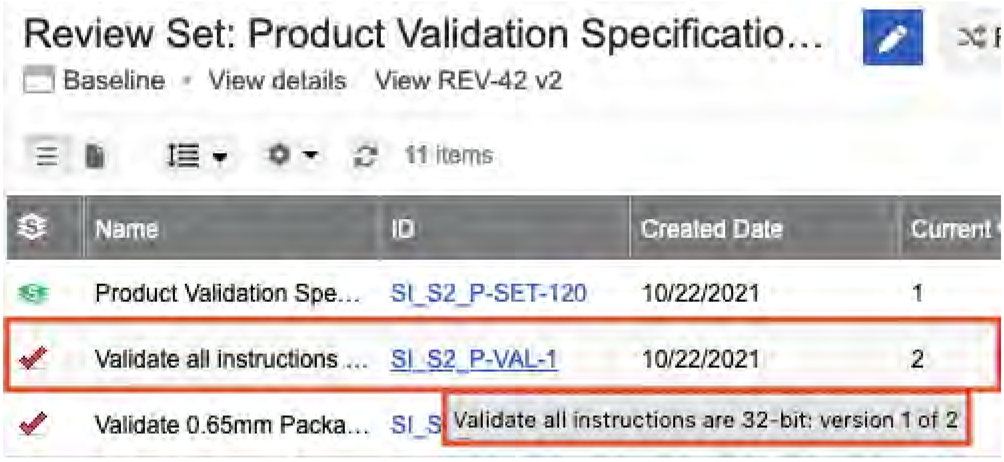
Baselines

A baseline in Jama Connect is a snapshot of your project, or a select collection of items (for example, a set or folder of items), at a point in time.

The current version of selected items — and their relationships — are forever associated with that baseline.

Important considerations

- When you add a relationship to a baseline, the version doesn't change.
- Relationships do not change if you replace it with a baseline.
  For example, if you have two relationships at the time of baseline version one, make a change to version two, add a relationship to version three and replace it with a baseline, you still have three relationships.
- If you click **Revert to Baseline**, all item fields are set back to their values at the time of the baseline.
- When you select an item with previous versions in the baseline, the historical view of that item opens in Single Item View. Hover over a link to see the available versions for an item. Selecting an item's link from a baseline will route you to the baselined version — Historical or current. You can also select the gear icon (Show/Hide) to open the drop-down menu, then select **Current version** and **Version** to display those columns.



What you need to create a baseline

Versioning must first be enabled to create a baseline. Once versioning is enabled [660], a baseline is created:

- Automatically [274] when someone initiates or revises a review
- Manually [268] by anyone with read/write permissions

Why are baselines important?

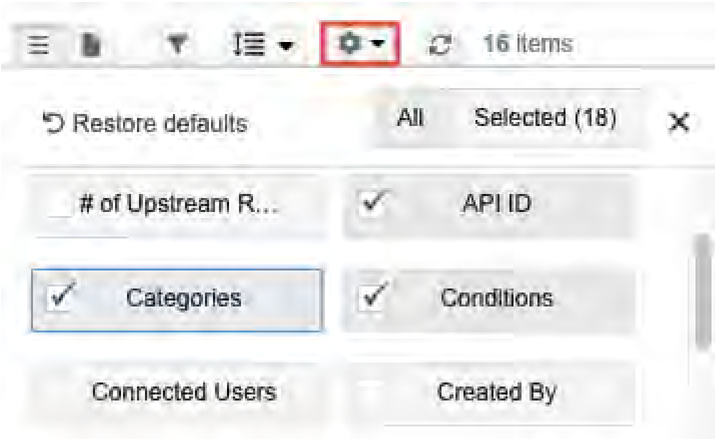
Baselines allow you to capture the state of your content in alignment with key points in your product development lifecycle, such as at key approval gates or when generating documents from Jama Connect. Having the baseline allows you to compare items as they change over time and, potentially, revert to a previous state.

What can I do with a baseline?

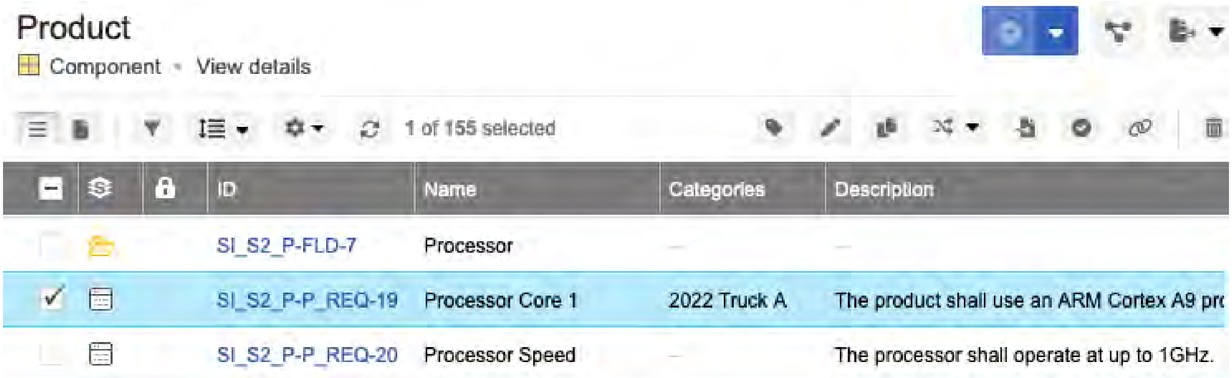
- Locate an existing baseline [271]
- Create a baseline manually [268]
- Compare baselines [273]
- View baseline activity [274]
- Replace current items with baseline [278]

Categories feature and baselines

When enabled by an organization admin, historical versions of categories are visible in the baseline. They can't be configured. To show or hide the Categories feature, click the **gear icon**.



The categories that were applied to the baselined items appear in Reading View or List View.



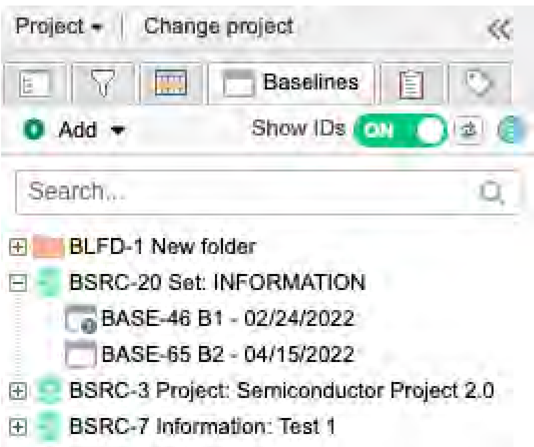
What is a baseline source?

A source is a container that holds all the baselines for a specific group of items.

You can add a baseline from a project, set, folder, filter, release, or individual items. Adding a baseline creates the source automatically. The source is created in the tree and contains the new baseline. A source can't exist without a baseline.

If a source already exists when a new baseline is created for the same set of items, the baseline is added to that source. Otherwise, a new source is created and added to the top of the tree.

Key to the baseline tree



- **Green database icon** — Source

- **White box wrapped in gray** — Baseline
- **Individual Items** — Default source name when multiple items are selected at the time the baseline is created.
- **B1-04/27/2020** — Example of a default baseline name (baseline number and date it was created). Baseline name is editable as needed.

Tips and more

- You can create a new baseline from an existing source.
- Deleting a baseline source deletes all the baselines it contains.

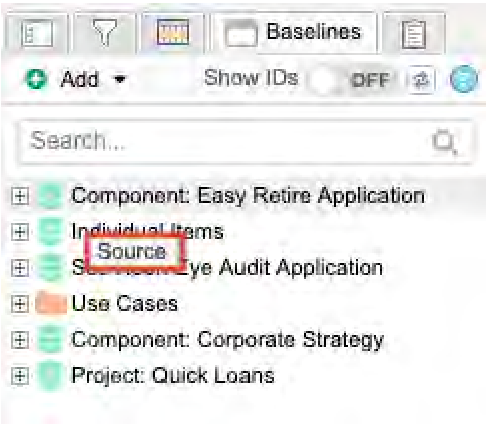
Benefits of organizing your baseline tree

Organize your baseline tree to reflect how your organization works.

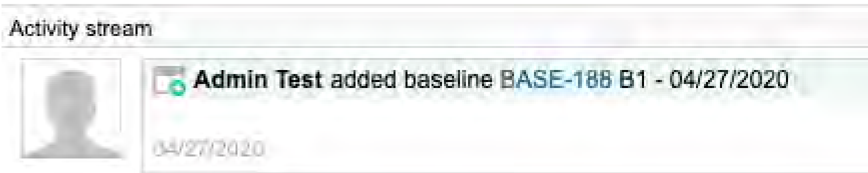
Project and organization admins can reorganize the baseline tree by dragging and dropping sources and folders.

Organizing baseline sources and folders

- Use drag and drop to move baseline sources from one location to another, from the root level to a folder, and between folders.
- Baseline folders can be created at the root level or added to a folder. Use drag and drop to reorder baseline folders.
- If you hover over an icon or name in the baseline tree, hover text describes the contents of the item.

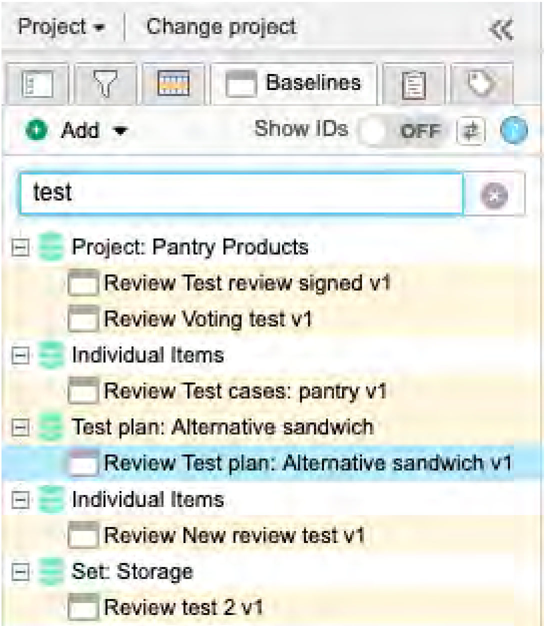


- Editing a source name creates an event in the project activity stream. In the activity stream, select the baseline source ID to open the baseline tree and view the highlight.

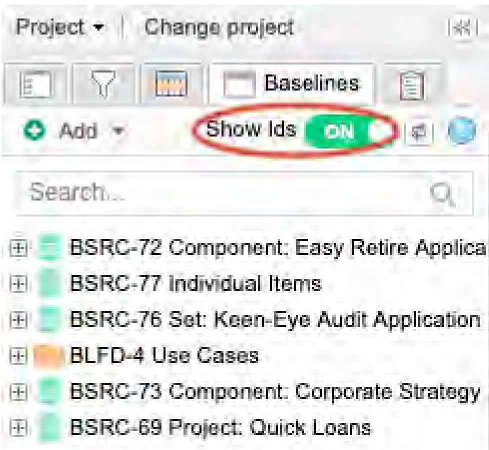


Searching and identifying baselines, baseline folders, and baseline sources

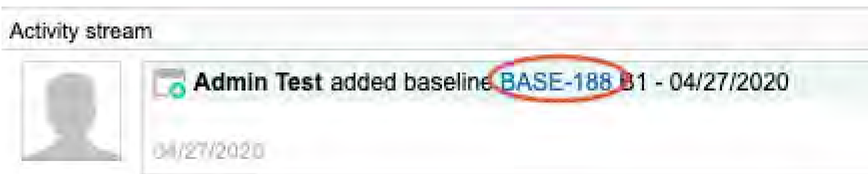
- When you type a name in the search field, the results are highlighted so you can find them easily.

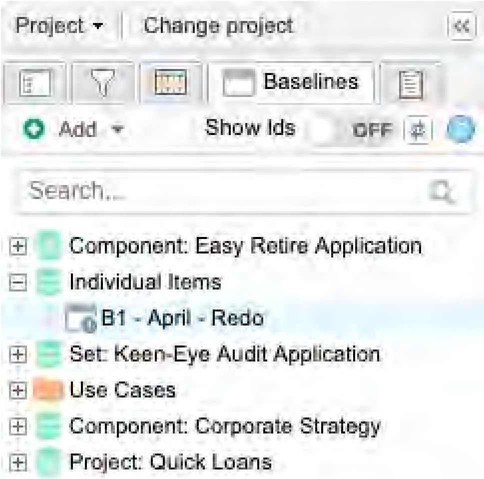


- When you clear the search field, the results from the previous search are expanded and highlighted in the baseline tree.
- When you create a folder or baseline, it is highlighted in the baseline tree.
- If you accessed the baseline from a link or if the Explorer Tree hierarchy is collapsed, select **Find me** to locate the baseline in the baseline tree.
- When you toggle **Show IDs** to **On**, the baseline IDs are displayed in the baseline tree. When the IDs are visible, you can search for them using the baseline search box.

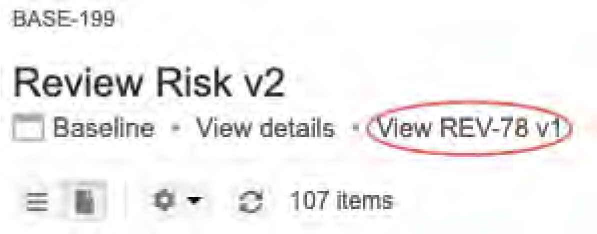


- When you select the baseline ID in the activity stream, the source is expanded and the baseline is highlighted. Use the baseline activity stream to monitor activity, quickly find a baseline ID, or see if a signature is revoked.





- A link is added in the baseline header when a baseline is created from a review or a new revision of a review. Use the link to navigate to a specific review quickly.



Creating and renaming baselines and baseline folders

Once a baseline is created, the collection of items in the baseline can't be changed. You can, however, change the baseline name and description.

Users with a creator license and permissions for project or organization admin can create, edit, and delete an empty baseline folder.

Anyone with read/write permissions can edit, delete, or restore a baseline that they created. However, you must have project or organization admin permissions to edit, delete, or restore baselines created by others.

Create a baseline folder using one of these methods:

- **Add** drop-down menu, select **Folder**.
- Right-click on the folder, then select **Add Folder**.

Create a baseline manually

Create a baseline when you want to capture a snapshot of where items are at in that moment.

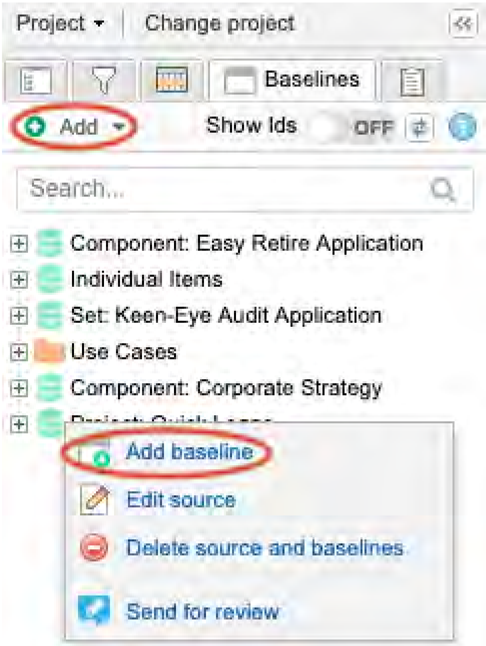
Important considerations

- Baselines are created automatically [274] whenever anyone creates a review.
- Project versioning must be enabled [660] to be able to create a baseline.
- All upstream and downstream relationship information from items included in the baseline scope is also included in the baseline snapshot, even if those upstream or downstream items aren't part of the baseline scope. This functionality is limited to relationship direction, item name, and item ID.

NOTE

You must have a creator license and read/write permissions to manually create a baseline.

1. In the Explorer Tree, select the **Baselines** tab in the project where you want to create the baseline.
2. Add a baseline using one of these methods:
   - If the item already has a source, right-click on the source and select **Add baseline**.
   - If you need to choose items, select **Add > Baseline** from the top.

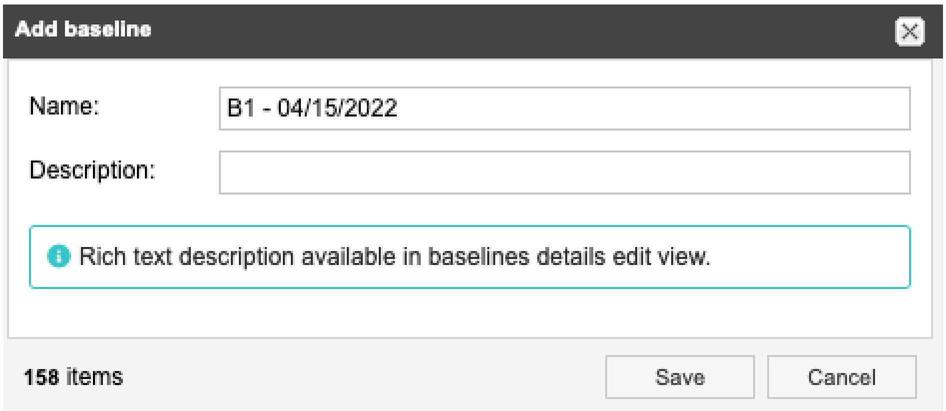


NOTE

If the items from an existing source were deleted, you can't add a new baseline from that source.

3. In the window that opens, click a tab (**Item selection**, **Releases**, **Filters**) and select containers or individual items in that tab. You can select containers or individual items, but you can select from only one tab.

4. Click **Create**.
5. (Optional) Change the default name for the baseline and add a description.
   You can update the pick list and rich text as needed. When the baseline pick list is updated, the activity is captured in the baseline and project activity streams.



6. Click **Save** to create the baseline.

The new baseline is added to the tree, either under an existing source or at the top of the tree. Baselines are always listed in the order they were created.

Edit a baseline

Once a baseline is created, the item content can't be changed. You can, however, change the baseline name and description.

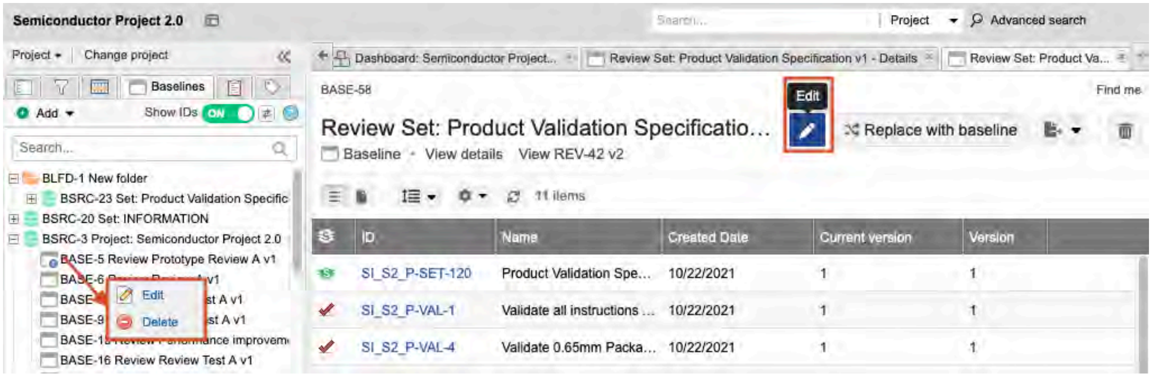
Important considerations

- Anyone with read/write permissions can edit, delete, or restore a baseline that they created.
- You must have project or organization admin permissions to edit, delete, or restore baselines created by others.

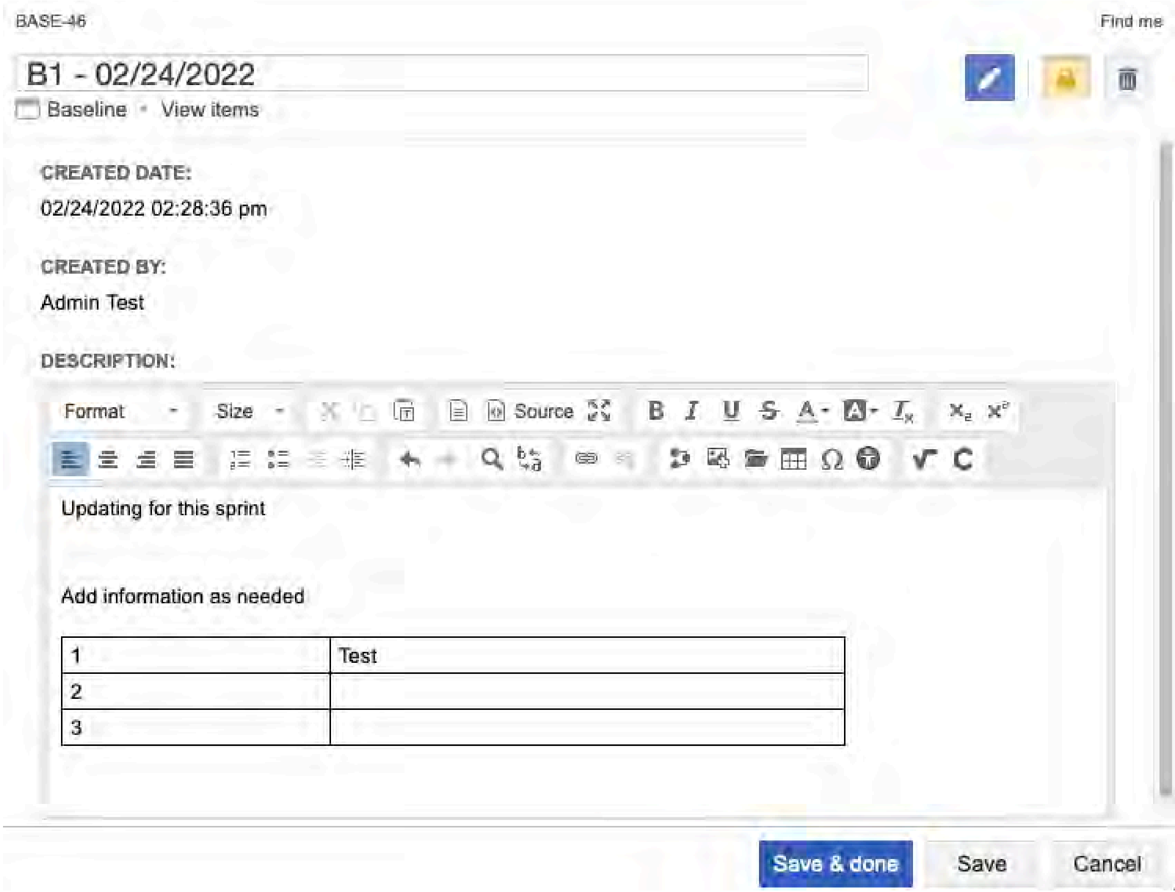
- You must be an organization or project admin to edit a signed baseline.

To edit a baseline:

1. Select the **Baselines** [271] tab in the Explorer Tree, then select the baseline you want to edit.
2. Edit the baseline using one of these methods:
   - Right-click on the baseline and select **Edit**.
   - In the upper right corner of the main panel, click **Edit**.



3. In the window, enter your changes and click **Save & done**.



Your changes appear in the Explorer Tree.

Locate an existing baseline

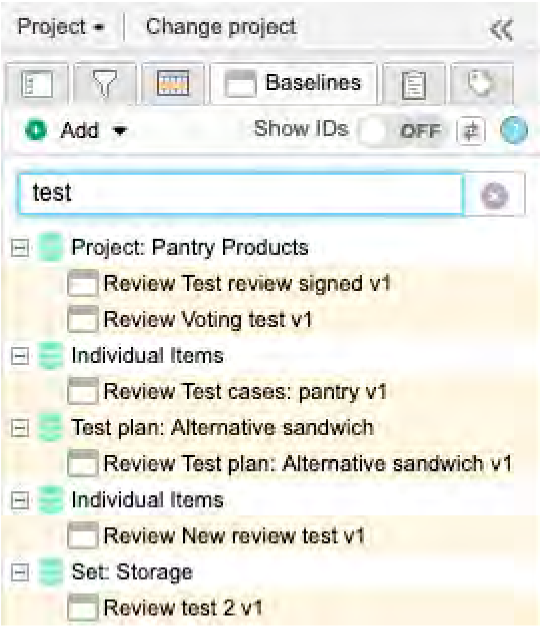
When anyone creates or publishes a revision of a review, a baseline is automatically generated. Knowing where to look for an existing baseline can be helpful when you want to compare changes in a review that has multiple versions.

You can find a baseline for a specific project from the Explorer Tree or Single Item View.

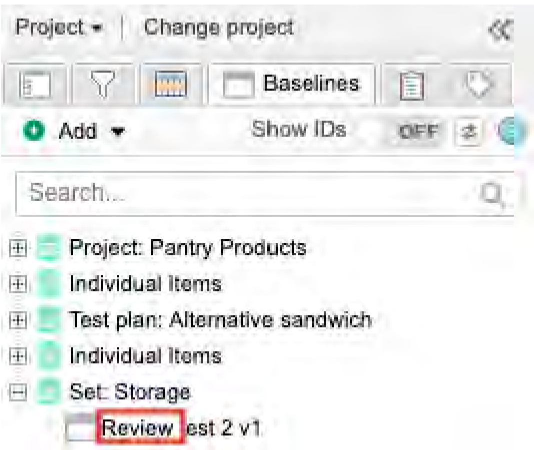
Explorer Tree

Use the Explorer Tree to quickly find a baseline.

1. Select the **Baselines** tab of the project you want to look at.
2. Type the baseline name in the search field. The results are highlighted so you can find them easily.



3. Expand the source to see all the baselines from the same source, then select the one you want. If a baseline was created from a review, it is preceded by the word "Review" in the name.

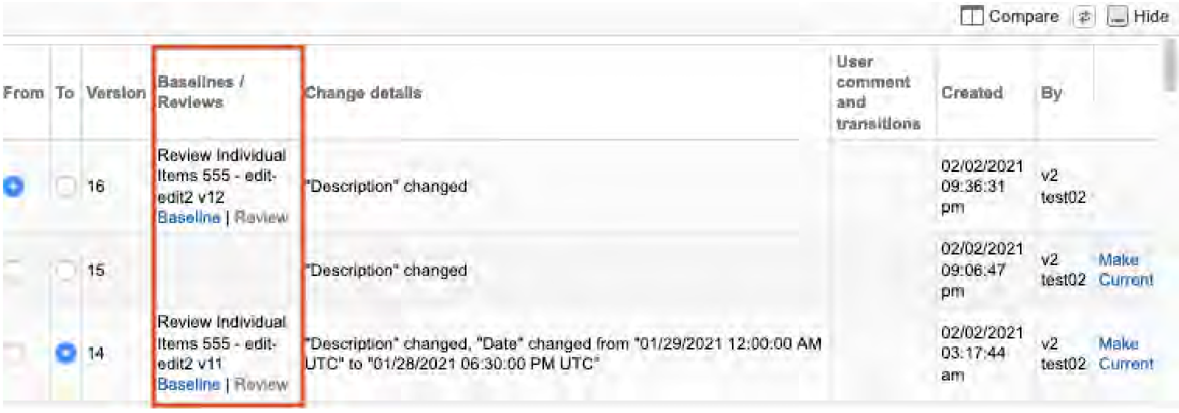


4. Select the baseline to view its contents.

Single Item View

Use the Versions information in Single Item View to see which versions of that item are associated with specific baselines and reviews.

1. Open the item in Single Item View [56].
2. Select the **Versions** widget on the side toolbar [57].
   The list of reviews and baselines is displayed in the bottom panel under the Baselines/Reviews column.



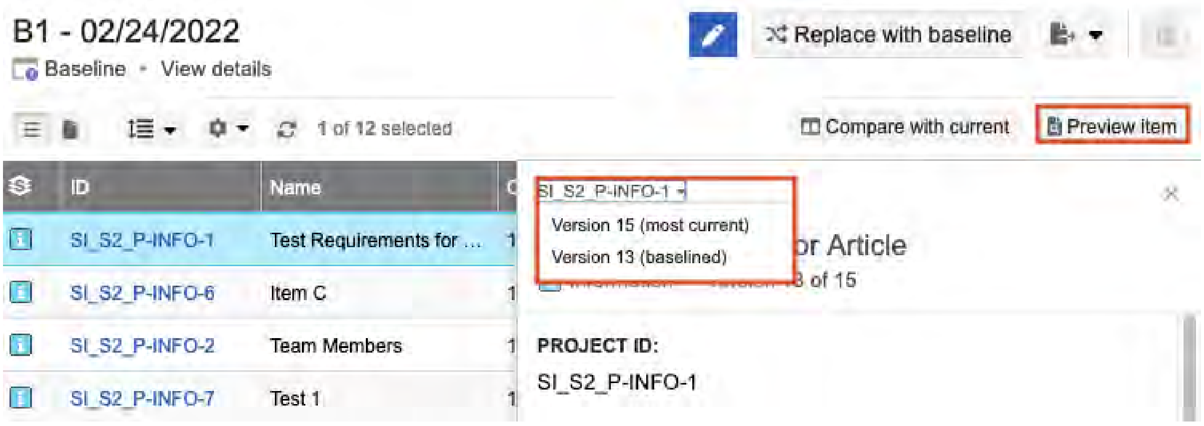
3. Select the link to open the review or the corresponding baseline. If the review link is disabled, you weren't invited to the review or the review isn't public.

Comparing baselines

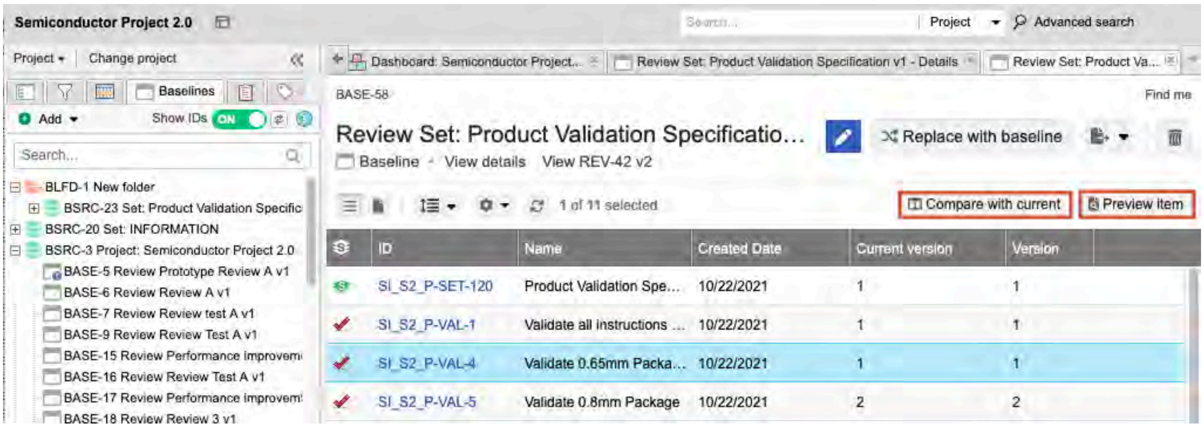
You can compare baselines to see if an item changed since the last baseline, and what those changes were.

You can use any of these methods to compare baselines:

- Select the **Baselines** tab in the Explorer Tree, then select the baseline you want to view.
- In List View, select the gear icon (Show/Hide) to open the drop-down menu, then select **Current version** and **Version** to display those columns.
- To preview an item, select the row, then select **Preview item**.
  A panel displays the information for the version you selected.
  From the Version drop-down menu, select **most current** or **baselined** to view the full details.



- To compare a baselined item with the current version side-by-side, select the row for that item, then select **Compare with current** in the top right.

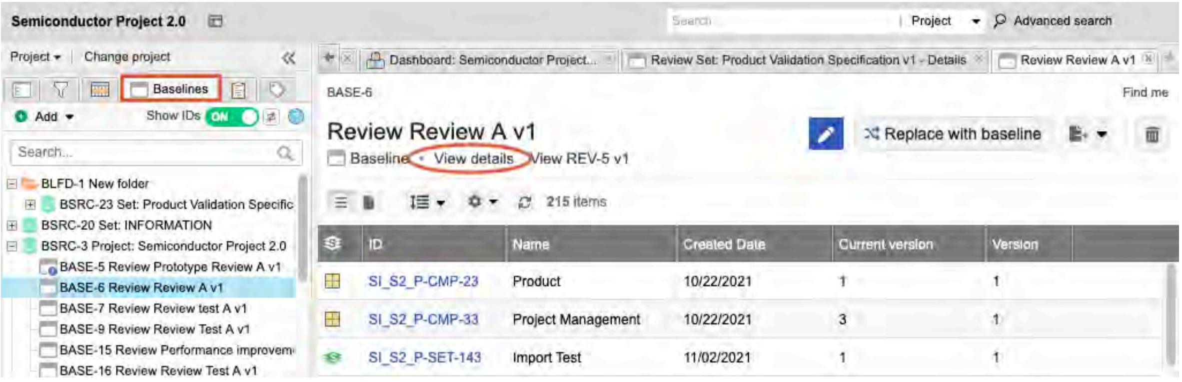


- View baseline reports to show changes over time:
  - Baseline Comparison [385] compares two baselines.
  - Baseline Compared to Current [384] compares the items and relationships from a baselined version to the current version.

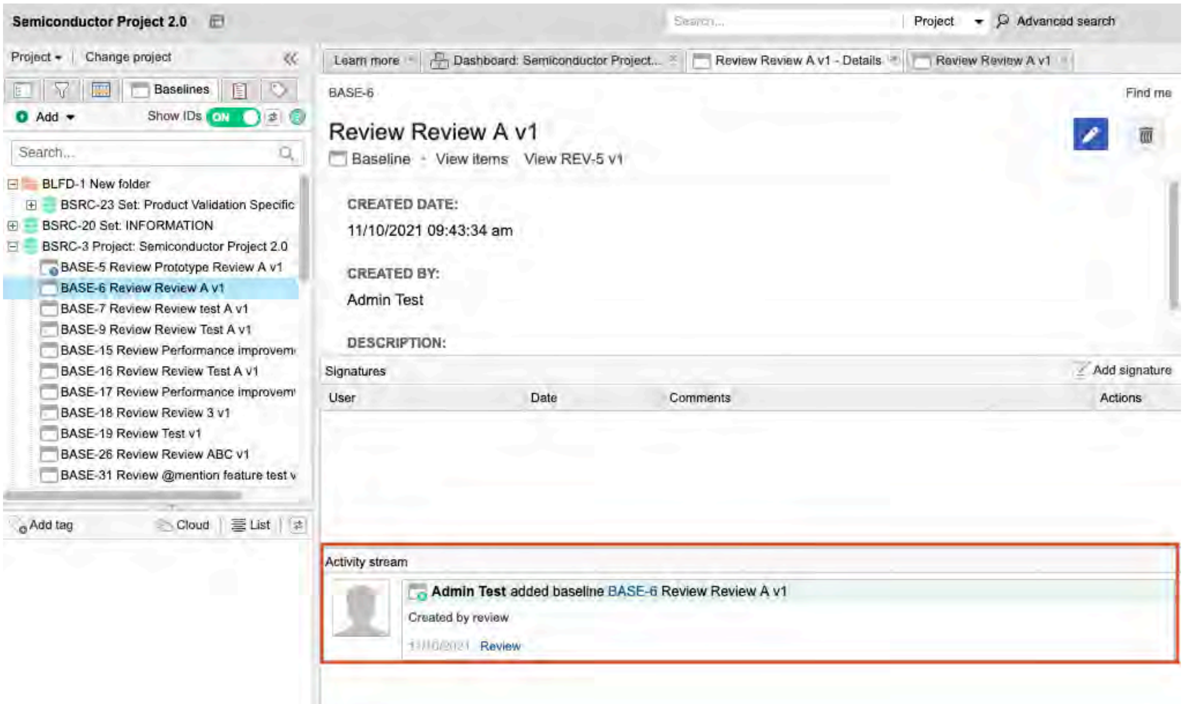
View baseline activity

Use the baseline activity stream to monitor activity, quickly find a baseline ID, or see if a signature is revoked.

1. Select the **Baselines** tab, then select the name of the baseline that you want to view.
2. Select **View details**.



The baseline activity stream is visible at the bottom of the center panel.

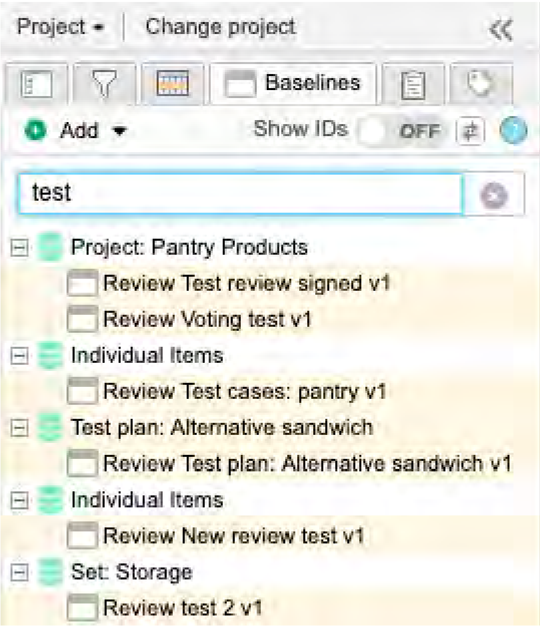


Locate review baselines

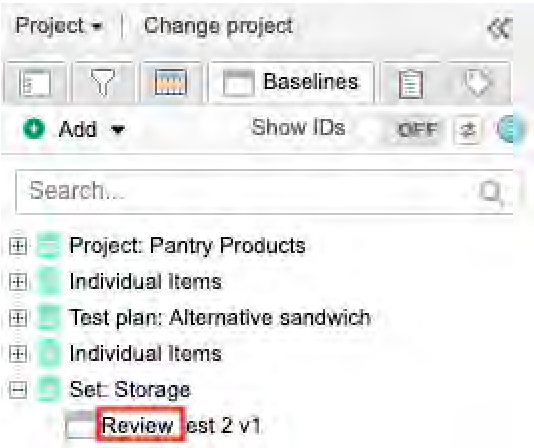
When anyone creates or revises a review, a baseline is automatically generated so that you can compare changes between reviews.

You can find automatically generated review baselines in two ways:

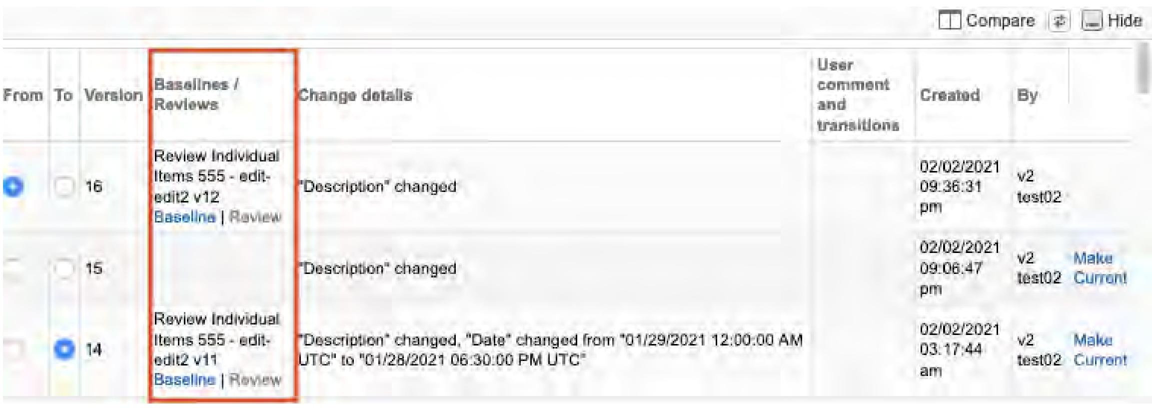
- Select **Baselines** in the Explorer Tree of your project.



Baselines that were automatically generated for reviews are displayed with the word "Review" preceding the name of the review.



- If you know the items that were included in the baseline (or the review that created it):
  1. Open the item in Single Item View [56].
  2. Select **Versions** in the side toolbar [57].
     The list of reviews and baselines is displayed in the bottom panel under the **Baselines/Reviews** column.

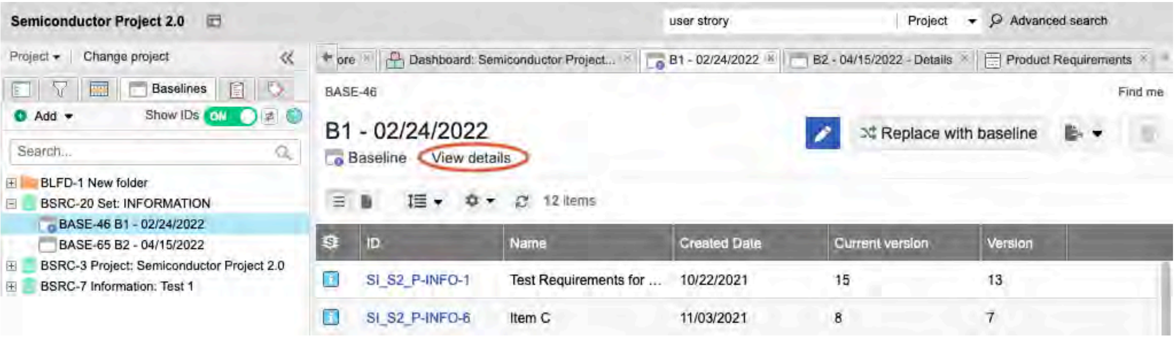


  3. Select the link for the review or its corresponding baseline. The link is enabled only if you were invited to the review.

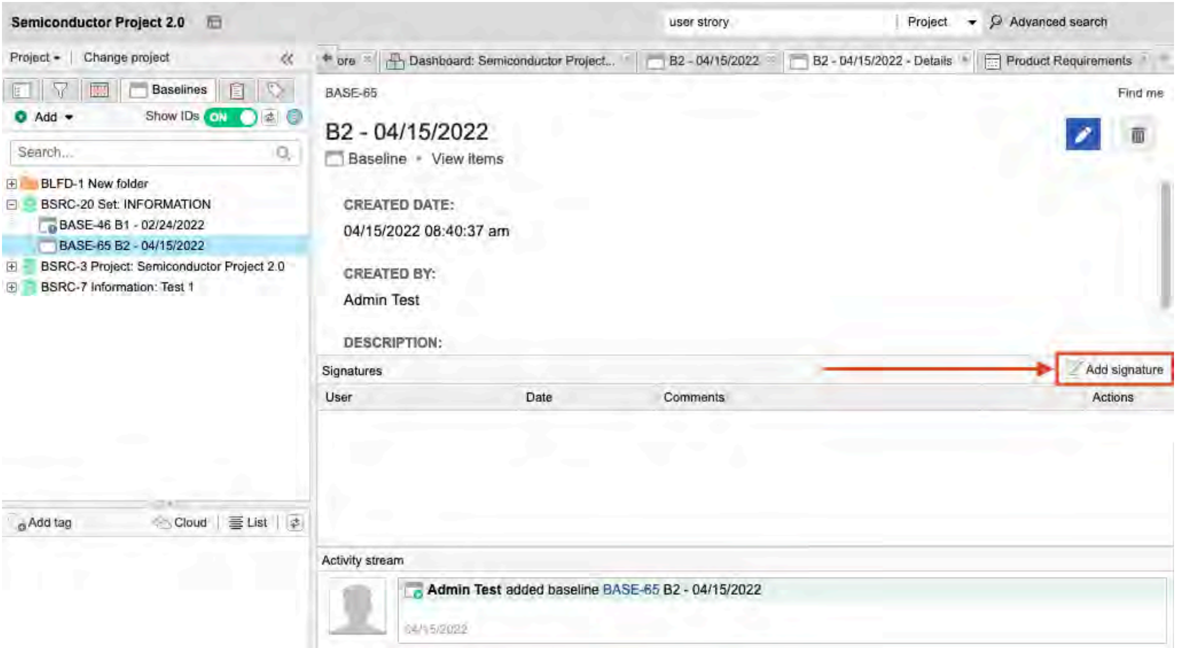
Sign a baseline electronically

If your business process dictates that signatures must be applied to collections of data such as baselines, electronic signatures can be associated directly with a specific baseline. Signatures can also be captured and associated with a baseline if signatures are collected during a review.

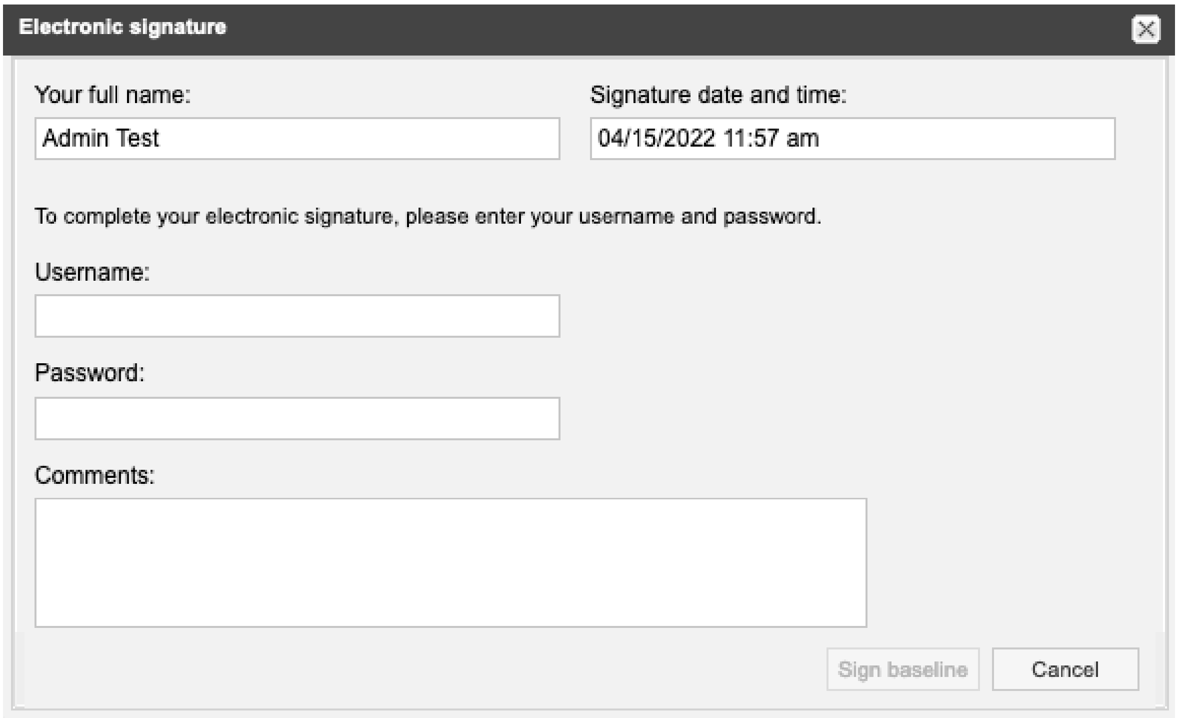
1. In the Explorer Tree under the **Baselines** tab, select the baseline you want to sign, then click **View details**.



2. Select **Add signature**.



3. In the **Electronic signature** window, enter your username, password, and any optional comments, then click **Save**. Username and password must match that of the logged in user.
   If your organization is using SAML for authentication, you are asked to select **Sign baseline**, then enter your username and password to authenticate your signature.



Deleting sources and baselines

Delete a source or baseline if it was created by mistake or you no longer need it.

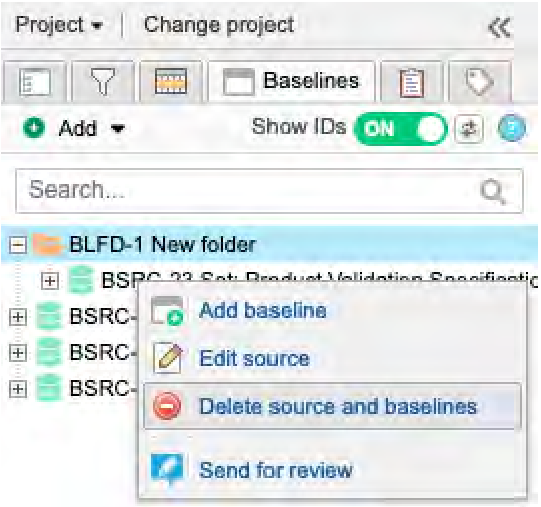
Important considerations

- Deleting a source deletes all the baselines it contains.
- The option to delete a baseline or source that contains a baseline is only enabled for baselines that are not yet electronically signed. However, deleting a project [641] deletes all project content, including baselines and signatures.

> **NOTE**
> You must have project or organization admin permissions to delete sources and baselines.

Delete a source

- Right-click on the source you want to delete, then select **Delete source and baselines**.



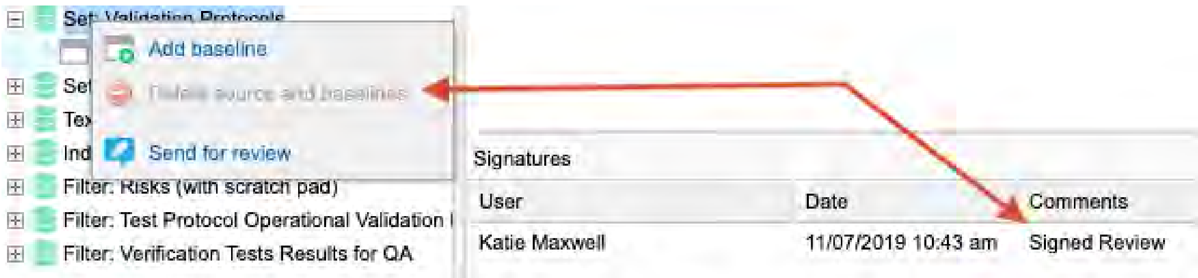
Delete a baseline

Delete a baseline from the project using one of these methods:

- Select the baseline, then click **Delete** (trash icon) in the top right.
- Right-click on the baseline name, then click **Delete**.

Tips and more

- **Undo** — If you change your mind after deleting a source or baseline, you can select **Undo** in the success notice.
- **Restore** — You can restore a deleted baseline or source by finding the deletion activity [230] in the projects activity stream and selecting **Restore**. If you deleted a source that contains multiple baselines, you can restore individual baselines or the source and all its baselines. When you restore a baseline or source, this event appears in the baseline activity stream.
- **Limitations** — You can't edit or delete a baseline that is electronically signed. You also can't delete a source if it contains an electronically signed baseline.



Replace current items with baseline

When you replace current items with a baselined version, a new version of the item is created and content is replaced with the baseline content. No versions are lost.

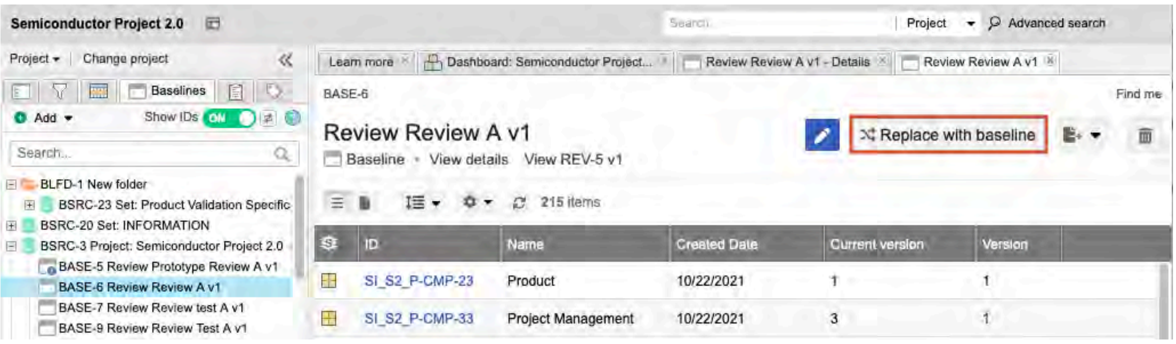
Important considerations

- Items that were deleted are restored to the version when the baseline was created.
- Relationships that were deleted aren't restored.
- You can restore a prior version of an individual item from the versions tab in Single Item View [251].

NOTE

You must have project or organization admin permissions to do this.

1. Select the baseline you want to revert to in the **Baselines** tab of the Explorer Tree [271].
2. Click **Replace with baseline**.



3. In the confirmation message, click **Yes**.

A pop-up message displays the number of items that were updated.

Coverage and traceability

Coverage is the extent to which items are validated by another item. Typically, a requirement is considered “covered” only if it has corresponding test cases against it and test engineers assigned to it.

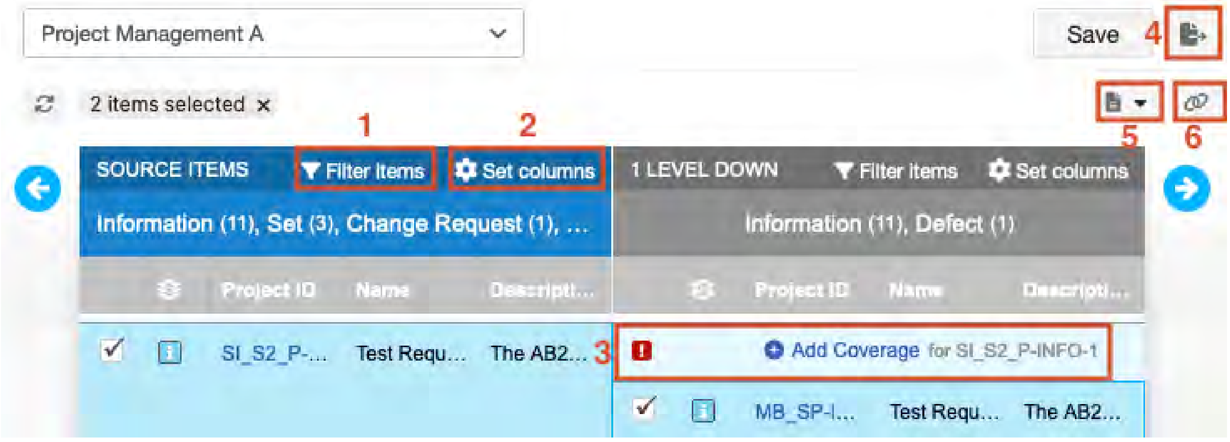
Traceability refers to the established connections made between various levels of requirements, risk analysis, designs, and verification. Trace is the item-to-item relationship made to indicate a connection between items, whether for indicating the abstraction of requirement to more detailed levels, mitigation of risk, fulfillment of a requirement by a design, or verification of a requirement. The creation of trace establishes the traceability of information which can be analyzed to assess change impact, determine coverage, and identify gaps.

In industries with rapid change and innovation such as medical device development and automotive manufacturing, an unidentified coverage gap can be risky to end users and costly to remediate. Tracking of coverage with end-to-end traceability helps eliminate these blind spots and ensure quality.

By relating items [286] according to a set of relationship rules [625], you can assess the impact that changes can have on other items. When you view items in Trace View [55] or use options to analyze item relationships, you can determine if you have the coverage you need.

Trace View

Trace View shows related upstream and downstream items. It also shows item details in context of their relationship, as well as any missing coverage (downstream relationship).

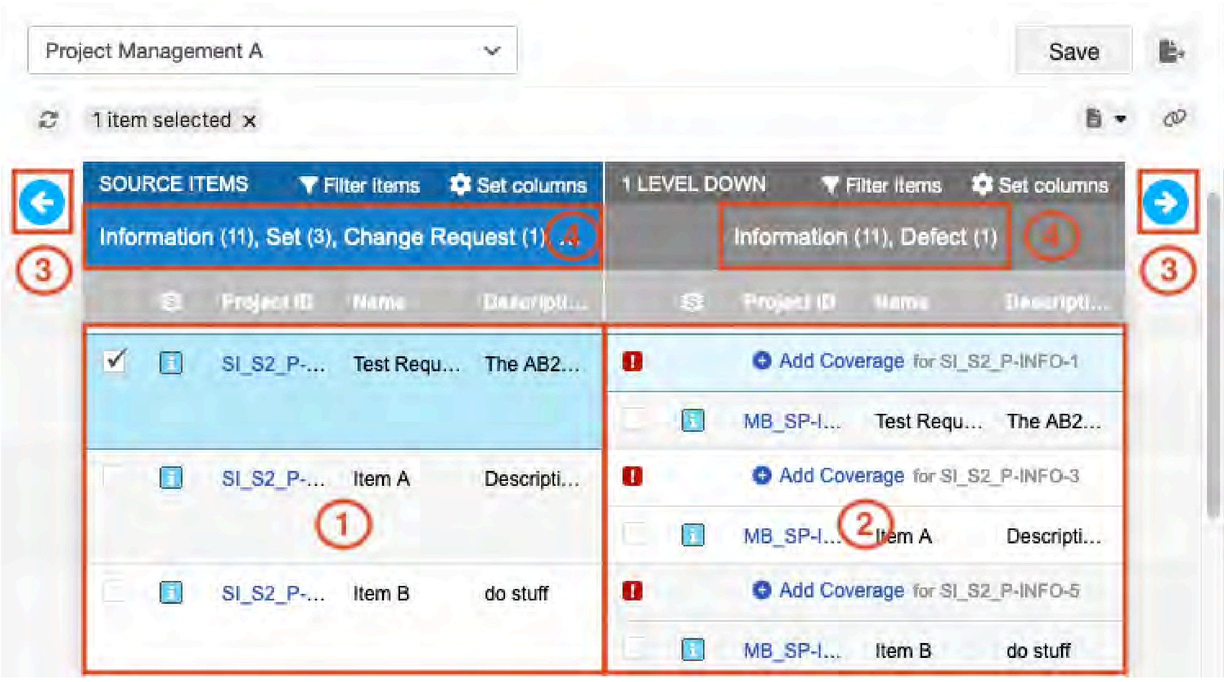


1. Filter item types in Trace View [283].
2. Configure each level to display or hide fields [48].
3. Find any gaps in coverage.
4. Export the content [282].
5. Add related items directly from this view with the Add menu option in the toolbar.
6. Establish relationships between existing items.

You can also display fields for various item types. For example, you can display the Test Case Status for verification and verification testing. If a test case item is visible in Trace View, you can navigate downstream to see any test runs generated from the test cases.

Understanding the Trace View interface

In the Source section, Trace View displays the items that were visible in the List View, Reading View, or Single Item View from the time the Trace View was initiated.



1. The source.
2. Direct downstream items.
3. Blue arrows = Travel upstream (right arrow) or downstream (left arrow).
4. Top of each level column = Number of item types on the entire level.

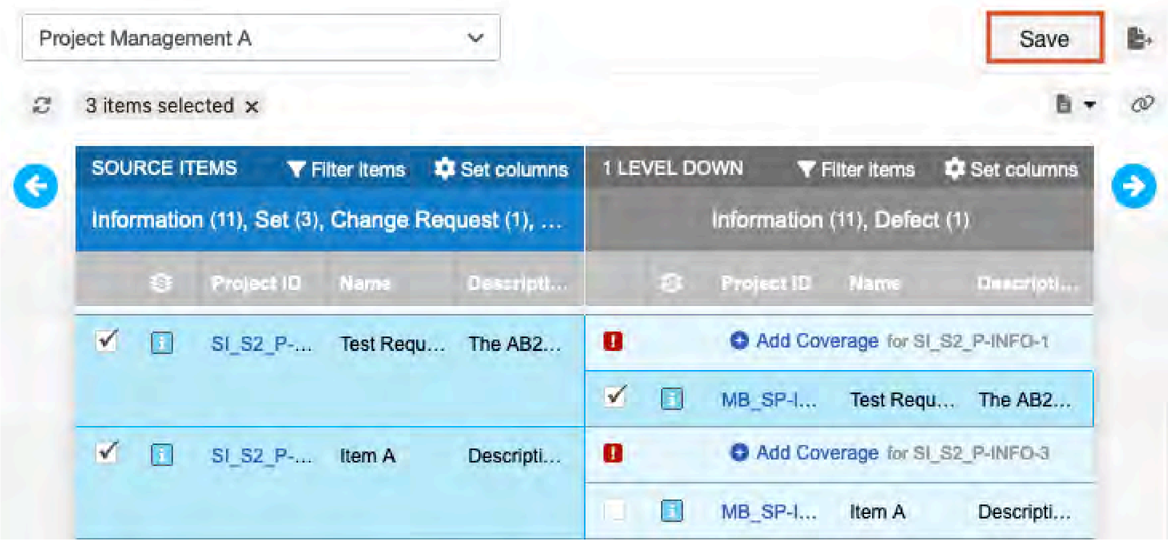
NOTE

The item count is a unique count. If the same item is downstream of multiple items in the source column, it appears multiple times in the "1 level down" column, but it's counted only once.

Save, copy, and bookmark a Trace View

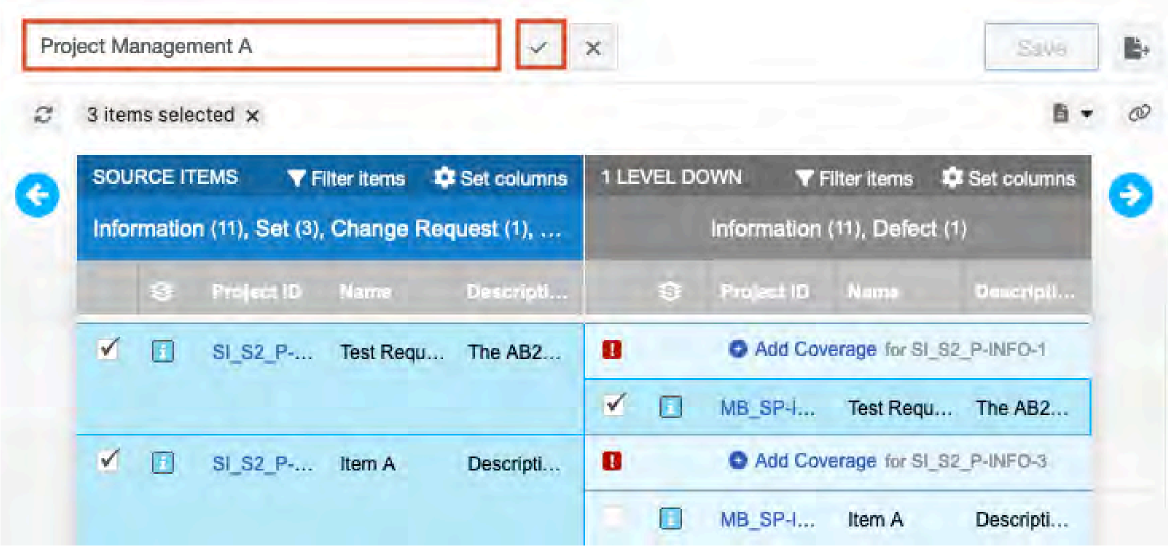
Saving a Trace View lets you bookmark it to be able to quickly find it or share it. You can copy a saved Trace View, then rename and edit it to use as a a new Trace View.

1. Select the Trace View [55] that you want to save, then click **Save**.

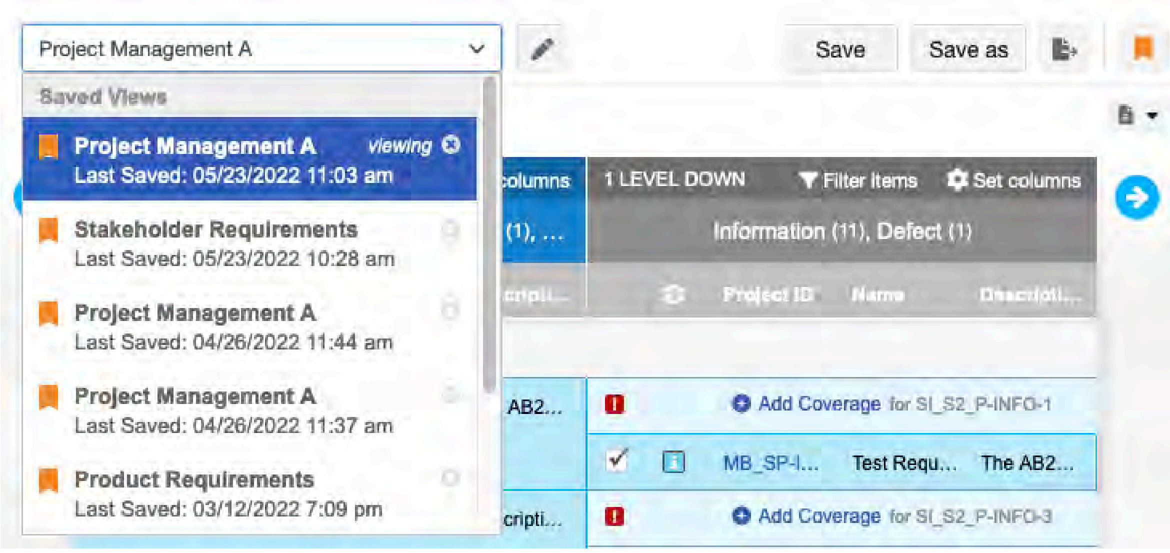


   The Name field is now editable.

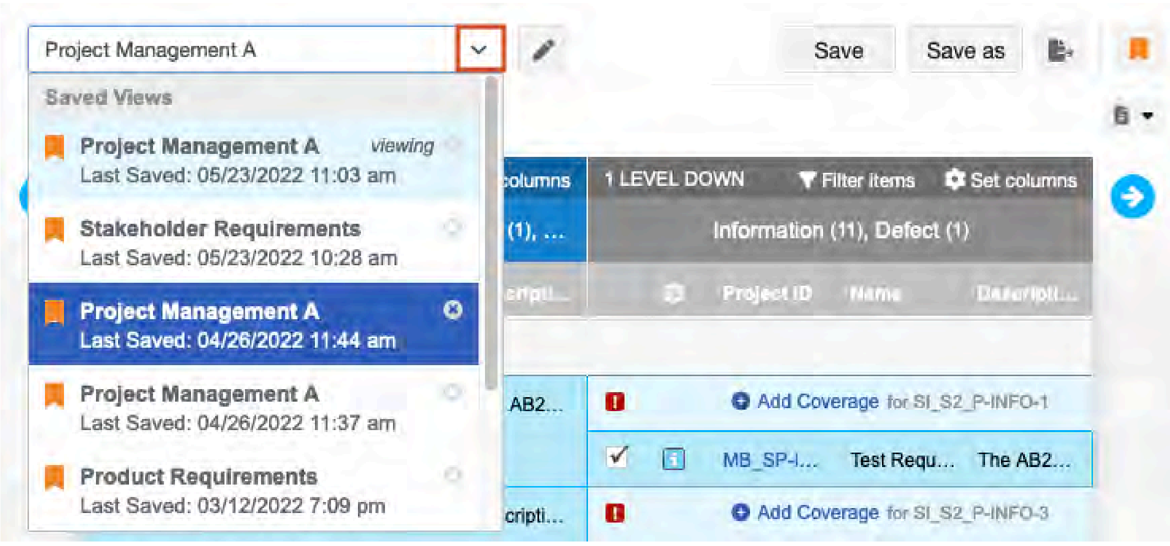
2. Edit the name as needed, then select the checkmark (**Save**) next to the field.



3. (Optional) Bookmark the Trace View by selecting the bookmark icon.



4. (Optional) To see a list of saved Trace Views, click the arrow next to the name. Bookmarked views appear at the top of the list.



Bookmarked Trace Views are visible from your homepage; use the URL to share this Trace View with other users.

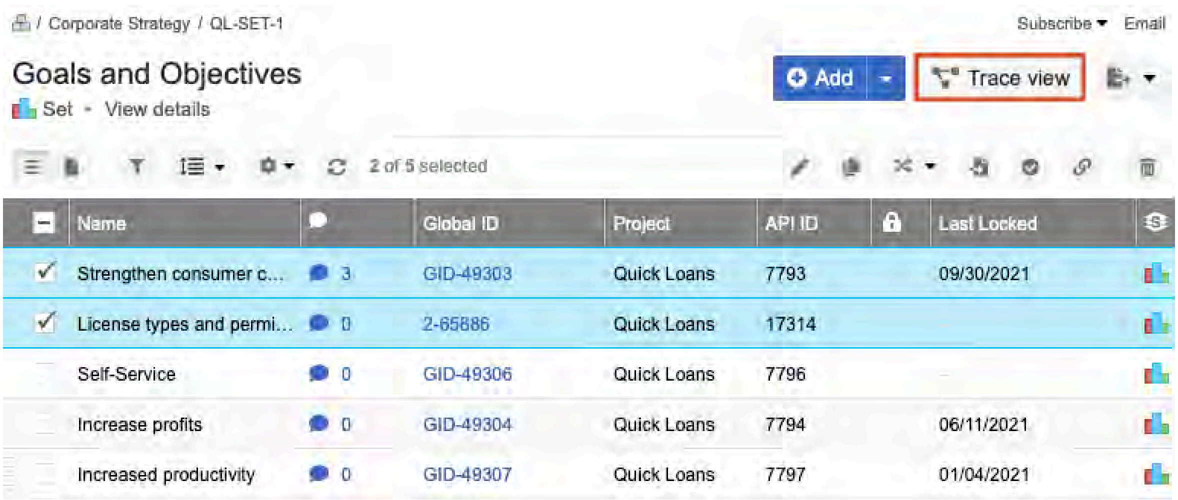
Export a Trace View

When you export from a Trace View, the result contains all data from the currently visible columns on your screen to the Source column. This means that if you are two levels downstream from the source, the export contains all the levels between the sources and the second level down. All displayed fields are also exported.

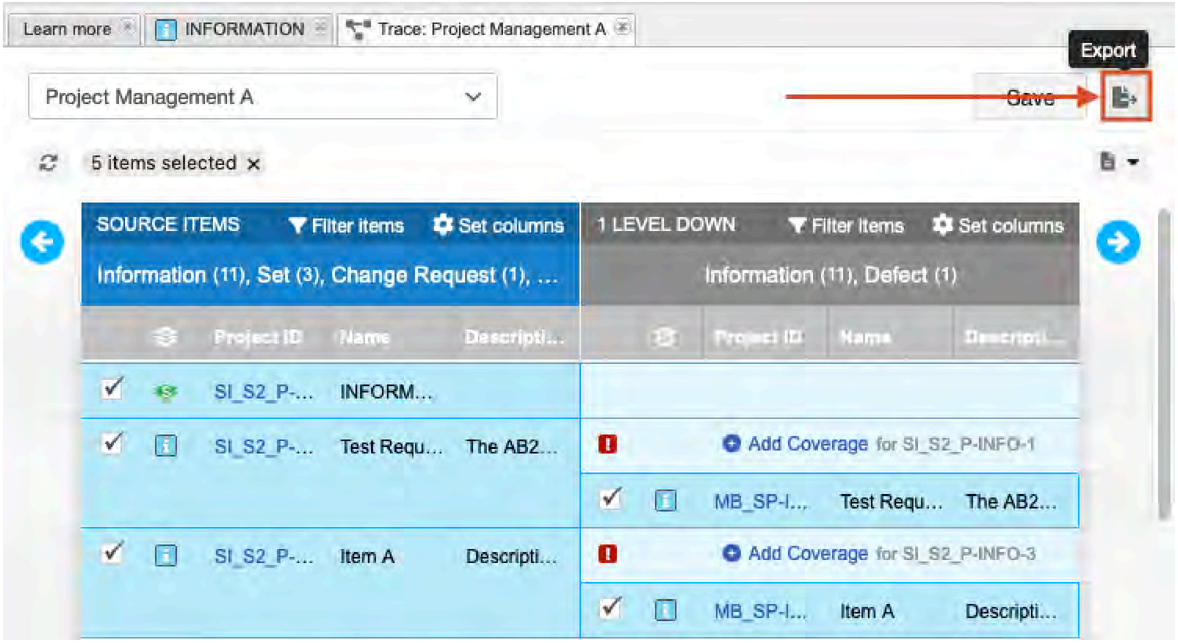
IMPORTANT

You can export a maximum of six levels from Trace View. If you try to export a view with more than six levels, the Export button is grayed out.

1. From the Explorer Tree or an advanced filter, select the items you want to export, then click **Trace view**.



2. Navigate to the furthest level upstream or downstream that you want to export, then click **Export** to generate a CSV file.

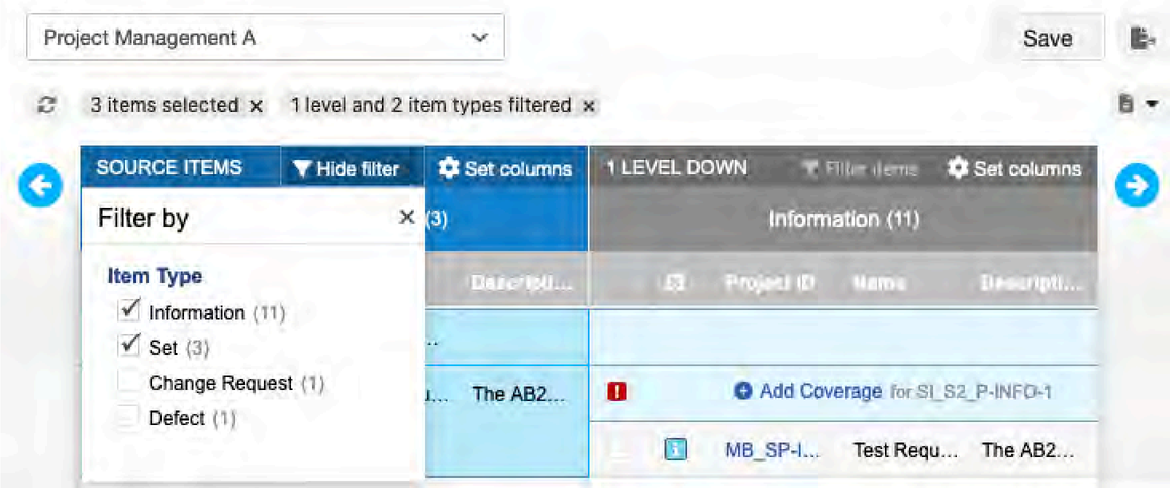


3. Click **OK** to open the CSV file.

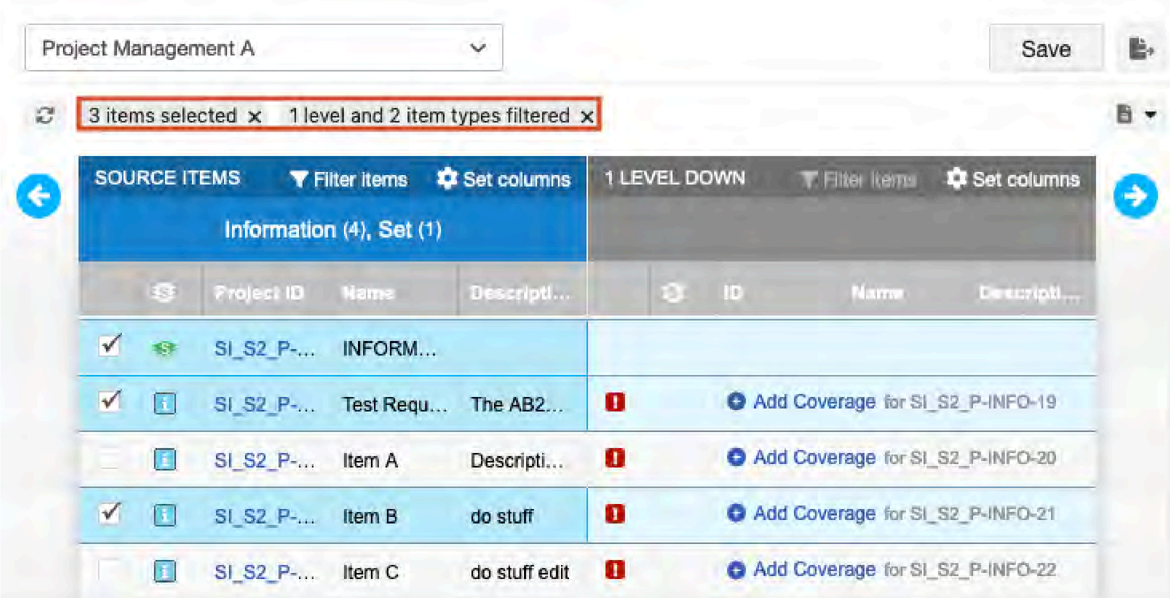
Filter items in Trace View

In Trace View, you can filter items by item type fo refine your results.

1. In Trace View [55], select the items you want to filter.
2. If the column you want to filter includes more than one item type, click **Filter items** at the top of the column.



3. In the window that opens, select the item types you want to see.
   The number next to each type is the total count of unique items of that type.
   After the filter runs, a message reports how many levels and item types were filtered.
4. (Optional) Select **X** to remove all filters and refresh the screen.



5. (Optional) Select Save the Trace View [281] or Export the Trace View [282] with filters in place.

Relationships

Relationships link items together. When items are linked, you can assess the impact an item or group of items can have on other items.

Traceability is defined by relationships. When one item changes, you can check related items to make sure they are still accurate and verify that requirements are written.

Relationships can be upstream or downstream from an item. With appropriate permissions [285], you can relate items within the same project or between multiple projects. Find and view relationships [149] in Single Item View.

You can also add relationships from:

- Single Item View [286]
- List View, Reading View, or Trace View [289] (by adding a new related item)
- Trace matrix [288]

Relationships and access permissions

Your ability to interact with relationships depends on your access permissions for each of the related items. Read more about permissions [585].

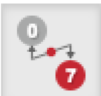
Permissions for current item...	Permissions for related item...	You can...
Read/Write	Read only	• View trace relationships. • View ID and name of related item. • Modify relationships. • Create new relationships. • Navigate to related item and clear suspect links.
Read only or Read/Write	No permission	• View trace relationships, but not modify or create new relationships. • See ID and name, but not navigate to related item.
Read only	Read/Write	• View trace relationships. • Modify relationships. • Create new relationships. • Navigate to related items and clear suspect links.
Read/Write	Read/Write	• Create, modify, and delete relationships. • Navigate to related items and clear suspect links.
Read only	Read only	• View trace relationships. • Navigate to related items, but not create or modify relationships between the two items.

Relationship Status Indicator

The Relationship Status Indicator shows an item's relationship count. The indicator shows red if the item is missing an upstream or downstream relationship, is suspect, or is causing a suspect relationship.

The Relationship Status Indicator is visible in the **Relationship** widget of the side toolbar [57], as well as in a column in List View (when configured [48]).

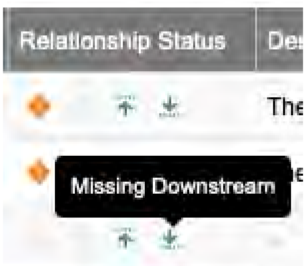
Relationships widget

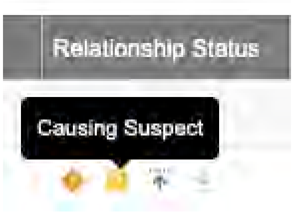


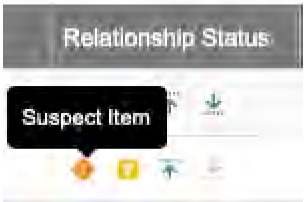
Top number:	Number of upstream items related to this item.
Bottom number:	Number of downstream items.
Red:	Item not in compliance with relationship rules.
Gray:	Item in compliance with relationship rules.

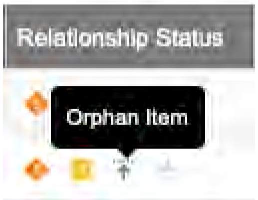
List View

When you hover over an icon (exclamation mark, question mark, up arrow, down arrow), you see how the item violates the relationship rule applied to the project.









An item might violate relationship rules in one of these situations:

- **Orphan Item** — Item is missing a required upstream relationship. Adding a related upstream item resolves the error.
- **Missing Downstream** — Item is missing a required downstream relationship. Adding a related downstream item resolves this error.
- **Suspect** — **Suspect Item** means one or more upstream items have changed. **Causing Suspect** means a change has caused a suspect relationship with all downstream items. When you've properly assessed the change, clearing the suspect links resolves the error.

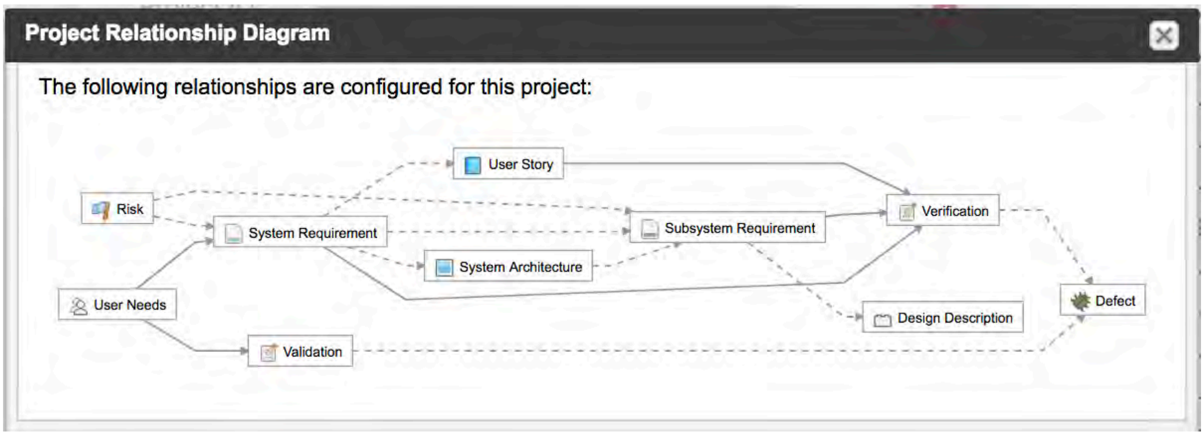
If relationship rules haven't been applied to the project, an error appears only if the link is suspect.

Add a relationship from Single Item View

Creating a relationship establishes a directional link between two items. The related items can exist in the same project or in different projects.

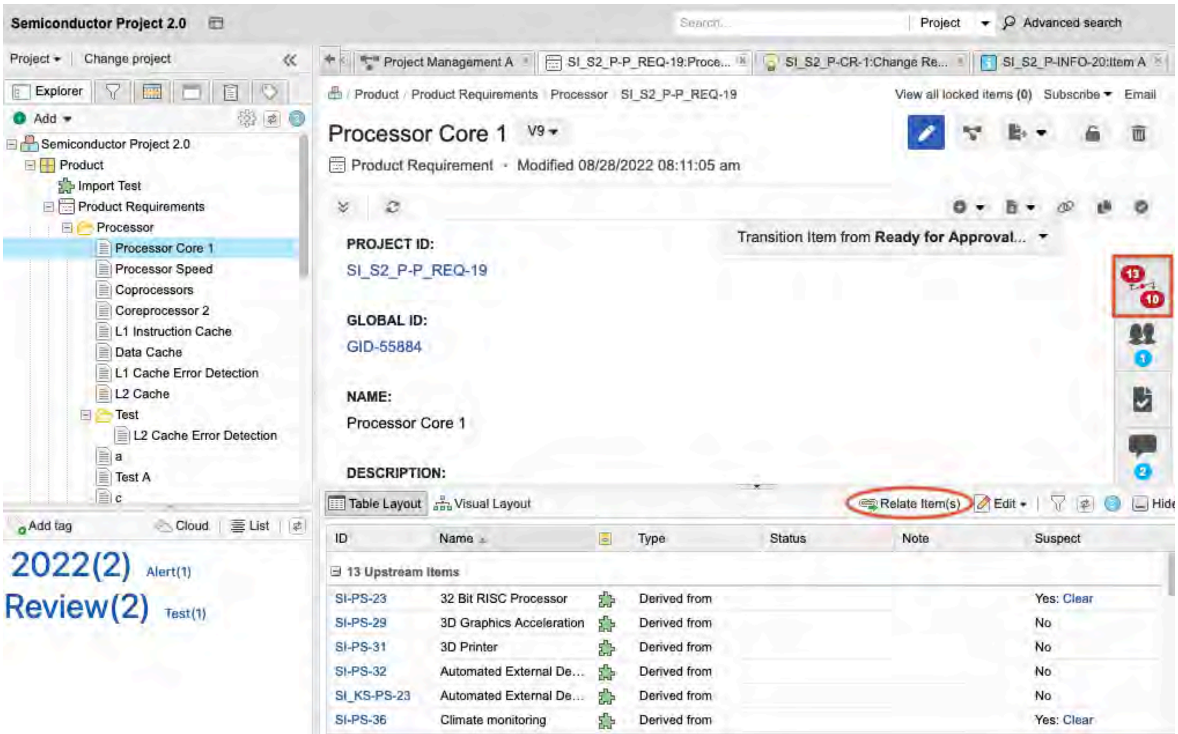
Important considerations

- You must have permissions to a linked related item to be able to preview, open, or edit it. Otherwise, you can only see the related item’s name, project, and relationship attributes.
- If relationship rules [625] were applied to the project, only items that meet the rule's criteria appear in the right panel. Likewise, you can only create a relationship with item types that meet the applied relationship rule. To display the rules associated with this project, click **Show relationship diagram** at the top of the right panel.



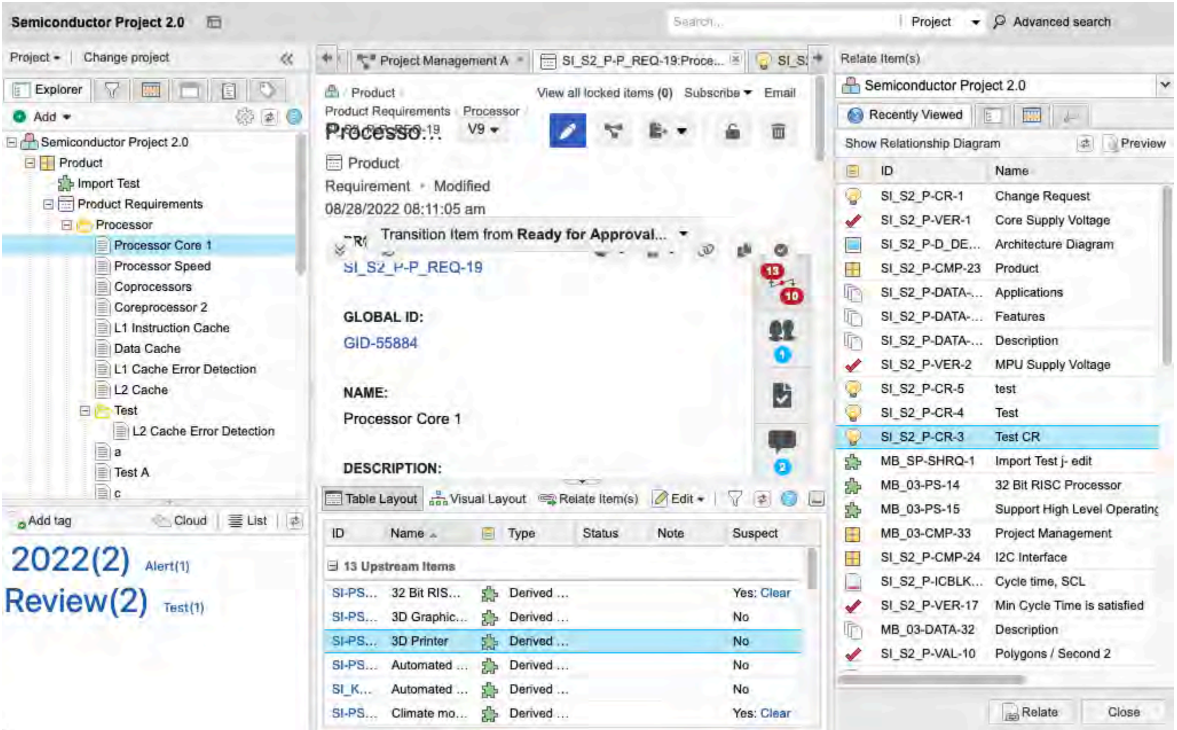
To add a relationship:

1. While viewing an item in Single Item View, click **Relationships** in the side toolbar, then click **Relate Items** in the bottom panel that opens.



2. In the side panel that opens, select the items you want to relate to the item you're viewing, using one of these methods:
   - Double-click on the items you want.
   - Select the items you want and click **Relate**.

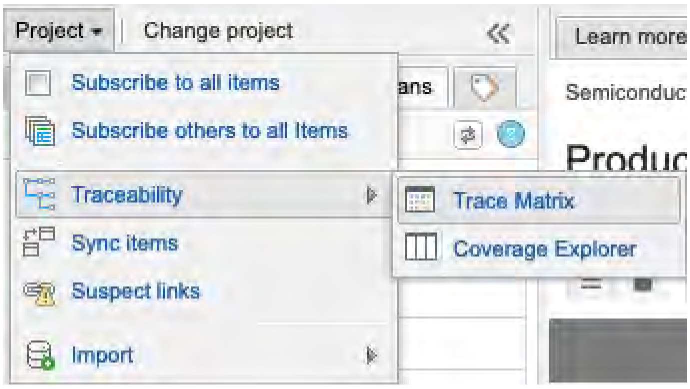
   A relationship is added to the selected item in the direction defined by the rules. It is then immediately visible in the bottom panel. If the new relationship isn't defined in the rules, you are prompted to define the relationship direction and type.



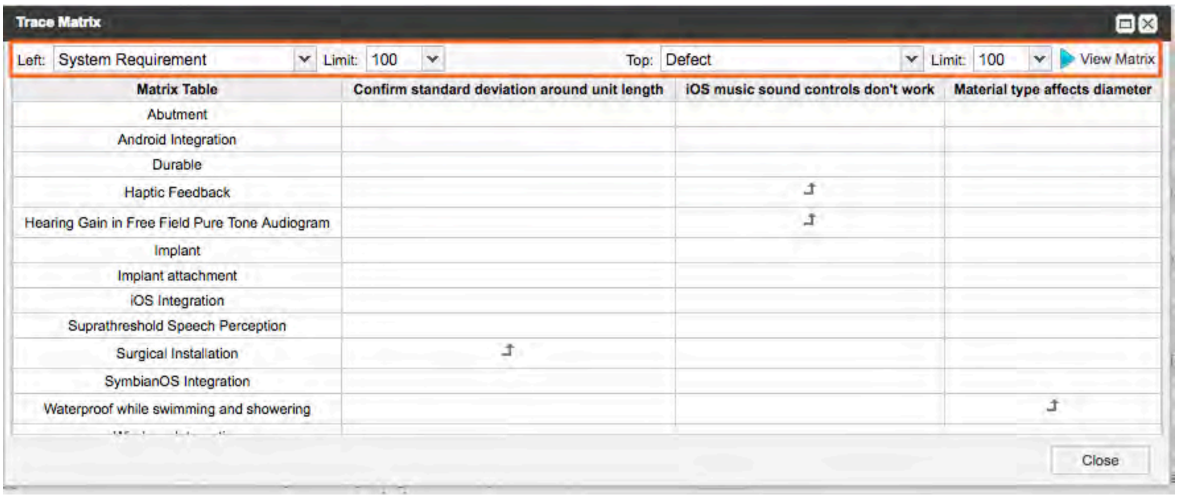
Add a relationship from the Trace Matrix

Creating a relationship establishes a directional link between two items. The related items can exist in the same project or in different projects.

1. Select **Projects** in the header, then select **Project > Traceability > Trace Matrix**.



2. In the header row of the Trace Matrix window, use the drop-down lists to select two item types you want to compare, select the number of items you want to see for each type, then click **View Matrix**.

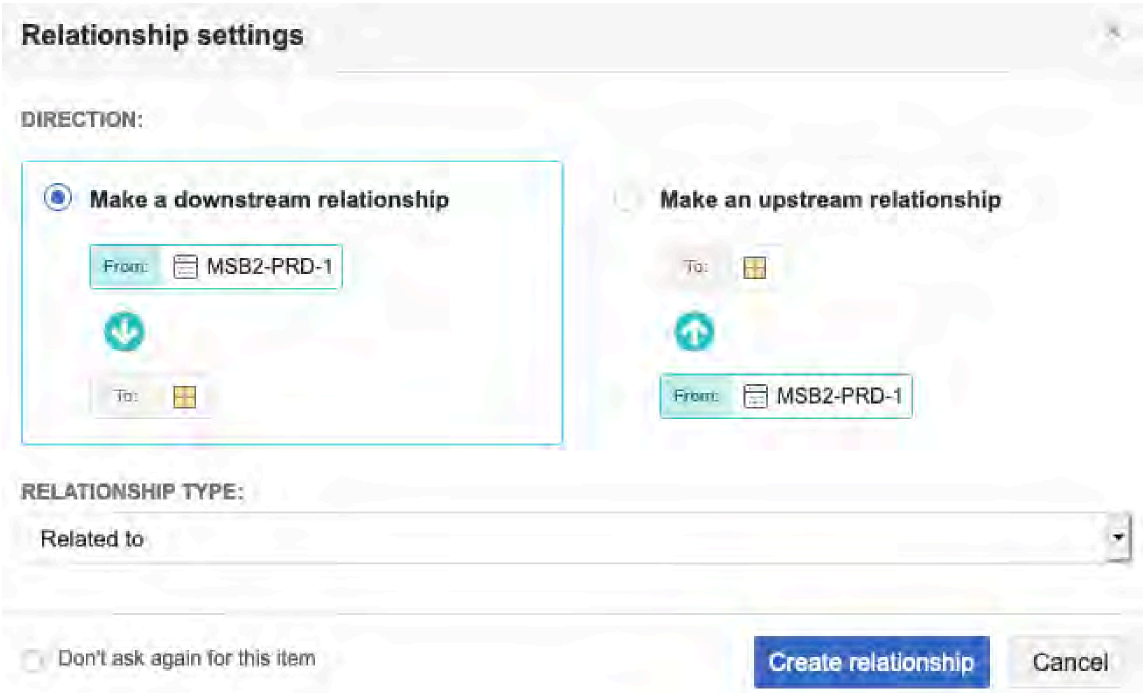


3. Double-click in any cell where you want to add or edit a relationship.
4. In the Add/Edit Relationship window, make the needed changes, then click **Update**.

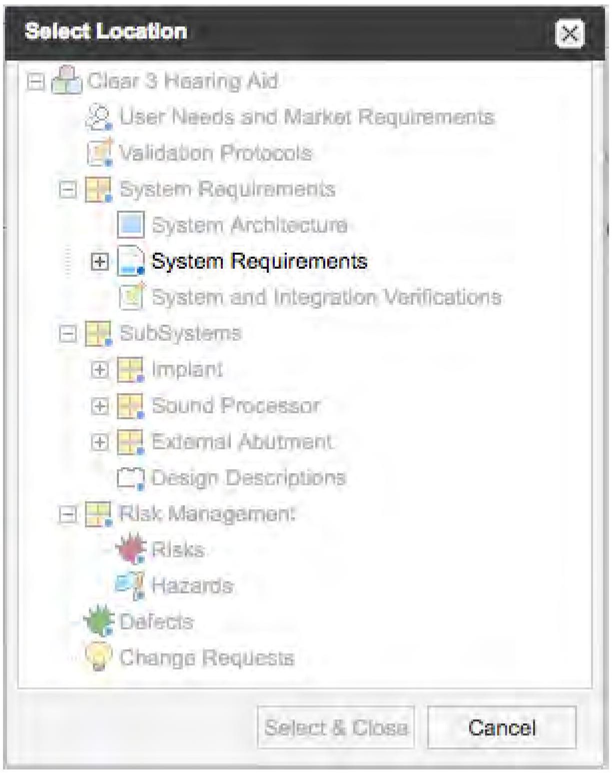
Add a new related item

You can add a new item and relate it to one or more items at the same time.

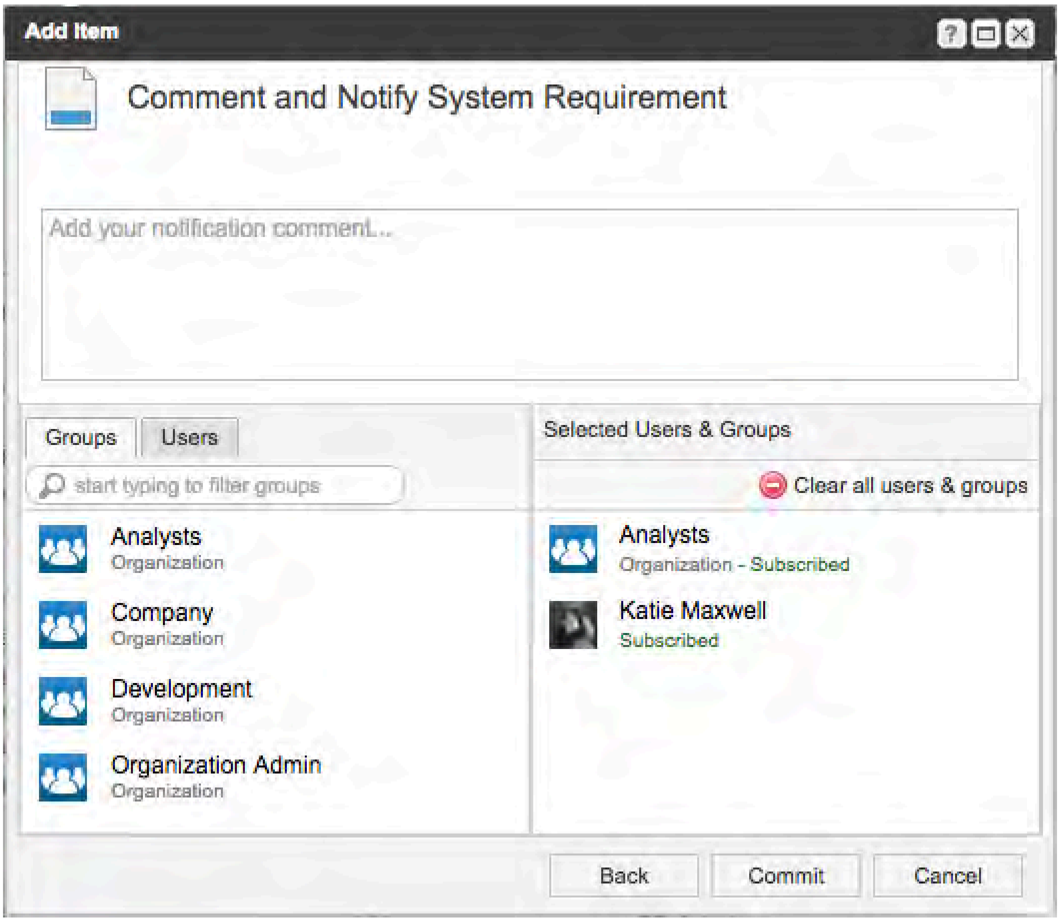
1. View the items to be related in List View [53], Trace View [55], or Reading View [54].
2. Select the items where you want to add related items. All selected items must be the same item type.
3. From the side toolbar, select **Add > Add related**. From the drop-down menu, select the item type for the upstream or downstream items you want to add. The drop-down menu lists only item types allowed by relationship rules.
   When a rule is applied, it dictates the direction and relationship type for the item you want to relate.
4. **If a rule is not applied** — In the Relationship settings window, select the direction and relationship type for the item you want to relate, then click **Create relationship**.
   - **Direction** — Upstream or downstream.
   - **Relationship Type** — Must be configured by an organization administrator [622].
     Common examples include: related to, dependent on, derived from, validated by, verified by, or mitigated by.



5. In the Add Item window, enter a name, description, and other details as needed, then click **Save**.
6. In the Select Location window, choose where to save this item, then click **Select & Close**.
   Locations that aren't permitted appear in light gray. You might need to expand folders, sets, or components to find the location you want.



7. If you selected **Notify** in the Add Item window, enter the comment, select groups or users to notify, then click **Commit**.

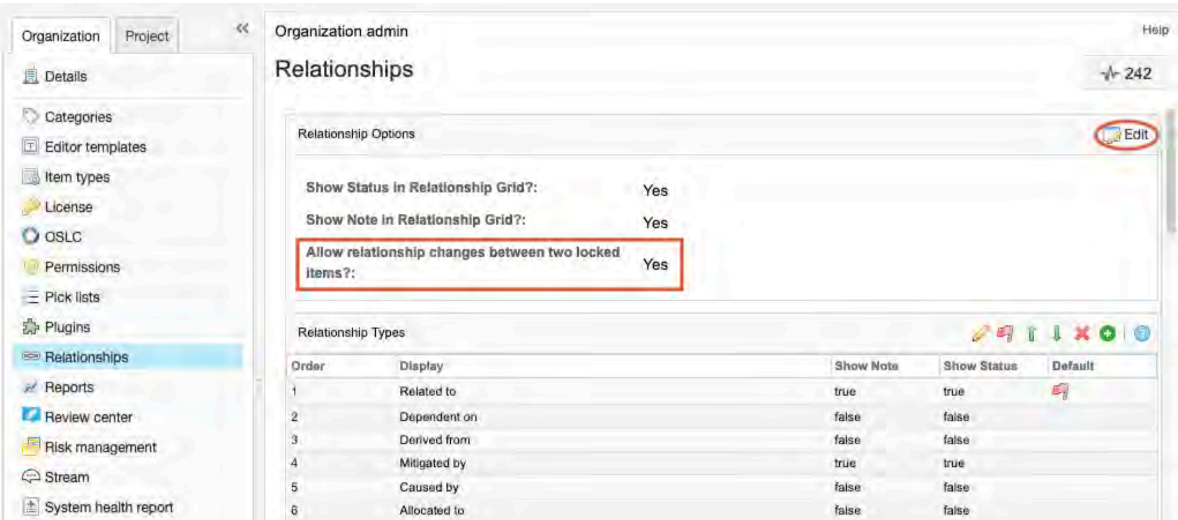


A pop-up window appears with this message: "Success <item name> has been updated/created."

Allow locked items to be related

As part of your workflow, you can relate two existing locked items. This functionality must be configured first by an organization admin.

1. Select **Admin > Organization**, then select **Relationships**.



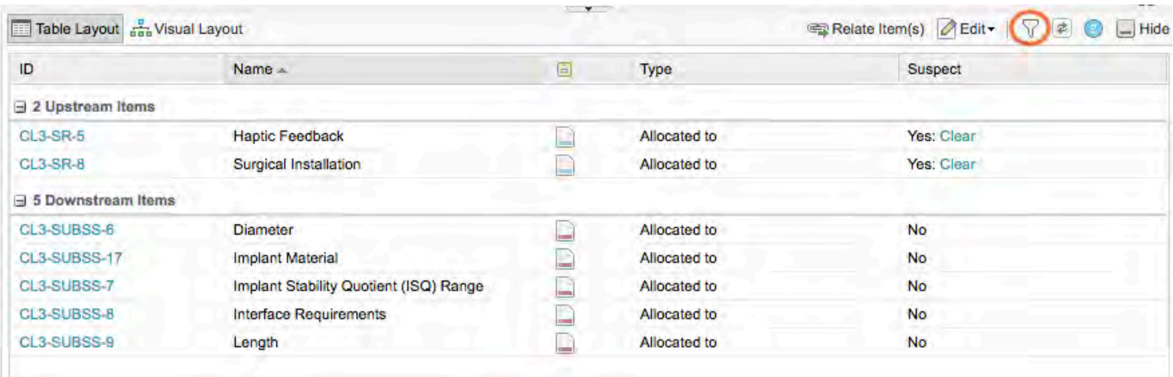
2. In the Relationship Options section, click **Edit**.
3. Select **Allow relationship changes between two locked items**.
4. Click **Save**.

You can now relate two locked items.

Filter relationships

You can filter items to display only items that are related to a single item. For example, you might want to view only the test cases related to a requirement. The filter is stored until the end of your session, so as you move from item to item, the filter remains in effect.

1. In Single Item View, select **Relationships** in the side toolbar.
2. In the bottom panel that opens, select **Filter**.



3. In the Relationships filter settings window, choose your own settings or keep the defaults, then click **Apply**.
   The filtered results appear in the bottom panel.
4. To release the filter and see all related items again, click **Filter Applied-Click To Restore Defaults**.

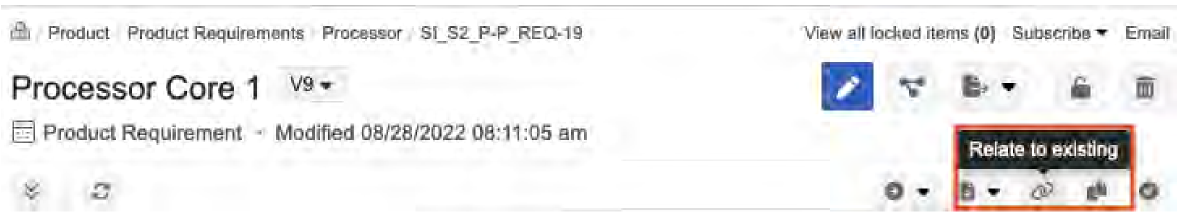
Relate to an existing item

Many times, the items you want to relate have already been added to Jama Connect. You can relate items that exist.

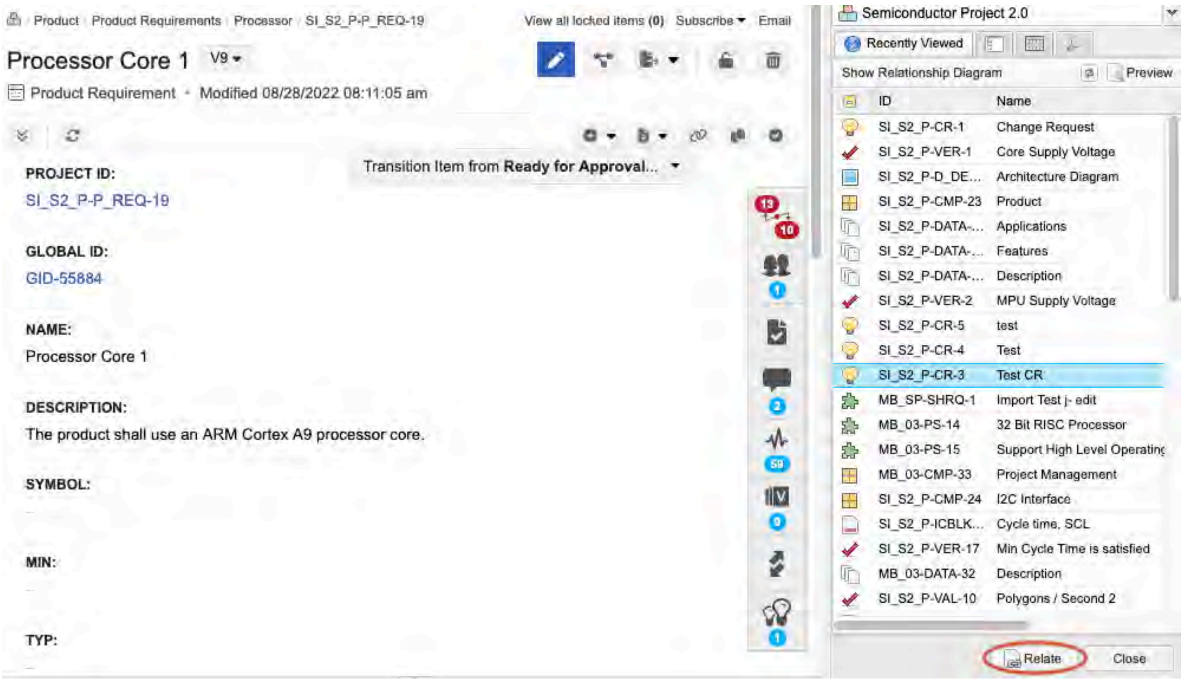
Recently viewed items is the default view, but you can also use the Explorer Tree, Releases, or Search tab to find the items you want to relate.

To relate an existing item:

1. View the items to be related in List View [53], Trace View [55], or Reading View [54].
2. Select the items you want to relate. All selected items must be the same item type.
3. Select **Relate to existing**.



4. In the side panel that opens, select the items that you want related, then click **Relate**.



A relationship is added to the selected item in the direction defined by the relationship rule. It is then immediately visible in the bottom panel of the relationships [149] view. If you establish a relationship that is not defined by a relationship rule, you are prompted to select a type.

Clear suspect links

Suspect links appear on an item when changes were made to upstream items, meaning the item might no longer be correct or complete. For example, if a requirement changes, the downstream verification might no longer correctly verify the requirement as-is. The change to the requirement causes a suspect relationship to the verification item.

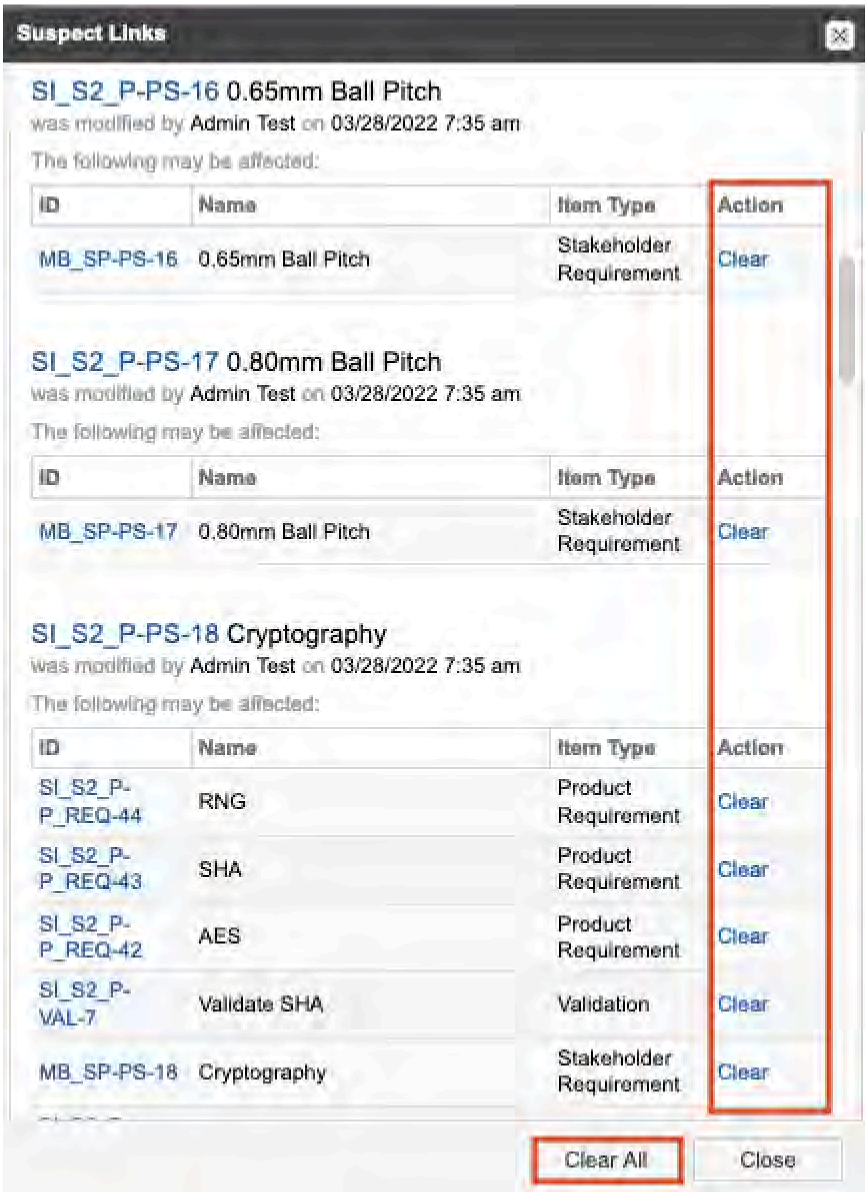
Only updates to certain fields trigger suspect links. These fields are determined by the organization admin, who configures item types [605].

Suspect links also cause the relationship status indicator to be red when you view items in List View or Single Item View.

If you determine that a suspect link has no impact or if you make the necessary changes, you can manually clear the suspect link.

To clear suspect links:

1. Open all suspect links for the project or for a single item [151].
2. Select **Clear** (one link) or **Clear All** (all visible items).

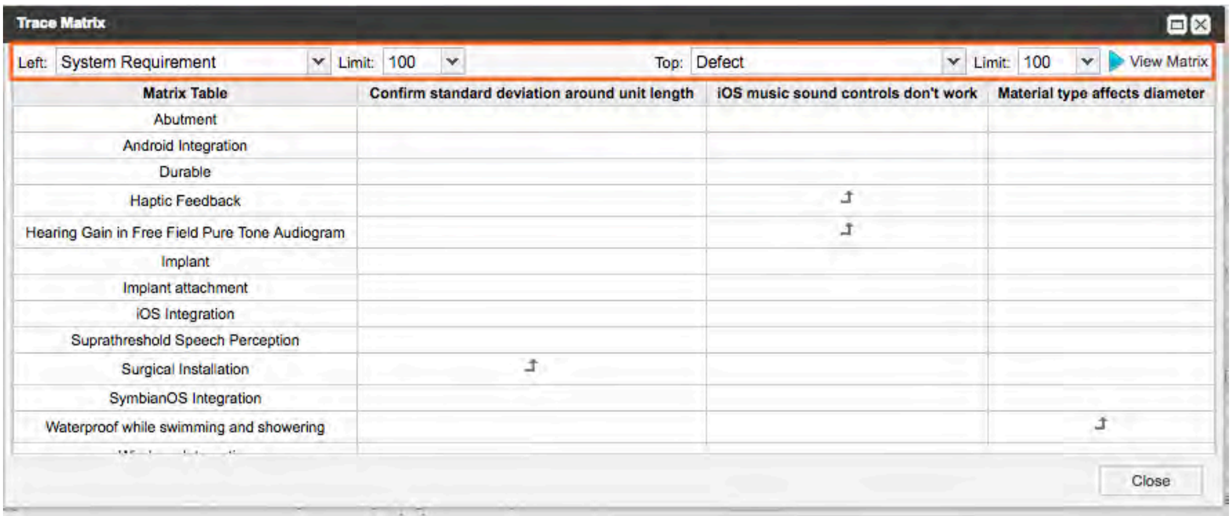


Trace Matrix

The Trace Matrix is a visual representation of relationships between the items in a project.

It helps you determine the impact when a change occurs and lets you quickly see relationships for two groups of items.

For example, you can select a set of requirements and see which have related test cases.



Along with determining the impact of a change, you can add a relationship from the Trace Matrix [288].

IMPORTANT

The Trace Matrix doesn't enforce relationship rules.

Impact Analysis

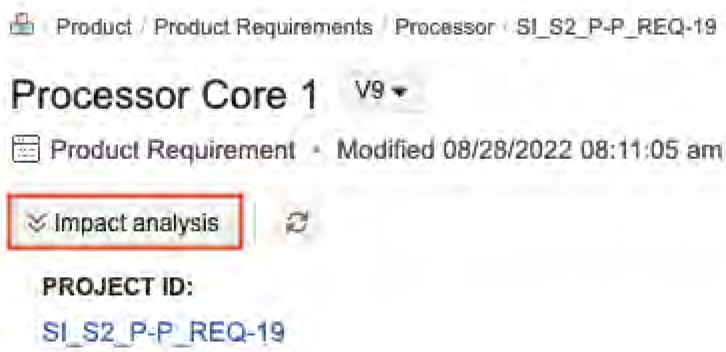
Impact Analysis shows you a complete picture of all upstream and downstream related items that might be affected by changes. You can run an impact analysis on an item or on a change request.

With traceability, you can see how a change might impact a selected item before you make the change.

For example, if you're about to change a requirement, you can run an impact analysis to see the degree to which the change might impact other requirements and verifications.

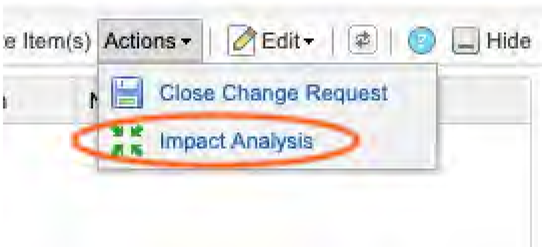
To run Impact Analysis on an item:

In the top toolbar of Single Item View, select **Impact Analysis**.



To run Impact Analysis on a change request:

In the side toolbar of a change request, select **Items to change** (bell widget) to open the bottom panel, then select **Actions > Impact Analysis**.

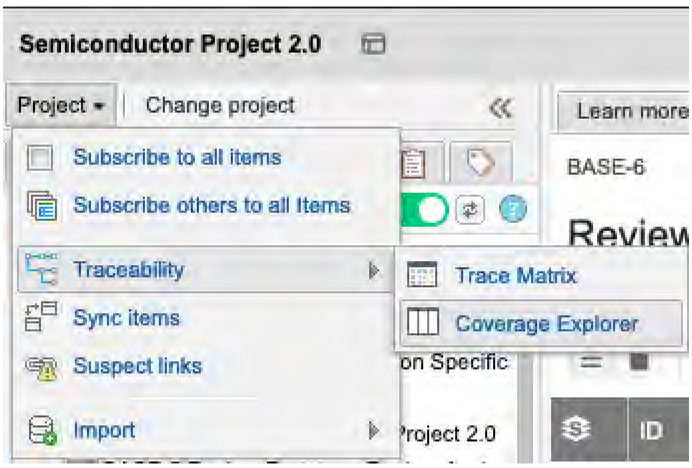


Coverage Explorer

The Coverage Explorer is a tool to view downstream relationships (or the lack of them) from a selected collection of items like a set, folder, or filter. Coverage Explorer provides needed coverage.

You can create and save coverage views and export them to an Excel document [297].

To open the Coverage Explorer, select **Projects** in the header, then select **Project > Traceability > Coverage Explorer**.



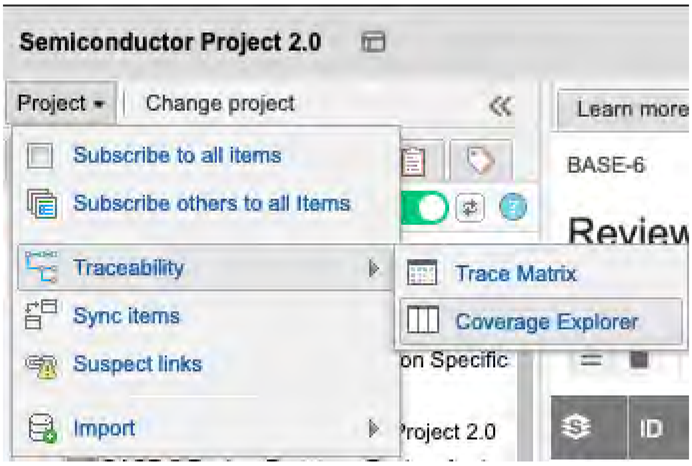
The Coverage Explorer opens. From this window, you can add a new coverage view and look at existing views.

Create and export views in the Coverage Explorer

Coverage Explorer enables you to analyze the relationships established across items in your project and identify gaps. For example, you can use Coverage Explorer to identify if any requirements lack verifications, or to ensure your requirements trace to “passed” verifications.

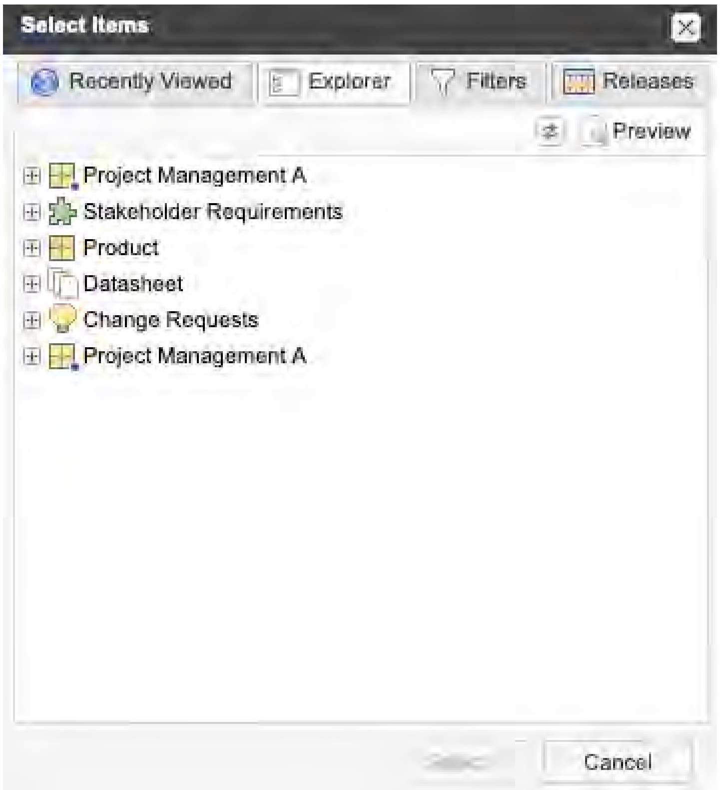
A view can contain a maximum of 500 items per level. You can bookmark a view to highlight and prioritize it. Only the view's creator can rename or delete it.

1. Select **Projects** in the header, then select **Project > Traceability > Coverage Explorer**.



2. Select **Add Coverage View** to open the Select Items window.

3. Select the items you want to analyze for coverage.
   To change your view, use the tabs at the top: **Recently Viewed**, **Explorer**, **Filters**, and **Releases**.



4. With the items selected that you want to analyze, click **Select** to close the window.
5. (Optional) To hide, show, or reorder fields for that level, click the gear icon at the top of the Coverage Explorer.
6. (Optional) To add a new level of downstream relationships, click the green plus button.
   You can add only one item type per level. However, if you add a downstream level and leave the item type blank, Coverage Explorer displays all items regardless of type if type isn't selected.
7. Click **Save**.
   You can deselect the star by clicking on it.
8. (Optional) Click **Export** to generate an Excel document.

Reuse and synchronization

With reuse [300] you can copy items and containers of items such as components, sets, and folders, along with any supporting information. With synchronization [307] you can maintain a connection between reused items and containers, monitoring them for differences and updating any that are out of sync.

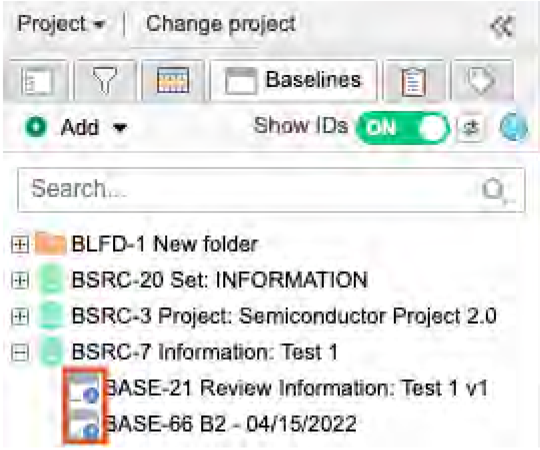
Supporting information that can be duplicated [81] includes:

- Entire item
- Item fields
- Item widget relationships, tags, attachments
- Child items

When items are synchronized, they receive a Global ID that they share regardless of their location in the system. You can synchronize the items that you reuse, or connect existing items so that they share a Global ID and can be synchronized.

To keep track of synchronized items, you use the Sync Items window, where you can compare items [313] and decide how to update synchronized items.

You can see which items are synchronized in the Explorer Tree. A blue dot on the item’s icon indicates that the item is synchronized.



Important considerations

- Only an organization admin can configure reuse and synchronize [563] options.
- Reuse and synchronization can require significant memory, especially if your organization has a large Jama Connect database and has heavy reuse or synchronization use.
- While the links to attachments are synchronized, the content in the attachment is not.
- Reusing and synchronizing items adds activity entries to the stream [241] for all items created or modified during the process.

Global ID

A Global ID is an identifier of synchronized items. While every item has its own unique ID [648], which is also the project ID, synchronized items share a Global ID.

Items that share this Global ID are considered cloned artifacts, despite being in different areas of Jama Connect.

Global IDs have two parts:

- **Global ID prefix** — The Global ID (for example, GID-) is the same across the organization. An organization admin can change the Global ID prefix [557].
- **Global ID counter** — The Global ID counter is a number that increases for each new Global ID. It can only be reset or reduced by an organization admin. If a user tries to set the counter value below the Last Used Global ID Counter, Jama Connect shows an error message notifying the user to choose a greater value.

When items are synchronized, they are assigned the same Global ID. When an item is removed from this group through Break sync [309], a new Global ID is assigned.

Reuse and synchronization considerations

Reusing and synchronizing hundreds of items can affect system performance, causing it to feel slower than usual for users and decreasing performance for other processes such as exporting.

If you try to reuse and synchronize hundreds of items, a warning appears if performance is likely to be impacted.

If you still want to reuse and synchronized hundreds of items, consider running the reuse and synchronization options in smaller batches or start the process during off hours when demand for resources is less.

Use cases for reuse and synchronization

Typical scenarios for reuse and synchronize include:

- **Duplicate** — Make a copy of an item, container, or project for reuse. Synchronization is optional but can be enabled between duplicated items.
- **Library** — Create a library to establish system-wide standards in your organization for all business units to follow. These standards might include common business practices, rules, glossaries, or non-functional requirements that teams must reference but can't modify. This information can be created and managed in one place and reused in projects where applicable.

  TIP

  If you're using a library to push changes to many projects, you can synchronize items to push changes from your "library" project to all other project items that share the same global ID. To do this, you must have write access on all projects included in the sync.

- **Shared requirements** — Large projects typically adhere to a common set of requirements, but often each requirement also has information specific to and managed by a project. For example, a requirement name and description can be shared across multiple projects, but release values, priorities, assignments, and relationships are managed by each project.
- **Branching** — You can split a set of artifacts into several branches so that each branch can be modified at the same time.

  This can be useful when you want a snapshot of items at a point in time, but still allow the items to be modified at the same time. In this case, reuse results in the versioning of an entire document made up of multiple items, rather than a version of only a single requirement.
- **Release management** — Similar to branching, reuse and synchronization let you use items across multiple releases in parallel. Typically, in this scenario, projects in Jama Connect represent a release.
- **Project template** — You can set up a project as a template that you reuse and synchronize. A template lets you ramp up new projects quickly or establish standard practices on content organization. You can also push updates to all projects that used the template.

Reuse

If your projects contain items that are often the same or slightly different, reusing items helps you work more efficiently. You can reuse items over multiple projects and synchronize them, as needed.

Reuse for users

Selecting items to reuse can be helpful if you are creating several copies, but want the original "source" item to maintain a connection with its copied items.

For example, you might have a set of requirements from a library project in Jama Connect and need to reuse it in several other projects. You copy the set to Project 1 and Project 2. When viewing the copied requirements in Project 2, users might see an upstream relationship to the "source" requirements in the library. Adding or not adding this relationship has no impact on how items are compared or synced.

You can only reuse items in sets of the same item type. For example, if you have two requirement sets in a project created from the same item type, you can duplicate and move items between these sets. Child items can also be reused, but they must be the same item type as the parent item.

TIP

If you have several items that are reused regularly, put them in a central project so future changes to items can be maintained from a central location. For instance, during reuse, relationships can automatically be created that are inconsistent with the relationship rules of a specific project.

Reuse administration

Reuse is best managed by a dedicated reuse admin. An organization admin can assign reuse admin permissions [591].

Reuse admins are the only ones who can:

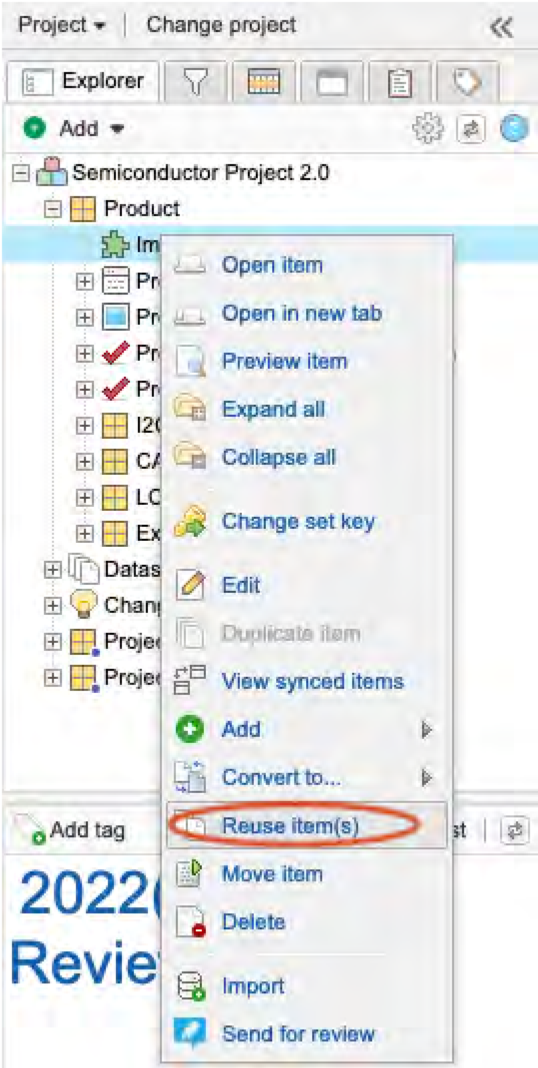
- Edit and delete Compare Views of synchronized items.
- Manage (add, edit, delete) reuse rules under Advanced options.

Reuse an item

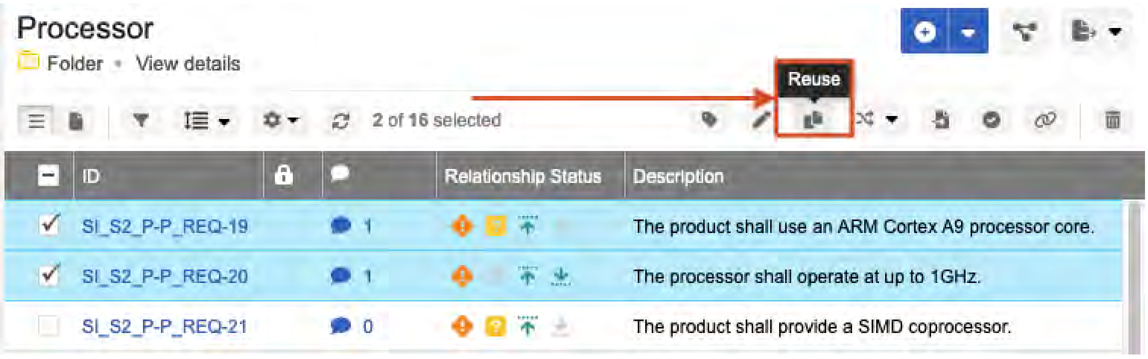
You can reuse individual or multiple items or containers of items such as components, sets, and folders. Items can be reused in the same project or in a different project.

> **TIP**
> To quickly make a copy of an item in the same project, use the Duplicate items [81] option.

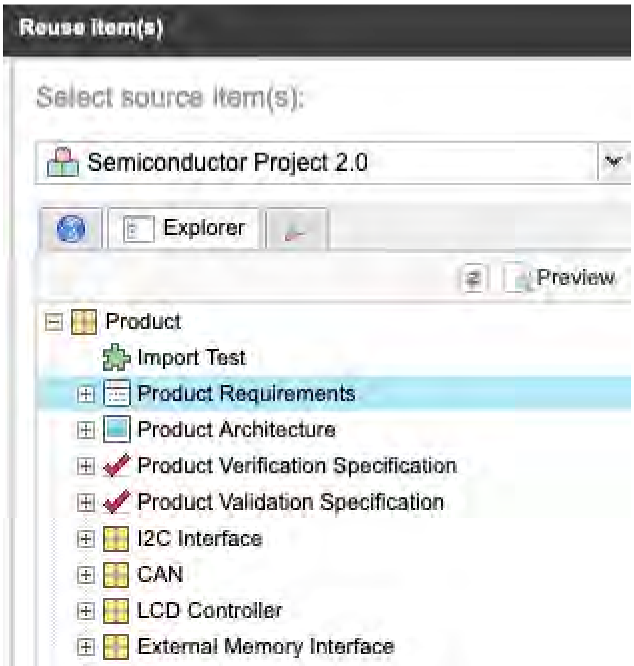
1. Select items for reuse with one of these methods:
   - **Explorer Tree** — Select the item or container that you want to reuse, right-click to open the context menu, and select **Reuse items**.



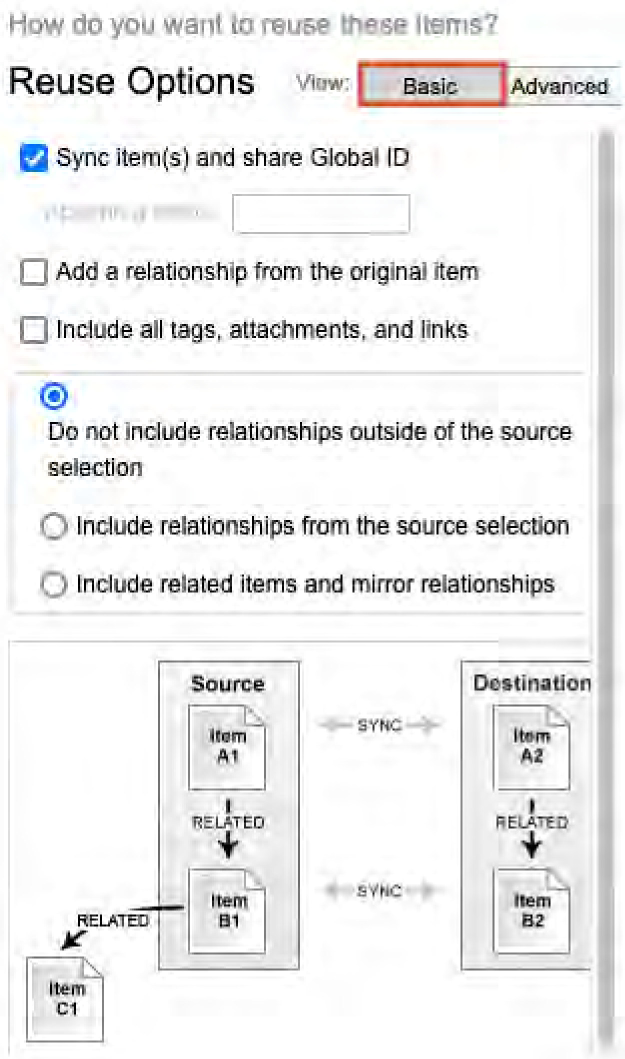
- **List View** — Select the items you want to reuse, then click **Reuse**.



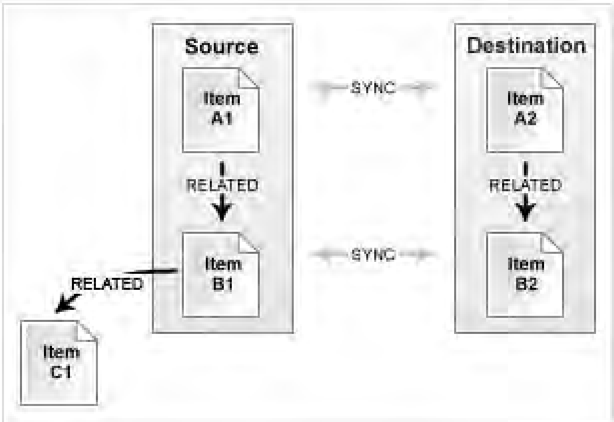
2. In the Reuse Items window, select the source items you need.



3. On the Basic tab, select the options you want.



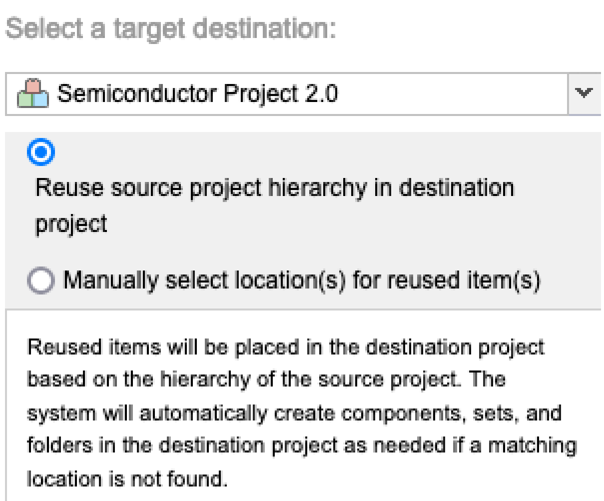
- **Sync items and share global ID** — Gives the source item and the destination item the same global ID. With the same global ID, changes to one item flag the relationship between them as out of sync.
- **Append a prefix to the names of the copied items** — If items are being reused but not synchronized, you can append a prefix to the new item to differentiate between two copies of the same items. Enter the prefix you want to use in the field.
- **Add a relationship from the original item** —Creates a relationship between the original item and the new item.
- **Include all tags, attachments, and links** — Duplicates all tags, attached files, and URL links associated with the items. If an existing item is overwritten and this option is selected, all tags, attachments, and links are updated to match (removes any tags, attachments, or links that existed in the destination but not in the source item). If this option isn't selected and you overwrite an existing item, any tags, attachments, and links are cleared in the destination item.
- **Don't include relationships outside of the source selection** — Copies only the source item. Relationships within the source item aren't copied. For example, if the source item has a component that contains Features, Requirements, and Test Cases, relationships between those selected items are copied when the component is reused.
  However, those relationships aren't copied if any source items have relationships to items outside the source component, such as a relationship between a requirement in the source component and a use case in another component that is not reused in this action.

- **Include relationships from the source selection** — Copies the items and relationships contained within the source. For items within the source that have relationships outside the source, the copies of these items have relationship created to those same related items outside the source.
- **Include related items and mirror relationships** — Copies the items and relationships contained within the source. Any items outside the source that are directly related to items within the source are also copied.

> **IMPORTANT**
> If you change the hierarchy of the source component, those changes aren't made in the destination component.

4. Select a target destination for the item.



- **Reuse source project hierarchy in destination project** — Reuses the project structure that contains the reused items. For example, if a folder is selected for reuse, the set that contains the folder is also reused.
- **Manually select location(s) for reused items(s)** — Select a specific location to place the reused content. The target location must contain a valid location to house the reused items. For example, if you select this option when reusing a System Requirement, the target location must have a set of System Requirements.

5. Click **Reuse and sync** at the bottom of the window. If you reuse something that has already been reused, you are prompted to select **Overwrite Items** or **Skip Items**.
6. In the Reuse Complete window that shows a summary of what was reused, select one:
   - **View Results** — Shows a list of all newly reused items.
   - **Reuse again** — Reuses the same source items in a different location.
   - **Finished** — Closes the window.

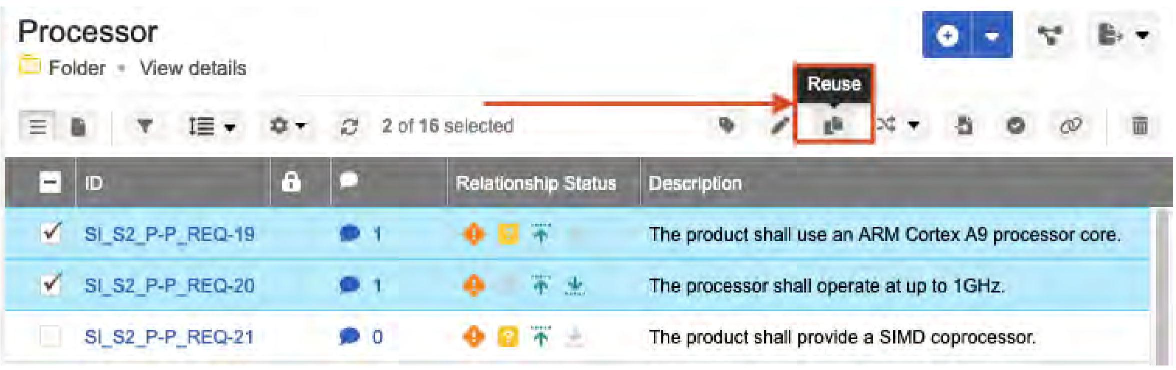
Add and edit reuse rules

As the reuse admin, you can create reuse rules and edit existing reuse rules.

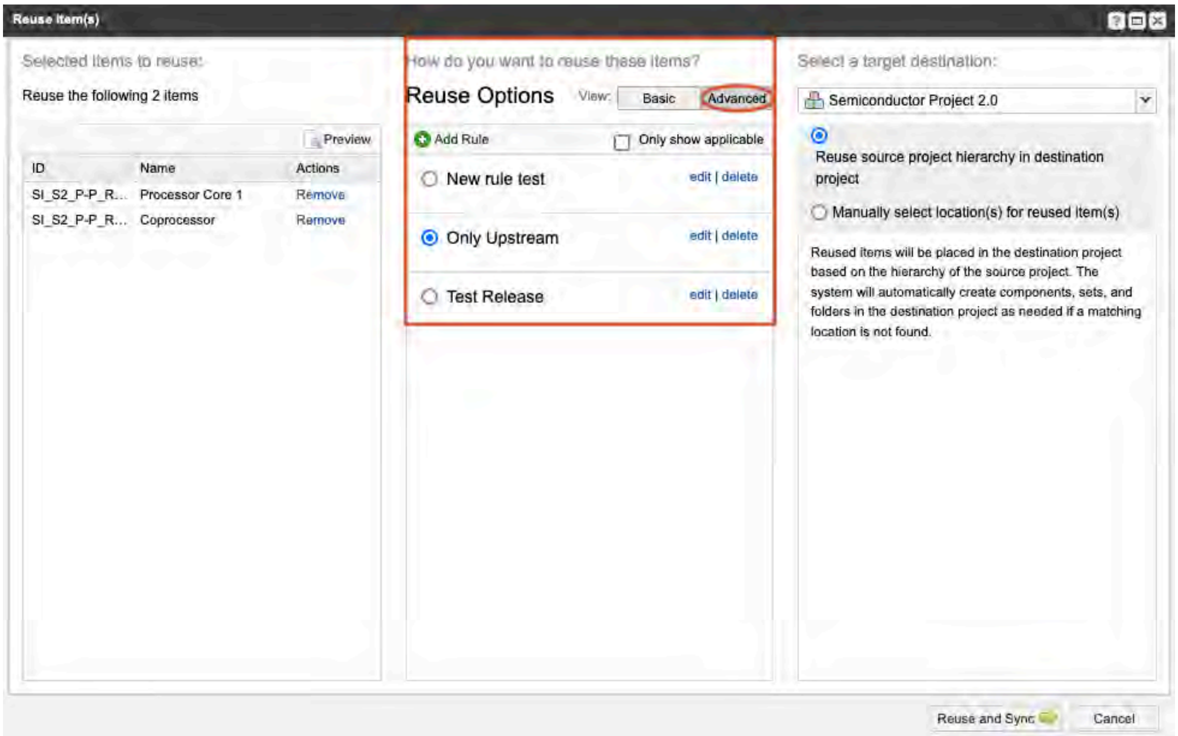
Any field left unchecked uses its default values.

> **IMPORTANT**
> You must be a reuse administrator [300] to perform these tasks.

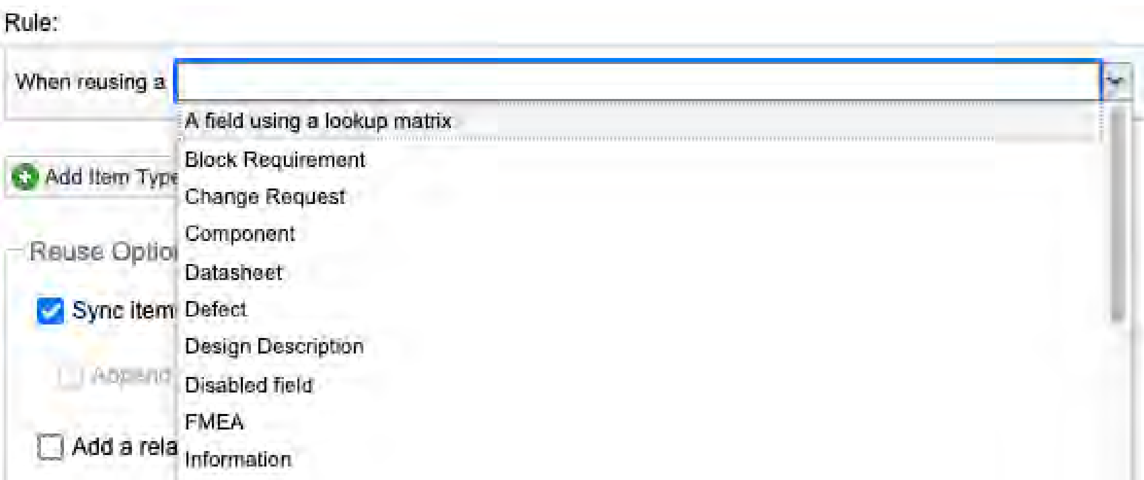
1. Select items for reuse from the Explorer Tree or List View, then click **Reuse**.



2. In the Reuse Items window that opens, under Reuse Options, click the **Advanced** tab.



3. Add a rule or edit an existing rule:
   - **Existing rule** — Click **edit** next to a rule name.
   - **New rule** — Click **Add Rule**, select **Add item type rule**, then select an item type from the drop-down list.



   - Define how to handle upstream and downstream items that are related to this item type: select the green Related button. You can add multiple rules for each item type and each rule can include a maximum of 16 levels.
   - To remove a level or rule, select the red **Delete** (minus) button.
4. Configure the reuse options that you want to apply to these rules:
   - **Sync items and share Global ID** — Gives the source item and the destination item the same Global ID so that changes to one item flag the relationship between them as out of sync.
   - **Append a prefix to the names of the copied items** — For items reused but not synchronized, adds a prefix to the new item to differentiate it from the original. Enter a prefix in the field.
   - **Add a relationship from the original item** — Creates a relationship between the original item and the new item.
5. At the bottom of the window under Fields to Copy, click **Configure** next to each item type you want to configure to limit the fields and widgets to be copied.

6. On the Fields tab, define whether all fields or specific fields are copied.

> **IMPORTANT**
> Release fields can't be reused and synced between projects because they are unique to each project.

7. On the Widgets tab, define whether to copy tags, attachments, and links.
8. Click **Done** to save your changes and close the window.

Synchronization

Synchronization checks for differences between reused items and containers. When differences exist, users can update the corresponding information for those items or containers.

Synchronized items are only visible if you have read permissions to both items. You must have write permissions to edit, synchronize [310], reuse [301], or duplicate items.

If you change the hierarchy of a source component, those changes aren't synchronized in the destination component.

When you convert a synchronized item to a different item type, such as converting a Requirement to a Feature Request, the item loses its synchronization and receives a new Global ID.

> **NOTE**
> Synchronization changes don't trigger suspect links [293]. Synchronizing doesn’t remove deleted items. For example, if an item is deleted from the original component, you can't choose **Sync All** to delete that item from the new component.

Synchronization updates are allowed only on projects where you have read/write permissions. You can pull data from projects where you have read-only permissions, but you can't push data to items in those projects.

When you add a new item to a synced container, Jama Connect indicates that the item is out-of-sync. Syncing the containers results in the creation of that item in the synced container.

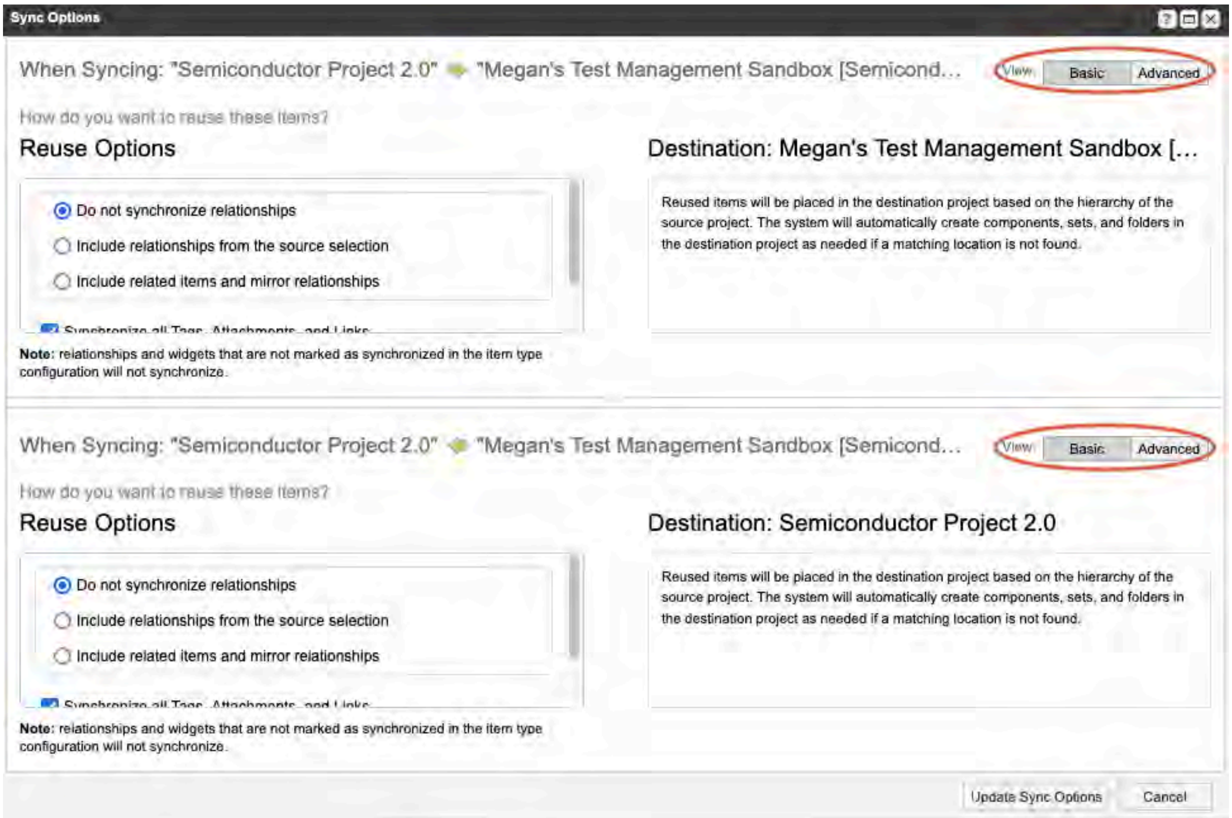
You can synchronize items using any of these methods:

- When you connect items from Single Item View [312]
- In the Sync Options window (when syncing multiple items) [310]
- When you reuse items [301]
- When an organization or project admin duplicates projects [638]

NOTE
If items with the same Global ID are not allowed in the same project, Jama Connect doesn't allow you to reuse in the same project with sync enabled.

Sync options window

When viewed from Compare View, the Sync Options window is divided into top and bottom section, which correspond to the left and right columns in Compare View, respectively. The functionality is the same for each section.



When you select the **Basic** tab in the top right corner, you can view and select these options:

Basic options	
Handle relationships	• Don't synchronize relationships. • Include relationships from the source selection • Include related items and mirror relationships
Options as needed	• Synchronize all tags, attachments, and links. When synchronizing related items that don't exist in the destination project, all fields, tags, attachments, and links are reused. Fields that aren't applicable to the destination project are set to defaults. Only links to attachments are synchronized, not the attachments themselves. • Add a relationship from the original item
Default destination uses the specified target destination	• Reused items are placed in the destination project based on the hierarchy of the source project. • If a matching location isn't found, the system automatically creates components, sets, and folders in the destination project as needed.

When you select the **Advanced** tab in the top right corner, you can view and select these options:

Advanced options	
Display and modify existing reuse rules or add new ones	• Reuse rules shown are filtered by item type. • Deselect **Only show applicable** to display all reuse rules. • Select **Add rule** to add a new rule to the items selected in this view.
Select a destination	• Select **Manually select location(s) for reused item(s)** to select a specific destination for your synced items. • Select **Synchronize** to sync all fields specified in the reuse rules in the Sync Options window. This also removes all attachments, tags, links, and relationships if selected. When synchronizing related items that don't exist in the destination project, all fields, tags, attachments, and links follow the sync option that's applied to the view (fields that aren't applicable to the destination project are set to defaults).

Select **Synchronize** to sync items based on the selected Sync Options setting.

When synchronizing related items that don't exist in the destination project, all fields, tags, attachments, and links follow the sync option that's applied to the view.

Break synchronization

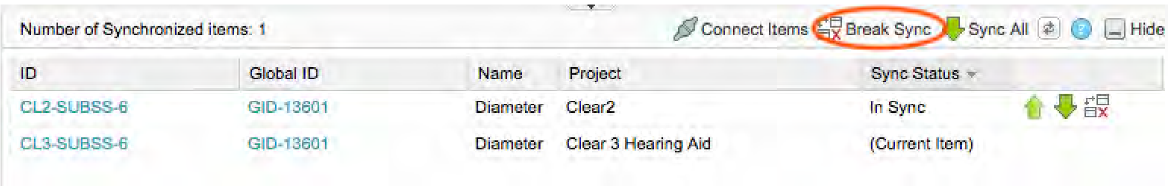
When you break the synchronization, the connection is removed between items and other relationships built on this connection. The removed item receives a new Global ID. Further synchronizations for that original Global ID don't affect the item with the broken connection.

1. Access the Number of Synchronized Items panel using one of these methods:
   - Open the Sync Items window by selecting an item in the Explorer Tree, right-clicking and selecting **View synced items**.

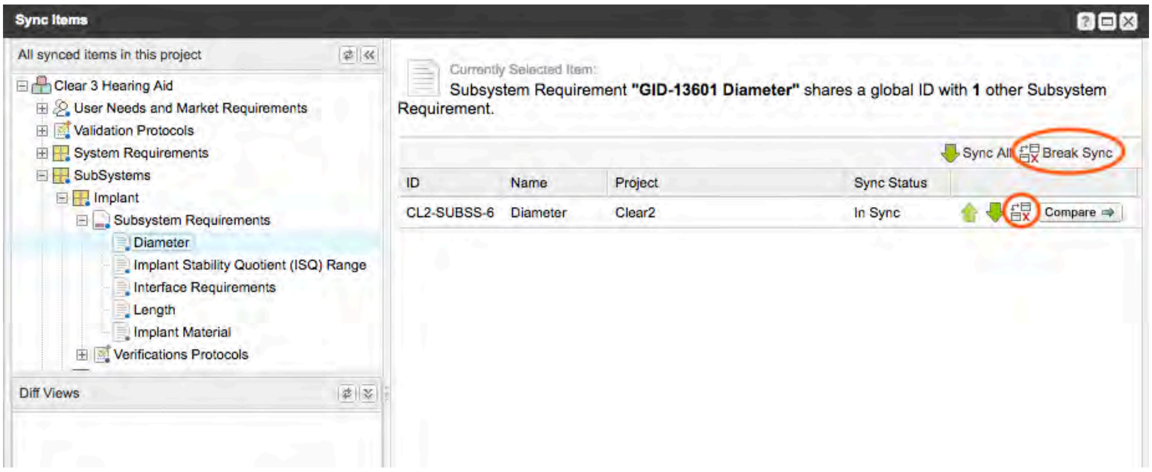
     

   - In Single Item View of the item whose synchronization you want to break, open the bottom panel by opening an item in Single Item View, then clicking the Synchronized items widget.

2. In the window that opens, select an item and click **Break Sync**.



3. In the Sync Items window, break the synchronization for one item or all listed items:
   - **One item** — To remove the sync from a specific item and assign a new Global ID, click **Break Sync** in the same row as the item.
   - **All listed items** — To break the synchronization between all listed items and assign a new Global ID to each item, click **Break Sync** at the top of the window.



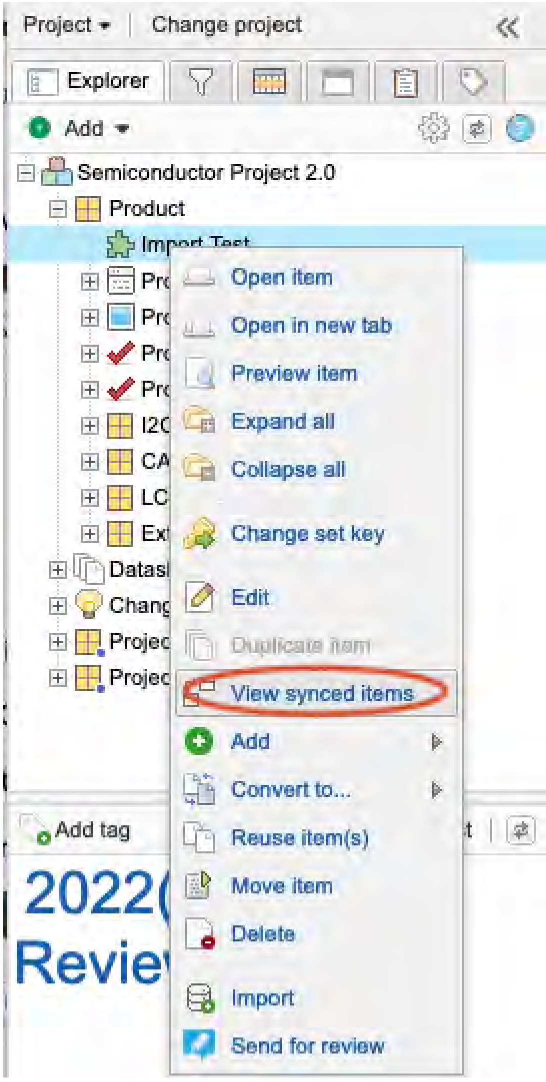
4. When prompted to confirm, click **Yes.**

A message confirms that the item is no longer synchronized.

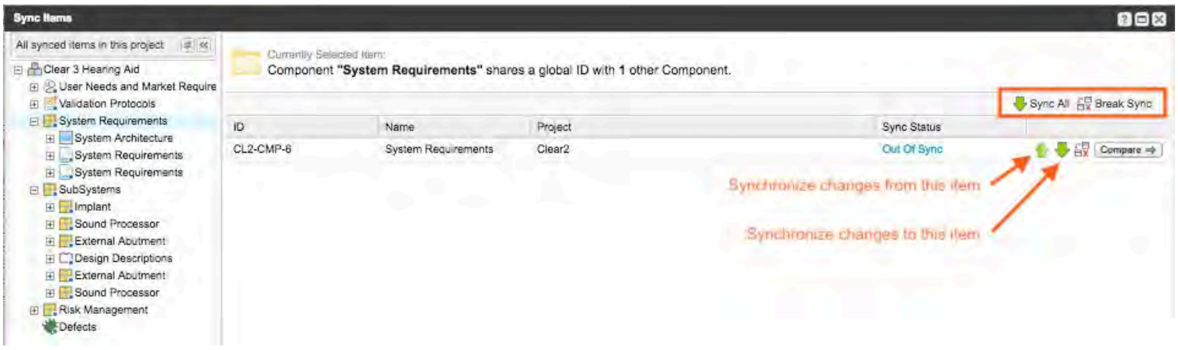
Synchronize items from Synced Items window

Synchronization checks for differences between reused items and containers. When differences exist, you can update the corresponding information for those items or containers.

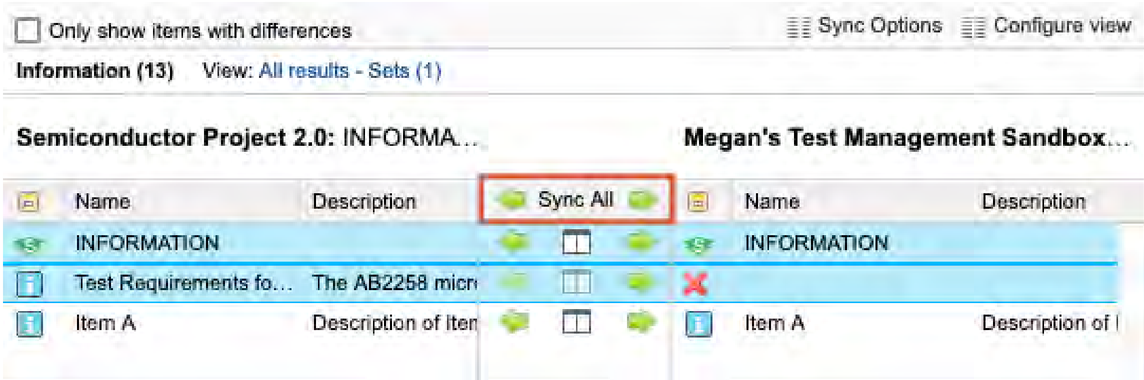
1. Open the Sync Items window: In the Explorer Tree, right-click the item, component, or set you want to sync, then click **View synced items**.



2. Click **Sync All** to open the window for all displayed items or use the up or down arrow to sync changes to or from the displayed items.



3. Click **Compare** to open the Compare View, then use one of these synch methods:
   - **One item** — Use the right or left arrow for each item to sync it in a particular direction.
   - **Multiple items** — Select multiple items (highlighted in blue) with the **Ctrl+Shift** keys, then use the arrows at the top of the Sync All column to synchronize all items in one direction.



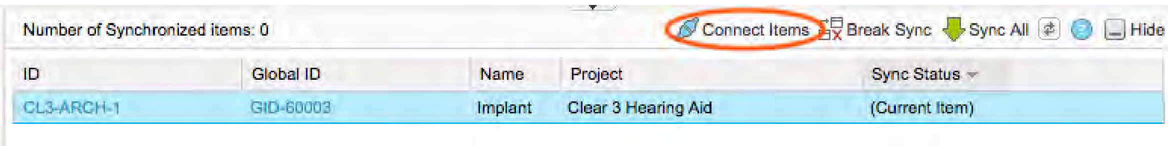
> **IMPORTANT**
> When you synchronize an item, a new version of that item is created. If the sync was done by mistake, it can't be undone but you can make the prior version current. This applies to field updates only, not to relationships created or new items created.

4. (Optional) The Batch Sync window displays the selected number of items to update, with **Selected Items** chosen by default. If needed, select **All Items**.
5. Click **Batch Sync** to complete the update.
   Sync items — Only fields that are enabled as synchronized fields [599] are updated. Child items are added to the destination if they exist in the source only.
   Sync a container — The container and all children are synced unless you created advanced reuse rules [305] that specify otherwise.

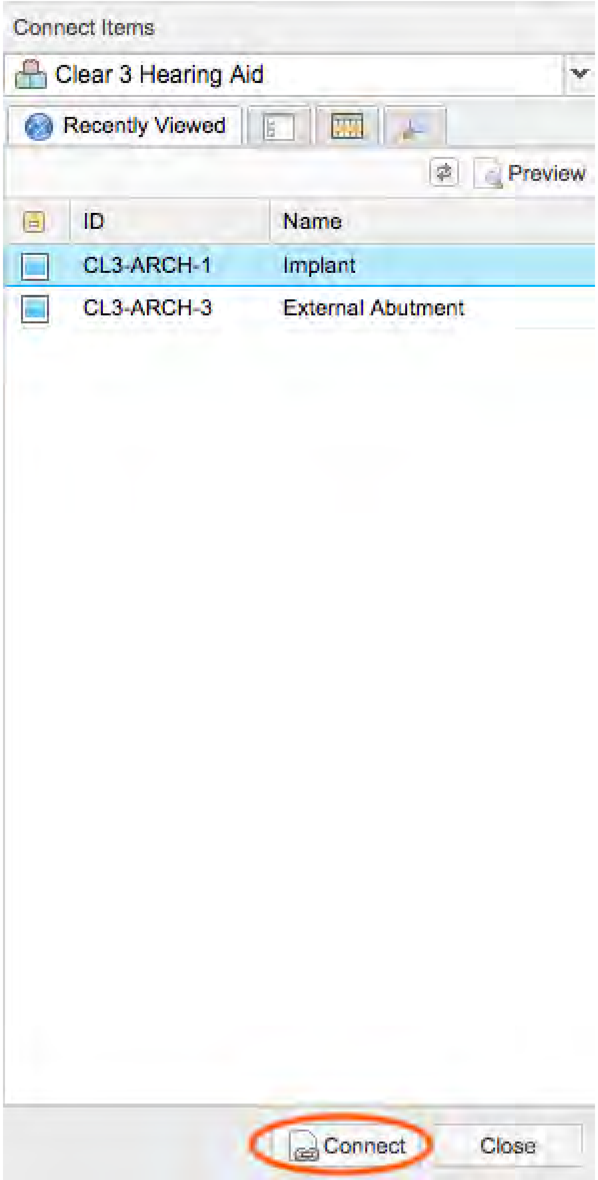
Connect items from Single Item View

If you want items to share a Global ID, you can connect them to keep them in sync.

1. Open the bottom panel in Single Item View [56].
2. In the bottom panel, select **Connect Items**.



3. In the panel that opens, select the item you want to connect to, then click **Connect**.
   To help you find the item, you can use the **Recently Viewed**, **Search**, **Explorer**, or **Releases** tabs. You can also click **Preview** to open a window with details about an item.

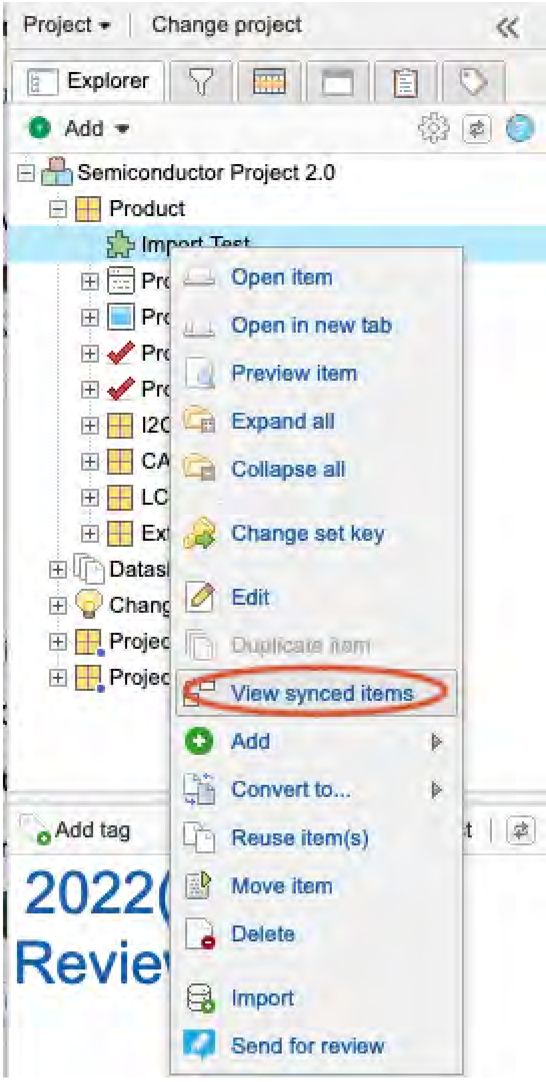


The newly connected item now appears in the bottom panel with the same Global ID. This change also appears as an activity in the Stream [224].

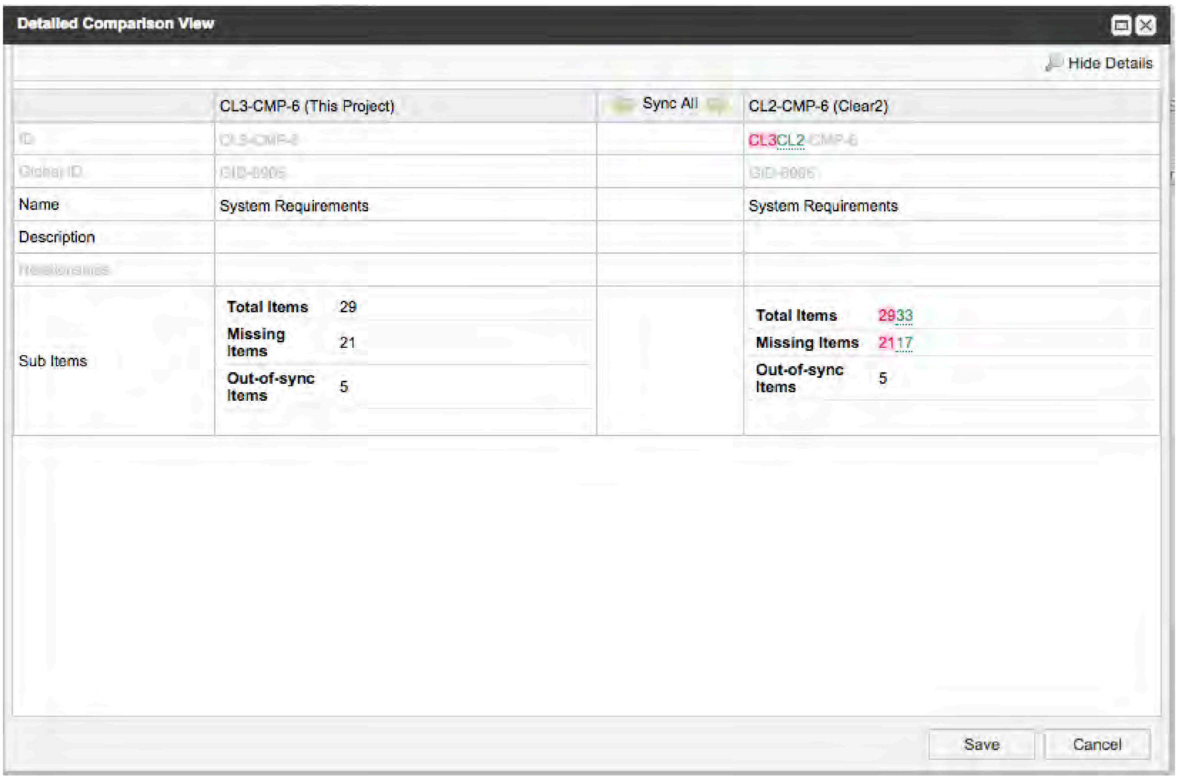
Compare synchronized items

You can compare synchronized items to see what has changed.

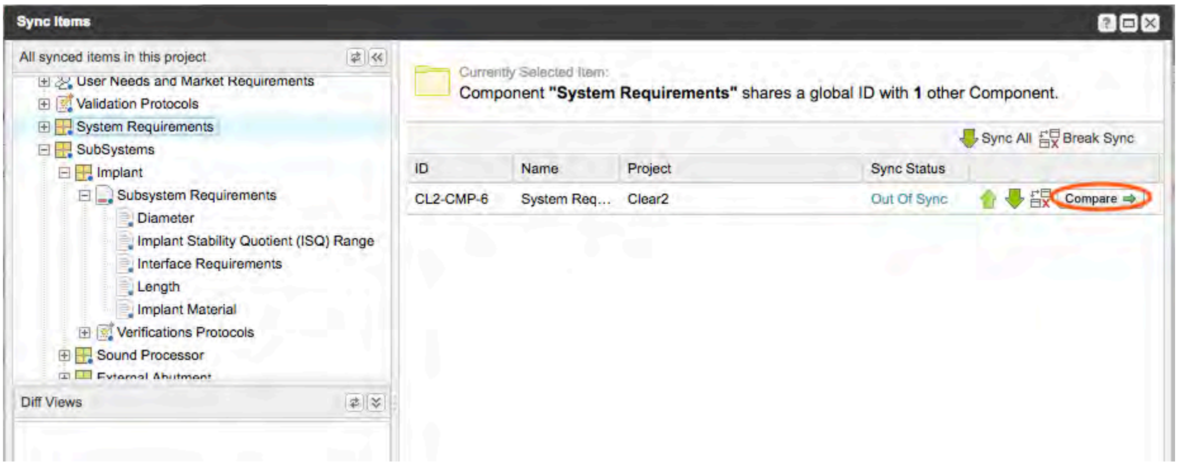
1. Open the Sync Items window: In the Explorer Tree, right-click on the item, component, or set you want to sync, then click **View synced items**.
   The selected item or component is displayed with a sync status that lets you know whether that item is in sync or out of sync.



2. If the item is out of sync, select it to open a Detailed Comparison View of those differences.

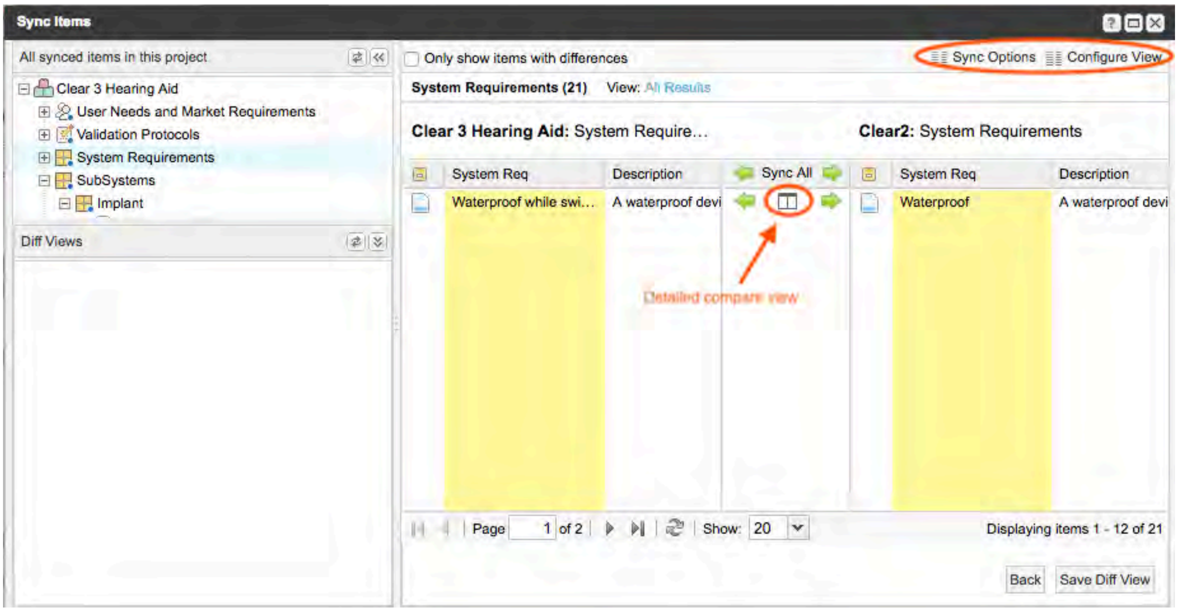


3. To view the differences at an item level, select **Compare**.



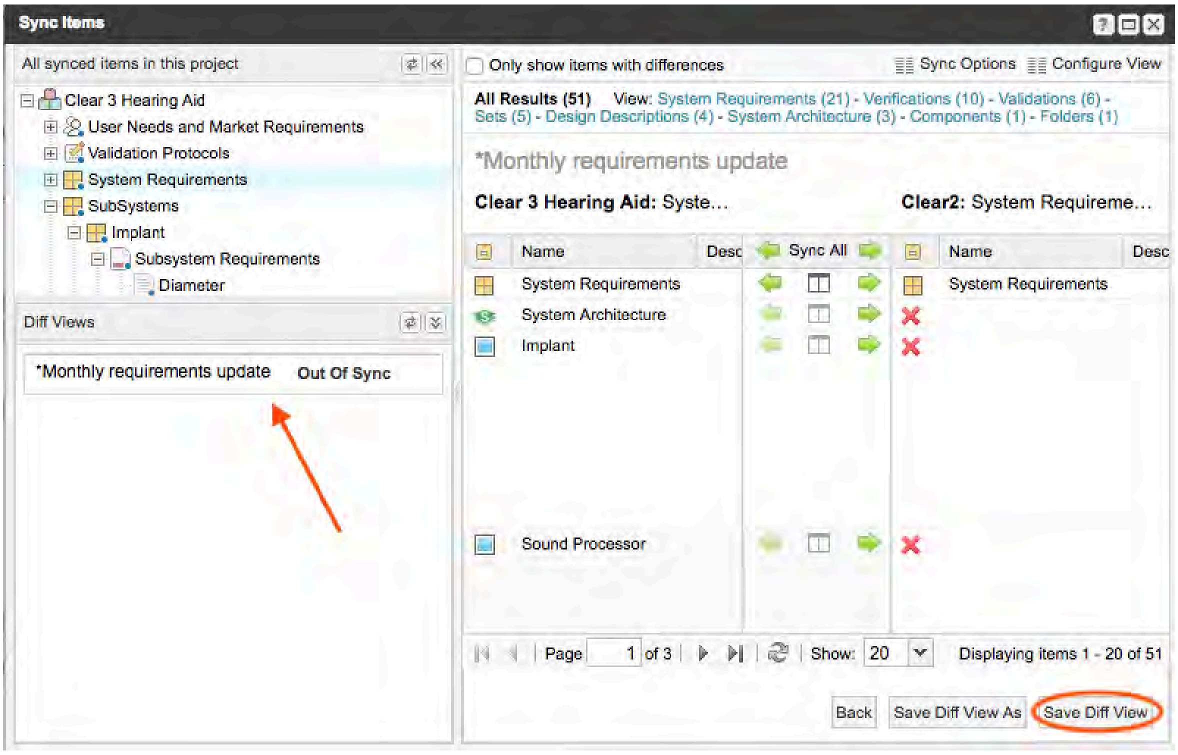
A list of all synchronized items in that component is displayed.

4. To filter items within a component, use the links at the top. Use your mouse to scroll left or right so you can compare fields.
5. Click **Configure View** to configure which fields are displayed [317]. Yellow highlights indicate synchronized items with content that doesn't match.

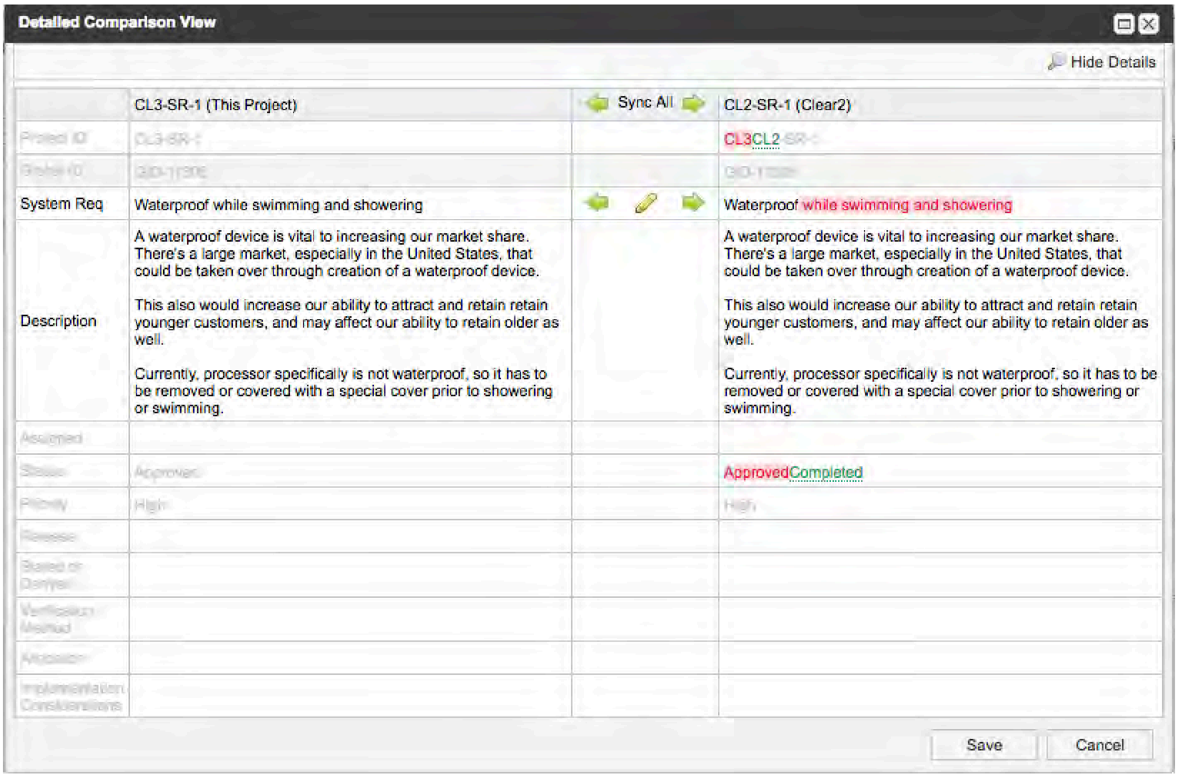


> **NOTE**
>
> If an organization admin didn't enable a field to be synced [599], it's never highlighted in yellow, and it can't be synced.

6. (Optional) Select **Save Diff View**.



7. For more information that helps determine whether to sync something, select **Detailed compare view** for the items you want to compare.
   The Detailed Compare View window lists changes, with old text red and highlighted and new text green and underlined.
8. To synchronize the data, select the green arrow or the pencil icon to manually edit the content of the fields.

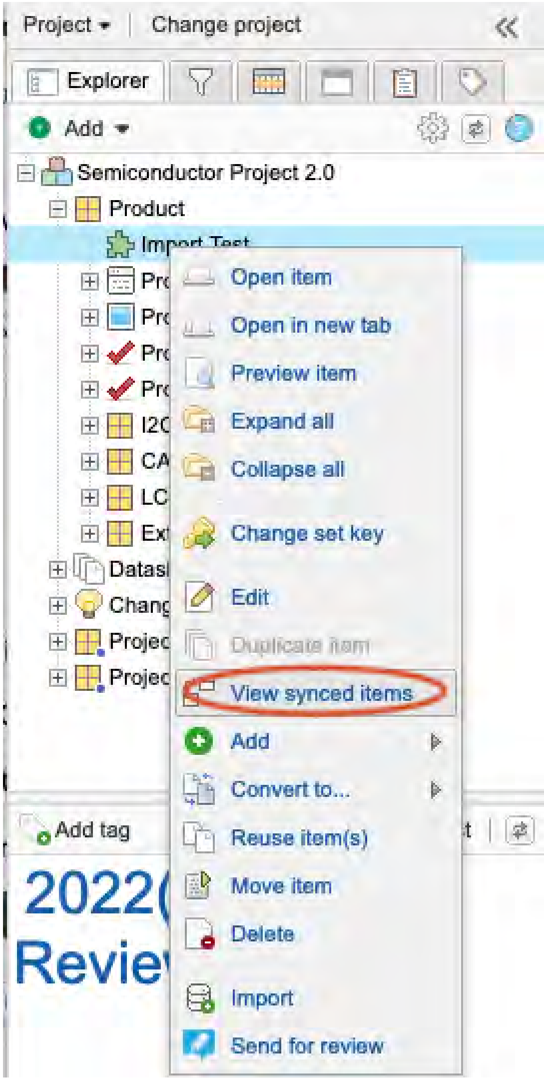


9. Click **Save** when you're done.

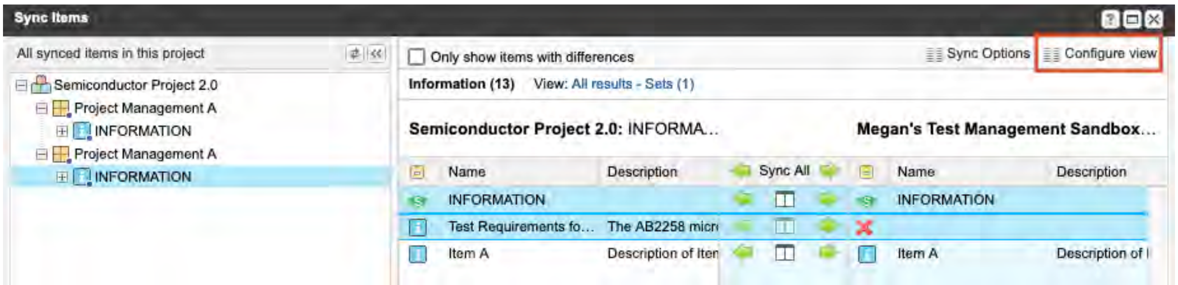
Configure Compare View for synchronized items

Configuring the Compare View window allows you to customize which fields you see, as well as relationships, widgets, and item types.

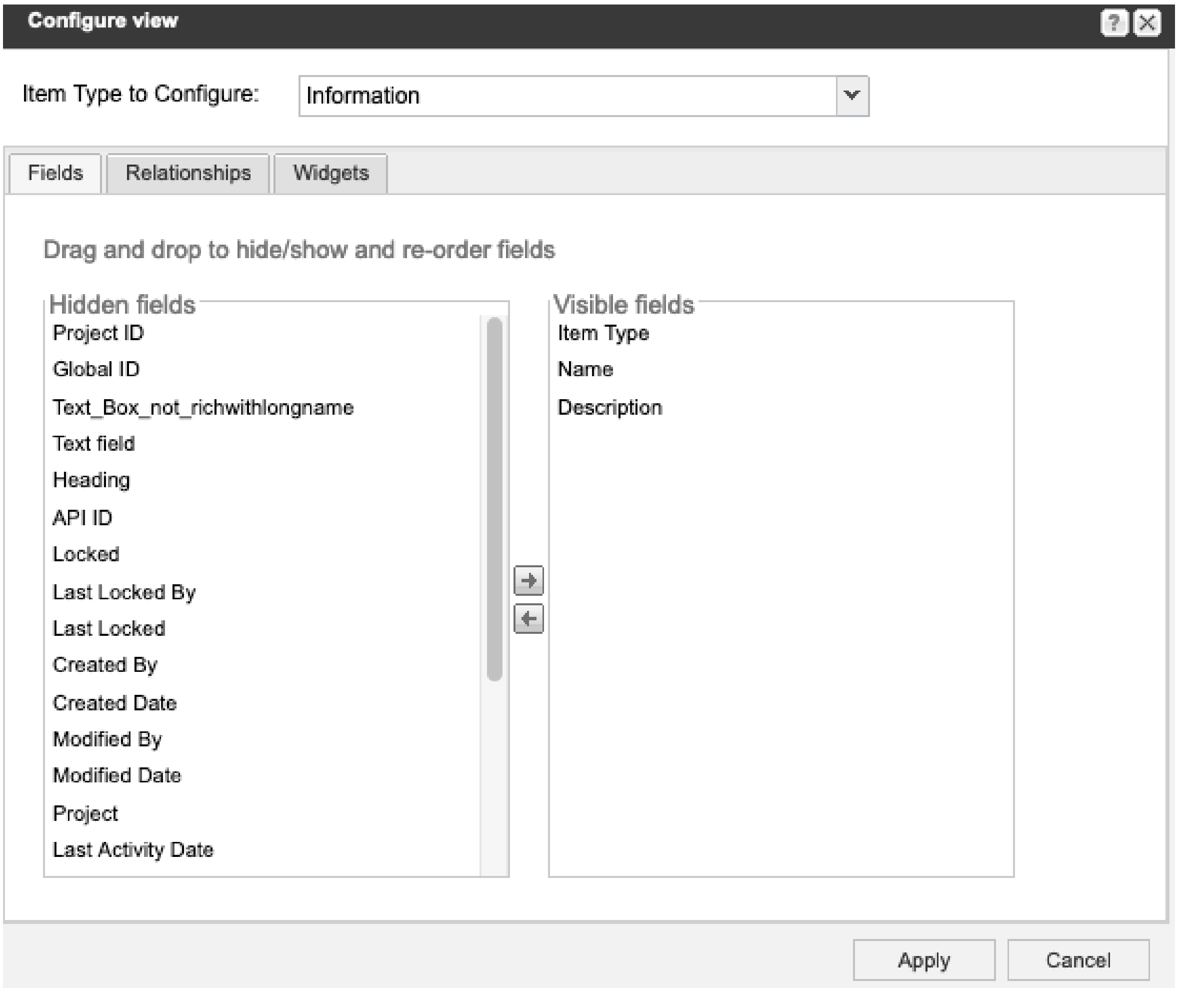
1. In the Explorer Tree, right-click on the item, component, or set you want to sync, then click **View synced items**.



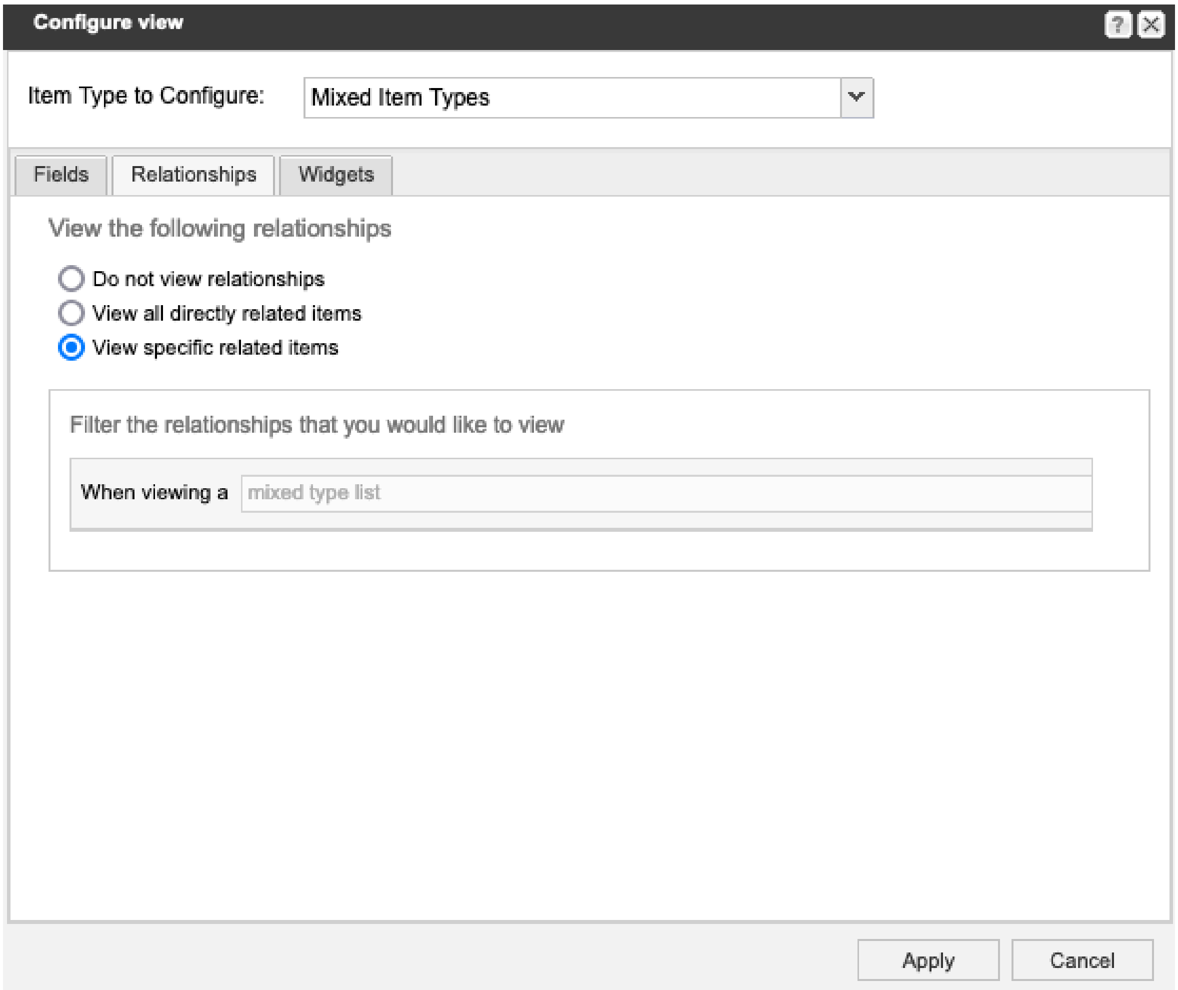
2. In the Sync Items window that opens, click **Configure View** in the top right corner.



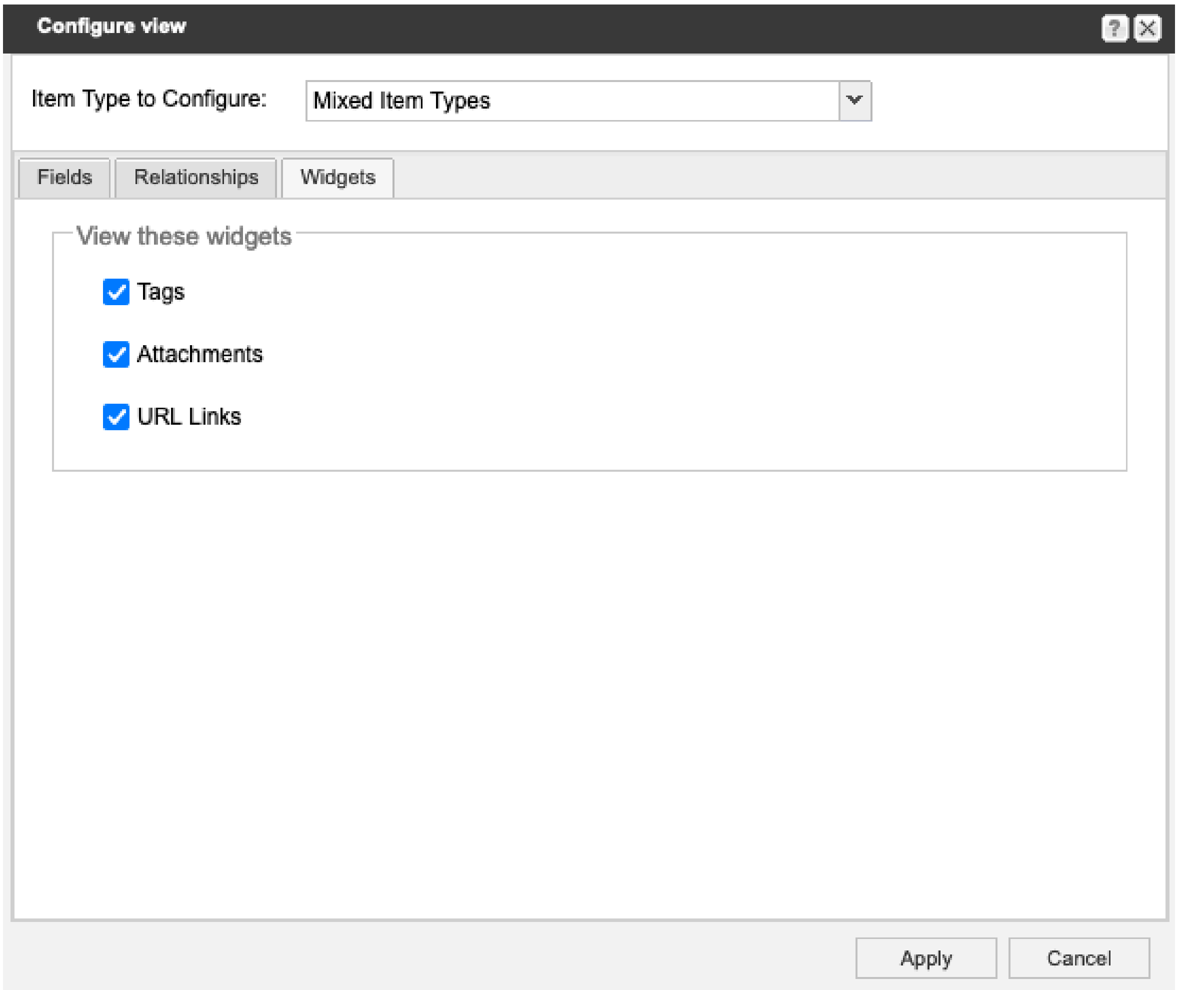
3. From the drop-down menu at the top of the Configure View window, select the item type you want to configure.
4. On the Fields tab, move the fields you want from the Hidden Fields column to the Visible Fields column, and move those you don't want to the Hidden Fields column. You can double-click, drag, or use the arrows.



5. On the Relationships tab, select whether and how to view relationships in the Compare View window.



6. On the Widgets tab, select the widgets you want to see in the Compare View window.



7. (Optional) To save the changes you made in this window, click save a Compare View [313]. Otherwise, the changes don't persist when you close this window.
8. Select **Apply** to save your changes.

The window is refreshed and your changes are saved.

Exports

With Jama Connect, you can create documents using the standard export to Word and Excel or by creating your own custom Office Templates [326]. For example, you might need to create documents to share with your customers, quality teams, or auditors.

Exporting without a template

To export data directly to Word [323] or Excel [324] in List View or Reading View, you can do so without a template, using advanced filters [135] or the Explorer Tree.

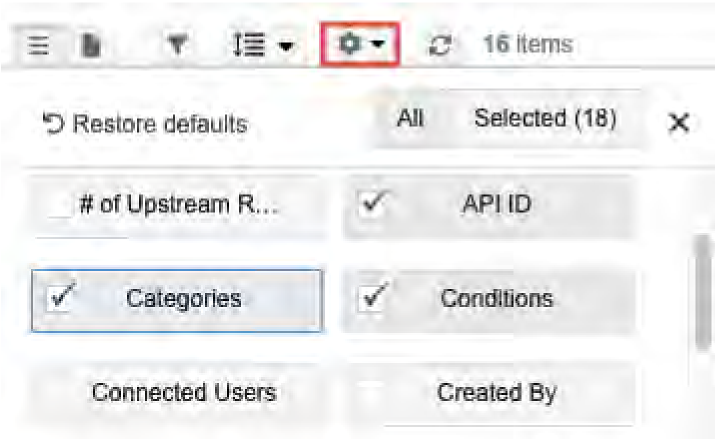
Exporting with a template

Using templates to export data speeds your work and improves consistency. With Excel templates, you can easily create and share your customized analysis with others in your organization. With Word templates, you can create standardized documents that are automatically populated with your data.

To export to a specific template, you select **Export > View all export options**, then download an existing template [329]. You can modify a template as needed.

Customizing your output

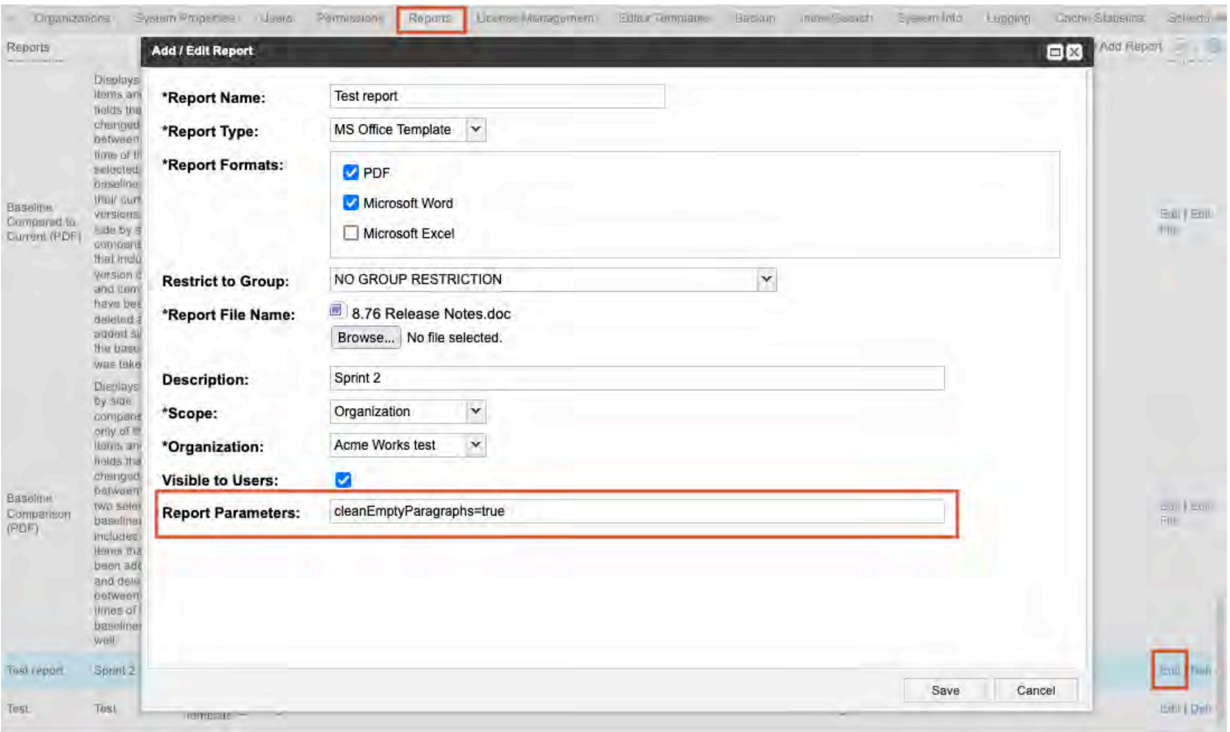
If you have information you want to include or exclude from your export, you can select which fields you want. In List View, select the gear icon to modify the fields that appear in your document.



Export template parameter

By default, extra line breaks are removed to improve the published document. This might cause consecutive tables to be combined.

To restore a template to previous export results, self-hosted customers can apply a new parameter to the report parameter field in the template.



Setting	Definition	Parameter
Default	Removes extra line breaks. Consecutive tables are combined.	cleanEmptyParagraphs=true
Custom	Keeps extra line breaks. Consecutive tables are separate.	cleanEmptyParagraphs=false

To upload custom Velocity reports

Self-hosted customers — Your system or organization admin can upload custom Velocity exports [572] that are displayed in the Export window.

Export to Word from Reading View

You can export a set of items as a Microsoft Word document. If you want to show your content in context, you can include hierarchy in the export.

The default Word export is a boilerplate that was created with Office Templates and can be modified to meet your needs.

1. Select the items you want to export using the Explorer Tree or an advanced filter.
2. Choose **Reading View**.
3. Select **Export > Export to Word**.
   Depending on how you selected your data, your exported content appears as follows:

Method	Results
Explorer Tree	The selected container becomes the title page for the export.
Advanced filter within single project	Reading View includes the container hierarchy above the filtered items, up to the top of the project. Container items that show hierarchy have a grayed-out (disabled) checkbox, while the rest of the items can be selected. Hierarchical containers are exported with the content items.
Cross-project filter	Reading View doesn't display numbering. The export is a listing of items without hierarchical information.

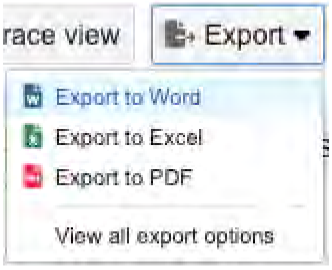
Export to Word from List View

When you export items from List View, all items appear in list form.

TIP

Word for Mac is known to have some issues with exporting certain formats and tables. If you experience issues, eliminate special formatting or tables within tables.

1. Select the items you want to export using the Explorer Tree or an advanced filter.
2. In List View, select **Export > Export to Word**.



The export displays a table of contents, followed by each item, its name, and a list of its field names and values.

Export to Excel

If you need to provide data to external stakeholders who don’t have access to Jama Connect, you can export to Microsoft Excel. You can also use round trip to work offline or share data in a format that can be used to update existing data.

IMPORTANT

Don't use field names in Jama Connect that start with the equal symbol (=). When Excel encounters a field value that starts with =, the cell is interpreted as a formula. For example, if the name of an item in Jama Connect is **=1338-1**, Excel interprets it as a formula and the value is displayed as **1337**.

You can export selected items to an Excel template in two ways:

- Default boilerplate template
- Office Templates, which can be customized

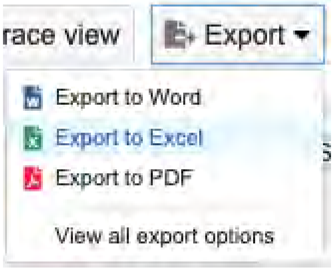
NOTE

Excel doesn't support rich text. Jama Connect removes formatting when it exports to Excel.

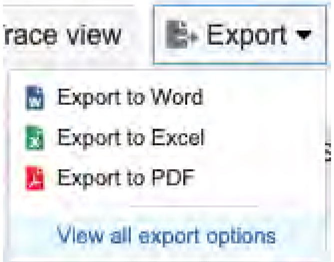
To export data to Excel:

1. Select the items you want to export using the Explorer Tree or an advanced filter.
2. In List View, select the gear icon (Show/Hide) to open the drop-down menu.

3. Select the fields that you want to include in the Excel output.
4. Deselect (hide) the fields that you don't want to include.
5. In the toolbar, select **Export**.
6. From the drop-down list, select an option:
   - **For default template** — To use the default boilerplate, select **Export to Excel**. Your results appear immediately.

   - **For Office Templates** — To customize your template, select **View all export options**, select an Excel export option, then click **Run**.

   - **Export to Excel default** — Generates an export that includes the fields that appear in List View (one column per field). Not intended for importing data updates to existing items in Jama Connect. Instead, use Excel Export for Roundtrip [117].
   - **Excel Export for Roundtrip** —Includes all available fields. You can edit the resulting spreadsheet and import the changes back into Jama Connect.

A confirmation message appears with a link to the report.

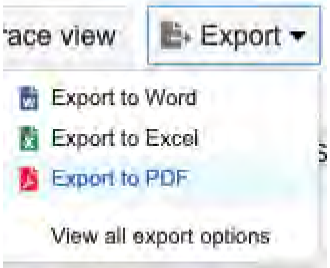
All fields that you plan to update using round trip must be included in the export, including rich text fields like **Description**. Rich text is output in raw HTML format, so the content can be preserved if re-imported.

Export to PDF from Reading View

You can export a set of items as a PDF using the PDF reports included with Jama Connect. If you want to show your content in context, you can include hierarchy in these exports. The default export is created with Office templates and can be modified as needed.

> **NOTE**
> For information about creating custom PDF reports and how to make existing reports PDF compatible, go to the Jama Software Community site and search for *Velocity reports* or see Export Velocity reports to Excel [400].

1. Select the items you want to export using the Explorer Tree or an advanced filter.
2. In Reading View, select **Export > Export to PDF**.



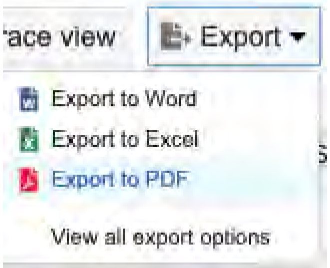
Depending on how you selected your data, your exported content appears as follows:

Method	Results
Explorer Tree	The selected container becomes the title page for the export.
Advanced filter within single project	Reading View includes the container hierarchy above the filtered items, up to the top of the project. Container items that show hierarchy have a grayed-out (disabled) checkbox, while the rest of the items can be selected. Hierarchical containers are exported with the content items.
Cross-project filter	Reading View doesn't display numbering. The export is a listing of items without hierarchical information.

Export to PDF from List View

When you export items from List View, all items appear in list form.

1. Select the items you want to export using the Explorer Tree or an advanced filter.
2. In List View, select **Export > Export to PDF**.



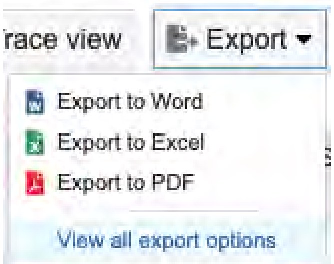
The export displays a table of contents, followed by each item, its name, and a list of its field names and values.

Office Templates

Microsoft Office Templates are Word documents and Excel spreadsheets that allow you to add formatting to your exported data.

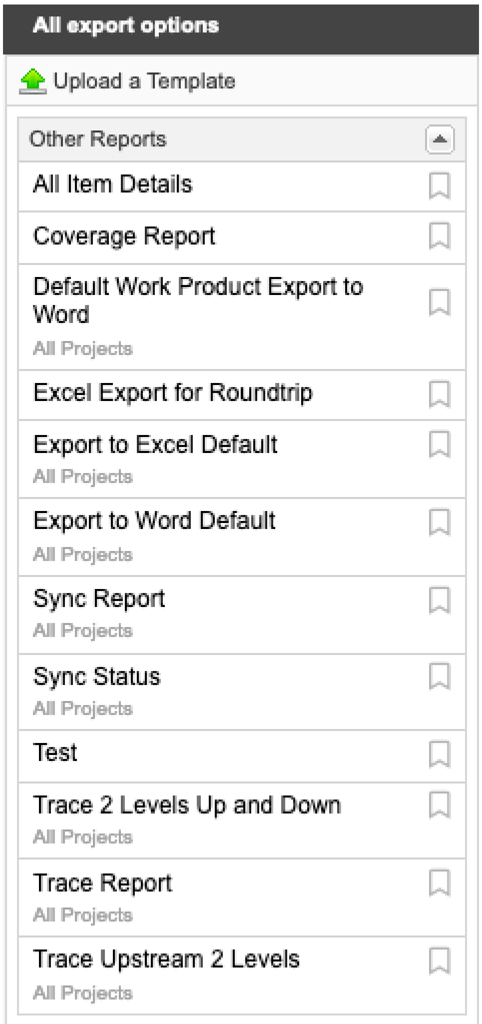
Office Templates are best for simple exporting with Word and Excel using data that you select in the Explorer Tree or with an advanced filter [135].

To open the Office Templates window, select **Export > View all export options**.



The Office Templates window shows several default templates that come with Jama Connect. You can download an existing template [329] and use it as is or modify it, or create your own template in Word and upload it [330]. Select the bookmark next to a template to move it to the top of the list.

Self-hosted customers — Your system or organization admin can upload Velocity reports [572] that are displayed in the Export window.



TIP

All Items Details Export [333] and the Coverage Report [334] are made with Velocity and can't be downloaded and modified with Microsoft Word.

Each Office Template consists of three sections:

- **Cover page** — Contains general information about the export, and the data it references. Some fields typically included in this area are:

```
<<reportName>> - shows the Report Name entered in the Office Templates
window
<<reportDescription>> - shows the Report Description entered in the
Office Templates window
<<contextType>> - shows the type of content being used (e.g. release,
component, filter, folder, item etc)
<<contextName>> - immediate context for the data being used (e.g.
container name, like "Requirements")
```

```
<<userName>> - name of the user generating the report
<<projectName>> - name of the project
<<projectManager>> - project administrator
<<organizationName>> - name of the organization
<<contextPath>> - hierarchical path from the content to the project level
```

- **Table of contents** — Automatically generated using Word's heading hierarchy. You can delete this by editing the template and removing this section.
- **Items and fields** — Contains the items and their respective fields from the selected data set. This section can be modified.

TIP

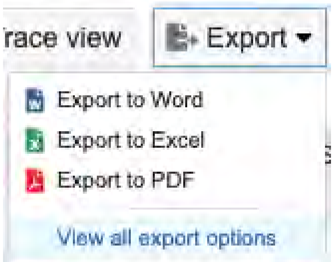
For a list of fields available for export in your current project, download the Field Reference Guide [335].

If you need to roll up field data or do something more complex than a simple export of formatted data from Jama Connect, read about reports [382] or custom reports [399].

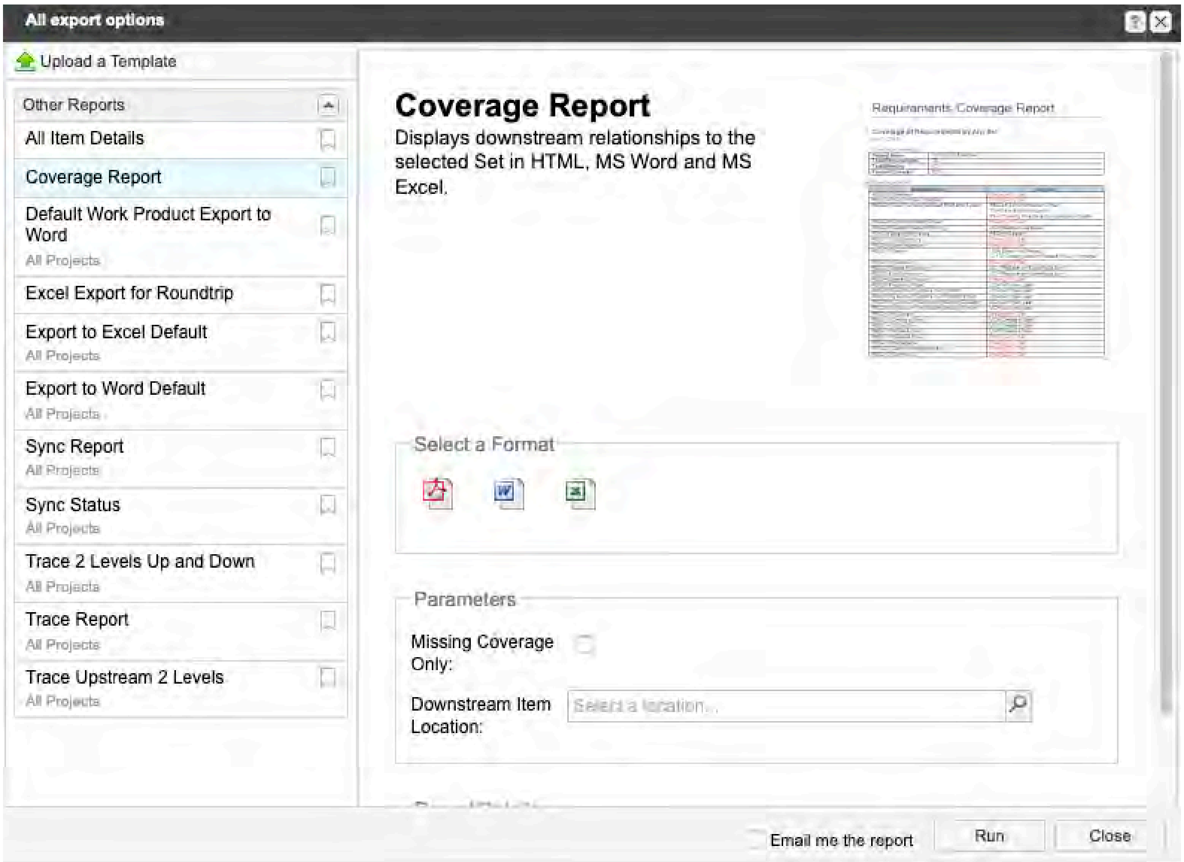
Export data with Office templates

Using data that you select in the Explorer Tree or with an advanced filter, Office Templates can be leveraged for simple exporting with Word or Excel.

1. In List View or Single Item View, select **Export > View all export options**.



2. In the window that opens, select the export you want from the template list on the left.



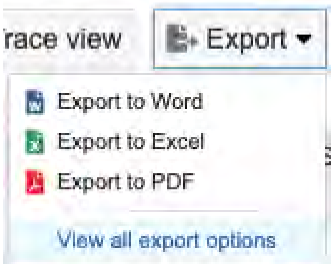
3. Select the format for your export and enter any additional information required for some templates.
4. (Optional) Select **Email me the report** to receive a link to the export when it's finished. Links are stored for 7 days before they're automatically deleted.
5. Click **Run**.

A confirmation message appears with a link to the report.

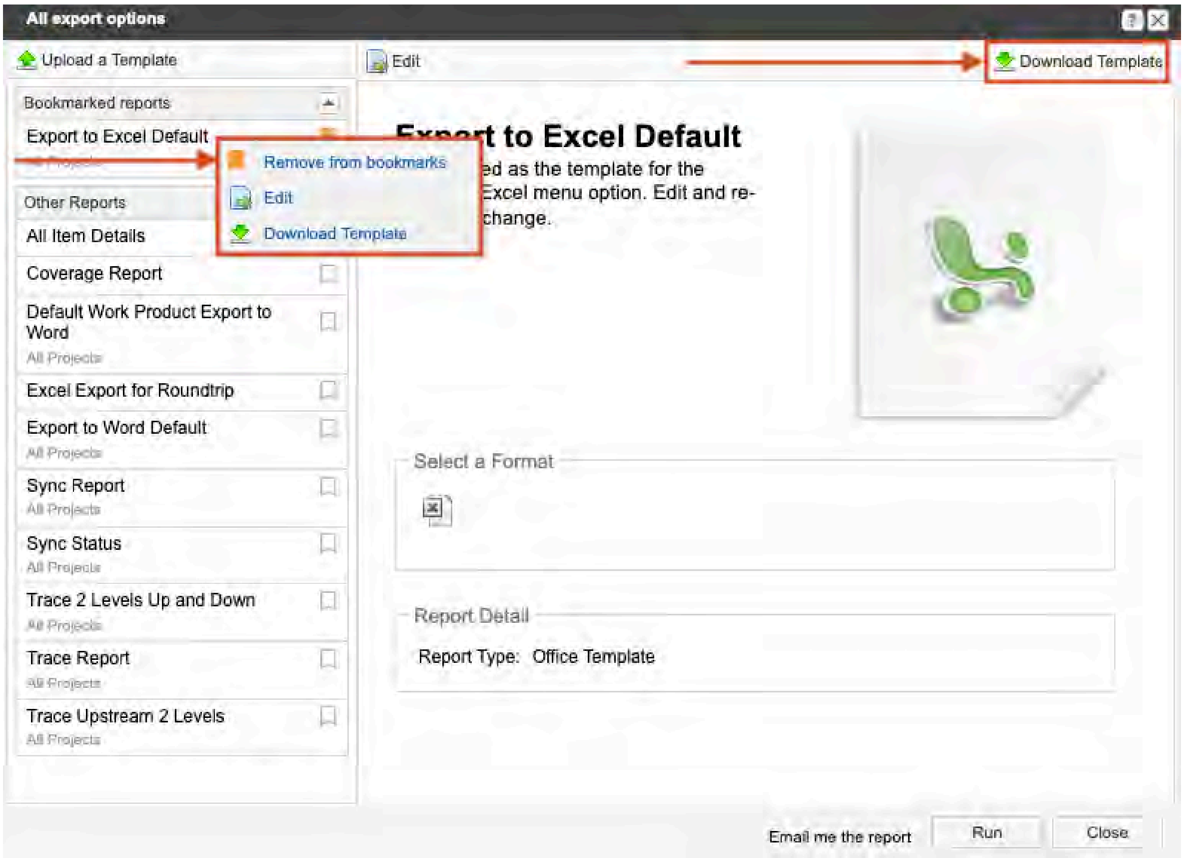
Download an existing export template

You can download an existing Office Template to use as is or modify it as a a new template.

1. In List View, Reading View, or Single Item View, select **Export > View all export options**.



2. In the window that opens, right-click on the template you want to download, then select **Download Template**.



The template is downloaded to your computer.

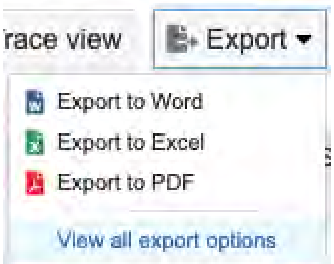
3. Modify the template in Word as needed and upload it as a new template [330].

Upload an export template for a report

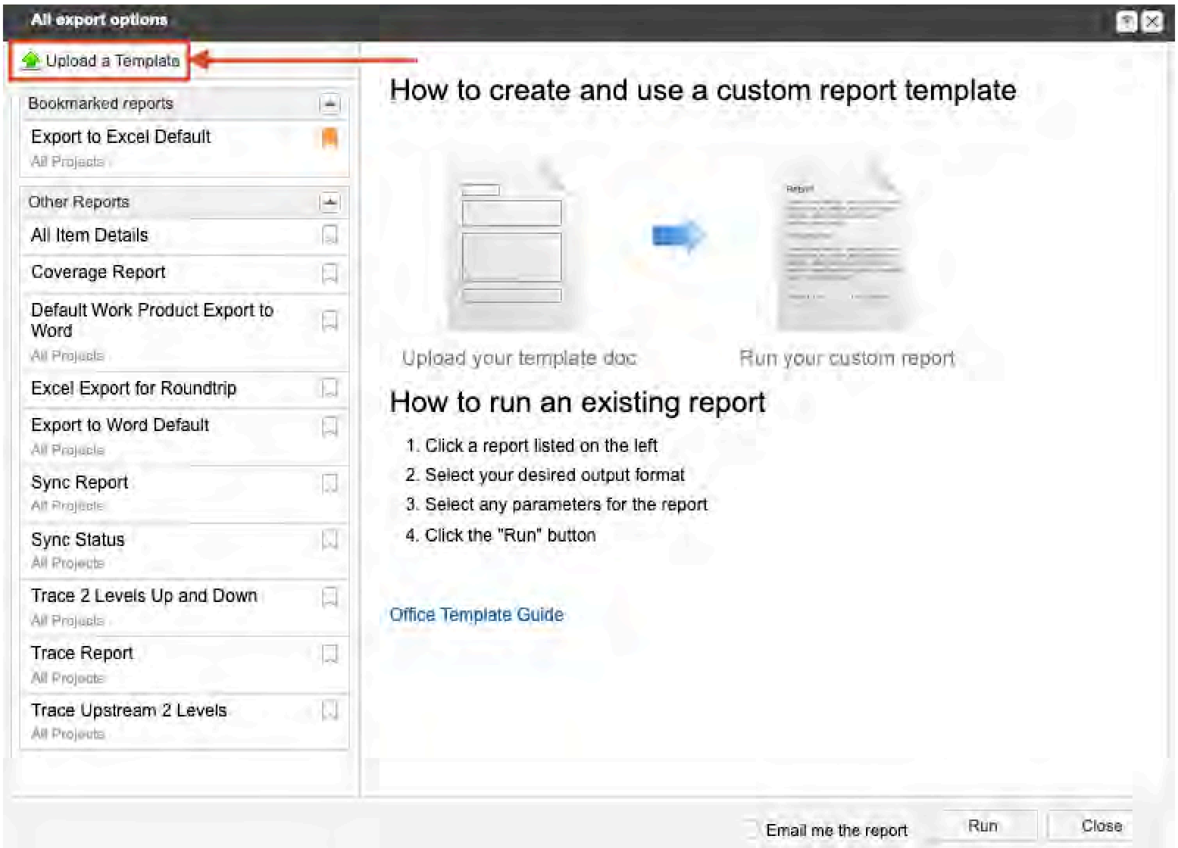
Any user with read/write permissions can upload and export a custom template.

> **NOTE**
> For self-hosted customers, an organization or system admin can upload templates in multiple projects.

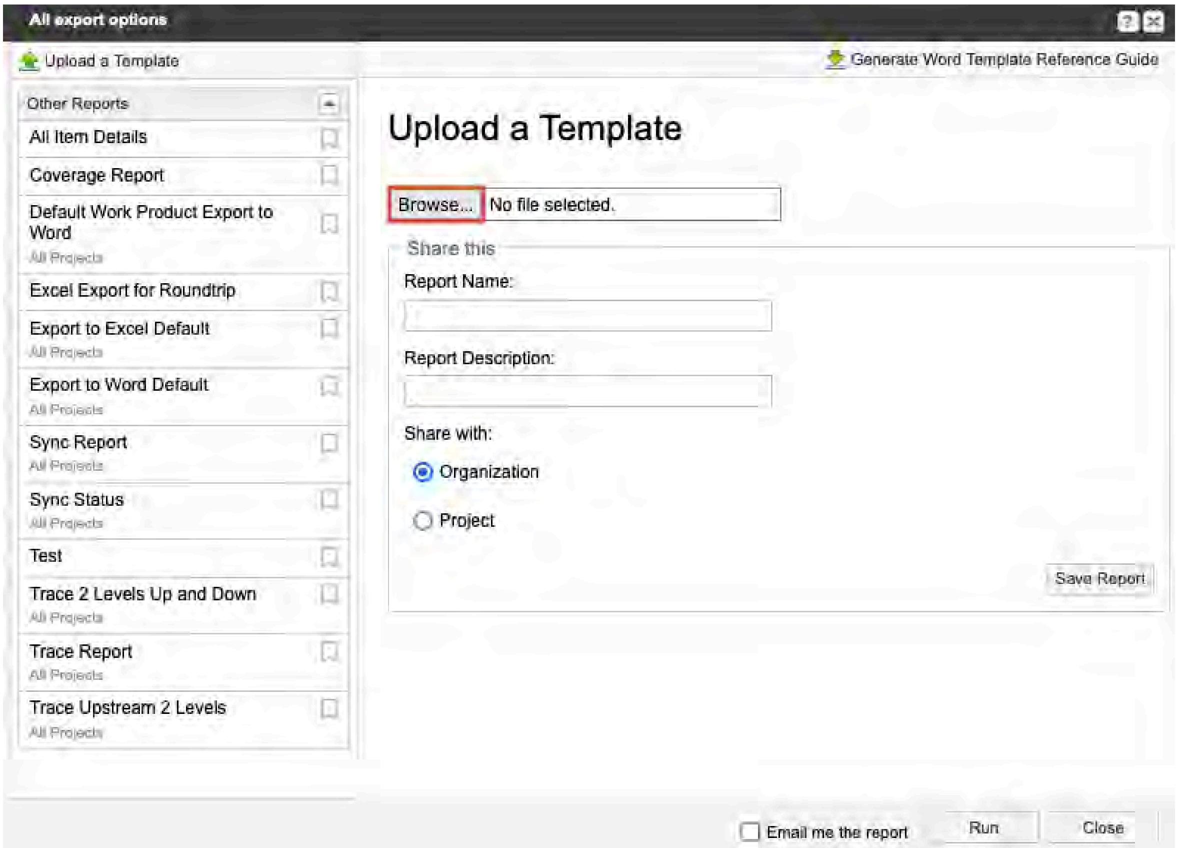
1. Save the template you want to upload to your desktop computer [329].
2. Select **Export > View all export options** to open the All export options window.



3. In the window that opens, click **Upload a Template**.



4. Select **Browse** and select the template you want to upload.

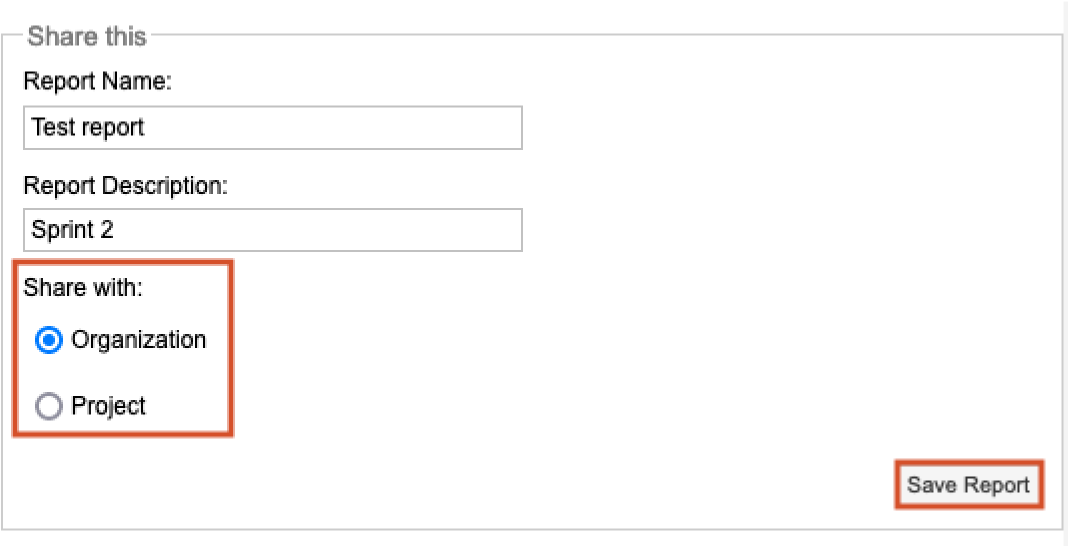


5. Enter a name and description for the report.
To make the template name and description visible in your export, include these field tags:

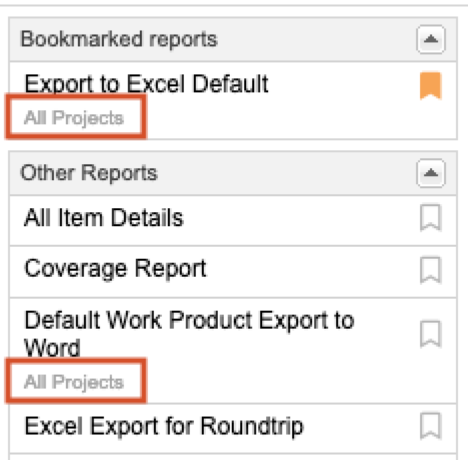
Report Name	«reportName»
Report Description	«reportDescription»

For a list of other available field tags you can include in your templates for the current project, generate the Word Template Reference Guide [335].

6. Under **Share with**, select how you want this export template to be available, then click **Save Report**.

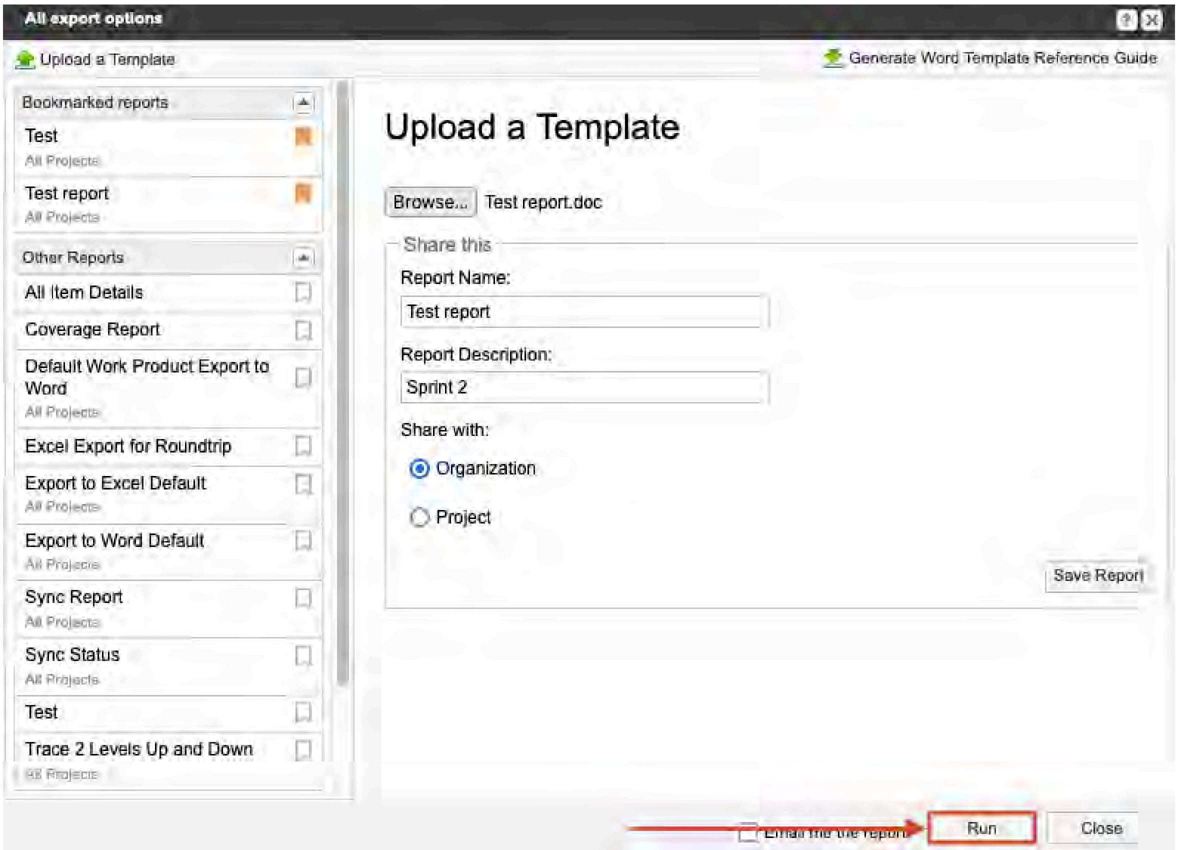


- **Organization** — Available to users *in any project*. Export templates that are shared with the organization are visible in the left column of the Office Templates window with the label **All Projects**.



- **Project** — Available to other users *in this project only*.

7. Click **Run**.



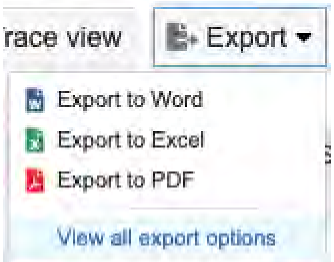
A confirmation message appears with a link to the report.

Create an All Item Details export

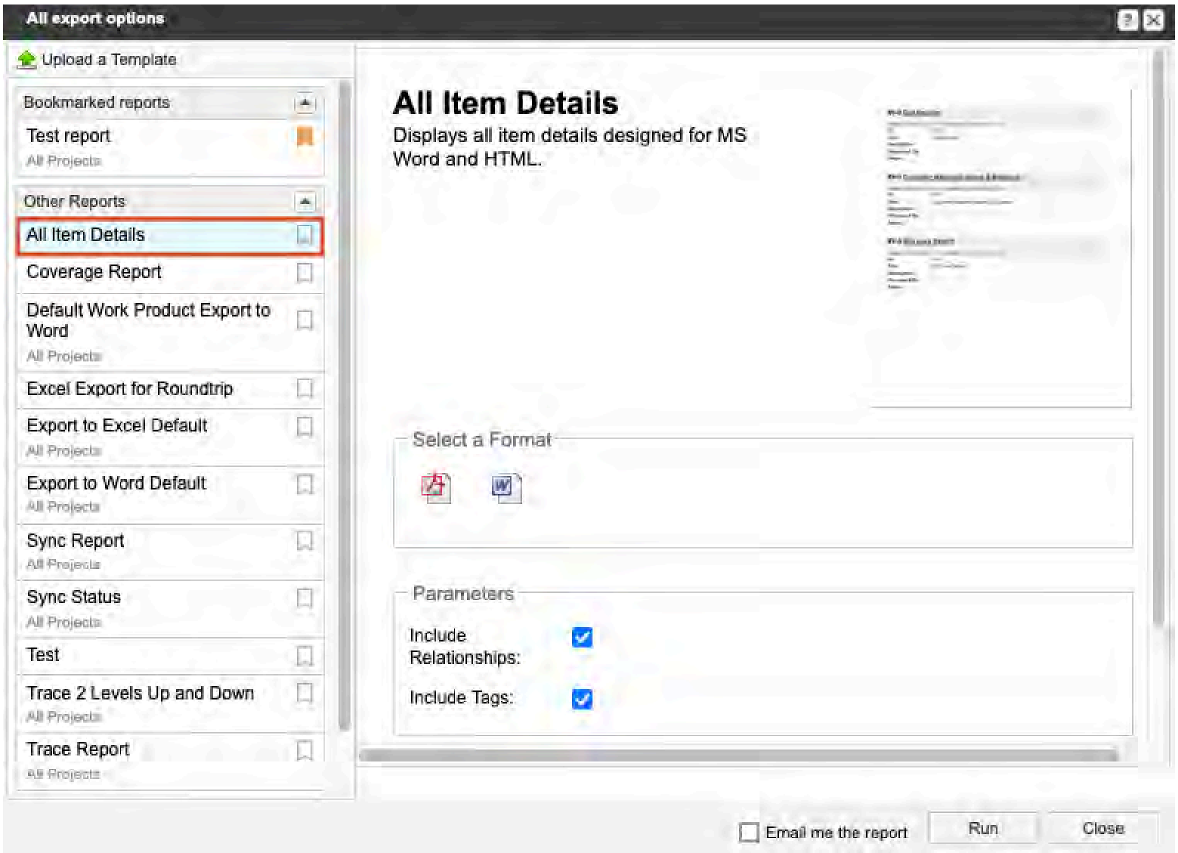
The All Item Details export displays all item details for the selected project. It was designed in Velocity for output in Microsoft Word and HTML.

This export is useful for sharing details of a set of requirements or another group of artifacts with others outside of Jama Connect.

1. Select the data you want to export using the Explorer Tree or an advanced filter.
2. Select **Export > View all export options**.



3. In the window that opens, select **All Item Details**, select a format, and choose the parameters you need (**Include relationships**, **Include tags**).



4. (Optional) Select **Email me the report** to receive a link to the export when it's finished. Links are stored for 7 days before they're automatically deleted.
5. Click **Run**.

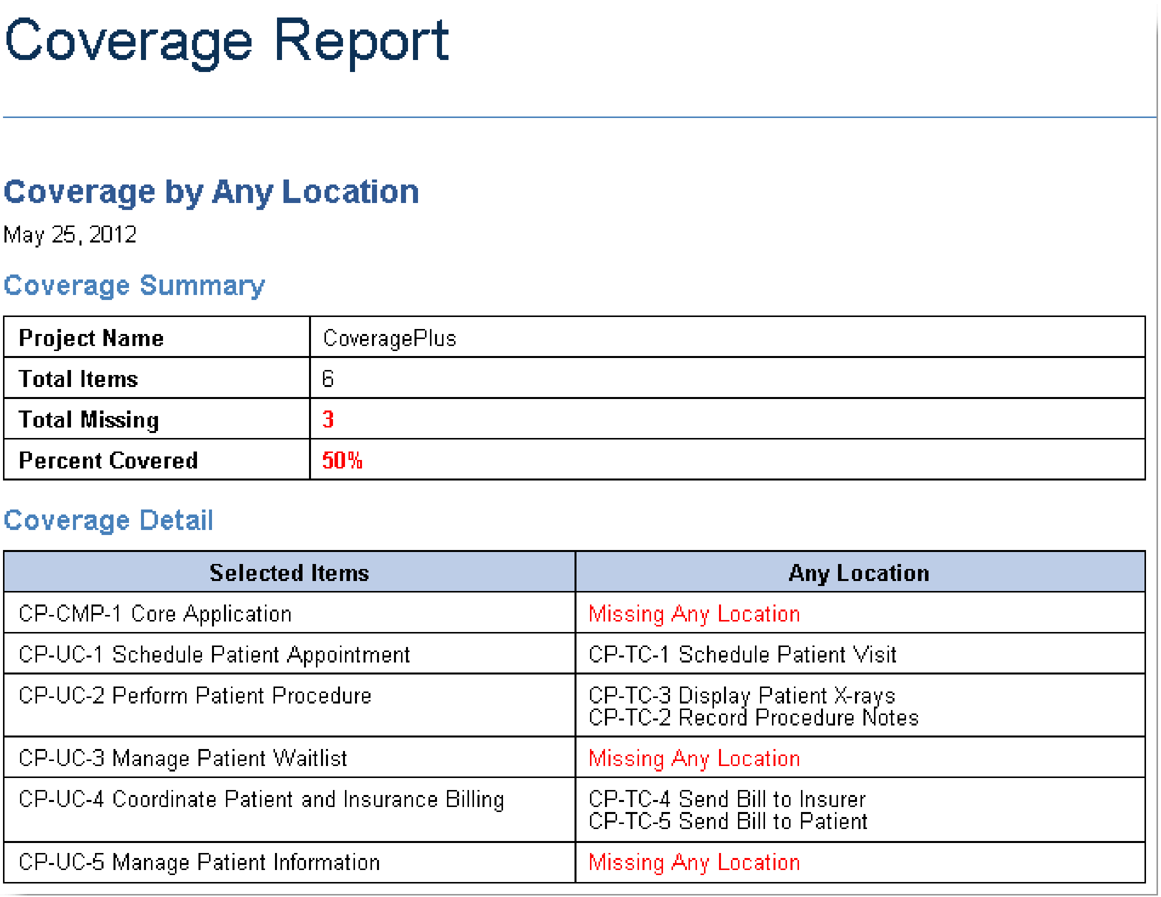
A confirmation message appears with a link to the report.

Create a Coverage Report

The Coverage Report displays downstream relationships to the selected set in HTML, Microsoft Word, or Microsoft Excel. It provides a summary and detailed information on the traceability coverage for the selected items.

1. Select the data you want to export using the Explorer Tree or an advanced filter.
2. Select **Export > View all export options**.

3. In the window that opens, select **Coverage Report**.
4. Select a format and choose the parameters you need (**Missing coverage only**, **Downstream item location**). If you select no parameters, your report looks like the following image. For a report with a more specific set of relationships, select one or both parameter options.



Coverage Report

Coverage by Any Location

May 25, 2012

Coverage Summary

Project Name	CoveragePlus
Total Items	6
Total Missing	3
Percent Covered	50%

Coverage Detail

Selected Items	Any Location
CP-CMP-1 Core Application	Missing Any Location
CP-UC-1 Schedule Patient Appointment	CP-TC-1 Schedule Patient Visit
CP-UC-2 Perform Patient Procedure	CP-TC-3 Display Patient X-rays CP-TC-2 Record Procedure Notes
CP-UC-3 Manage Patient Waitlist	Missing Any Location
CP-UC-4 Coordinate Patient and Insurance Billing	CP-TC-4 Send Bill to Insurer CP-TC-5 Send Bill to Patient
CP-UC-5 Manage Patient Information	Missing Any Location

5. (Optional) Select **Email me the report** to receive a link to the export when it's finished. Links are stored for 7 days before they're automatically deleted.
6. Click **Run**.

A confirmation message appears with a link to the report.

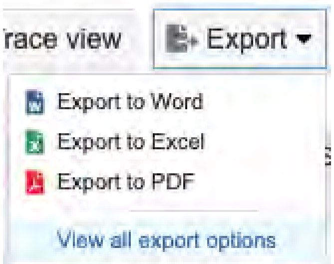
Generate the Word Template Reference Guide

The *Word Template Reference Guide* is helpful when you're creating or editing templates. It provides a dynamic reference of all field tags that you can use to expose information in your export templates.

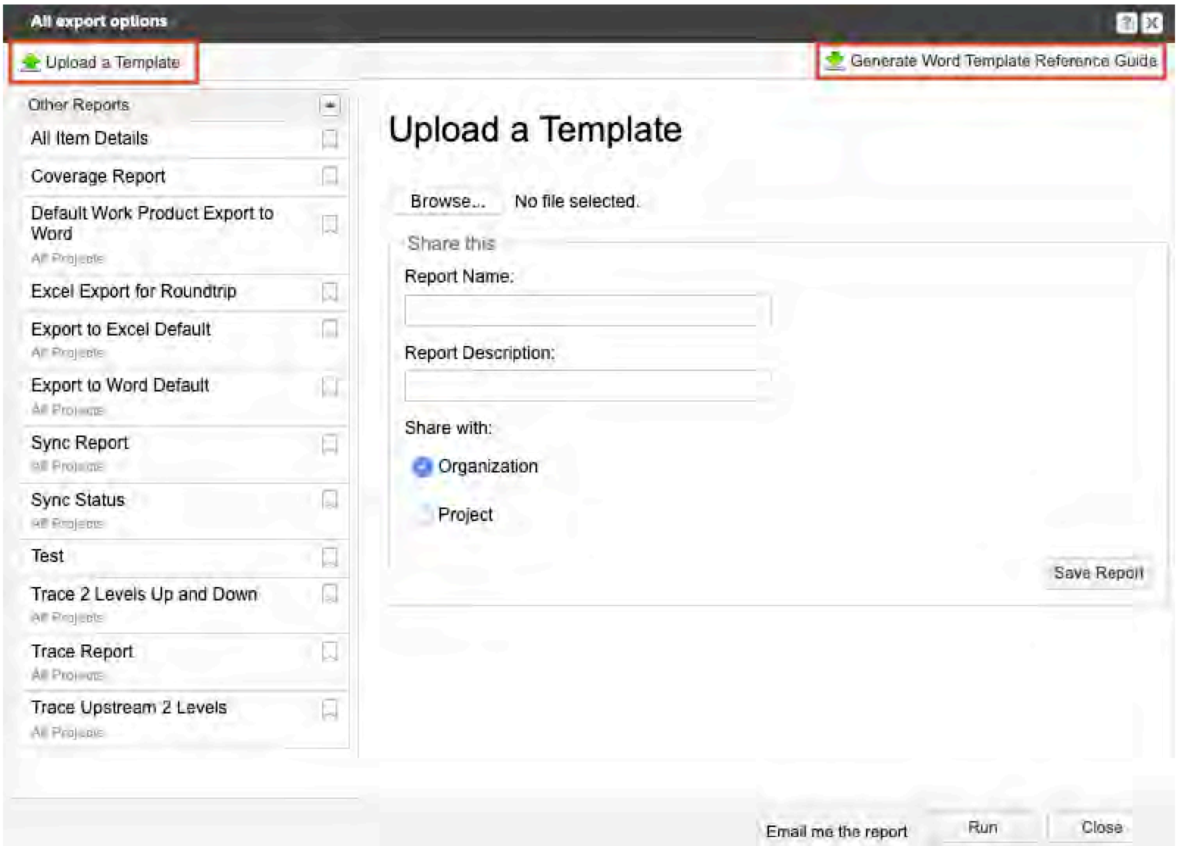
This guide is unique to each project in Jama Connect. Downloading the guide provides an up-to-date list of all available field tags for items in the currently selected Jama Connect project.

When creating a new template, you can copy and paste from this reference guide. If any fields change in your project, download a new guide to see how the changes affect export templates.

1. In List View or Single Item View, select **Export > View all export options**.



2. In the window that opens, click **Upload a Template**, then click **Generate Word Template Reference Guide**.



3. (Optional) Select **Email me the report** to receive a link to the export when it's finished. Links are stored for 7 days before they're automatically deleted.
4. Click **Run**.

A confirmation message appears with a link to the report.

Embed custom fonts in exports

You can embed custom fonts into Word or PDF exports.

> **IMPORTANT**
> The custom font you use in the template must be in the TrueType Font format (TTF).

1. Download the template [329] for the existing export that you want to publish with a custom font.
2. Convert that template to DOCX format by selecting **File > Save As > Word Document (.docx)** in Microsoft Word.
3. Select all of the text in the document and apply your custom font.
4. Enable embedded fonts in the document.
5. Upload the template [330] to an existing or new export in Jama Connect.
6. Export the document [328] in Word or PDF format.

Test

You can use tests in Jama Connect to validate and verify the quality of your product and provide reports to show connections between regulations, requirements, and tests.

A typical workflow looks like this:

- Create test cases [337] that meet the needs of a particular project or multiple projects across your organization. Test cases describe the specific tests you plan to use and their steps [339].
- Create a test plan [347] that gives an overview of how you want to test requirements.
- Associate the cases you want to use into that plan using groups [350] to organize them.
- Get ready for testing, by moving those groups into cycles [358] where you can see a list of all the tests you want to run.
- Execute the test runs and log defects [368] as needed.
- Resulting test run statuses roll up to calculate the overall test case status [341]. You can then generate a report showing results, such as the Test Plan Summary Report [395] or the Test Plan Detail Report [393].

IMPORTANT
You must have at least a test runner license to be able to add and edit defects and items, create test plans and runs, and manage relationships and attachments. However, test runners can only affect items that are used as defects [338]. More extensive permissions require a different license [585].

Test cases

Test cases are items that contain the tests needed to validate or verify product features or systems.

Test cases contain essential information about your tests. Depending on how you want to use them you can make standalone tests, or specific tests aligned with your use cases and requirements to assist with validation and verification.

Creating test cases is the first step in getting tests set up for your organization. Although Jama Connect comes with a default item type of Test Case, you can use any item type as a test case [601]. You can add a new test case in the same way you would add any other item [66].

Here are three ways you might want to organize test cases:

- **By project:** Keep all the test cases in the same location as your project so the team goes to the same place to collaborate, and can see a similar mirrored structure between your tests and requirements. This makes it easy to manage permissions for users and contain the test case and test run status in your reports.
- **By library:** You can create a single library of tests in a separate project and reuse test cases in different projects. This can be useful to standardize the testing setup and to allow the entire organization to use the same test cases. However, with test cases being reused in multiple plans and projects, reports are more likely to rely on test run status than test case status.
- **Adhoc:** You can pull test cases from multiple projects into any plan. You can find test cases across multiple projects by using a filter.

Test cases are where you create test steps [339] that are used every time that case is run.

Test cases contain an automatically calculated (and uneditable) test case status [341] field.

Import test cases

You can import multiple test cases and their corresponding test steps by importing them from a spreadsheet. Use one-way import [113] to quickly bring legacy test cases into Jama Connect.

You can also use a round-trip import [117] so you can work with content outside of Jama Connect and bring changes back in safely.

> **TIP**
> Although you can import test cases using Microsoft Word, you can only map the **Name** and **Description** fields, not the individual steps. Instead, use Excel for test case imports.

When importing test cases:

- Your Excel spreadsheet must contain the following column headers: Test case name, Action, Expected results, and Notes.
- Add columns to represent additional fields as part of the import, which is consistent with how other imports to Excel work.
- Each row with the same test case name imports as a new test step for that case.
- You can't use a round-trip [117] to edit the test case status [341] because that field is automatically calculated from test run statuses.
- To add a test step in Excel, copy a pre-existing row and insert that row where you want it. Change the content of the cells as needed to create the new step. The numbering of the steps appears off but re-numbers on import.
- To remove a step in Excel, delete a row anywhere in the sequence of steps. Re-numbering takes effect upon import.

Special use of item types for test

Any item type can be set up by an organization administrator [601] to work in the following test-specific ways.

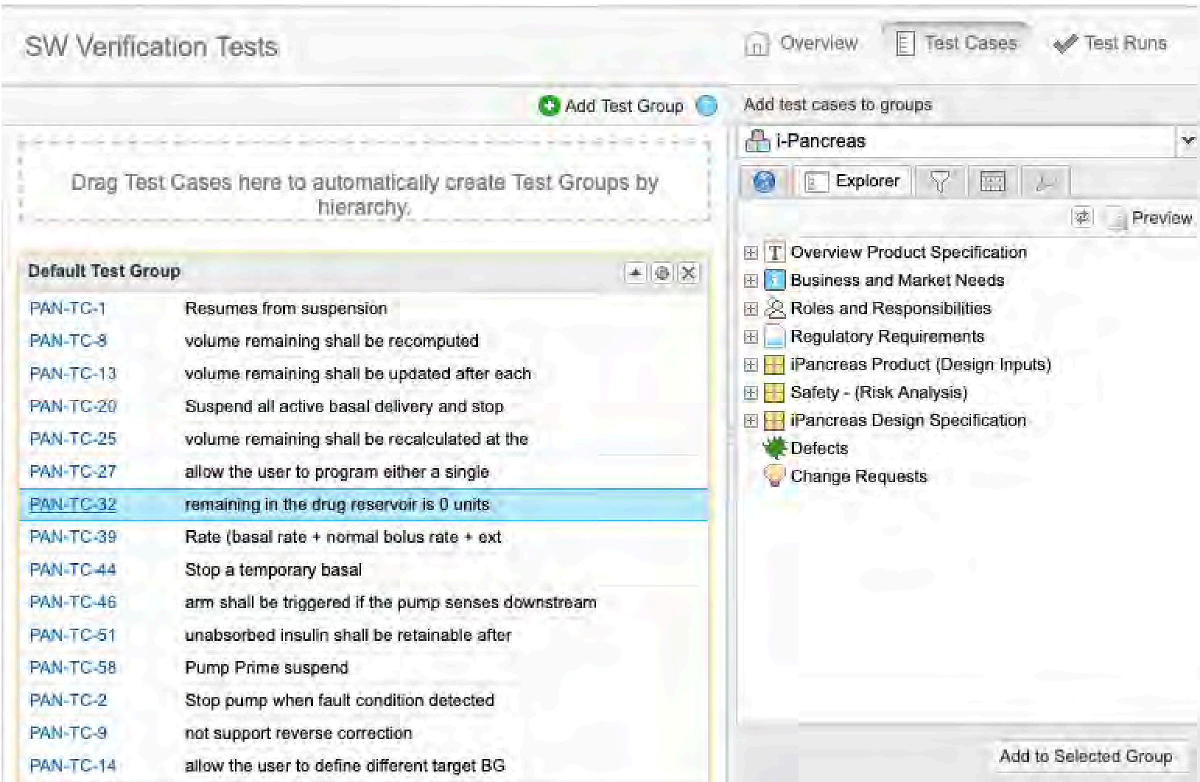
- **Test case** — Items used as a test case can have **test steps [339]** and **test case status [341]** fields, as well as work in test plans for those with a creator license.
- **Defect** — Items you use as defects work in testing for those with a test runner license [586] or a creator license.

View and edit test case details

Test cases are created in the Explorer Tree for a project and edited like any other item [70]. They can be opened from the Explorer Tree, Reading View, List View, or found using search or filter.

You can also view and edit test cases in these other ways:

- View test cases in groups. Select the test case ID to open and edit it in Single Item View.



- Access test cases from test runs. When you're viewing a test run in Single Item View, select the test case button on the side toolbar to open a bottom panel with details about the test case. Then select the ID to open and edit that test case.

Test steps

Test steps are distinct steps used to run a test.

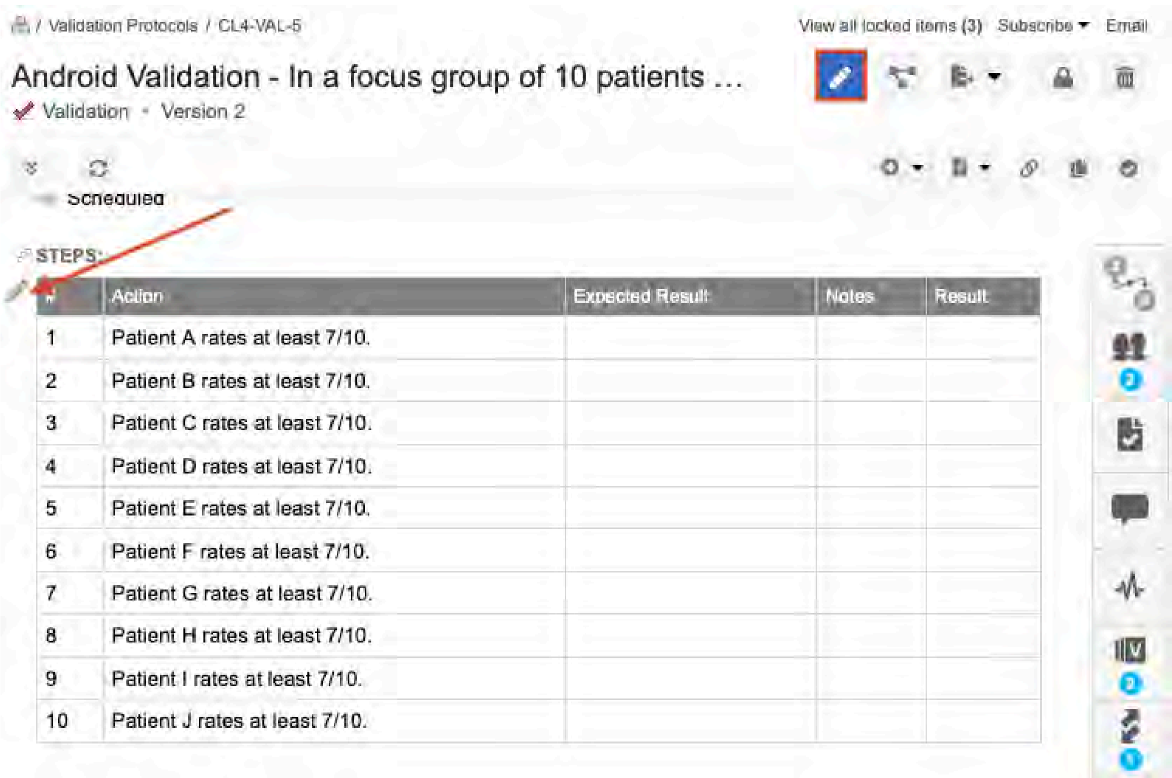
When running a test, you can indicate the success or failure of each step. The test steps field is available in any item whose item type is used as a test case [601].

Add and edit test steps

Test steps are plain text by default. When an organization administrator enables rich text in test steps [602], you can edit with rich text by selecting the pencil icon or double-clicking on the **Steps** field. Selecting **Edit** in the toolbar only allows plain text or html edits.

You can't edit test steps when editing a test run.

1. View details of the test case [338] where you want to add steps, or create a new test case [337].
2. Select **Edit** in the toolbar, the pencil icon next to the field, or double-click in the field to make it editable. In the steps field, select **Add step**.



3. Enter text in the **Action**, **Expected result**, and **Notes** fields, if you want. You can use the Tab key to move between fields. Use the rich text editor [340] to format text or to add images in the steps.
4. Use the **up** and **down** arrows to re-order the steps. You can also grab the handle by the row number to drag it to the right position.

5. Use the **insert** icon to insert a step. Delete a step with the **trash can** icon.
6. Select **Save** to include the test steps in the test case.

Add images to test steps

Test steps are plain text by default. An organization administrator can enable rich text for basic formatting and embedded images. [602]

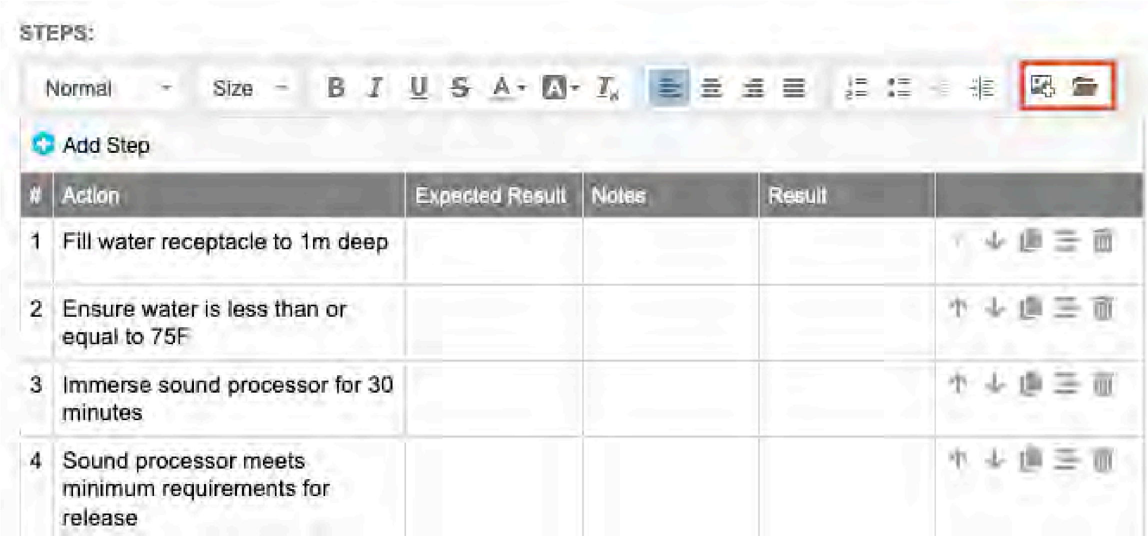
To add an image:

1. Edit a test case.

> **IMPORTANT**
>
> You must save a test case first before adding images to test step fields.

2. Select **Edit** in the toolbar, the pencil icon next to the field, or double-click in the field to make it editable. Place your cursor in the step where you want to add the image.

3. Select the **add image** icon, then select the image from your browser. You can also select the **file folder** icon, then select the image from those already saved onto the application server as attachments.



4. Large images are resized automatically to fit the width of the cell. To view the full-sized image, navigate to the image location by right-clicking on the image.

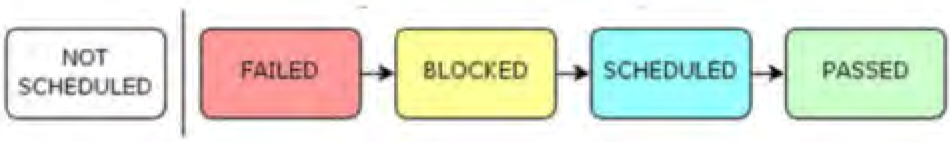
Test case status

Test case status is an automatically calculated status that indicates the state of the last edited test run associated with that test case.

By default, this status is calculated using all available test runs associated with the test case, including runs that aren't scheduled. An organization administrator can disable this option [629] so that unexecuted runs aren't included in the calculation.

The status is calculated in one of these methods:

- If the test case is used in only **one test plan**, the latest status is reported on the test case.
- If the test case is used in **multiple test plans**, test case status shows the most urgent test run status based on the following hierarchy, *regardless of when it ran*: Not Scheduled, Failed, Blocked, Scheduled, Passed.



The status is visible in Single Item View of each test case.

> **NOTE**
> Because test case status is automatically calculated, it can't be manually updated when editing a test case.

TIP

If a test case is used in multiple plans and it's picking up the status of a plan that's no longer relevant, one option is to archive that plan [357]. Doing so removes that plan's test run statuses from the test case status calculation.

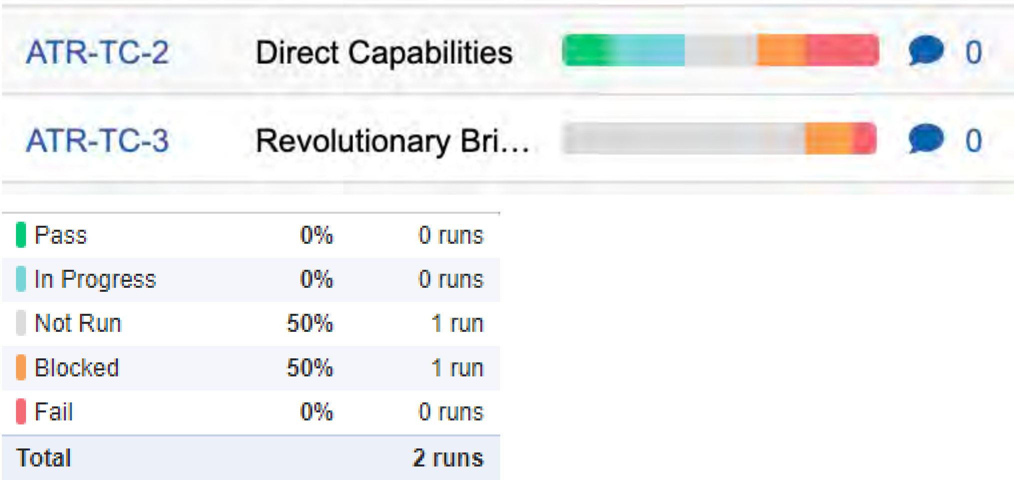
You can also use archiving to trigger a recalculation of all test cases in a plan. When a user archives and then un-archives the test plan, this results in a re-calculation of the status for all test cases in that plan. This can be useful if you change the admin setting to include unexecuted test runs [629] (which isn't retroactive) and want to recalculate test case status with the new setting.

View test run results

You can add a **Test Run Results** column to Test Cases in reviews, List View, Reading View, and Trace View. The column displays the status of all Test Runs that are downstream.

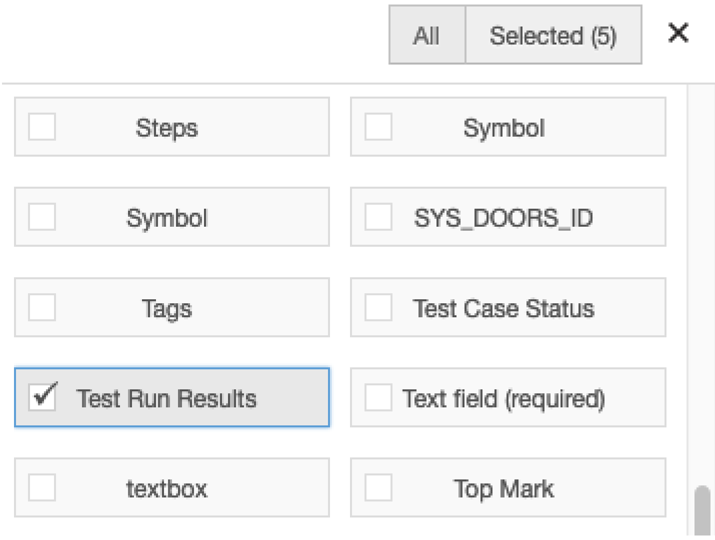
Add column in List View or Reading View

1. From the gear icon, select **Test Run Results**.
2. Hover over the color bar to view the status for each test run.

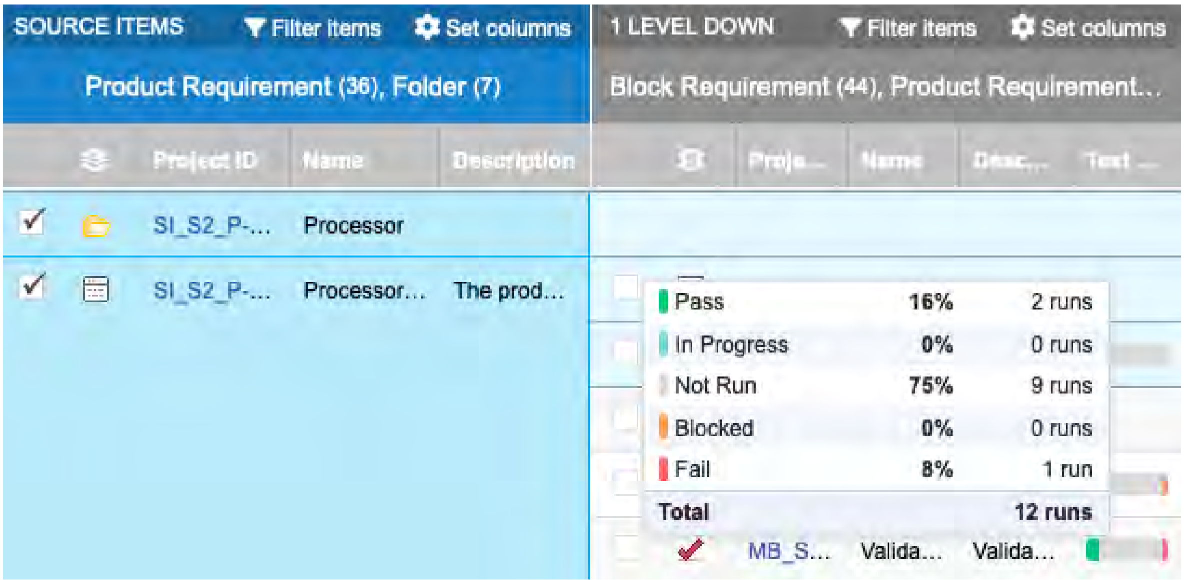


Add column in Trace View

1. From the gear icon, select **Test Run Results**.

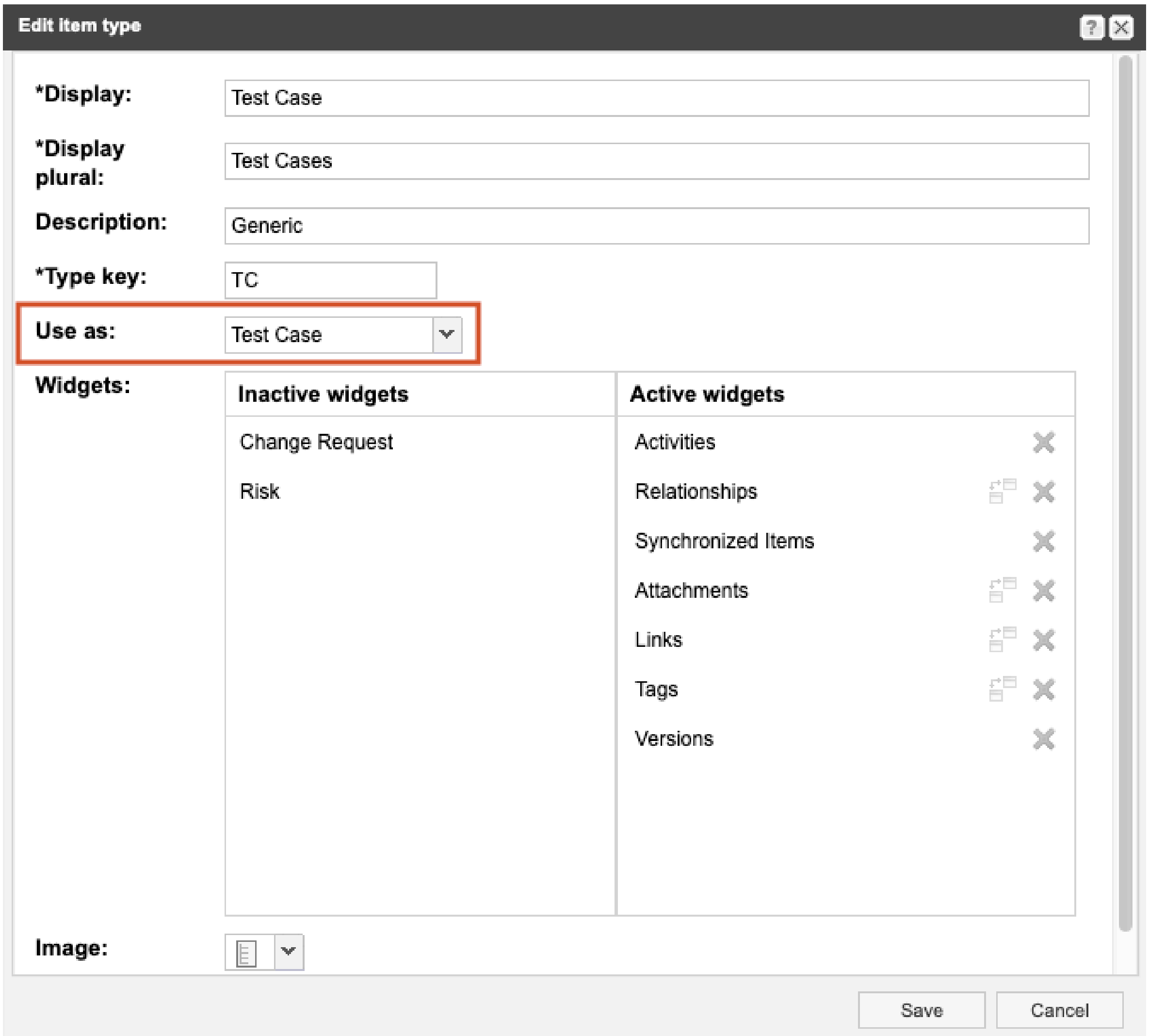


2. Hover over the color bar to view the status for each test run.

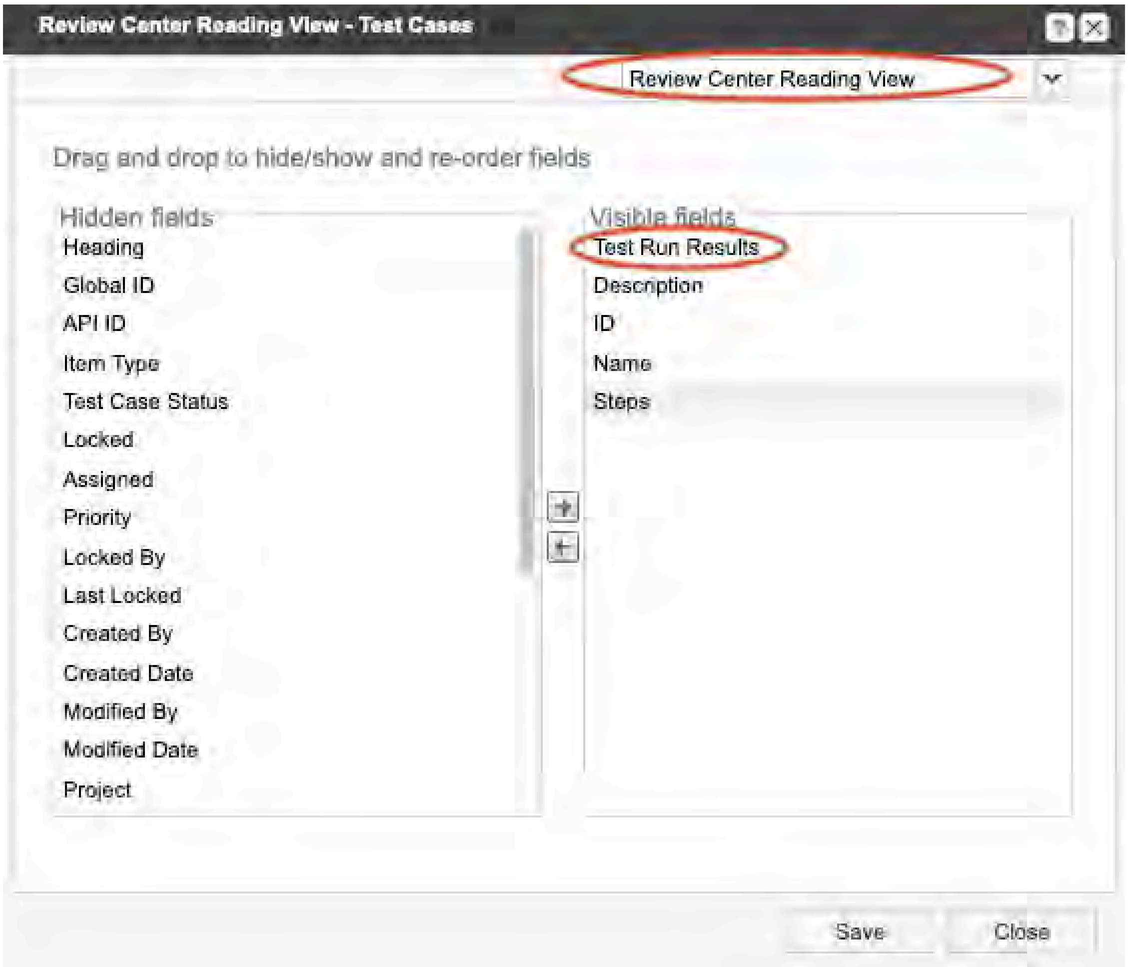


Add column in reviews

1. Select **Admin > Organization**, then select **Item types**.
2. On the Item types page, select **Test Case > Edit**.
   Note: Your administrator might use a different name for Test Case, like "verification." To confirm the item type, look at the "Use as" section in the Edit Item Type window.



3. Click **Save**.
4. Select **Test Case > Views** and enable the **Test Run Results** field for Reading View and Single Item View.

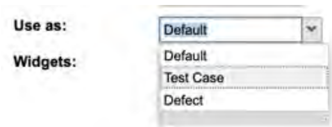


In a review with Test Case items, the results rollup bar now appears.

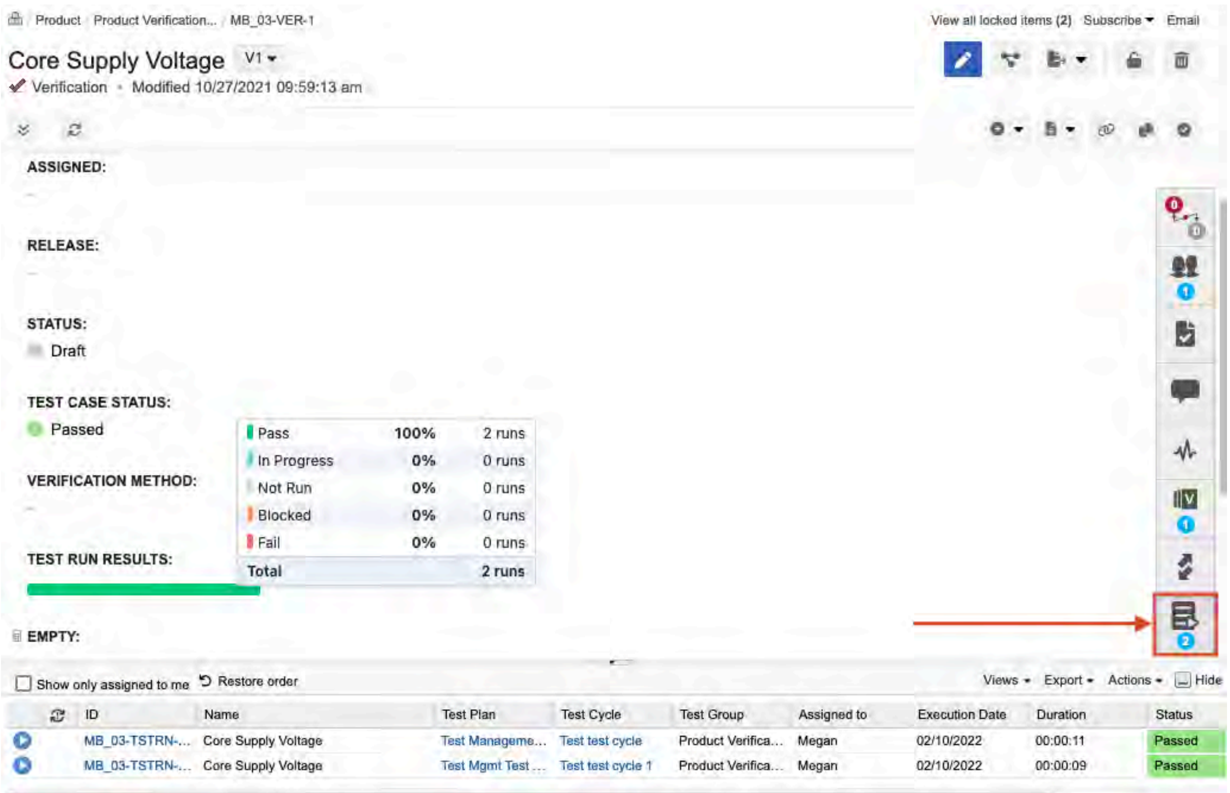
5. Hover over the color bar to view the status for each test run.

Test Runs widget

In Single Item View, the Test Runs widget appears on item types where the "Use as" setting is Test Case.



This widget shows all Test Runs associated with the Test Case. From the Test Runs widget, you can view the Test Runs status, and take action on the Test Runs: batch assign, status updates, and sync with a Test Case. The number indicates the number of active Test Runs.



Export test cases to Microsoft Excel

You might want to export test cases to Excel for manual testing or for audit purposes when the documents need to be saved in a formal repository.

The content that appears in the final output depends on the items you select. For example, if you select **Name** and **Modified by**, those are the only fields that appear in the output.

> **NOTE**
> You can also export test cases [323] to a Microsoft Word document.

Things to know before selecting Steps

Each step is assigned its own row in Excel output. Also, each step row includes the same non-step data for that case. The repeated data impacts the item count in the spreadsheet.

Compare the results with and without Steps:

With Steps

	A	B	C	D	E	F	G	H	I
1									
2	Folder				Produced by:	Shawnna Williams		MediKiosk	
3	Patient Information				on:	05/23/2013		Jama Software	
4	ID	Item Type	Locked	Name	Assigned	Priority	Test Case Status	Step #	Step Action
5		Test Case	FALSE	Edit Patient Inf	Will French	Unassigned	Passed	1	Select "Edit Info" on patient rec
6		Test Case	FALSE	Edit Patient Inf	Will French	Unassigned	Passed	2	Enter a new last name
7		Test Case	FALSE	Edit Patient Inf	Will French	Unassigned	Passed	3	Click "Save"
8		Test Case	FALSE	Edit Patient Inf	Will French	Unassigned	Passed	4	View updated record
9		Test Case	FALSE	Record Proced	Sean Adley	High	Blocked	1	Search for patient or select fr
10		Test Case	FALSE	Record Proced	Sean Adley	High	Blocked	2	Select tooth, procedure or ger
11		Test Case	FALSE	Record Proced	Sean Adley	High	Blocked	3	Enter in text. Select from pre-
12		Test Case	FALSE	Record Proced	Sean Adley	High	Blocked	4	Open existing note and make
13		Test Case	FALSE	Record Proced	Sean Adley	High	Blocked	5	Search by date, procedure, tc
14		Test Case	FALSE	Validate insurai	Will French	Unassigned	Scheduled	1	Navigate to a patient record
15		Test Case	FALSE	Validate insurai	Will French	Unassigned	Scheduled	2	Select "Update Insurance"
16		Test Case	FALSE	Validate insurai	Will French	Unassigned	Scheduled	3	Enter inaccurate insurance infc
17		Test Case	FALSE	Schedule Patie	Sean Adley	Medium	Failed	1	Enter in date, needed time, dat
18		Test Case	FALSE	Schedule Patie	Sean Adley	Medium	Failed	2	Compare against database set
19		Test Case	FALSE	Schedule Patie	Sean Adley	Medium	Failed	3	Pick one of the available times

TIP

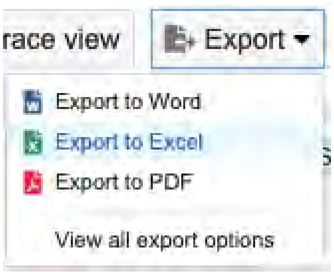
All step fields are included: Step #, Step Action, Step Expected Results, and Step Notes. These columns can't be configured in Jama Connect and must be adjusted after the export.

Without Steps

	A	B	C	D	E	F	G	H	I
1									
2	Folder				Produced by:	Shawnna Williams		MediKiosk	
3	Patient Information				on:	05/23/2013		Jama Software	
4	ID	Item Type	Locked	Name	Assigned	Priority	Test Case Status		
5		Test Case	FALSE	Edit Patient Inf	Will French	Unassigned	Passed		
6		Test Case	FALSE	Record Proced	Sean Adley	High	Blocked		
7		Test Case	FALSE	Validate insurai	Will French	Unassigned	Scheduled		
8		Test Case	FALSE	Schedule Patie	Sean Adley	Medium	Failed		
9		Test Case	FALSE	Create family g	Will French	Medium	Passed		
10									
11	Total Items:	0							

To export test cases:

1. From the Explorer Tree, select the set or folder for the test cases that you want to export. If the test cases are in multiple locations, you must use a filter to select the test cases.
2. Select **List View**.
3. Select the gear icon to open a drop-down menu and select what you want to include in the Excel spreadsheet.
4. In the toolbar, select **Export > Export to Excel**.



Test plans

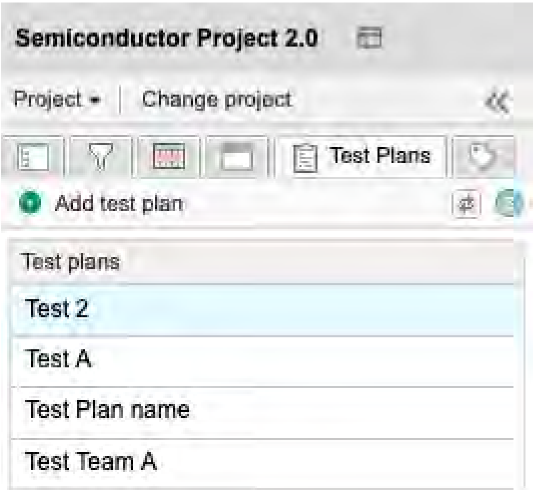
A test plan is an item that documents the overall strategy for validating or verifying that a product or system meets its design specifications and requirements.

Add a test plan

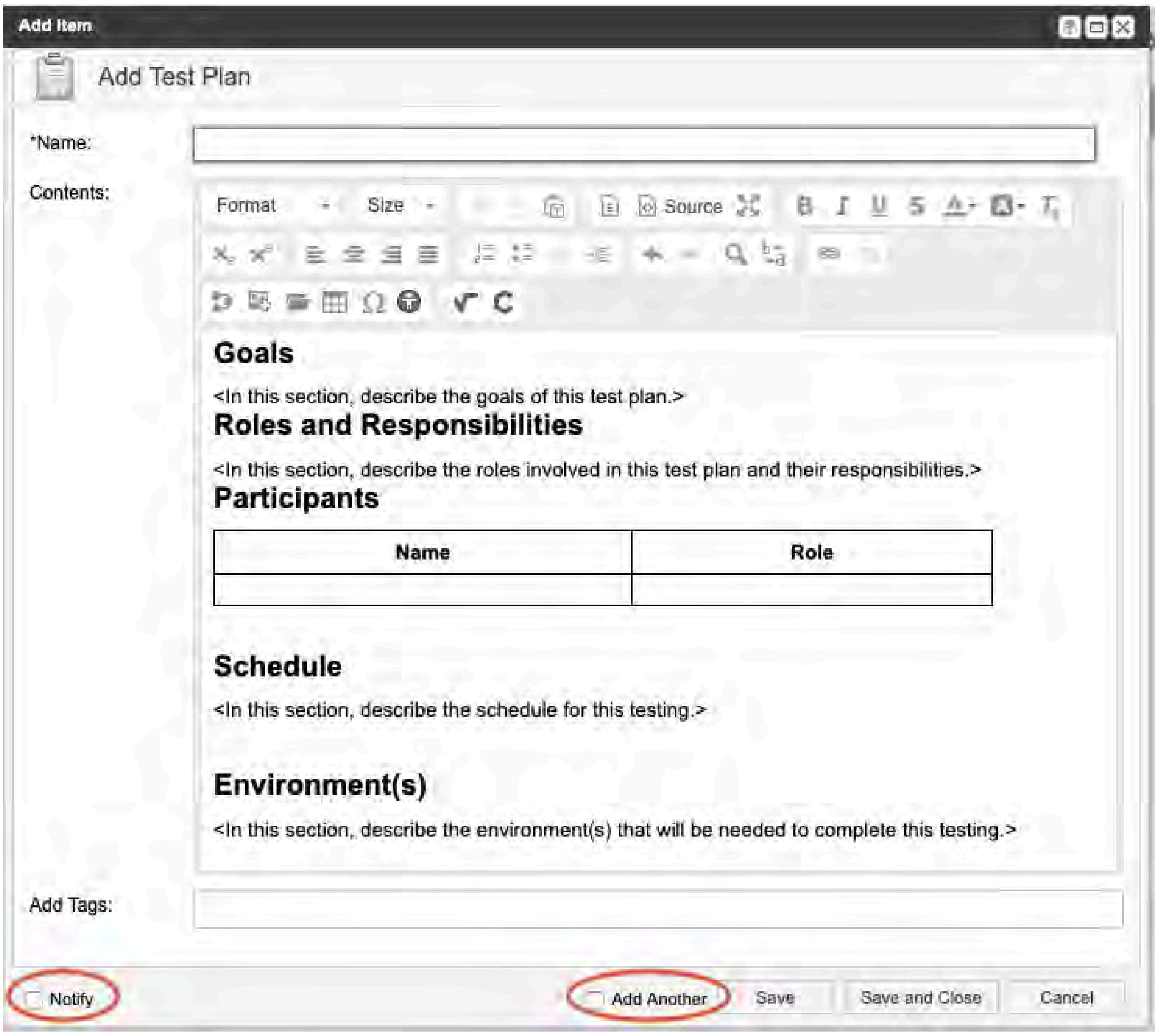
NOTE

You must have read/write permissions for the entire project in order to create a test plan.

1. Select the **Test Plans** tab in the left panel.



2. Select **Add test plan**.
3. In the **Add item** window that opens, enter the name and description of your new plan, and add any tags. An organization administrator can edit the default template [619] included in the test plan description.



TIP

If you select **Add another**, when you save this plan a new **Add item** window opens for you to create another plan.

If you select **Notify** in the lower left corner of the window, you can leave a comment and notify a particular person or group by email that this plan was created.

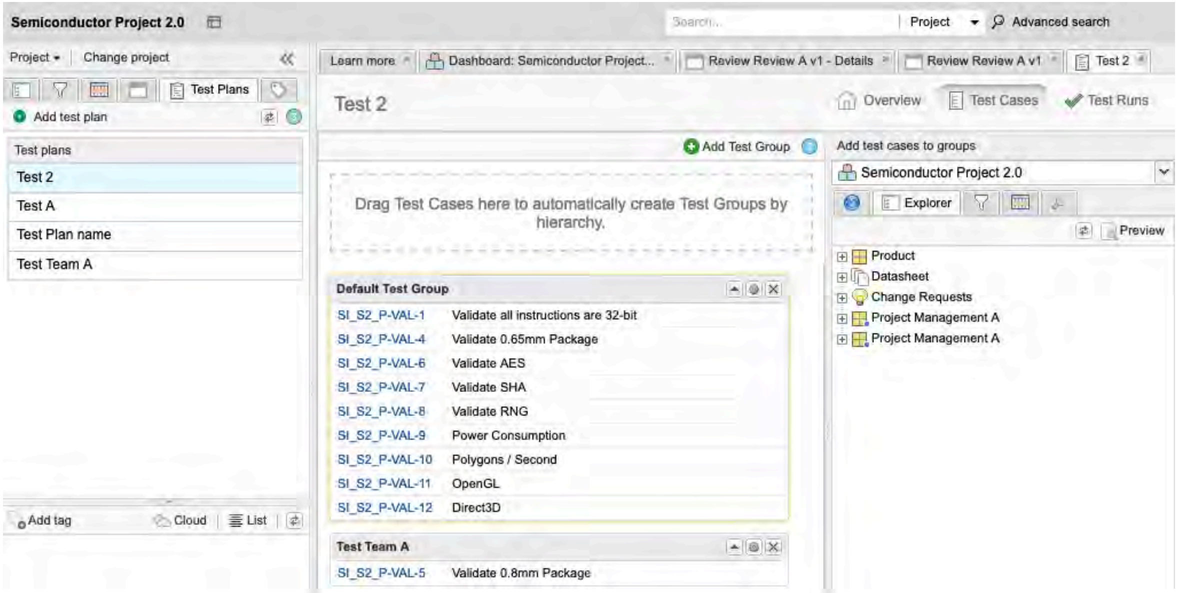
4. Select **Save and close**.

Add test cases to a plan

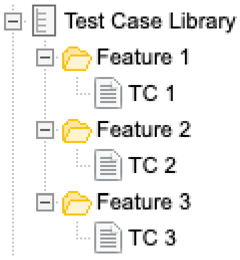
Once you have created test cases, you can add them to a plan in groups. For example, you might group all the cases for a specific aspect of the product, test location, or tester. You can use groups later to create a similar cycle of runs [358].

You can only add a test case to one group in a test plan.

1. Select the **Test Plans** tab in the left panel, and the name of the plan where you want to add the cases.
2. In the upper right toolbar of the center panel, select **Test cases** for that plan.
3. The right panel shows an Explorer Tree for your project. In the center panel you can view (or create) groups [350] for organizing your test cases.



4. Select any component, set, or folder of test cases, or an individual test case from the tree on the right. You can also use the **Releases**, **Filters** , or **Search** tabs to find the test cases you want to add. Drag it to an existing group to add cases to that group.
   Alternatively, grab test cases and drag to the dashed line box at the top of the center pane to create a new group. If you drag a component, set or folder that contains test cases, the hierarchy is preserved. For example, if you drag this set of test cases to the top of the center panel:



... it results in the creation of these three groups:

Test groups

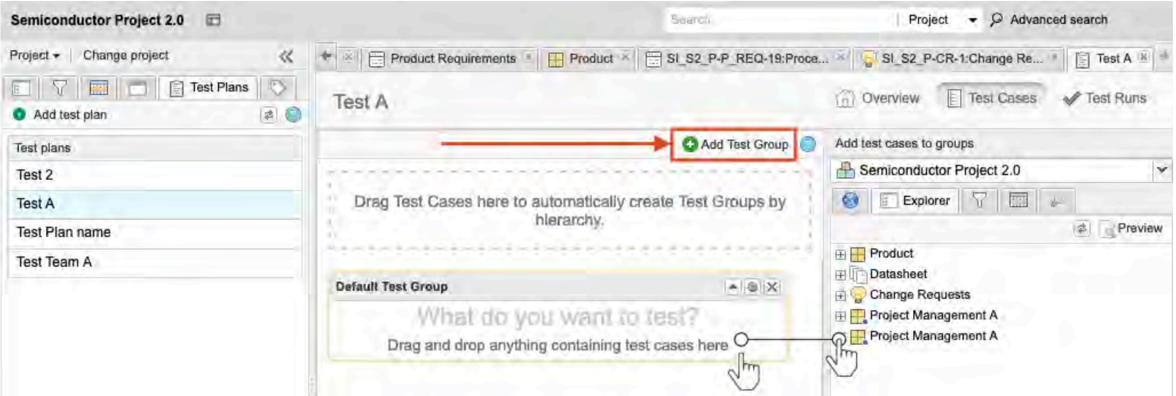
Test groups let you combine and label similar tests in a test plan.

Test cases are added to a plan in groups. Organizing test cases this way makes it easier for others to understand and run your test plan. For example, you might want to put all the cases for a specific aspect of the product, test location, or tester in the same group.

Add, edit, or delete a test group

When adding test cases to a plan [349], they are added in groups. In addition to the default test group, or automatic groups that are created by dragging test cases, you can also manually create a new group.

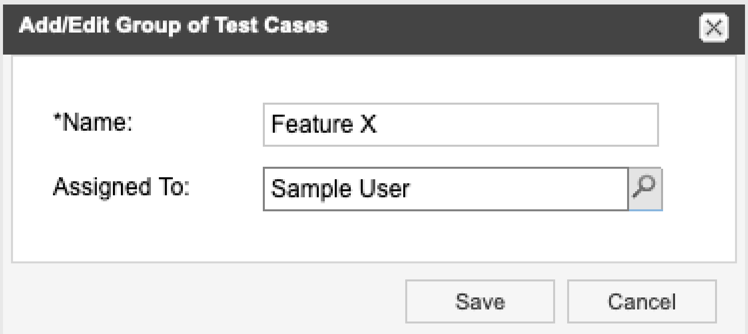
1. Select **Test cases** [153] for the plan you want to see.
2. Select the green **Add Test Group** button.



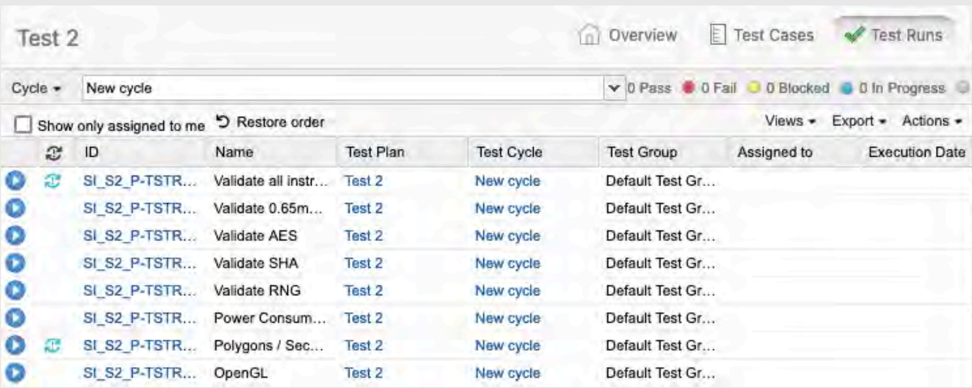
3. In **Add/Edit Group of Test Cases**, enter the name of the group.
4. Select the magnifying glass icon to open the **Add users** window. Select the name of the person you want to assign to run the tests in this group. Use **Select user** to complete the action. This also automatically assigns any runs created from this group to that person.

TIP

Some organizations create a user as a placeholder for a particular team, such as "Sample User" and assign groups to that team.

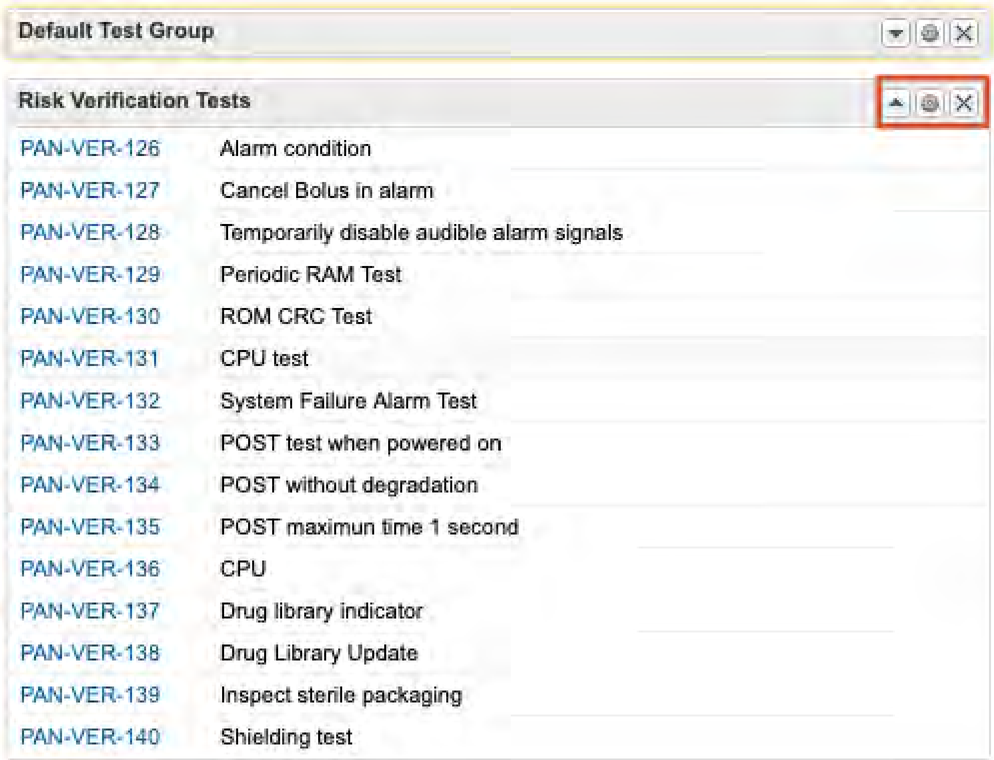


This does require an active license, but it allows members of the team to see all the runs that are assigned to their team in a cycle.



When you execute a run that was assigned to another user (such as "Sample User") you can reassign that run to yourself.

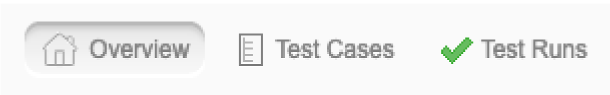
5. Select **Save** on the **Add/Edit groups of test cases** window.
6. To edit an existing test group, select the **settings icon** in the corner of the group to open the **Add/Edit window**. You can also use the **triangle** to collapse or expand groups, or the **X** to delete groups.



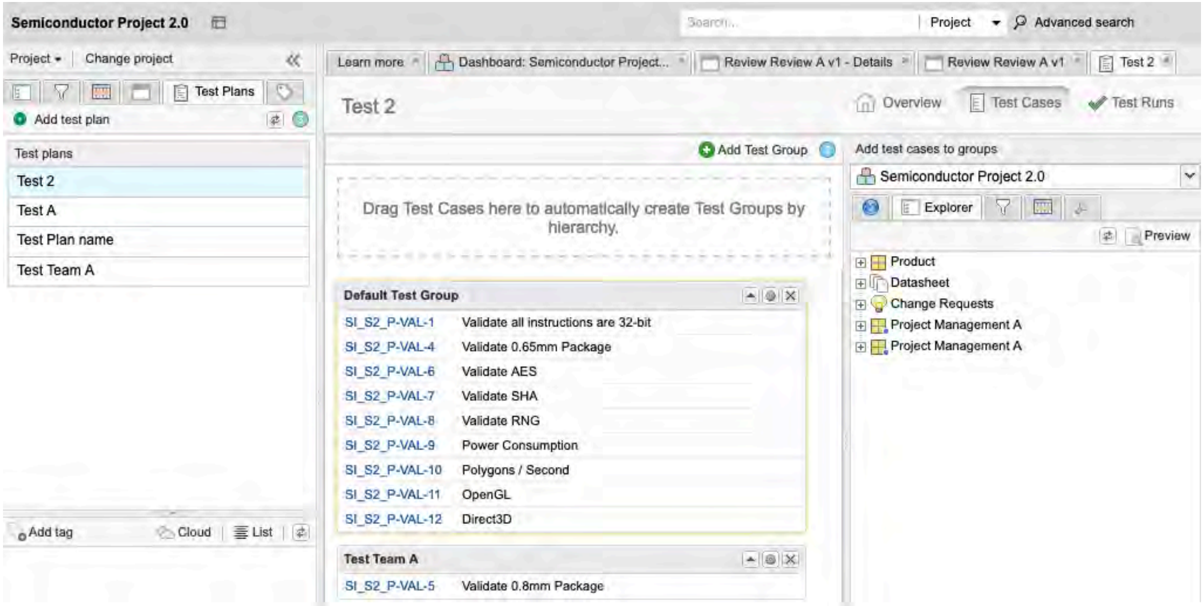
View test plan details

Select the name of a plan to open it. In the center panel, you can toggle between these three views:

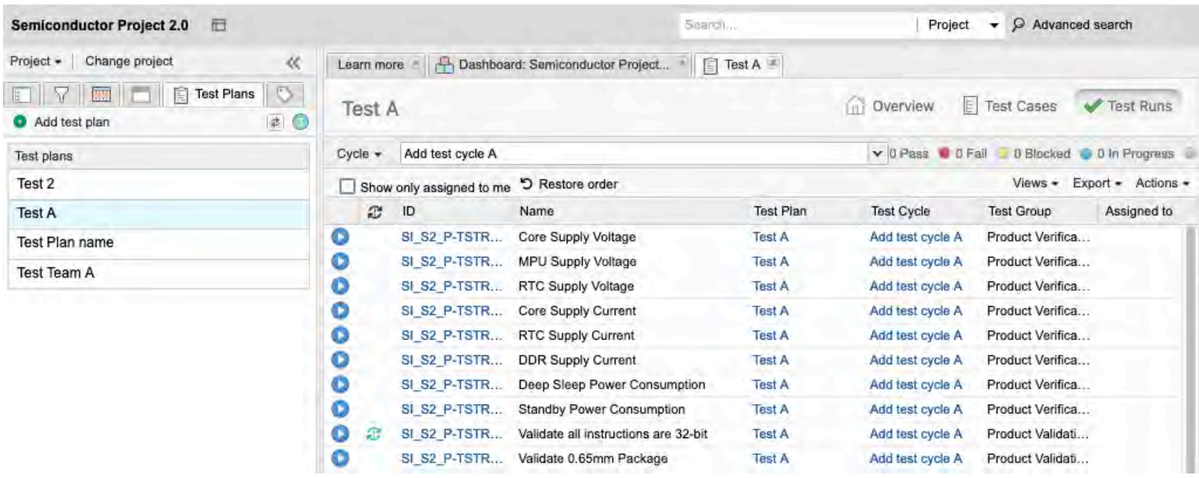
- **Overview**
  Describes the testing goals and purpose. It's displayed as a Single Item View [56] of the test plan. An organization administrator can configure which fields are displayed for this item type [605].



- **Test cases**
  Select **Test Cases** to add groups of test cases to a plan.



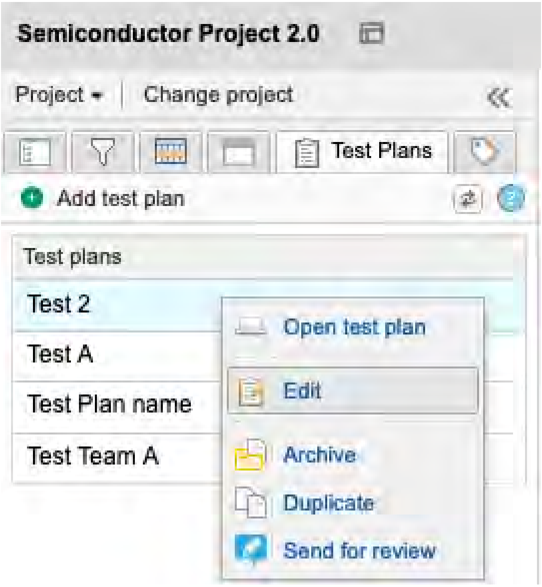
- **Test runs**
  Select **Test Runs** to add and perform a cycle of test runs.



Edit a test plan

Once you find the test plan you want to use, decide which way to edit the overview section of a plan.

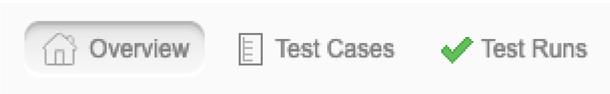
1. Right-click on the plan you want to edit.
2. Select **Edit** to open the **Edit item** window.



3. Make changes to the test plan overview and select **Save**.

Alternatively, you can:

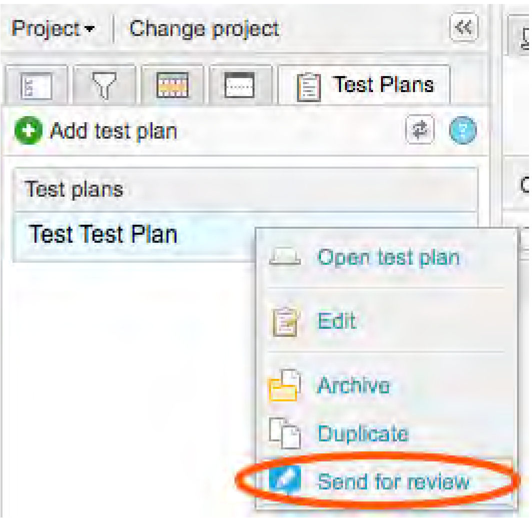
1. Select the plan name to open it in Single Item View. **Overview** must be selected in the toolbar.



2. Select the gray pencil icon next to the field you want to edit.
3. Make changes to the test plan overview and select **Save**.

Send a test plan for review

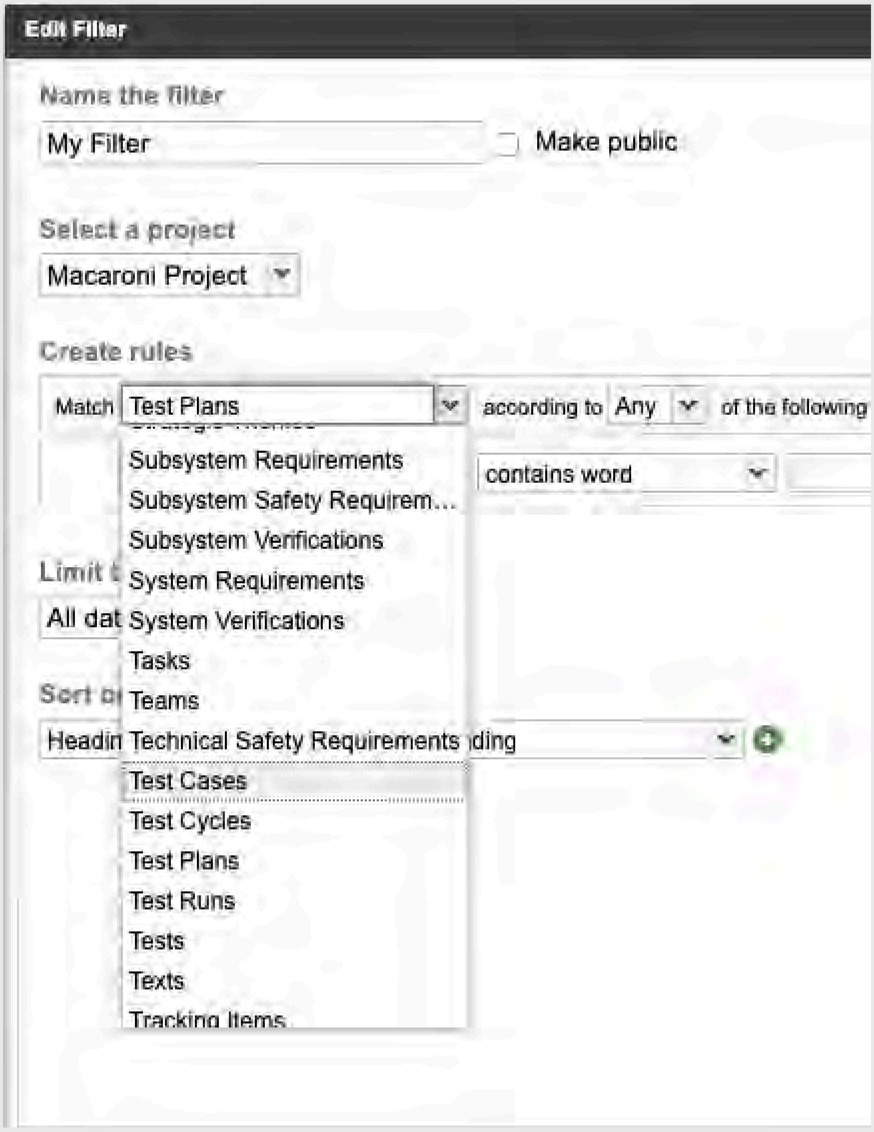
1. Select the test plan [154] you want to use.
2. Right-click on the test plan you want to review and select **Send for review**.



3. Initiate a review [159] as usual.

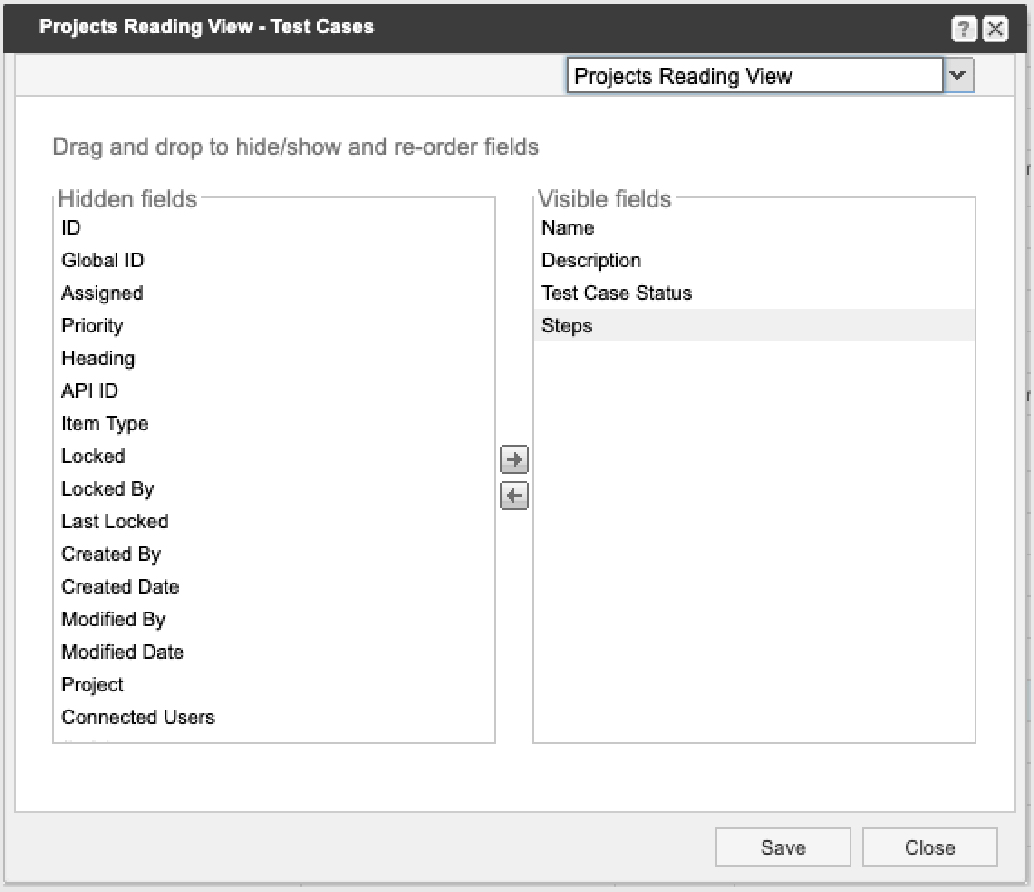
TIP

You can also create an advanced filter [135] that contains any combination of test plans, cycles, cases and runs and send that to review.



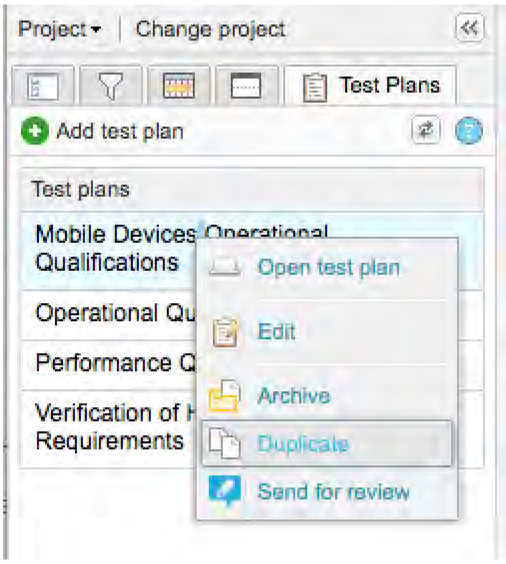
TIP

When sending test items to review, not all relevant fields might appear in Reviews Single Item View or in Reviews Reading View. An organization administrator can configure views [620] for an item type to include the necessary fields.



Duplicate a test plan

Right-click on the test plan you want to duplicate (active or archived) and select **Duplicate**.

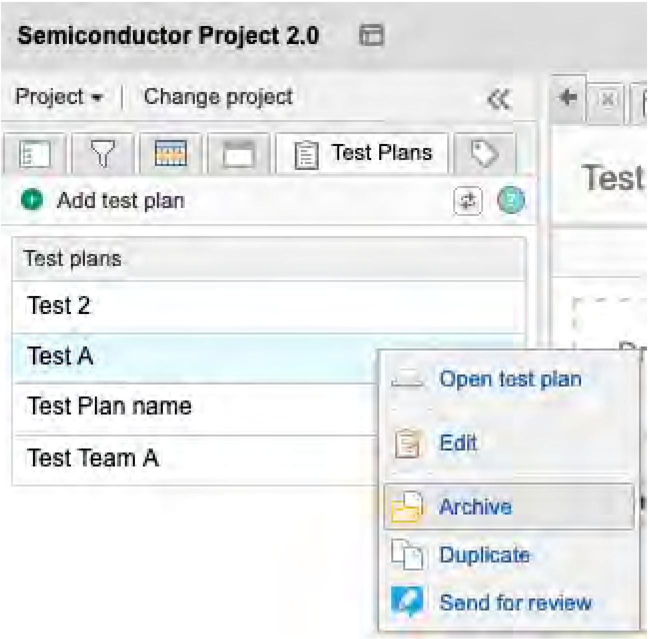


This creates an active copy of the selected test plan.

IMPORTANT
The copy contains the same details as the original and the same groups of test cases, but doesn't contain the test runs or test cycles from the original.

Archive a test plan or run

1. Right-click on the test plan that you want to archive and select **Archive**.



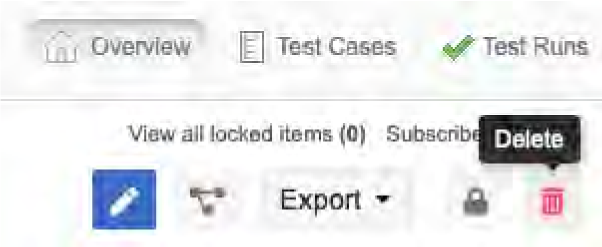
2. Archived test plans move into a group at the bottom of the list of test plans.
3. To unarchive a test plan, right-click an archived test plan and select **Unarchive** to make it active.

NOTE
The only way to archive a test run is to archive the associated test plan. When you archive a test plan, the associated test runs no longer appear in the associated test case, and the test case status reverts to "not scheduled." You can unarchive test runs and recalculate test case status by unarchiving the associated test plan.

Delete a test plan

CAUTION
When you delete a test plan, you also delete all associated test cycles and runs. If you do this, test cases associated with deleted test runs can change status. If a plan has any associated test runs, consider archiving the test plan [357] rather than deleting it.

1. View details [352] of the plan you want to delete.
2. In the toolbar, select **Delete (trash icon)**.

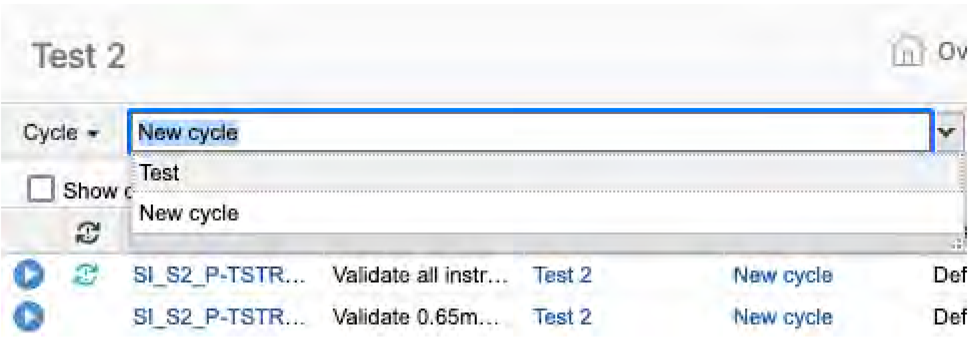


Test cycle

Test cycles convert groups of test cases into a series of test runs that are ready for execution.

In a test plan, you can add a test cycle [358] to help you manage and execute runs [368]. You can also send a test cycle for review [363].

Test cycles can include tests for a particular team, from a particular test case, and tests you want to run on the same day or at the same location.



TIP

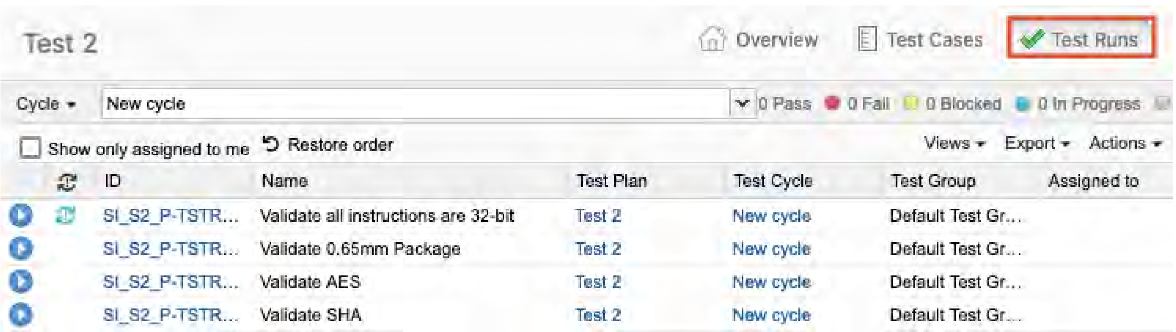
You can't add a test case directly to a cycle; it must first be included in a group.

Add a test cycle

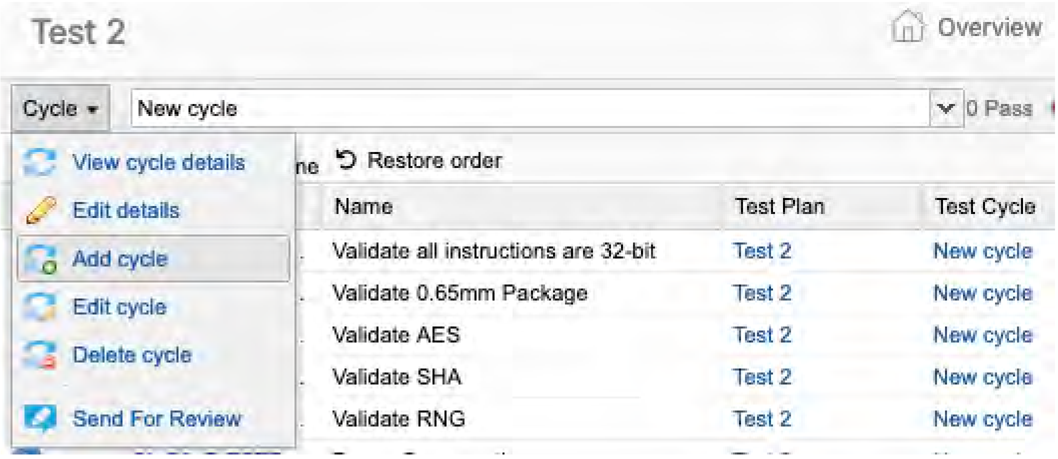
Cycles are created from groups of test cases. Add a test cycle to combine test runs that you want to execute together.

To add a test cycle:

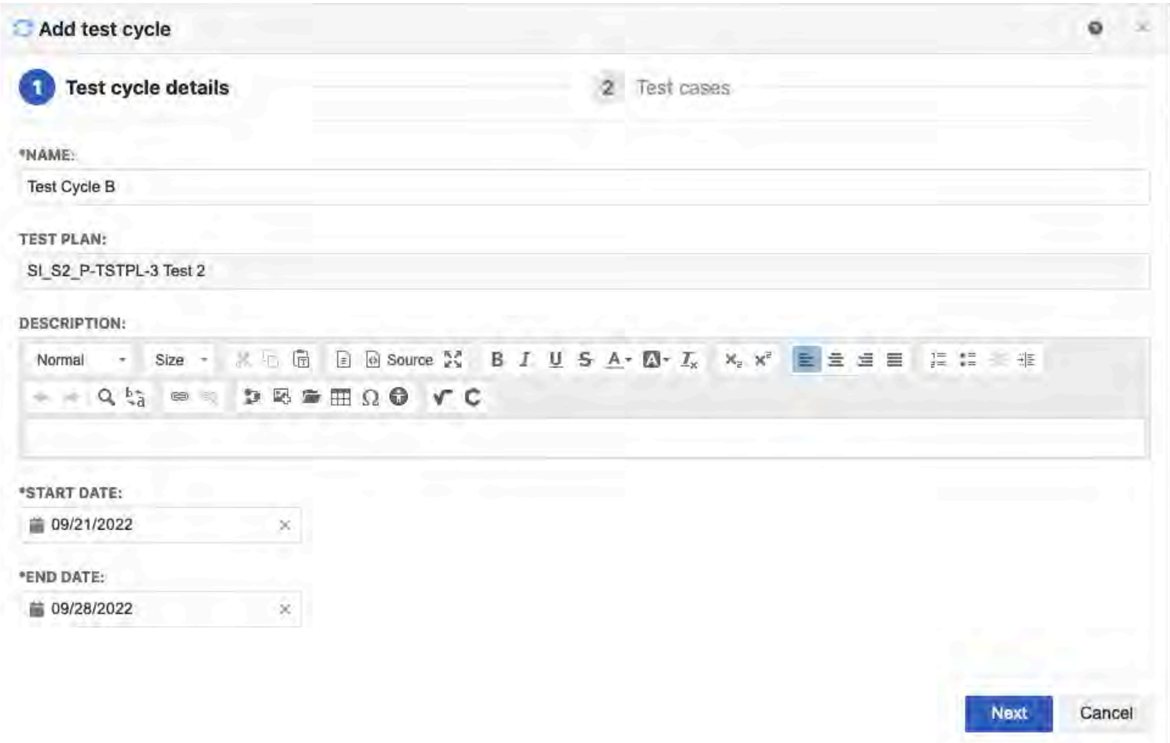
1. In a test plan, select **Test Runs**.
   The screen displays the selected cycle and all associated test runs.



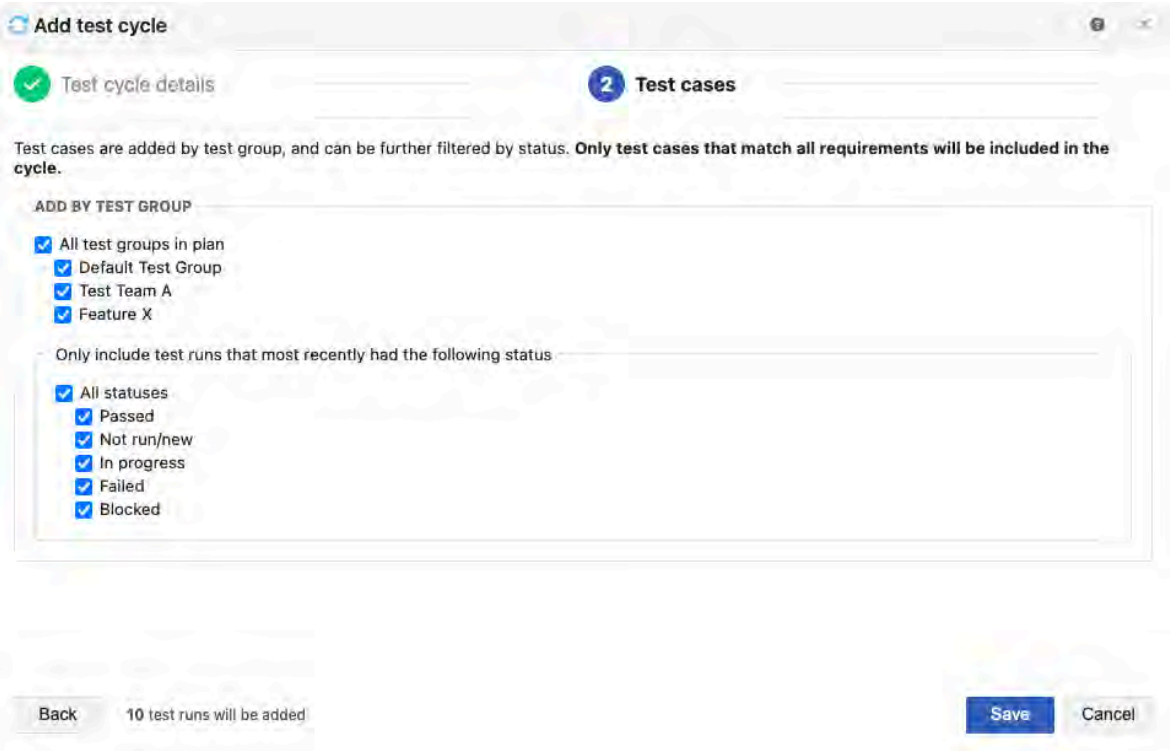
2. To add a cycle, select **Add cycle** from the Cycle drop-down menu.
   If this is the first cycle you're adding, you see a green button icon.



   The Add test cycle wizard opens.
3. On the Test cycle details page, enter the name, start and end dates, optional description, then click **Next**.



4. On the Test cases page, make your selections:



- **Add by test group** — Select **All test groups in a plan** or select individual test groups.
- **All statuses** — Select **All statuses** or select individual statuses.

5. Click **Save**.

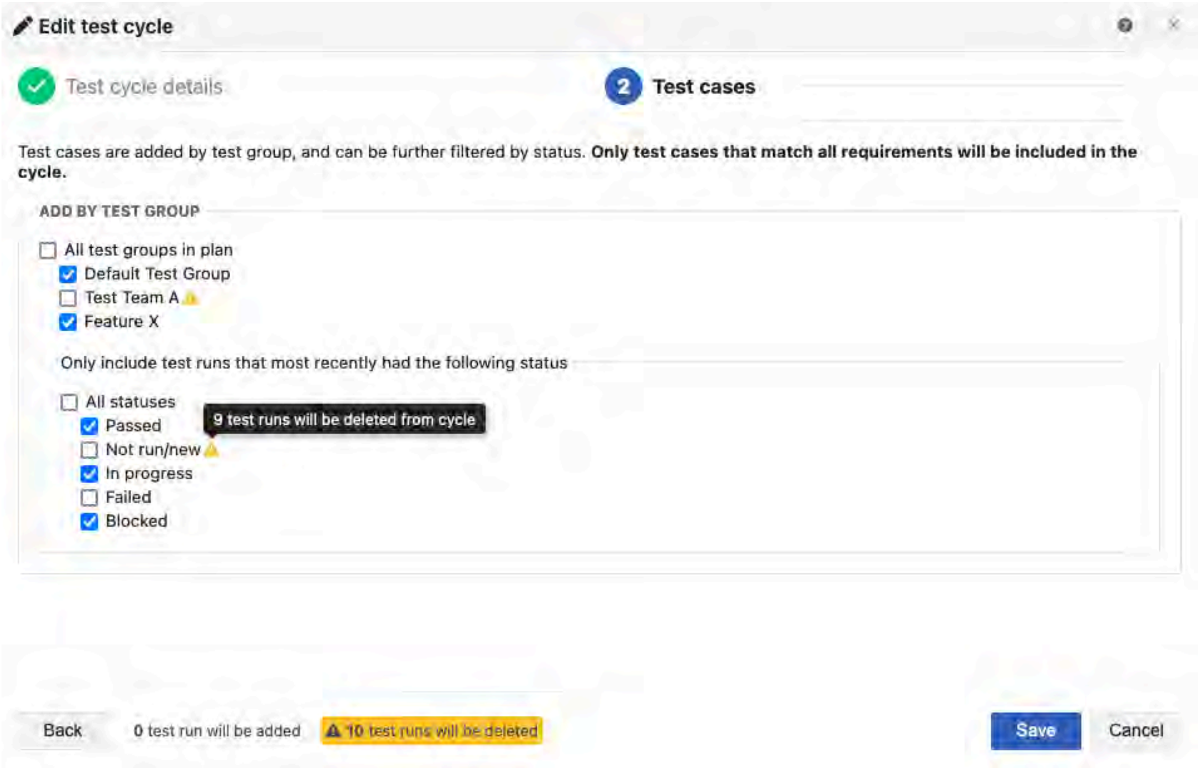
The page is refreshed and displays the new test cycle.

Edit a test cycle

Cycles are created from groups of test cases. From the Cycle drop-down menu, you can edit the details (name and description) and the cycle's contents (test cycle and test case details).

Important considerations

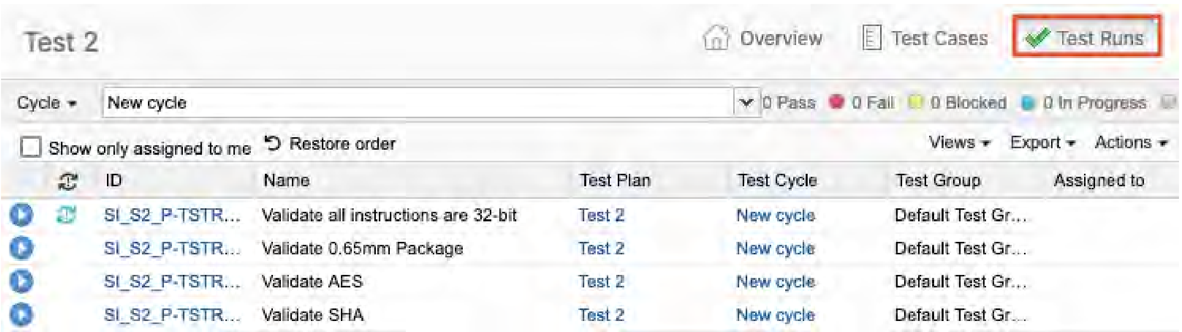
- When you edit the contents of a test cycle, you receive a text alert when there's potential data loss. Individual counts for each group that are removed appear when you hover over the caution icon; the total number is highlighted in yellow at the bottom of the screen.



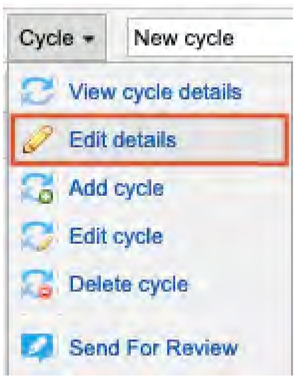
- When a group is removed, the test cycle still includes test runs with assignees or status progress. Individual runs that meet the criteria (are assigned and/or have status) must be manually removed from the test run or filter.

To edit a test cycle:

1. In a test plan, select **Test Runs**, then select the cycle you want to edit.
   The screen displays the selected cycle and all associated test runs.



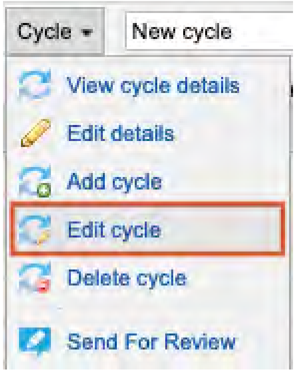
2. To edit the details, select **Edit details** from the Cycle drop-down menu.



   This action doesn't impact the cycle's content.

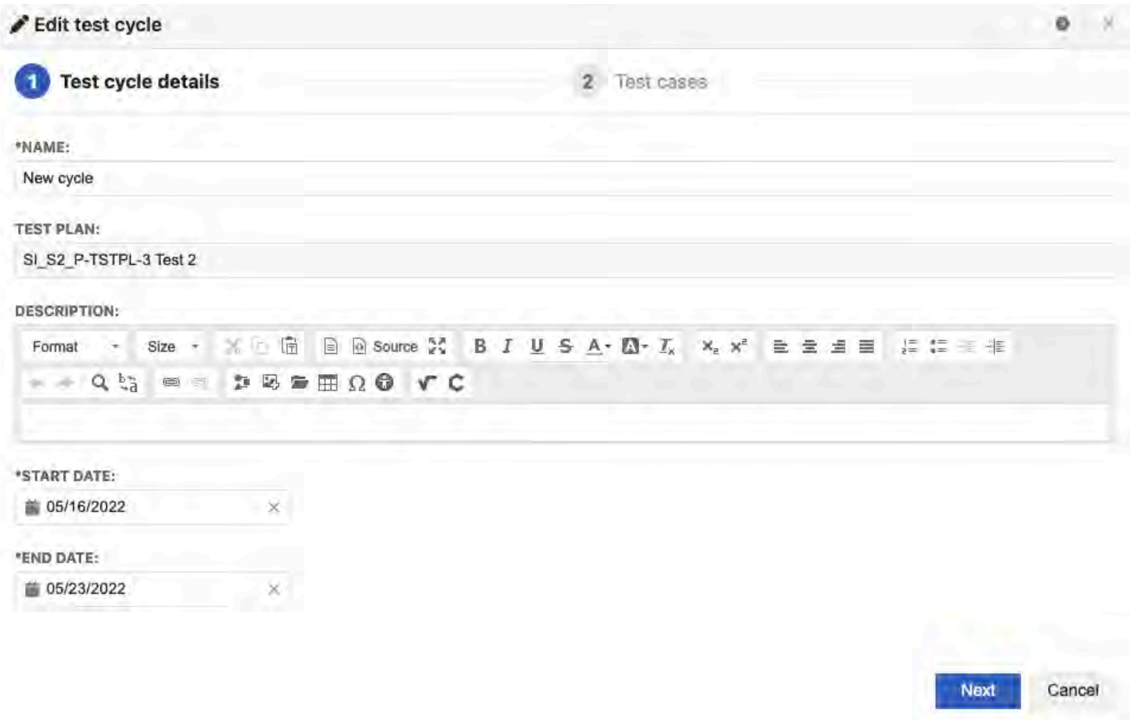
a. Edit the name and description.
b. Click **Save**.

3. To edit the cycle, select **Edit cycle** from the Cycle drop-down menu.

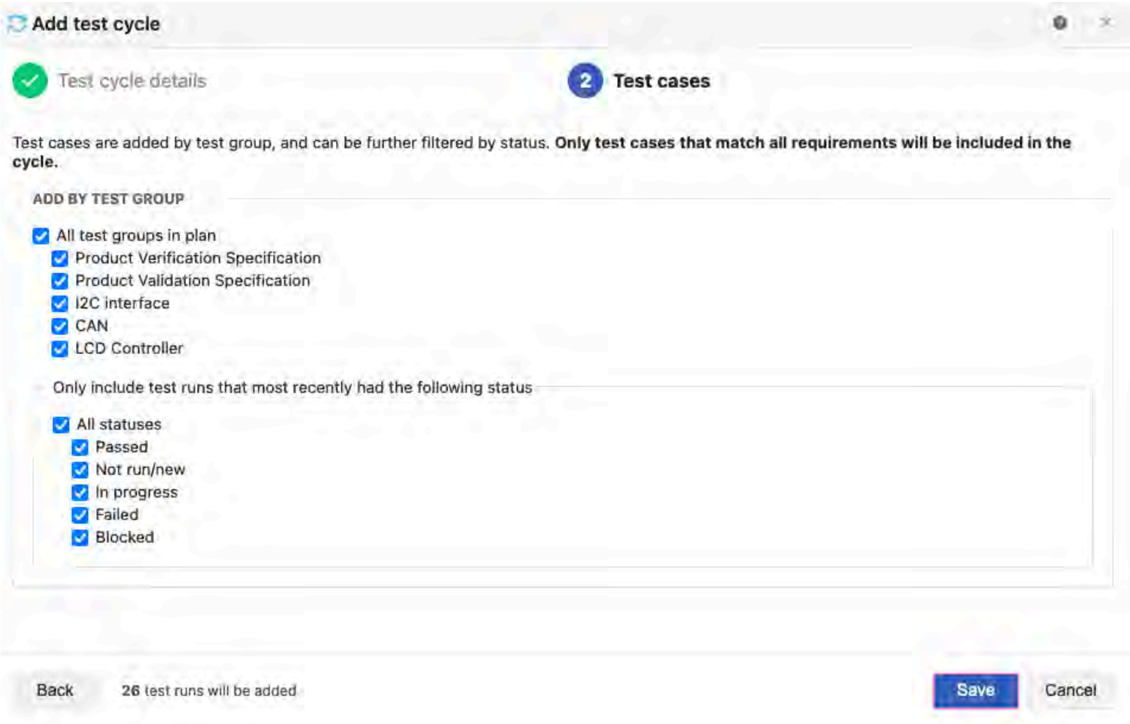


The contents associated with the cycle are updated and the Edit test cycle wizard opens.

a. On the Test cycle details page, enter the name, start and end dates, optional description, then click **Next**.



b. On the Test cases page, make your selections:



- **Add by test group** — Select **All test groups in plan** or select individual test groups.
- **All statuses** — Select **All statuses** or select individual statuses.

c. Click **Save**.

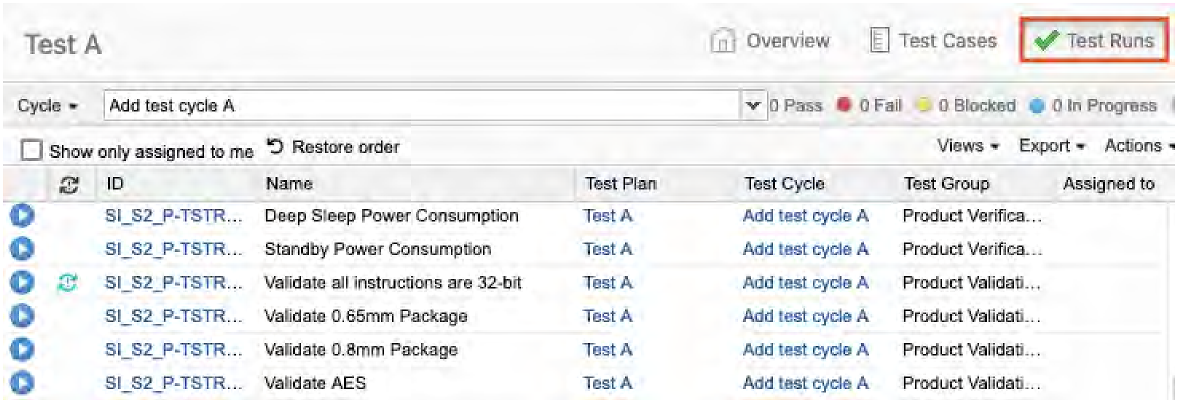
A pop-up message confirms that the changes were successful.

Send a test cycle for review

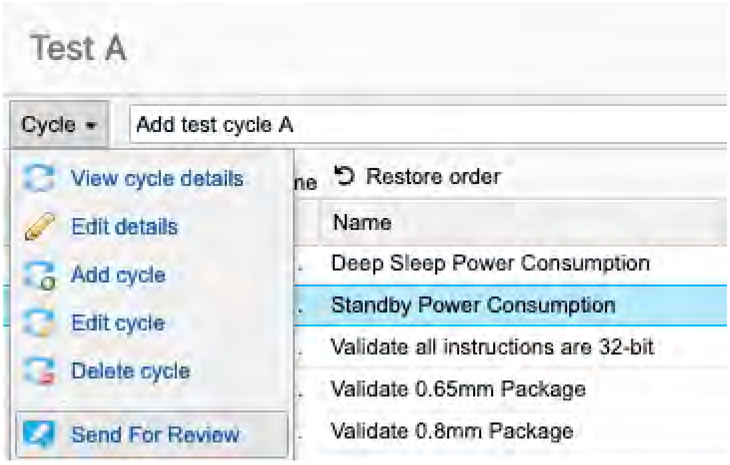
When you send test items for review, some relevant fields might not appear in a review's Single Item View or Reading View. If this occurs, an organization admin can configure views [620] for an item type to include the necessary fields.

To send a cycle for review:

1. In a test plan, select **Test Runs**, then select the cycle you want to send for review.



2. To send the cycle for review, select **Send For Review** from the Cycle drop-down menu.



3. Initiate a review [159].

A wizard opens and guides you through the process.

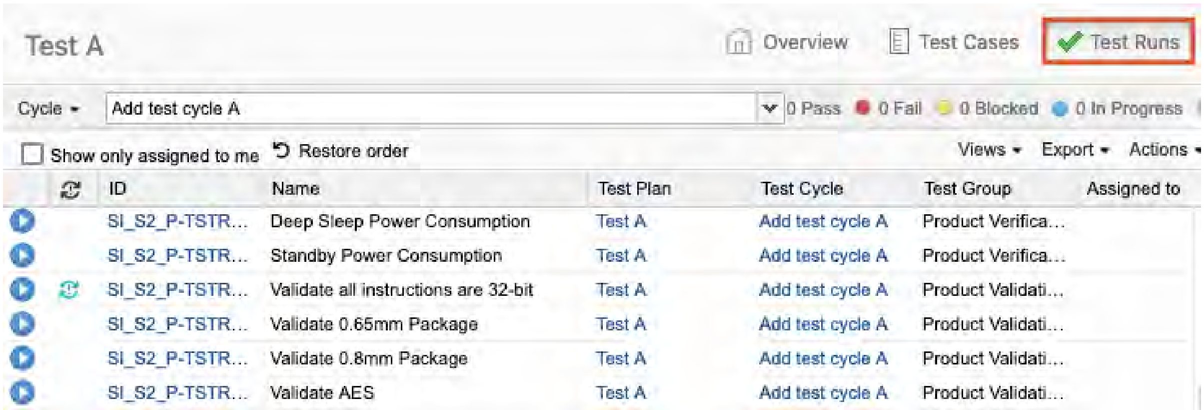
Test runs

A test run is an item used to record results for a test case you ran against your product.

Find and manage test runs

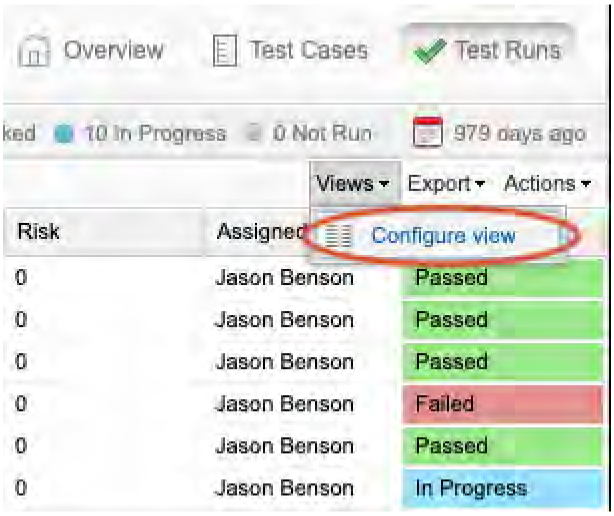
By selecting Test runs in the toolbar, you can manage all the runs in the cycles for a plan.

- For the plan you're using, select **Test runs** in the upper right toolbar.



- Test runs are displayed in a configurable List View in the center panel. Select **Views > Configure view** in the upper right toolbar to make the fields you want to see visible.

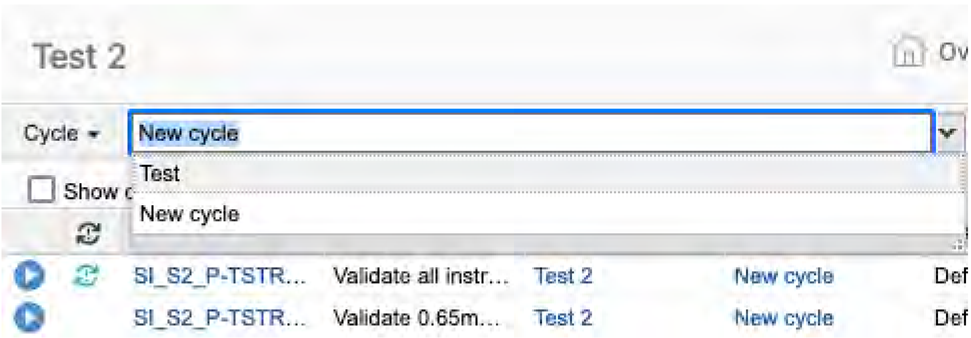
> **NOTE**
> If you select **Test Case** as one of the visible columns, the Test Case column shows the ID in front of the name.



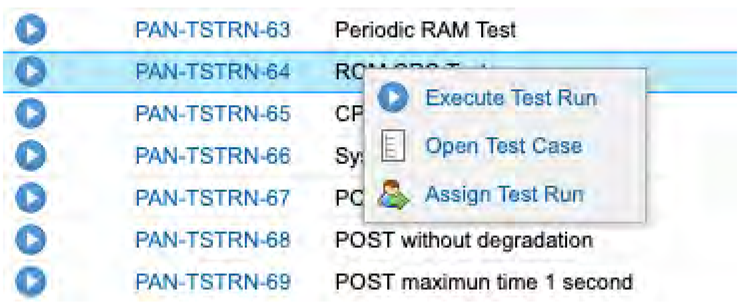
- Select the column header to sort columns. Return them to their original order by selecting **Restore order**. For older data, a project reindex [661] might be required to properly restore the order.

> **NOTE**
> The **Test group** column order is based on the hierarchy of groups [350]. The names themselves can't be sorted in List View.

- Use the drop-down menu next to **Cycles [358]** to display the test runs for a cycle.



- To execute a run, select the **blue circle** at the left of each row, or right-click and select **Execute test run**.



- You can also right-click on a test run and select **Open test case** to see the test case associated with this run or **Assign test run** to select an assignee.
- Select **Show only assigned to me** in the upper left toolbar to filter the List View for test runs assigned only to you.
- Select **Export** to export the test runs shown as a standard Word, Excel, or custom format document (Office Templates).

TIP

You can see and analyze test runs in Trace View [55] if you view their associated test cases there.

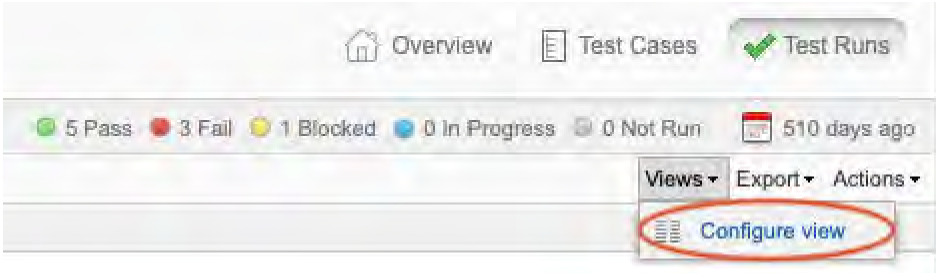
View test run details

1. In the test plan, select **Test runs** from the upper right toolbar to display test runs in List View.
2. Select the name of a test run to view its details.
3. From the toolbar on the right, you can view and add relationships, comments, and connected users. You can also check the activity and version history for the test run or open the associated test case.
4. Double-click on any of the fields to edit the test run.

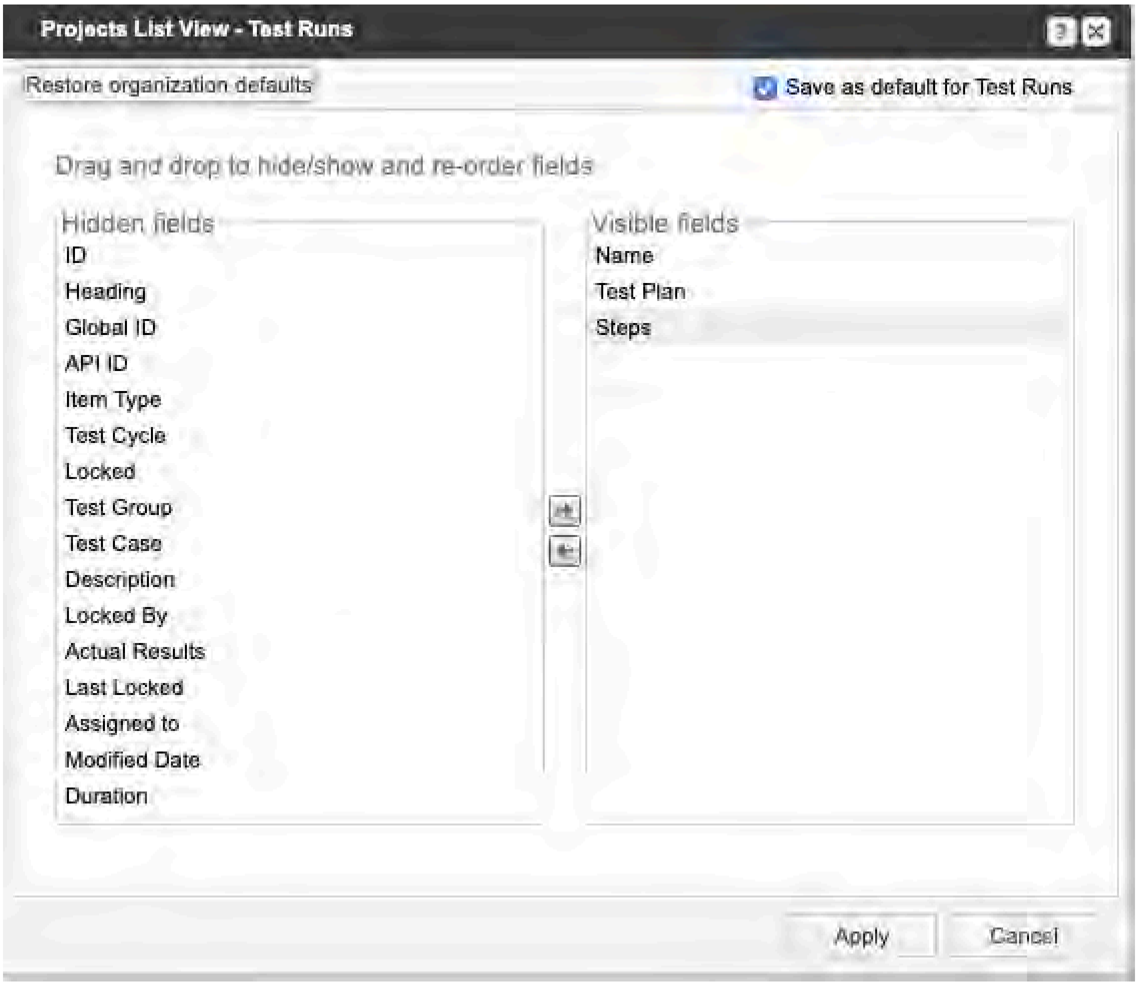
Configure test run view

You can choose which columns are displayed under test runs. These settings only apply to you.

1. Select a test plan, then select **Test runs** in the top right menu.
2. Under **Views**, select **Configure view**.



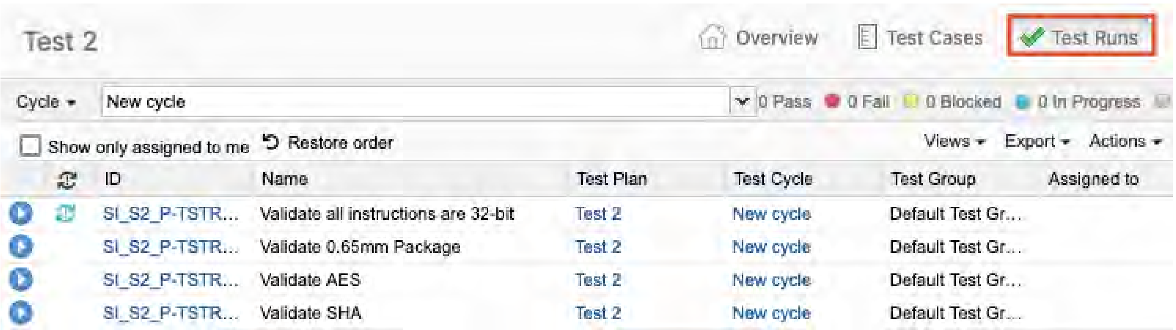
3. In the window that opens, double-click on the field name, drag and drop, or use the arrows in the middle to move the field names between **Hidden fields** and **Visible fields**.



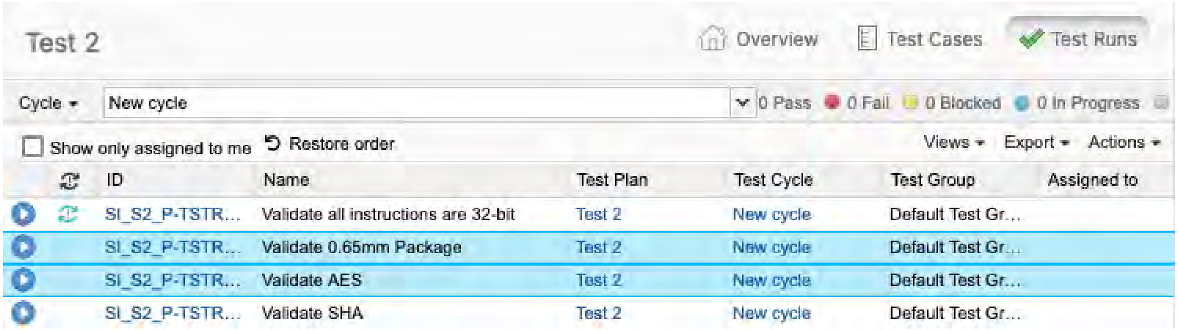
4. Select **Restore organization defaults** if you want to return to the default settings. An organization administrator can configure the default view settings for test run item types [620].
5. Select **Save as default for test runs** if you want to use this configuration for all test runs that you view in Jama Connect. If you uncheck this box, your settings are only applied during this session and return to default settings when you log in again.
6. Select **Apply**.

Assign test runs

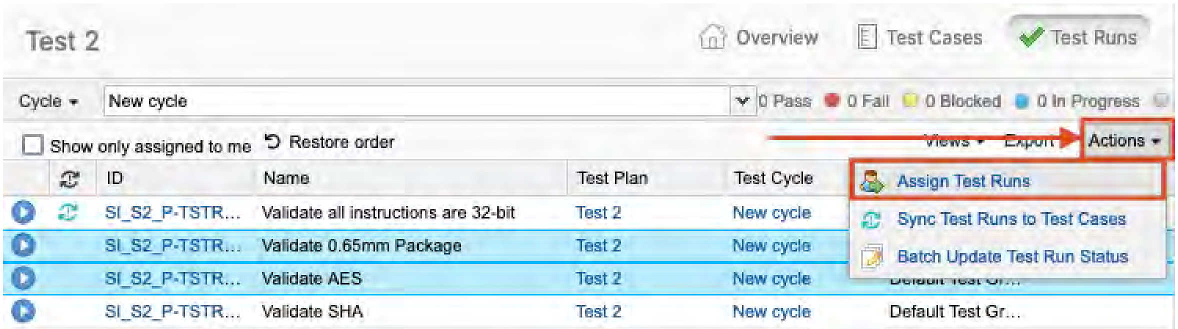
1. In the test plan, select **Test Runs**.



2. Select the test runs you want to assign. Press **Ctrl** or **Shift** to select more than one.



3. From the Actions drop-down menu, select **Assign Test Runs**.



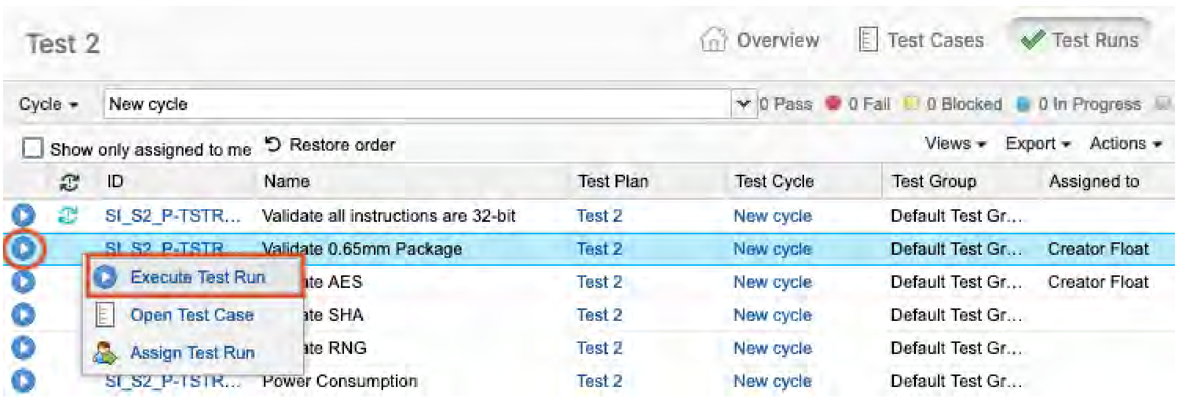
4. In the Assign Test Runs window, select the name of the user you want to assign, then click **Select User**.
5. Click **OK**.

The page is refreshed and the user you assigned to the test run appears in the **Assigned to** column.

Execute a test run

> **IMPORTANT**
> When you select **Pause**, the results (pass/fail) aren't automatically saved. You must click **Save and Done** to save the recorded results or "actual results" values.

1. In the test plan, select the **blue button** next to the run you want execute or right-click and select **Execute Test Run**.

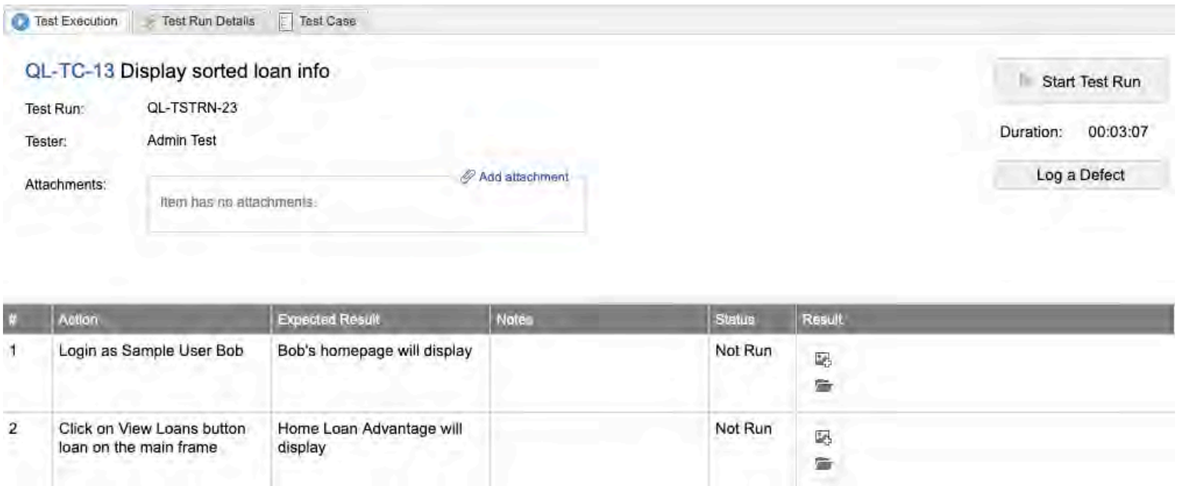


2. In the Execute Test window, use the three tabs at the top to execute the test, view run details, or view the associated test case.

NOTE

If you try to execute a test run that isn't assigned to you, you are prompted and asked to reassign it to yourself.

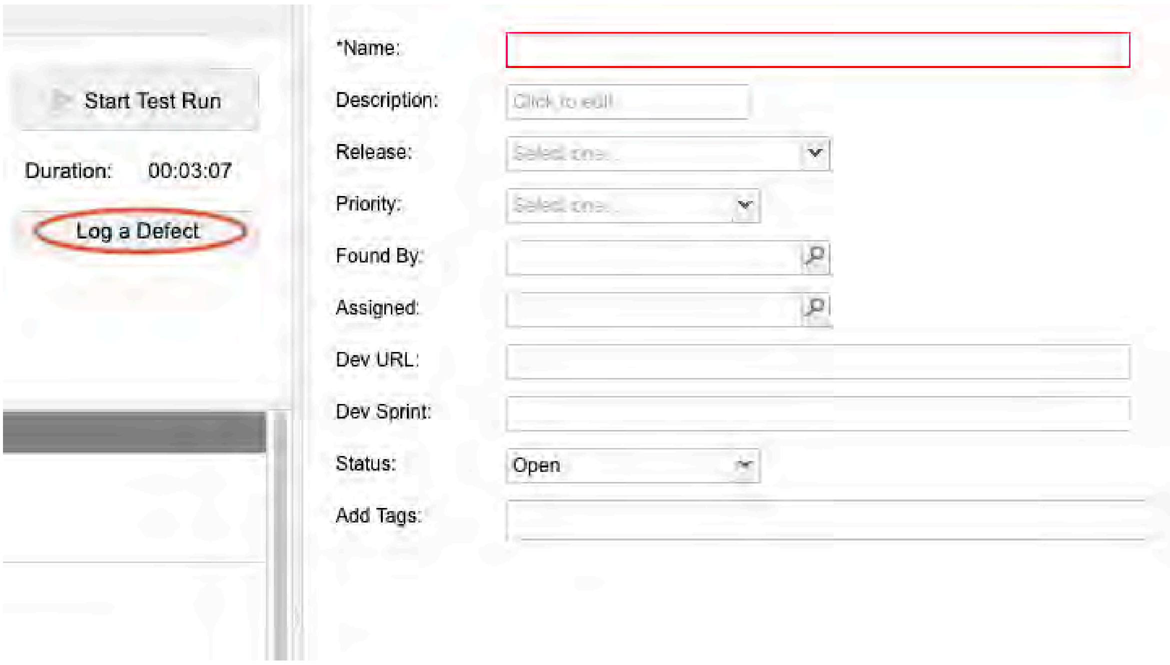
3. From the Test Execution tab, select **Start Test Run** to start the duration timer.



NOTE

Unless the field is configured to read-only, you can double-click on the duration field and change the timer to reflect the actual testing time.

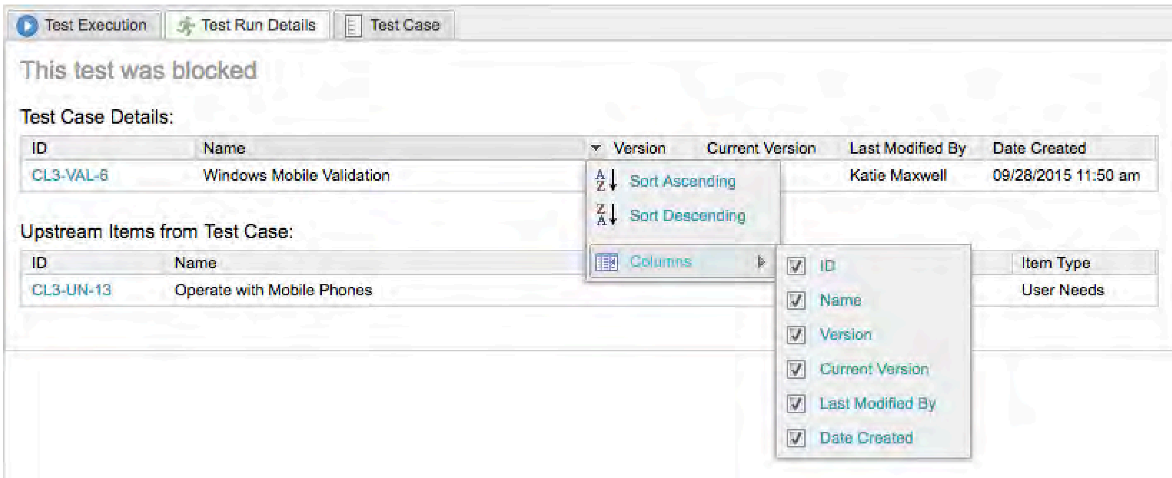
4. If you discover a defect while running a test, select **Log a Defect** to open the right panel, fill in the information and select **Save Defect**. A project administrator can determine where these defects are saved [660]. When you add a defect from the **Test Execution** window it's automatically related to that test run.



5. Once you start the time and begin the test, you can mark each step as **passed** (green check) or **failed** (red x). You can add results for each step in the results field. If no steps were added to the original test case, you see a single pass/fail button.

You can also add or upload an attachment by clicking **Add attachment**. These attachments aren't accessible from any defect items created during the test run. Attachments or screenshots for a defect must be recorded separately on the defect item.

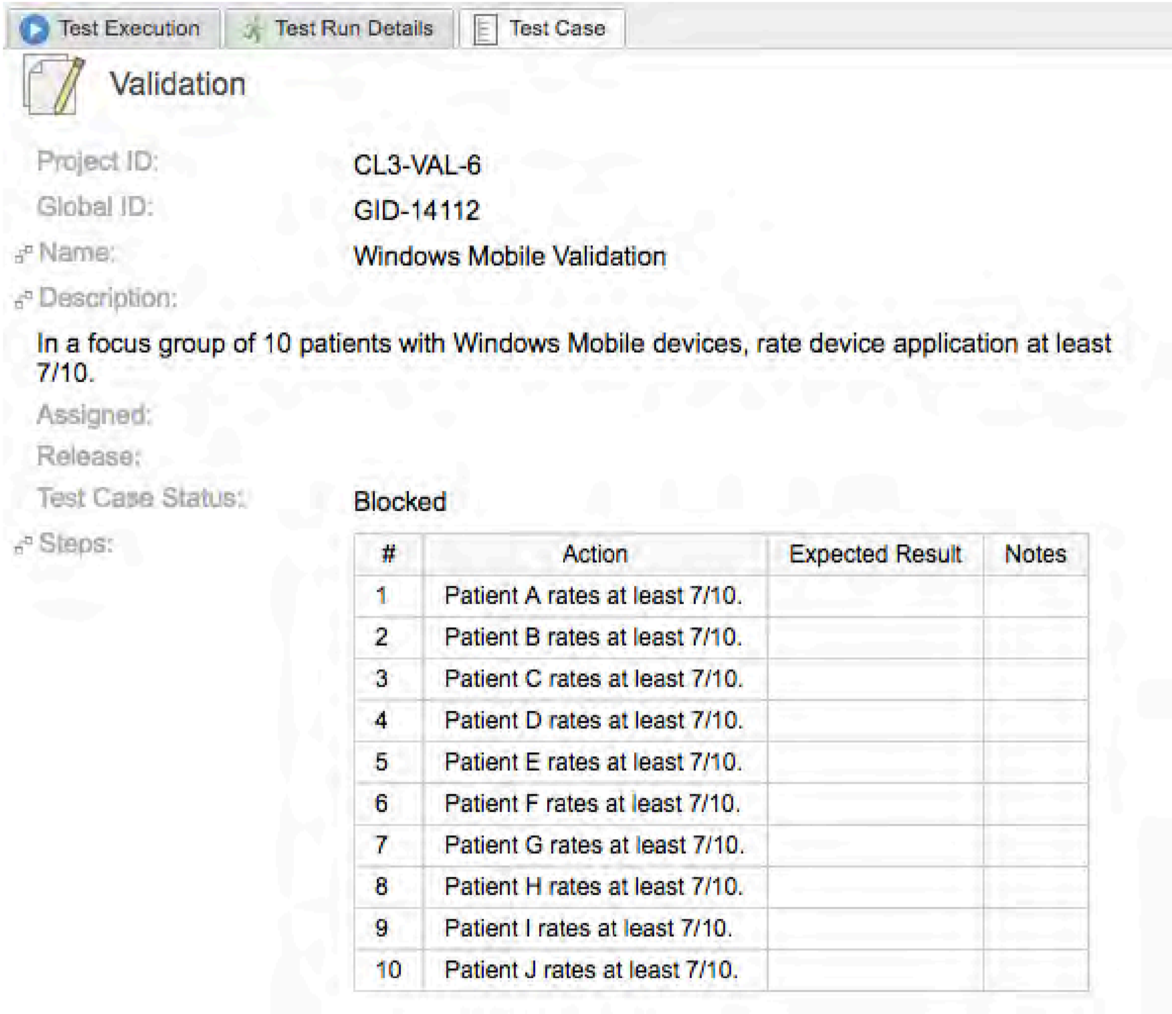
6. (Optional) Include images in the **Results** column of the test steps, or provide feedback in the **Actual results** section below the test steps table.
7. The test case status [341] (in progress, passed, failed, blocked) is shown at the bottom of the status column. If at least one step failed, you can select **Mark as blocked**, (when something prevented performing all the steps) or **Pass with errors**.
8. Select the **Test run details** tab to view details about the run. Select the arrow in a column header to use the drop-down menu to sort the column or to select which columns are visible.



You can see the following items in this window:

- **The test case that generated this test run**
  Select the ID to open up a new window that displays the details of the derived item, such as the goal of the test case, pre-conditions, steps in the case, and the duration of the test run.
- **Upstream items related to this test run**
  Select the item ID to view detailed information about the related items in a separate window.

9. Select the **Test case** tab to view details about the test case that generated this test run.



10. Select **Save and Close**.

Configure custom fields to appear during test execution

Custom fields added to the Test Run item type appear in the Test Execution window during testing. Similar to the **Actual Results** field, these custom fields can be filled in during test execution.

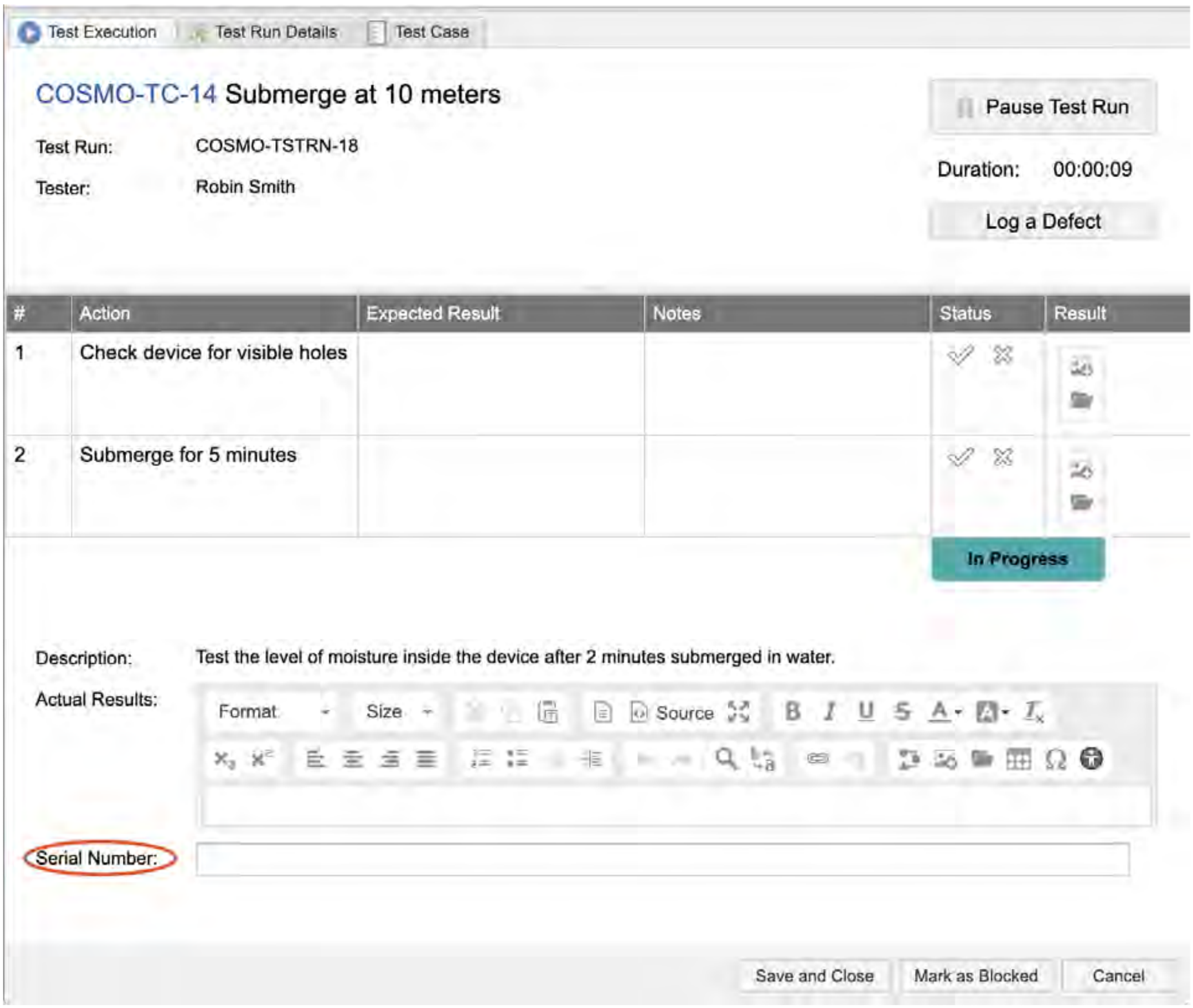
Supported custom field types

Other custom field types don't appear on the test run execution panel.

- Date
- Flag (boolean)
- Integer
- Multi-select
- Picklist
- Text box (plain text)
- Text box (rich text)
  Note: You can use Editor Templates in custom rich text fields. To export the Editor Template information for a Test Run item: From Single Item View, select **Export > View all export options > All Item Details**, then click **Run**.
- Text field
- URL

1. Click **Admin > Item Types >Test Runs**, then select **Add field**.
   The Add field window opens.
2. In the window, complete the form [605], then click **Save**.
   On the next test run, the custom fields are available and can be edited.

Example: Add a test field to capture the serial number for a product being tested during that test run's execution.

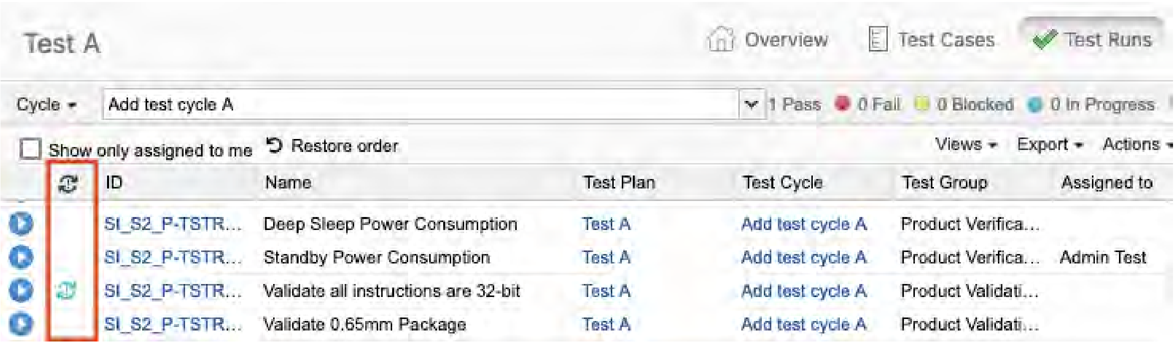


Sync test runs with test cases

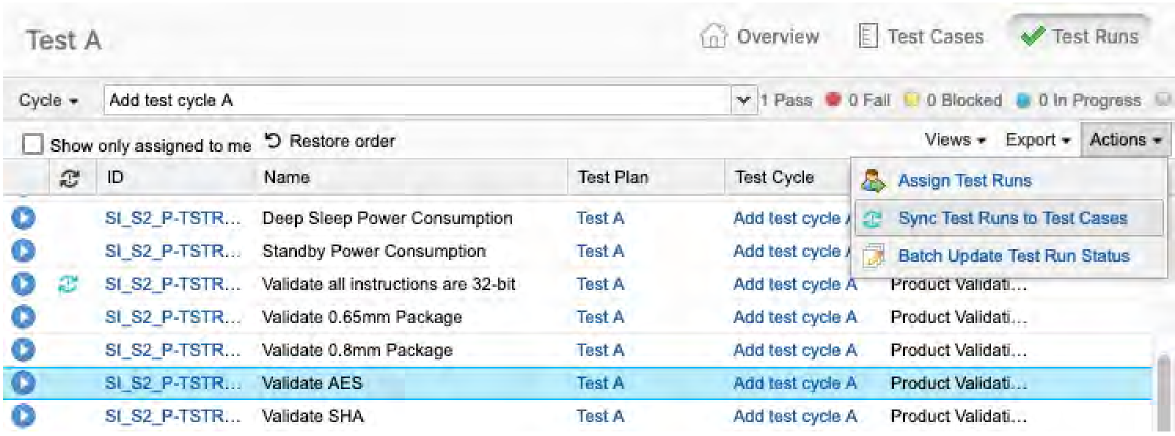
When you create a test run, a copy of the test case is added to the test run. However, if you make a change to the test case after the synchronization, the change isn't reflected in the test run.

If you don't have read/write access to an item or if it's locked by someone else, the test case isn't updated.

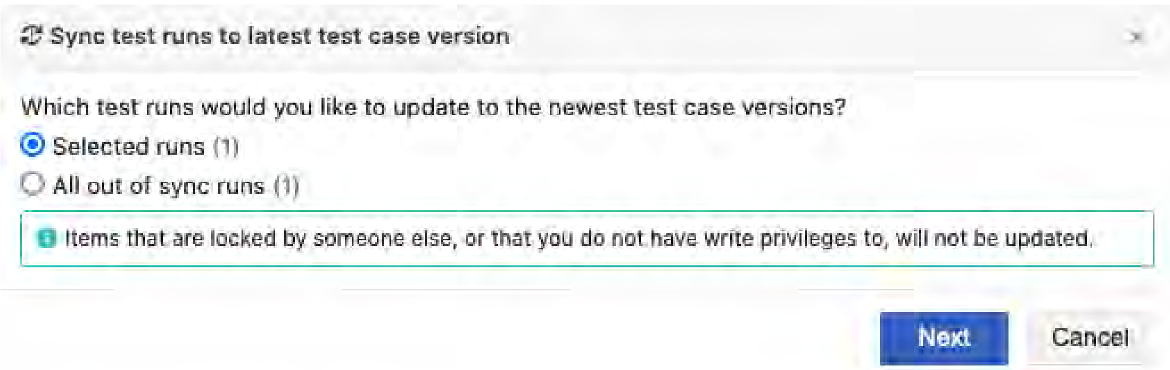
1. If a test case has changed since the test cycle was updated, an out of sync alert appears in the second column of the test execution grid.
   This alert also appears in the test run execution window next to the test run name.



2. Select the test runs you want to make current (press **Shift** to select multiple), then select **Actions > Sync Test Runs to Test Cases**.



The Sync test runs to latest case version window opens.



3. In the window, select whether you want to make all sync runs current or only those you selected, then click **Next**.
4. Select **Commit** to make test runs current.

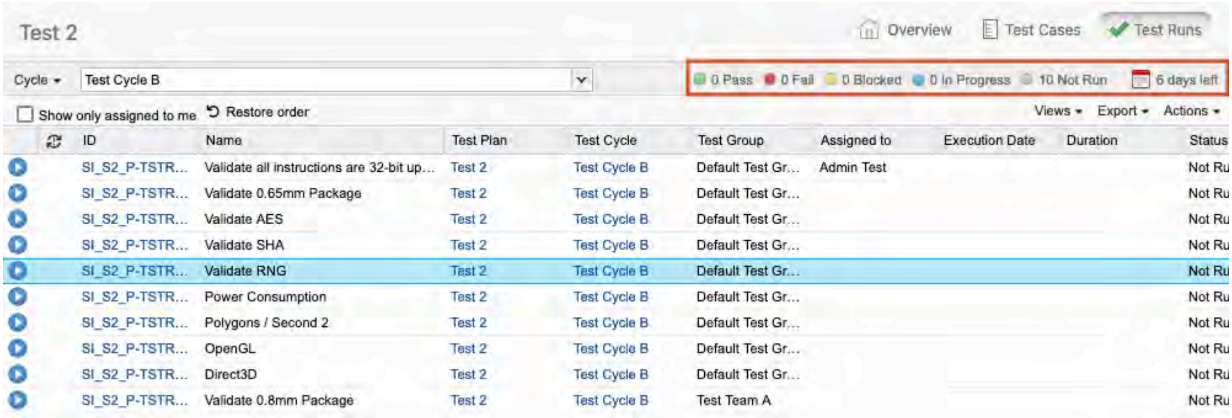
Synced test runs are versioned and updated to reflect the changes from the test case. Any previous progress, results, or statuses are saved in the test run version history. The previous results can be restored with the Make Current action in the test run version history widget.

Test run status

Test run status indicates the current state of a test run, and is used in calculating test case status.

Test run status is visible in the test run execution window and in Single Item View.

You can also use a rollup of test run status for all tests in a cycle. You can see it above the cycles when you select **Test runs** in the toolbar.



Possible states are:

- Pass
- Fail
- Blocked
- In progress
- Not run

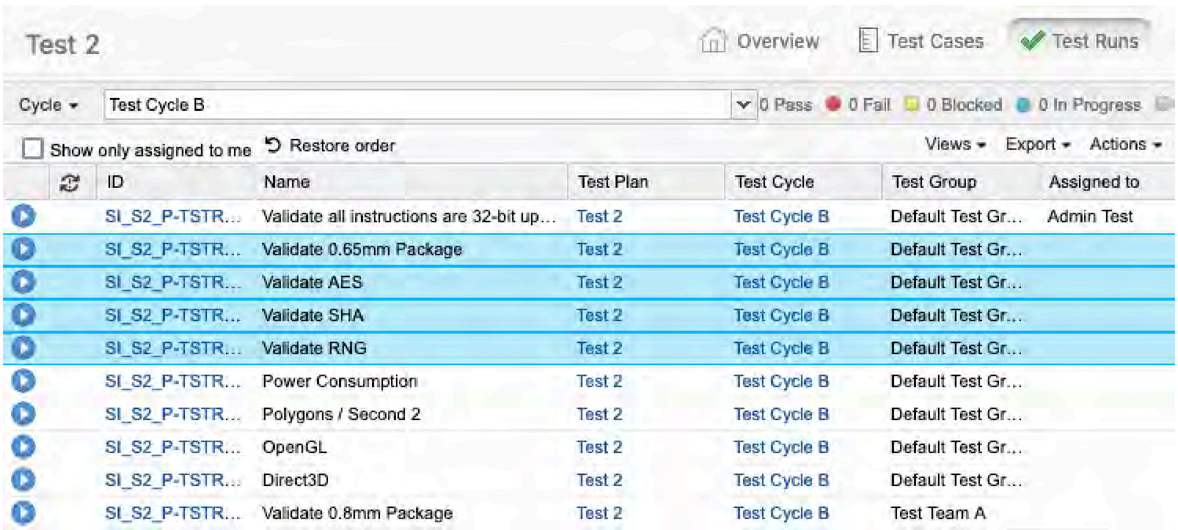
NOTE

If you need to reset the test run to a status of **Not run**, you can batch update test run status [374] or unmark steps that were marked as pass or fail, and set the test run duration to 0. This automatically resets the status to **Not run**.

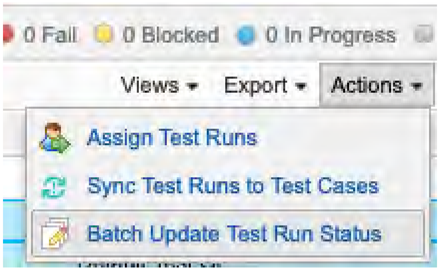
Batch update test run status

As long as test runs aren't locked and you have write permissions, you can batch update the test run status.

1. Select **Test Runs** in the upper right toolbar.
2. Select the test runs you want to update in the center panel. Use the **Ctrl** or **Shift** keys to select multiple.

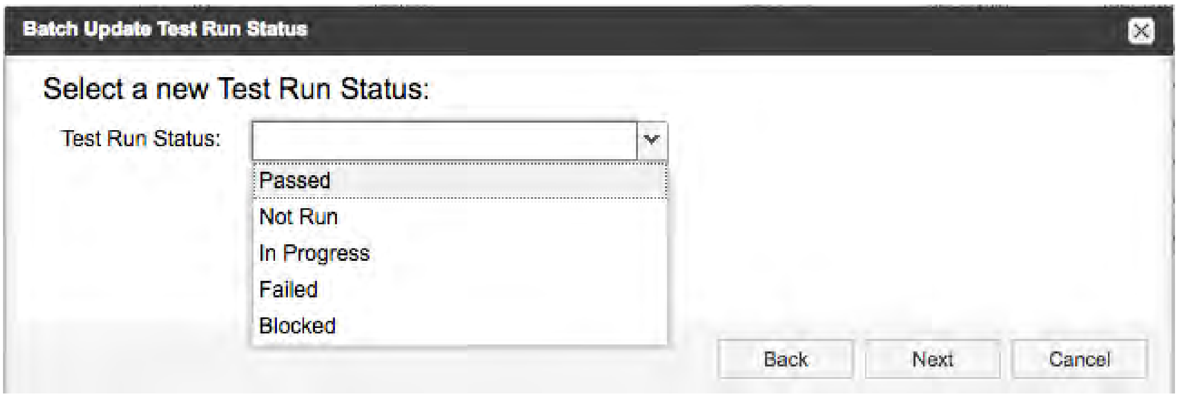


3. Select **Actions > Batch Update Test Run Status**.

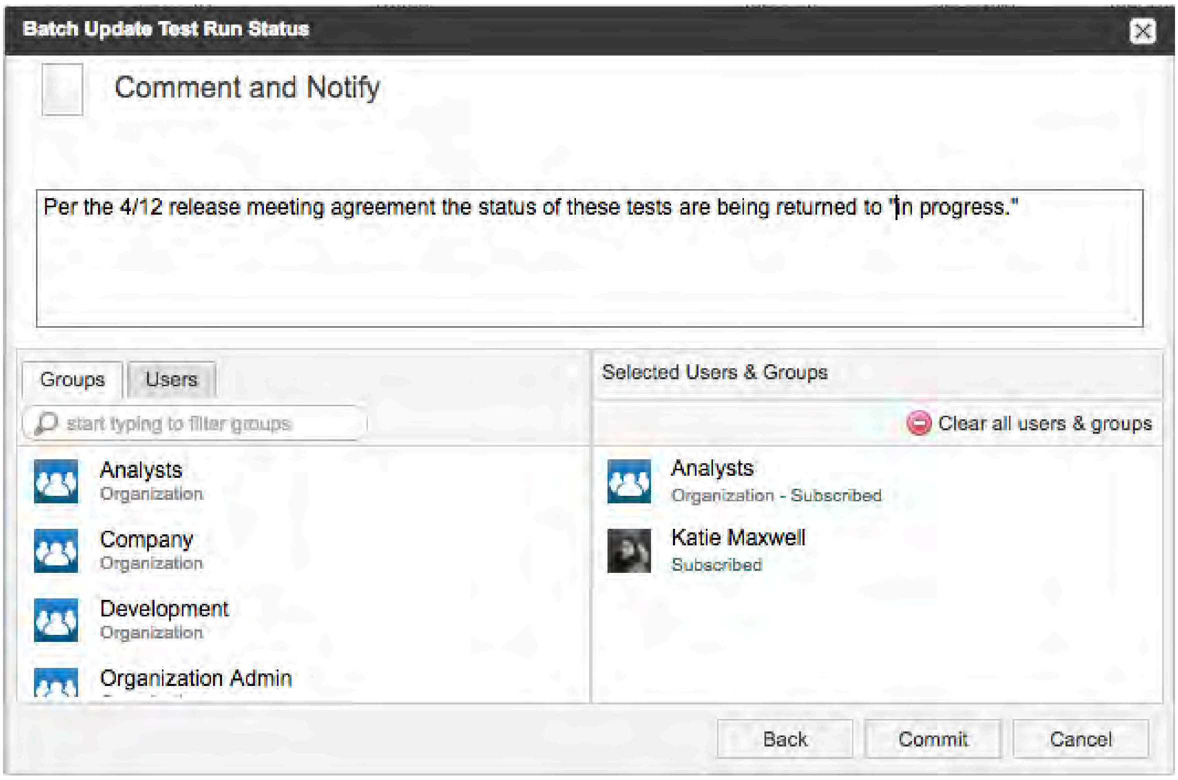


4. Confirm the number of runs, then select **Next**.

5. Select the new status you want for the selected runs, then select **Next**.



6. Select then users or groups you want to notify, then select **Commit**.



IMPORTANT

You can only batch update test runs in the **Test runs** window. You can't use advanced filters to batch update test runs.

Analysis — Monitoring your project

Jama Connect includes tools that give you the big picture of your project and that help you gain insight on different areas of your product development.

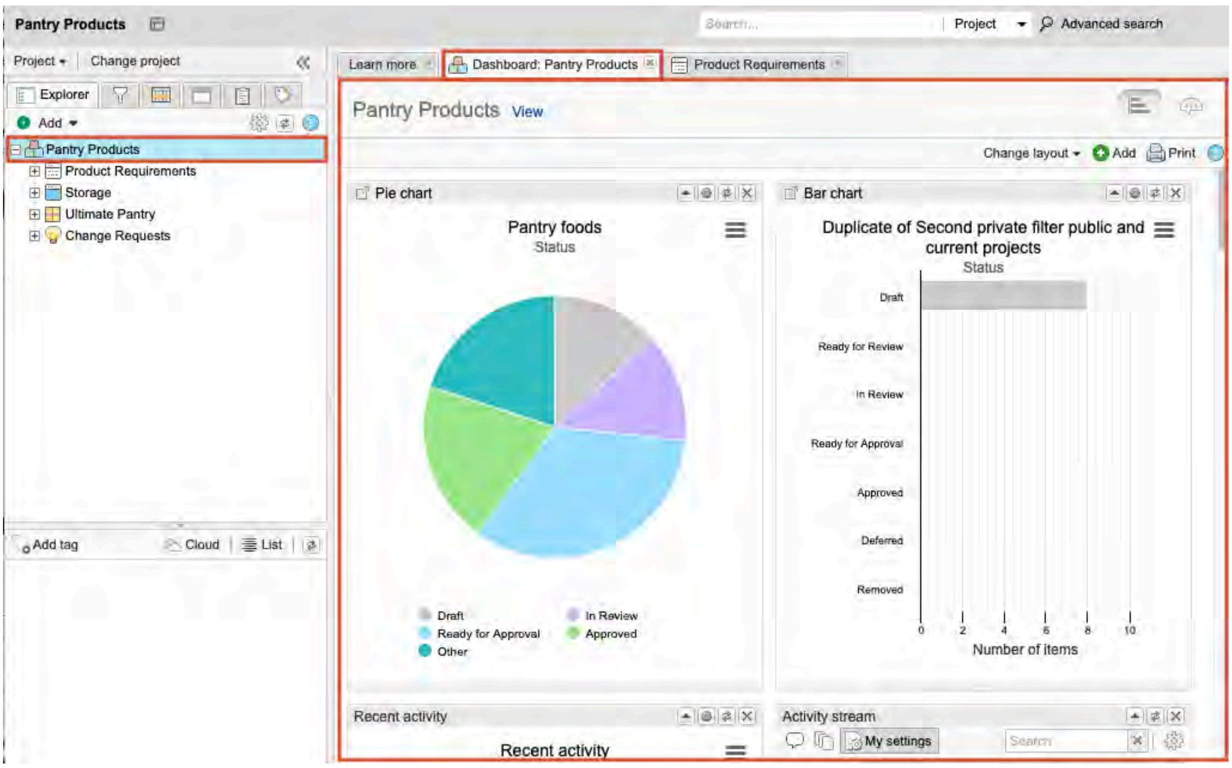
- Dashboard [377]
- Reports [382]
- Coverage and traceability tools [279] — Find out how mature the product development is. For example, if 100% of requirements have a traced verification, development is in a mature and complete state and can claim compliance.
- Exports [321] — Analyze data in tools like Excel. Jama Connect provides dashboards for a visual at-a-glance display of your project. Users with organization admin or project admin permissions can configure a project dashboard.

You can select dashboard options that display a project's key metrics, so you can see which parts of your project need attention.

Examples dashboard options include:

- Pie chart — Shows all requirements by status. For example, 25% are in draft state, 75% are in review state.
- Bar chart — Shows count of all requirements missing a downstream verification test.

Dashboards are customized per project, not per user. See a list of dashboard options [377] that can be added to the dashboard [379].

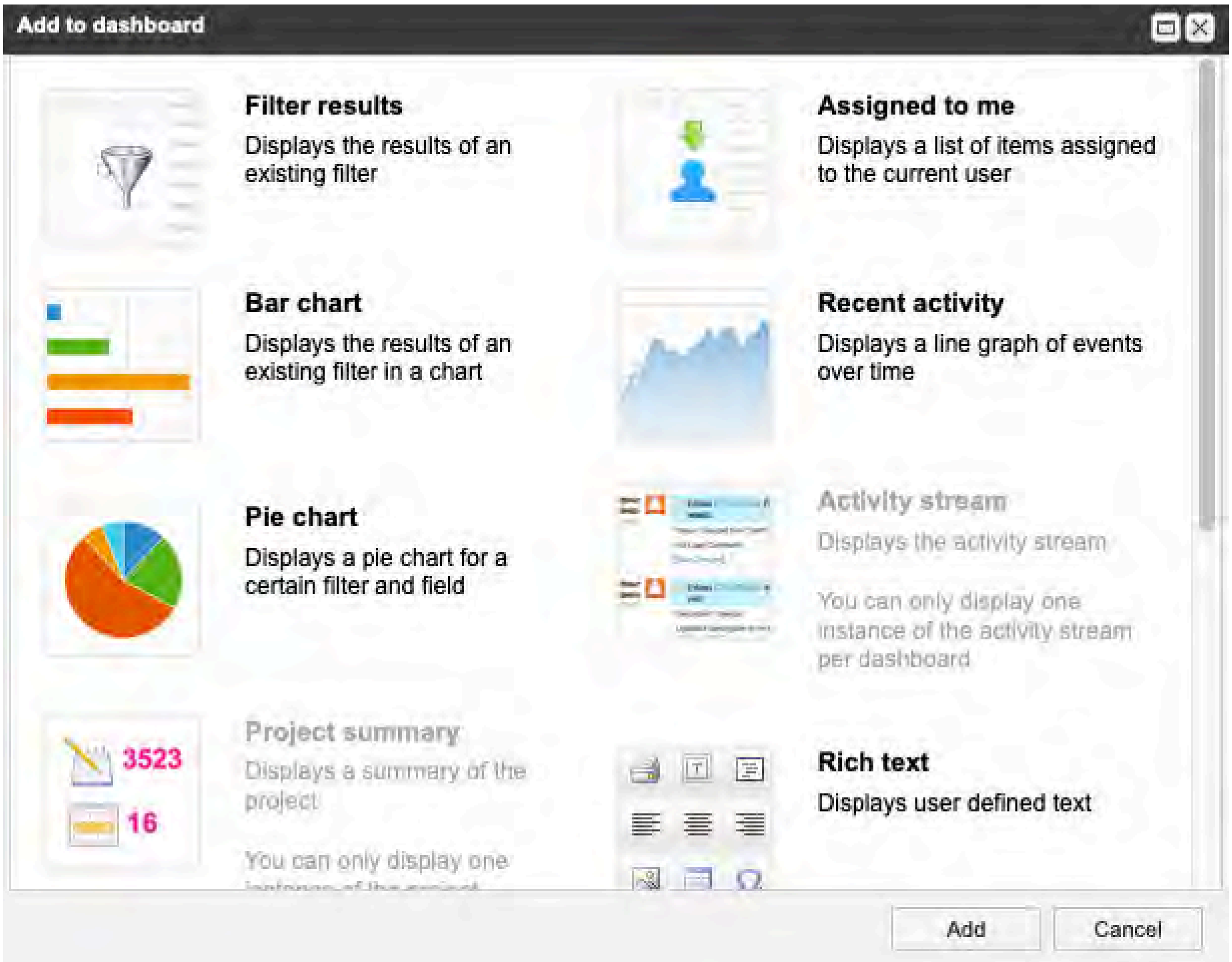


Dashboard options

You can customize a project dashboard to display the information needed by project members. Dashboard changes are made at the project level.

> **CAUTION**
>
> To manage the dashboard [379], you must have organization admin or project admin permissions.

The following options can be added to the dashboard.



Filter results		Displays the results of an existing filter. • Name the window. • Select a filter and which columns to display. • Select how many items to display.
Bar chart		Displays the results of an existing filter as a bar chart. • Configure the name, filter, field shown, and number of elements with the gear icon in the top right. • Select individual bars in the bar chart to view those items in a new tab.
Pie chart		Displays a pie chart for a filter and field that the user selects. • Configure the filter and field with the gear icon button in the top right. • Select the individual items in the pie chart to open those items in a new tab.
Project summary		Displays a summary of the entire project, including: • Total number of items in the project. • Number of days until next release. • Number of days until project completion.

Recently viewed		Displays the last 15 items viewed by the current user. • Select a recently viewed item to open it in a new tab.
Assigned to me		Displays a list of items assigned to the current user. • Select the gear icon in the top right to edit the settings. • Name the window. • Select a filter and which columns to display. • Select how many items to display.
Recent activi-ty		Displays a line graph of recent activity over a period of time. • Configure the time period. • Change the name with the gear icon in the top right.
Activity stream		Displays the current activity stream of the project. • View all current activity including comments, edits made, new items created, and assignment changes. • Use the filters at the top right to filter only comments, activities, or search for specific items.
Rich text		Displays user-defined text, images, diagrams, and equations. • Select the gear icon to insert text, pictures, and tables with the same rich text options as an item description field [87].
Relationship rules diagram		Displays the relationship rules [150] applied to the project.
Complex chart		Displays a granular snapshot of data based on filter, field, and series selections. • Select the gear icon to configure the filter, fields, and series. • Select individual bar sections in the stacked bar chart to view those items in a new tab.

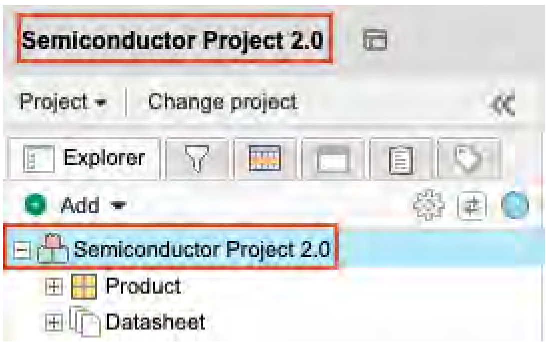
Manage the dashboard

Use the dashboard to give your team insight into the progress of each project.

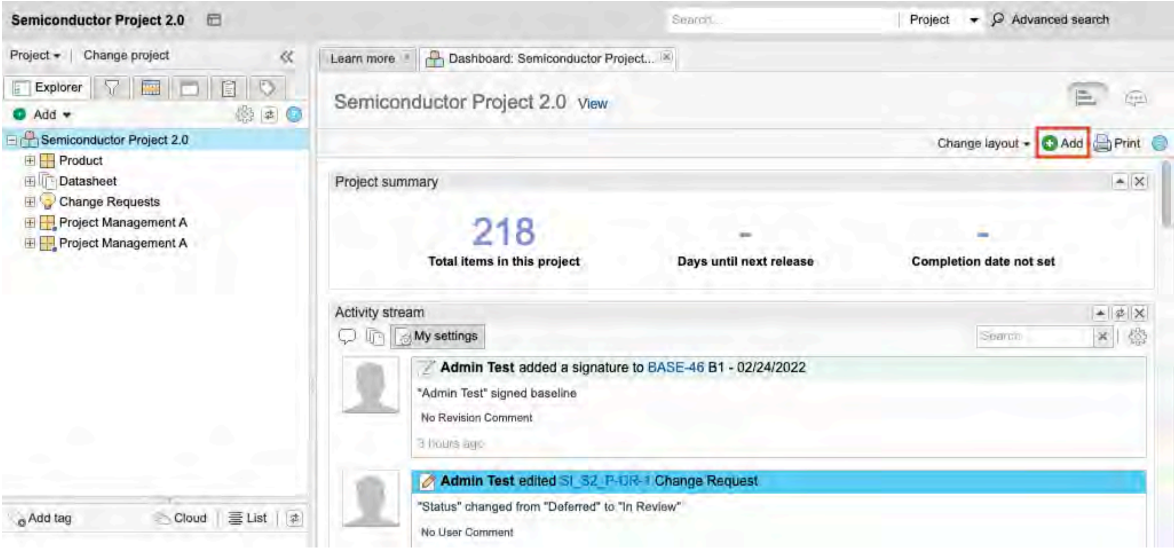
> **CAUTION**
> Users with project admin or organization admin permissions can modify the dashboard. Changes are made at a project level.

To set up the dashboard:

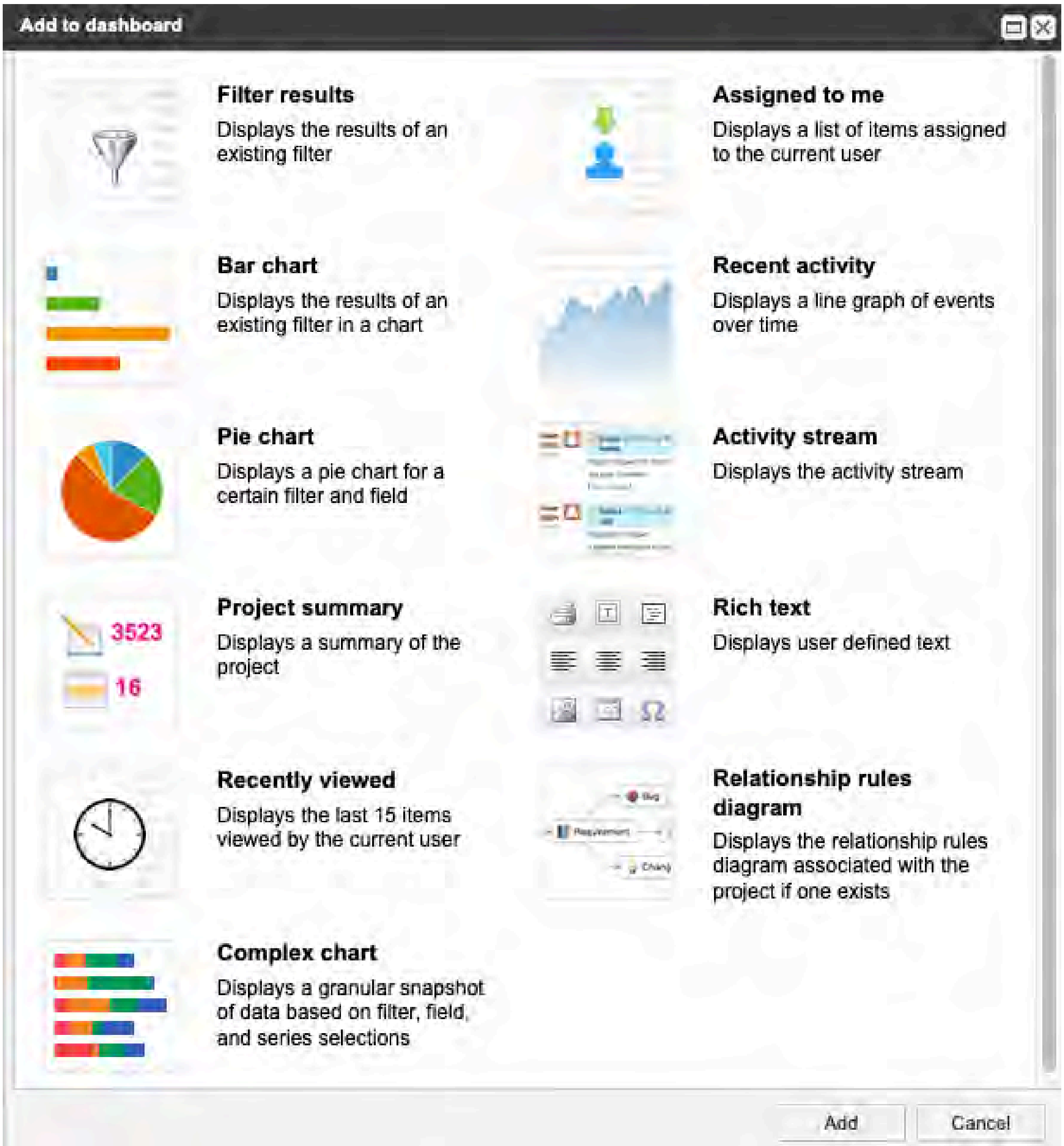
1. From the Explorer Tree, open your project dashboard by selecting the project name.



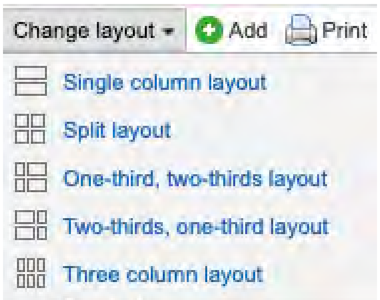
2. Select **Add** in the top right toolbar of the dashboard.



3. In the **Add to dashboard** window, select the icon for the dashboard options [377] you want, then click **Add**.



4. Select **Change layout** in the toolbar, then choose how you want the windows to appear on the dashboard.



5. (Optional) To download or view data from a chart, select an option from the drop-down menu. The export menu only appears in the Bar, Line, Pie, and Complex chart widgets.

- **Download PNG** — Downloads the widget image.
- **Download CSV** — Downloads the data from the chart.
- **Download PDF** — Downloads the widget image.
- **View data table** — Displays the data table/chart and the numerical information associated with the data.

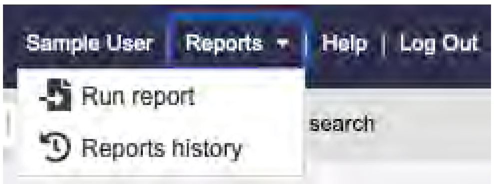
6. (Optional) Select **Print** to print the contents of your dashboard. For best results, use a landscape page setup and enable printing of background images in your browser settings.

Reports

A report is a document that helps you analyze the current status and progress of your project. Reports can include graphs, tabular data, metrics, and other roll-ups.

Reports can refer to specific data within a project, to an entire project, or they can apply across multiple projects.

To access reports, select **Projects > Reports** in the upper-right header. From there, you can run a report [383].



Jama Connect includes default reports that were created with BIRT or Velocity. You can also create custom reports.

- **Cloud customers** — Contact jamareports@jamasoftware.com for help uploading custom reports.
- **Self-hosted customers** — Create custom reports [399] that can be uploaded by a system admin so they are visible under Reports.

Jama Connect includes these default reports:

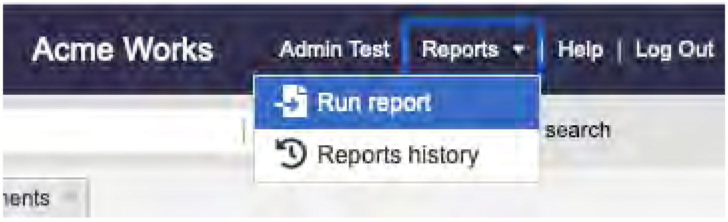
Report type	Displays...
Baseline Compared to Current	Side-by-side comparison of items and relationships in a baseline and their current versions.
Baseline Comparison	Side-by-side comparison of items and relationships in two baselines.
Bidirectional Traceability	Upstream and downstream relationships for a selected container of items.
Items in a Set	Tabular list of items in a set.
Release Status	Current state of the items within a release.
Task List with Estimates	All item types and sums and totals their estimates if applicable.
Test Plan Detail	Details of a test plan.
Test Plan Summary	Summary of the test plan with graphs and charts, by cycle and build.
Trace Relationships	Items with their downstream relationships.
User List	List of all the active and inactive users associated with the organization.
Review Center Stats	Progress of a specific review.

Run a report

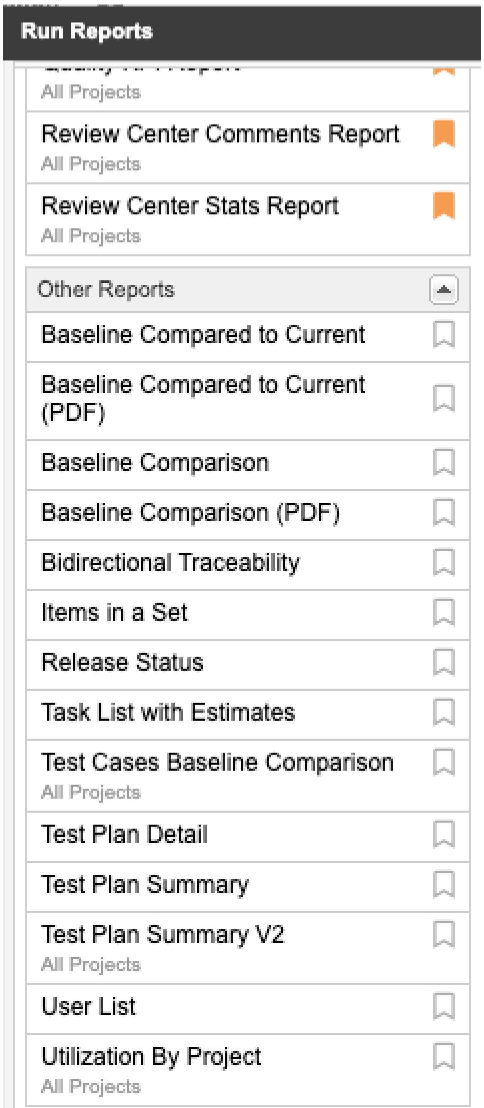
Reports can refer to specific data within a project, to an entire project, or they can apply across multiple projects.

To generate a report:

1. From the Jama Connect header, select **Reports > Run report**.

   Jama Connect lists all default reports and any custom reports [399] you have added. Bookmarked reports appear at the top of the list.

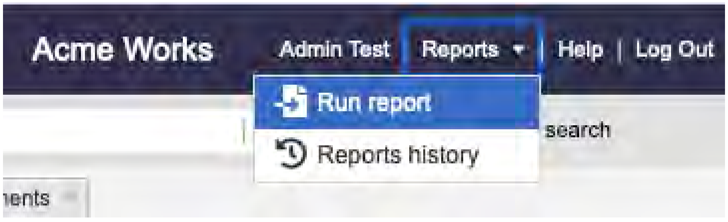
2. (Optional) To add a report to your bookmarked reports, select its bookmark icon.
3. From the list of reports, select the one you want to run, then define the options for that report.
   For details on defining the report options, see the task for running that specific report.
4. Select **Run Report**.

Run a Baseline Compared to Current report

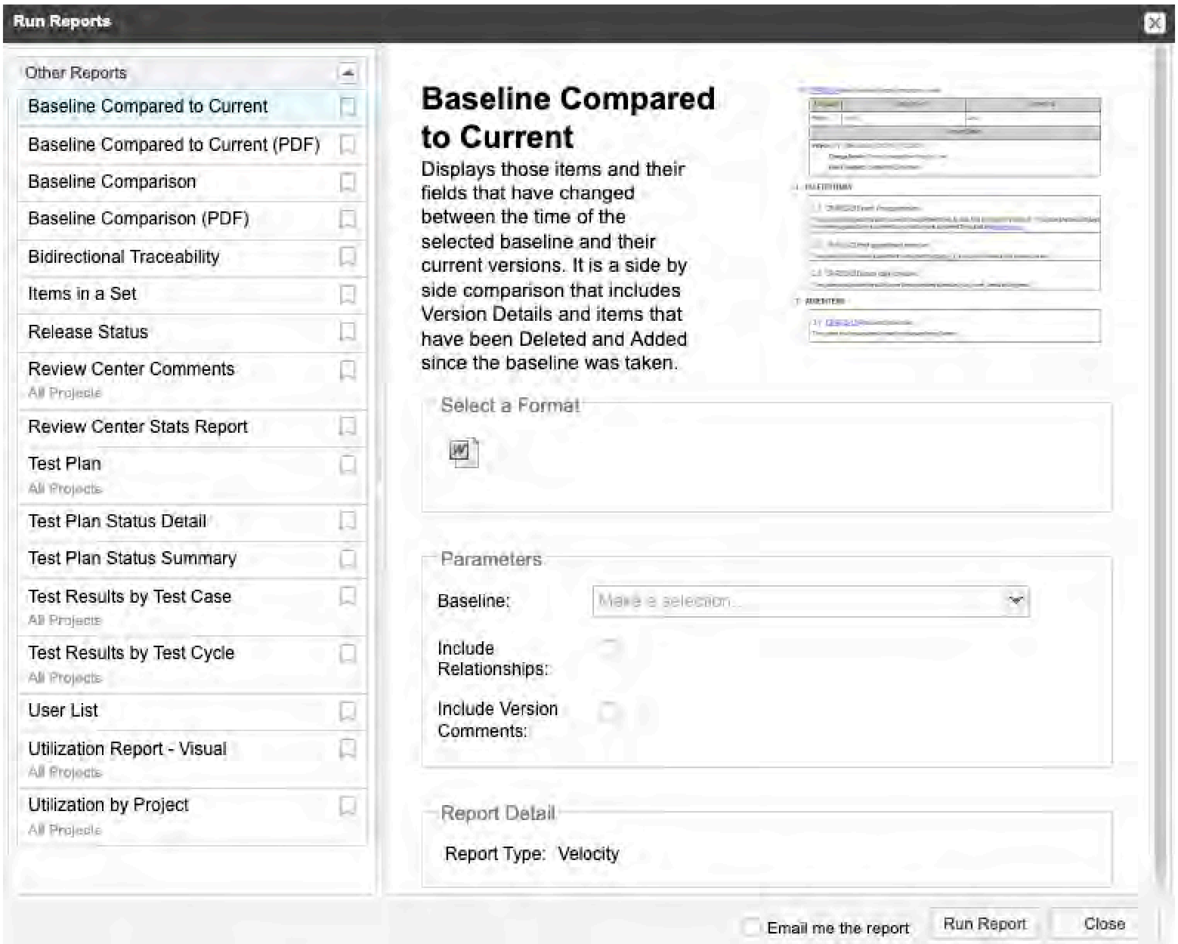
The Baseline Compared to Current report compares items and relationships in a baseline to their current versions, displayed in side-by-side columns.

To run this report:

1. From the project with the baselines you want to compare, select **Reports > Run report** in the upper-right corner of the header to open the **Run Reports** window.



2. From the list of reports in the Run Reports window, select an option for this report:



   - **Baseline Compared to Current** — Word format
   - **Baseline Compared to Current (PDF)**

3. Define the report:
   a. Select the format for the report (available formats are listed).
   b. Navigate to and select the baseline you want to compare to the project’s current state.
   c. (Optional) Include relationships and version comments.
4. (Optional) Select **Email me the report** to receive it by email.
5. Select **Run Report**.

Baseline Compared to Current shows a table that compares the baseline items and relationships side by side.

Field Label	Baseline v3		Current v4	
Description	The problem of	Dental software being clunky and focused heavily on administrative tasks. This results in dentists trying to manage procedures and images within calendaring programs that expect the user to be sitting at a desk interacting with a system using a mouse and keyboard.	The problem of	Dental records software being clunky and focused heavily on administrative tasks. This results in dentists trying to manage procedures and images within calendaring programs that expect the user to be sitting at a desk interacting with a system using a mouse and keyboard.
	The impact of which is	Dentists cannot free themselves to focus on a patient's dental needs and must go between a surgical environment to one that is best accessed from within a cubicle.	The impact of which is	Dentists cannot free themselves to focus on a patient's dental needs and must go between a surgical environment to one that is best accessed from within a cubicle.
			A successful solution would be	Software that is user-friendly and focused more on clinical needs. The system

Run a Baseline Comparison report

The Baseline Comparison report displays a side-by-side comparison of items and relationships in two baselines.

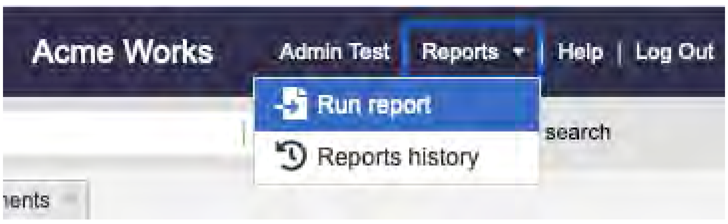
This report compares two specific states of selected items at a certain point in time. For example, to see what has changed between two baselines, you can compare the baseline that's created when you open a review with the baseline of the completed review.

NOTE

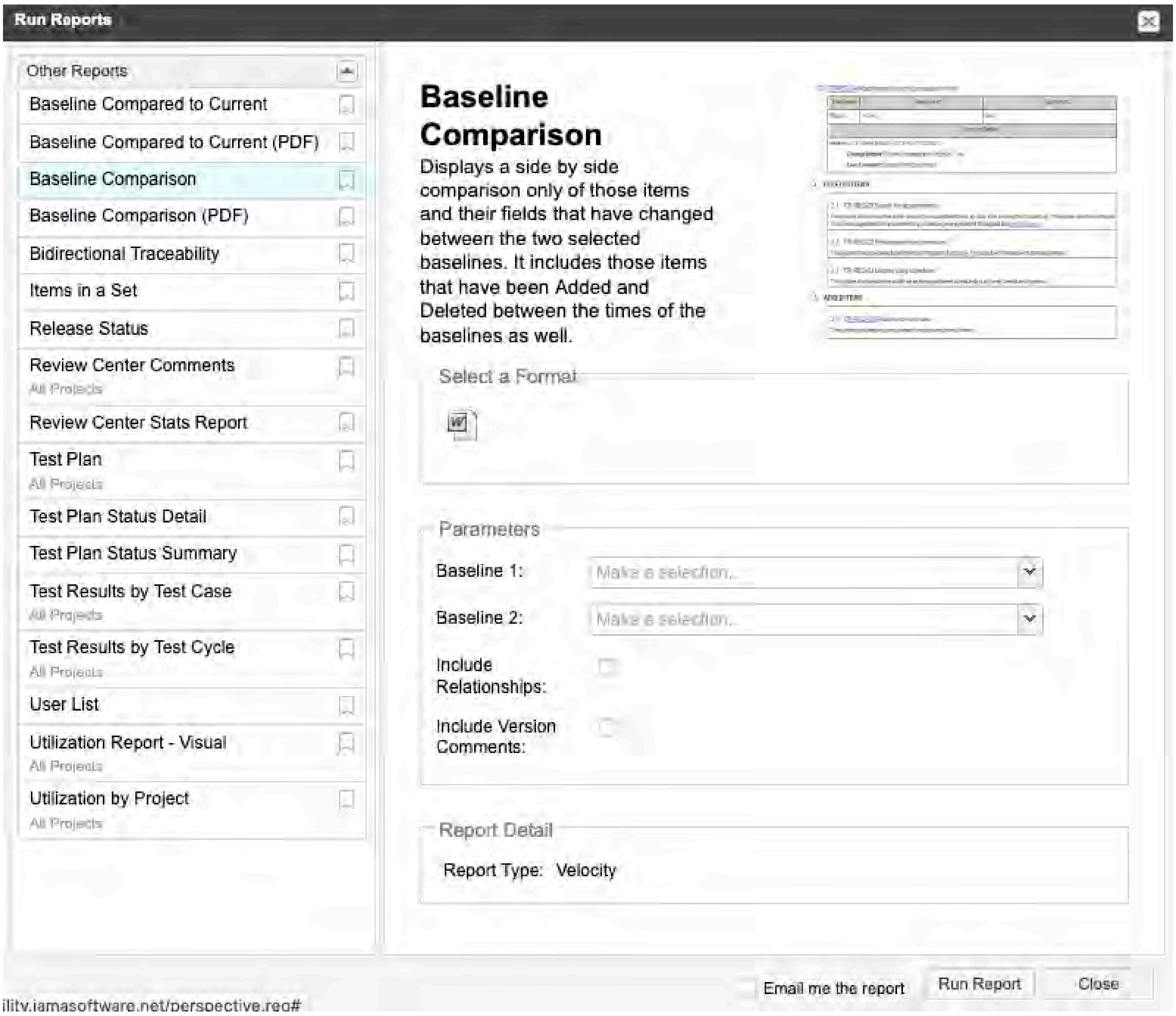
When comparing baselines, the hierarchical order must be the same between the two baselines. If items are reordered in the Explorer Tree from one baseline to the next, the report shows incorrect or no results.

To run this report:

1. From the project with the baselines you want to compare, select **Reports > Run report** in the upper-right corner of the header to open the Run Reports window.



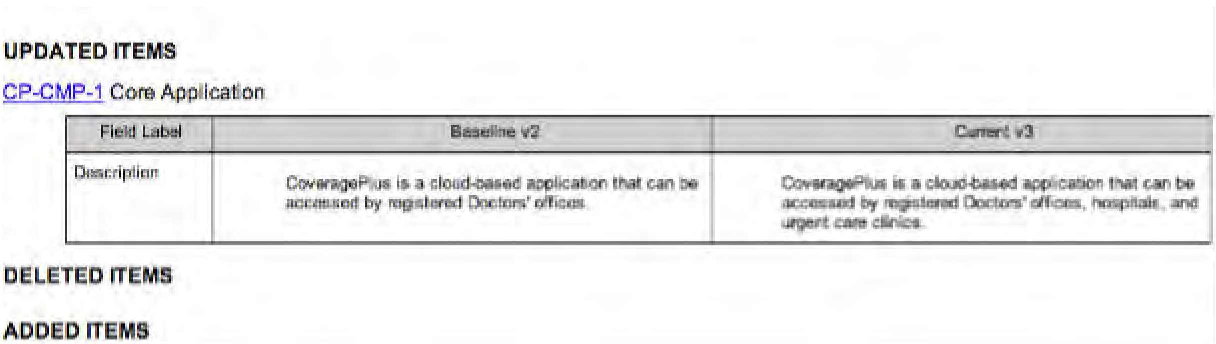
2. From the list of reports in the Run Reports window, select an option for this report:



- **Baseline Comparison** — Word format
- **Baseline Comparison (PDF)**

3. Define the report:
   a. Select the format of the report.
   b. Navigate to and select the two baselines you want to compare.
   c. (Optional) Include relationships and version comments.
4. (Optional) Select **Email me the report** to receive it by email.
5. Select **Run Report**.

Items added or deleted between the compared baselines are noted at the top of the report.



UPDATED ITEMS

CP-CMP-1 Core Application

Field Label	Baseline v2	Current v3
Description	CoveragePlus is a cloud-based application that can be accessed by registered Doctors' offices	CoveragePlus is a cloud-based application that can be accessed by registered Doctors' offices, hospitals, and urgent care clinics.

DELETED ITEMS

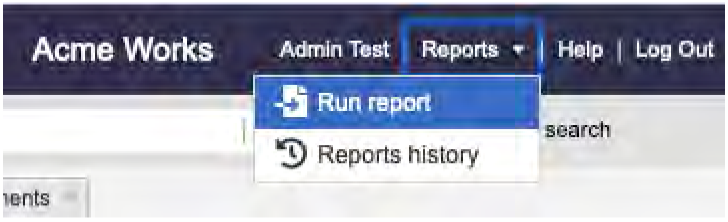
ADDED ITEMS

Run a Bidirectional Traceability report

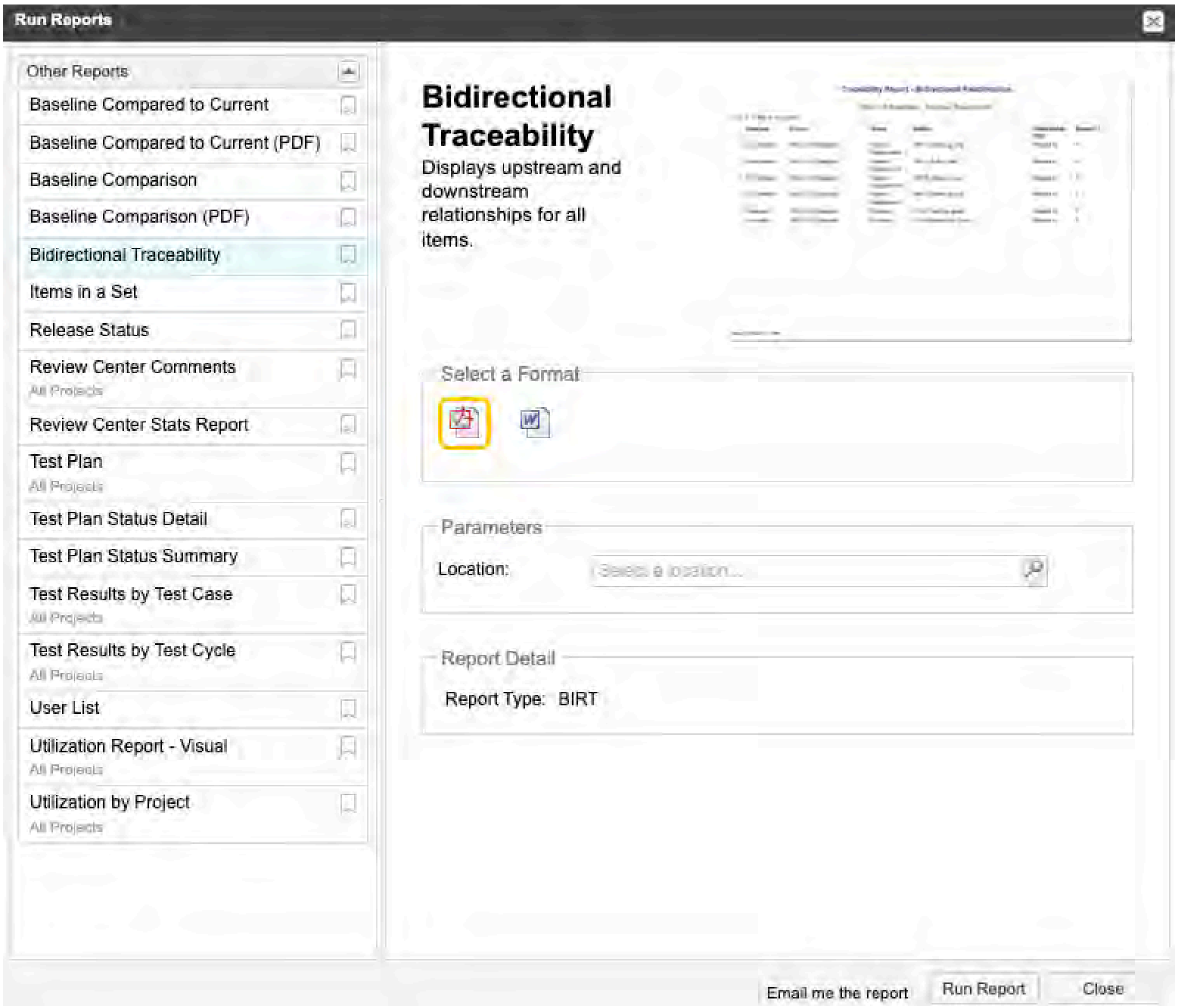
The Bidirectional Traceability report displays upstream and downstream relationships for a selected container of items.

To run this report:

1. From the project with the relationships you want to include, select **Reports > Run report** in the upper-right corner of the header to open the Run Reports window.



2. From the list of reports in the Run Reports window, select **Bidirectional Traceability**.

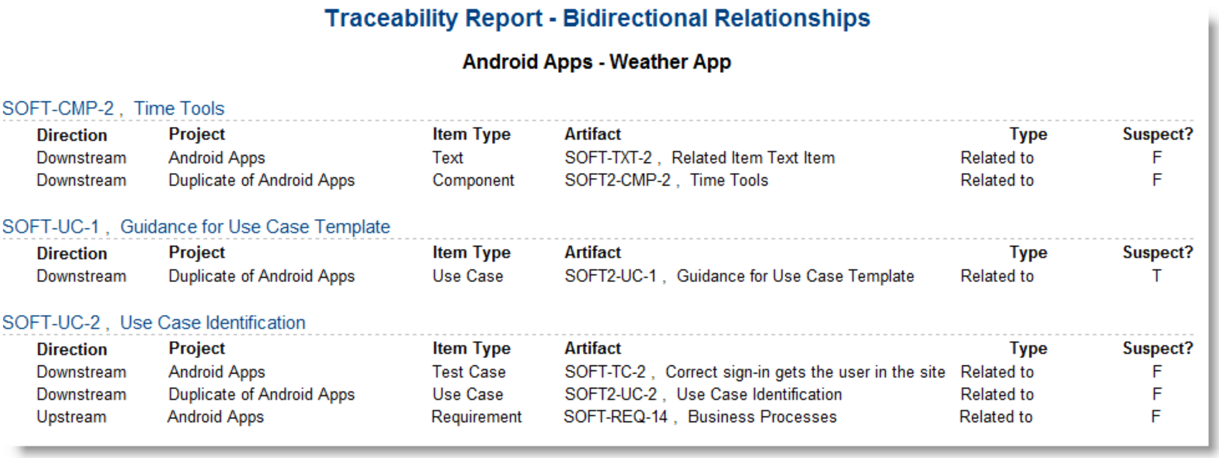


3. Define the report:
   a. Select a default format (HTML, PDF, WORD, or XLS).
   b. Select the location of the items you want to include.

> **NOTE**
> You must choose a container of items to analyze for upstream and downstream traceability. The report doesn't work on single items.

4. (Optional) Select **Email me the report** to receive it by email.
5. Select **Run Report**.

The report displays all items that have relationships from the selected location. Both downstream and upstream relationships are displayed for each item. The report also indicates whether any related artifacts are marked as suspect: T = True (suspect), F = False (not suspect).


Traceability Report - Bidirectional Relationships

Android Apps - Weather App

SOFT-CMP-2 , Time Tools

Direction	Project	Item Type	Artifact	Type	Suspect?
Downstream	Android Apps	Text	SOFT-TXT-2 , Related Item Text Item	Related to	F
Downstream	Duplicate of Android Apps	Component	SOFT2-CMP-2 , Time Tools	Related to	F

SOFT-UC-1 , Guidance for Use Case Template

Direction	Project	Item Type	Artifact	Type	Suspect?
Downstream	Duplicate of Android Apps	Use Case	SOFT2-UC-1 , Guidance for Use Case Template	Related to	T

SOFT-UC-2 , Use Case Identification

Direction	Project	Item Type	Artifact	Type	Suspect?
Downstream	Android Apps	Test Case	SOFT-TC-2 , Correct sign-in gets the user in the site	Related to	F
Downstream	Duplicate of Android Apps	Use Case	SOFT2-UC-2 , Use Case Identification	Related to	F
Upstream	Android Apps	Requirement	SOFT-REQ-14 , Business Processes	Related to	F

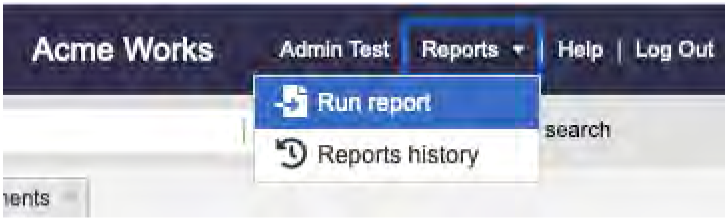
Run an Items in a Set report

The Items in a Set report displays a tabular list of items included in a set.

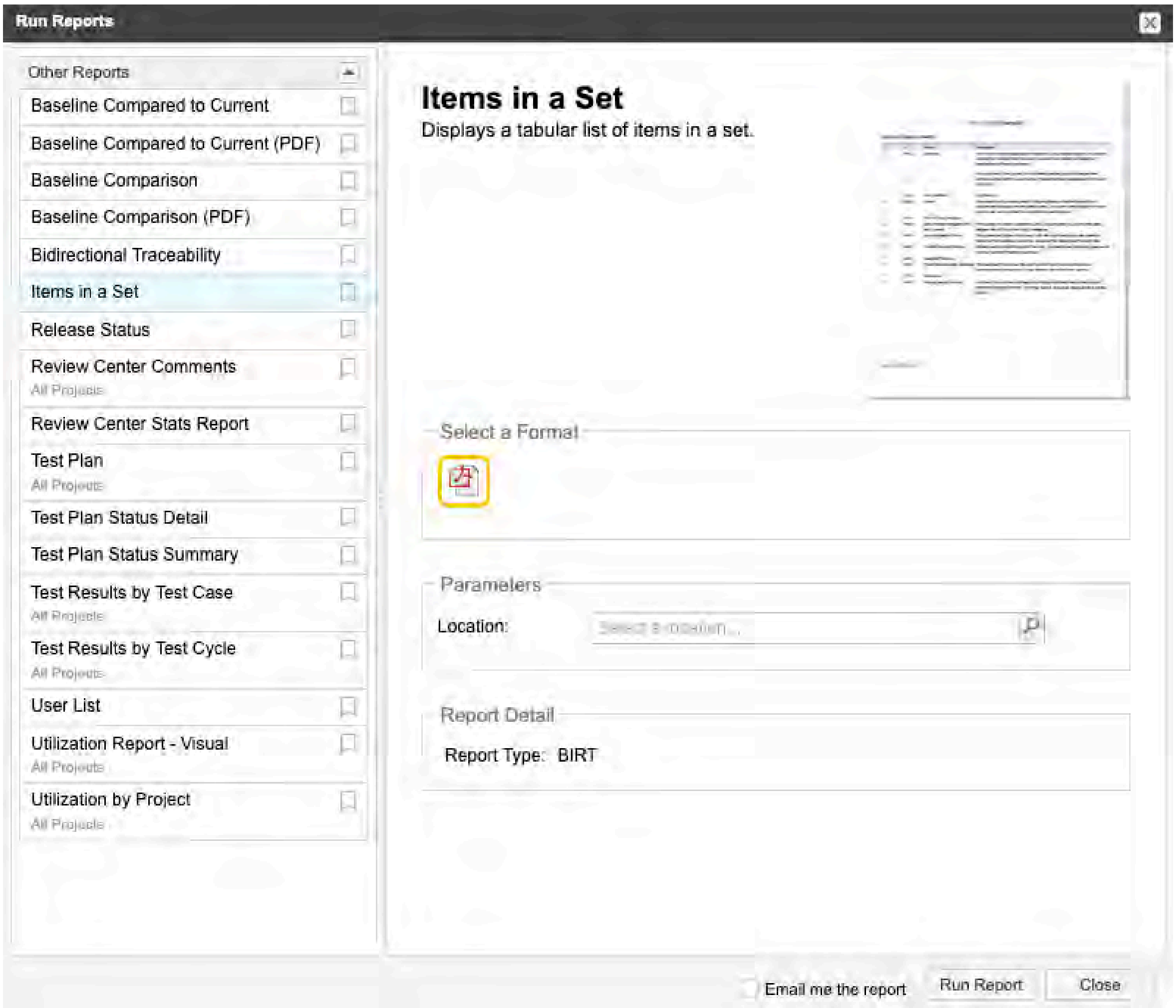
The report is displayed as a table that includes these columns: **Header** (hierarchy), **ID**, **Name**, and **Description**.

To run this report:

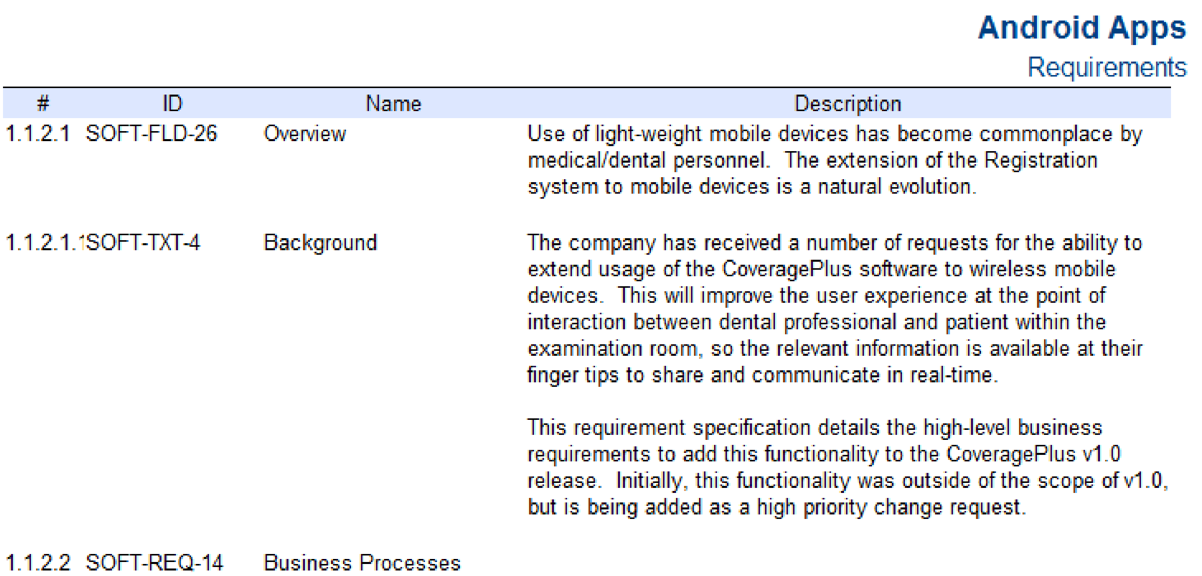
1. From the project with the items you want to include, select **Reports > Run report** in the upper-right corner of the header to open the **Run Reports** window.



2. From the list of reports in the Run Reports window, select **Items in a Set**.



3. Define the report:
    a. Select the format of the report.
    b. Select the location of the items you want to include.
4. (Optional) Select **Email me the report** to receive it by email.
5. Select **Run Report**.



Android Apps
Requirements

#	ID	Name	Description
1.1.2.1	SOFT-FLD-26	Overview	Use of light-weight mobile devices has become commonplace by medical/dental personnel. The extension of the Registration system to mobile devices is a natural evolution.
1.1.2.1.1	SOFT-TXT-4	Background	The company has received a number of requests for the ability to extend usage of the CoveragePlus software to wireless mobile devices. This will improve the user experience at the point of interaction between dental professional and patient within the examination room, so the relevant information is available at their finger tips to share and communicate in real-time. This requirement specification details the high-level business requirements to add this functionality to the CoveragePlus v1.0 release. Initially, this functionality was outside of the scope of v1.0, but is being added as a high priority change request.
1.1.2.2	SOFT-REQ-14	Business Processes	

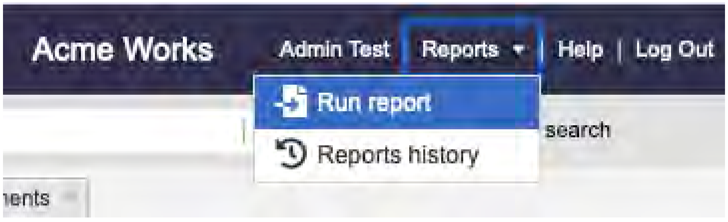
Run a Release Status report

The Release Status report displays the current state of the items within a release.

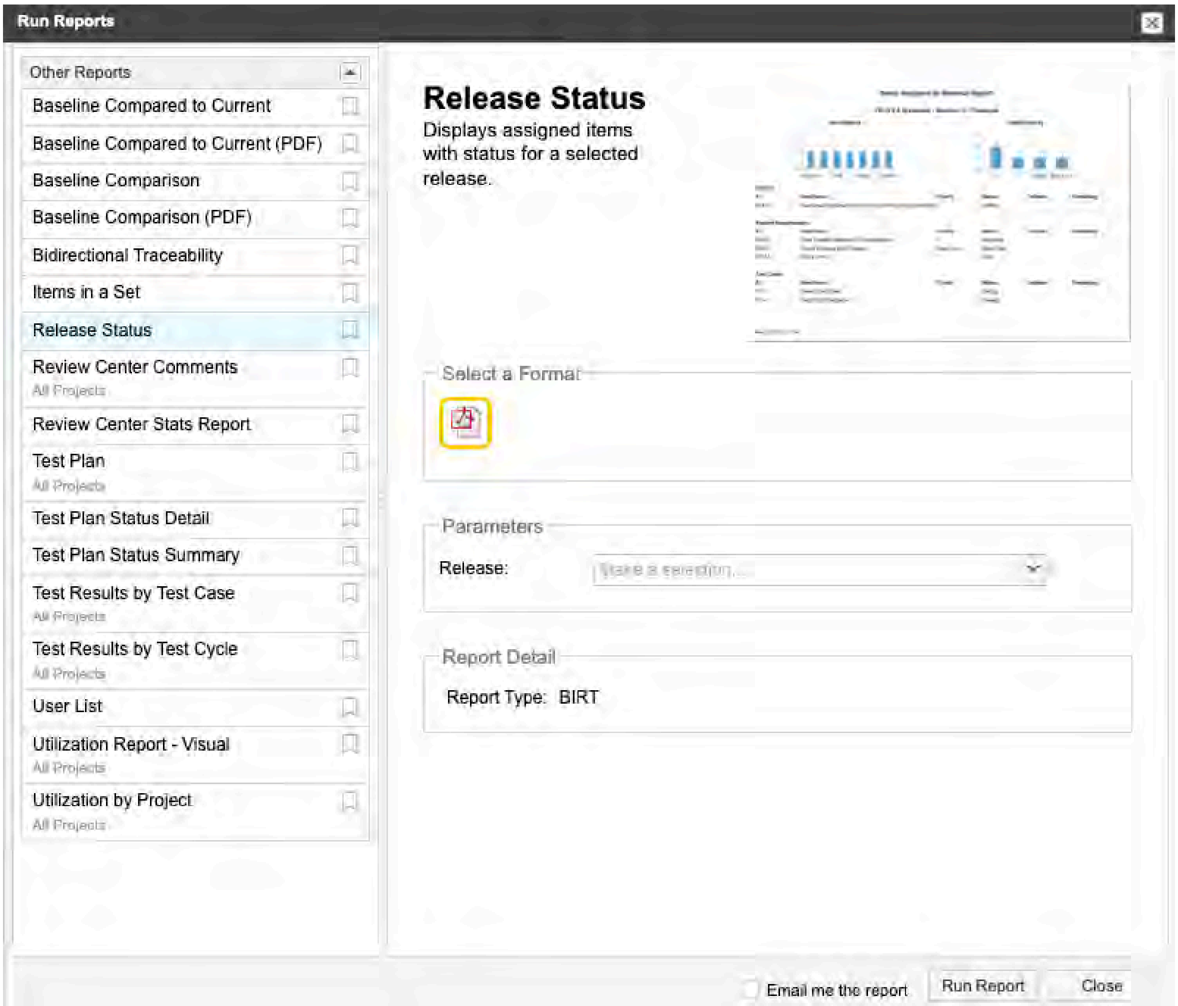
It shows graphs of item status and priority, as well as a table with priority, status, estimate, and amount remaining.

To run this report:

1. From the project with the items you want to include, select **Reports > Run report** in the upper-right corner of the header to open the **Run Reports** window.



2. From the list of reports in the Run Reports window, select **Release Status**.



3. Define the report:
   a. Select the format of the report. The default format is PDF.
   b. Select the location of the items you want to include.
4. (Optional) Select **Email me the report** to receive it by email.
5. Select **Run Report**.

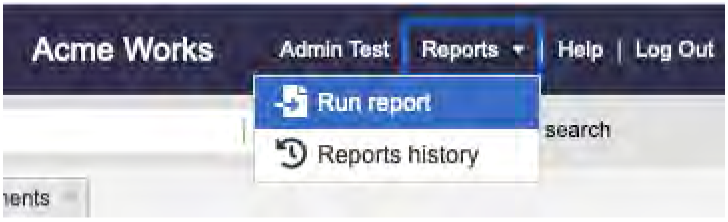
> **NOTE**
> If you have data in the Estimate and Remaining fields, those numbers are totaled at the bottom of the report.

Run a Review Center Stats report

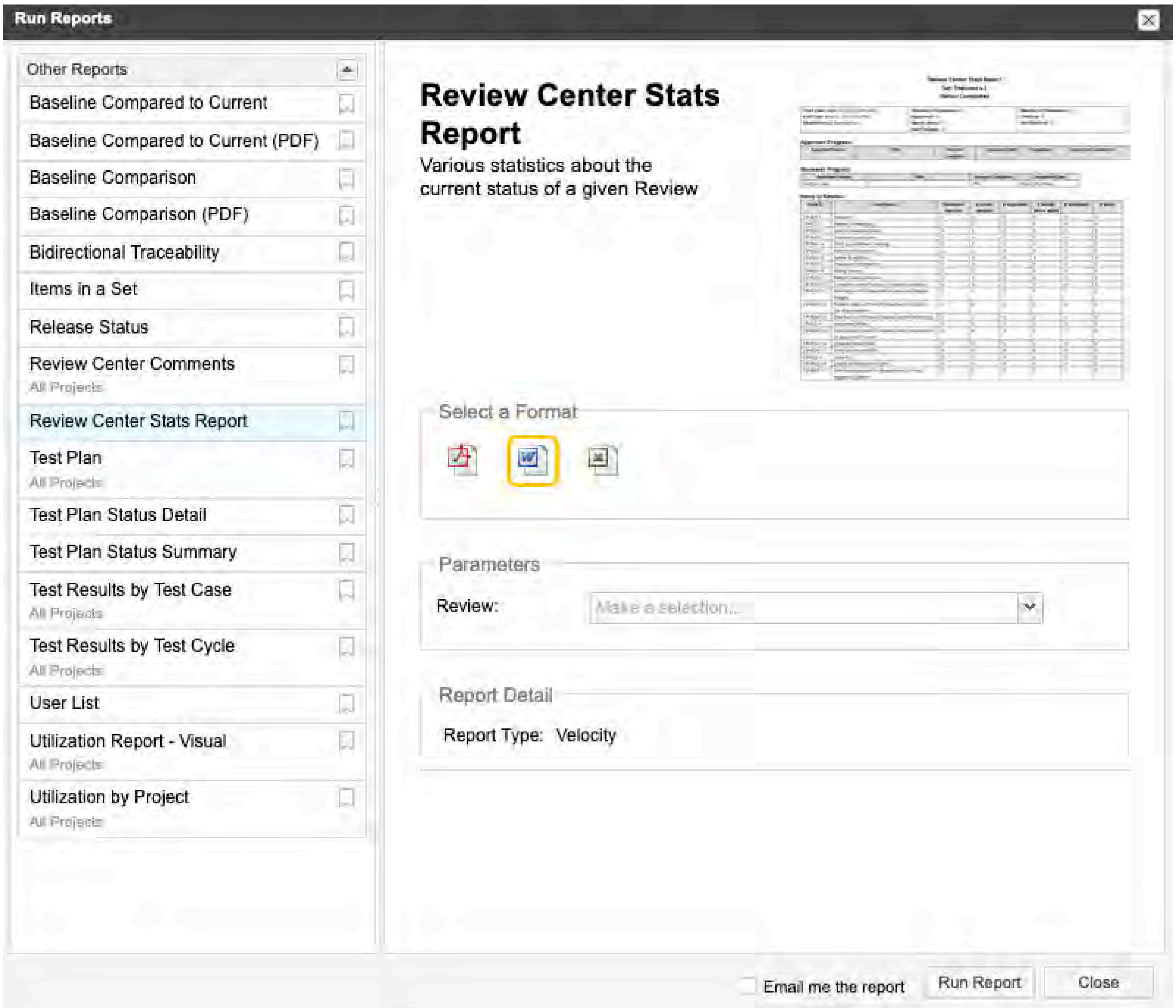
The Review Center Stats report displays the progress of a specific review in a table that shows activity per reviewer and per review item.

You must be a reviewer, approver, or moderator of a review to run the report or to be able to see the review listed in the menu. Public reviews aren't listed unless you're specifically assigned to the review.

1. From the project with the review you want to include, select **Reports > Run report** in the upper-right corner of the header to open the Run Reports window.



2. From the list of reports in the Run Reports window, select **Review Center Stats Report**.



3. Define the report:
   a. Select the format of the report (available formats are listed).
   b. Select the review you want to use.
4. (Optional) Select **Email me the report** to receive it by email.
5. Select **Run Report**.

Review Center Stats Report
Review Center Stats Report v.1
Status: In Progress

Start Date: January 31, 2022 at 6:41:10 PM UTC **End Date:** February 8, 2022 at 1:00:41 AM UTC **Moderator(s):** Admin Test	**Number of Approvers:** 1 **Approved:** 0 **Rejected:** 0 **Not Finished:** 1	**Number of Reviewers:** 0 **Finished:** 0 **Not Finished:** 0

Approver Progress

Approver Name	Title	Percent Complete	Approval Date	Signature	Signature Comments
Admin Test		0%	Not completed	N/A	

Reviewer Progress

Reviewer Name	Title	Percent Complete	Completed Date

Items in Review

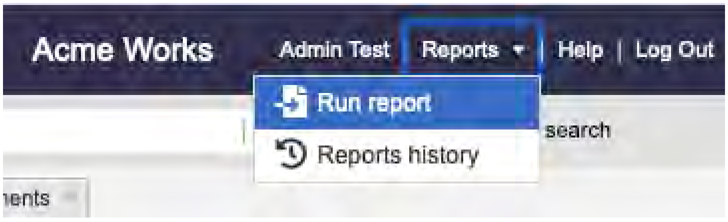
Item ID	Item Name	Reviewed Version	Current Version	# Approved	# Needs More Work	# Reviewed	# Votes
SI_S2_P-VAL-10	Polygons / Second	1	1	0	0	0	0
SI_S2_P-VAL-11	OpenGL	1	1	0	0	0	0
SI_S2_P-VAL-12	Direct3D	1	1	0	0	0	0
SI_S2_P-CMP-24	I2C Interface	1	1	0	0	0	0
SI_S2_P-INFO-8	Test 2	1	1	0	0	0	0

Run a Task List with Estimates report

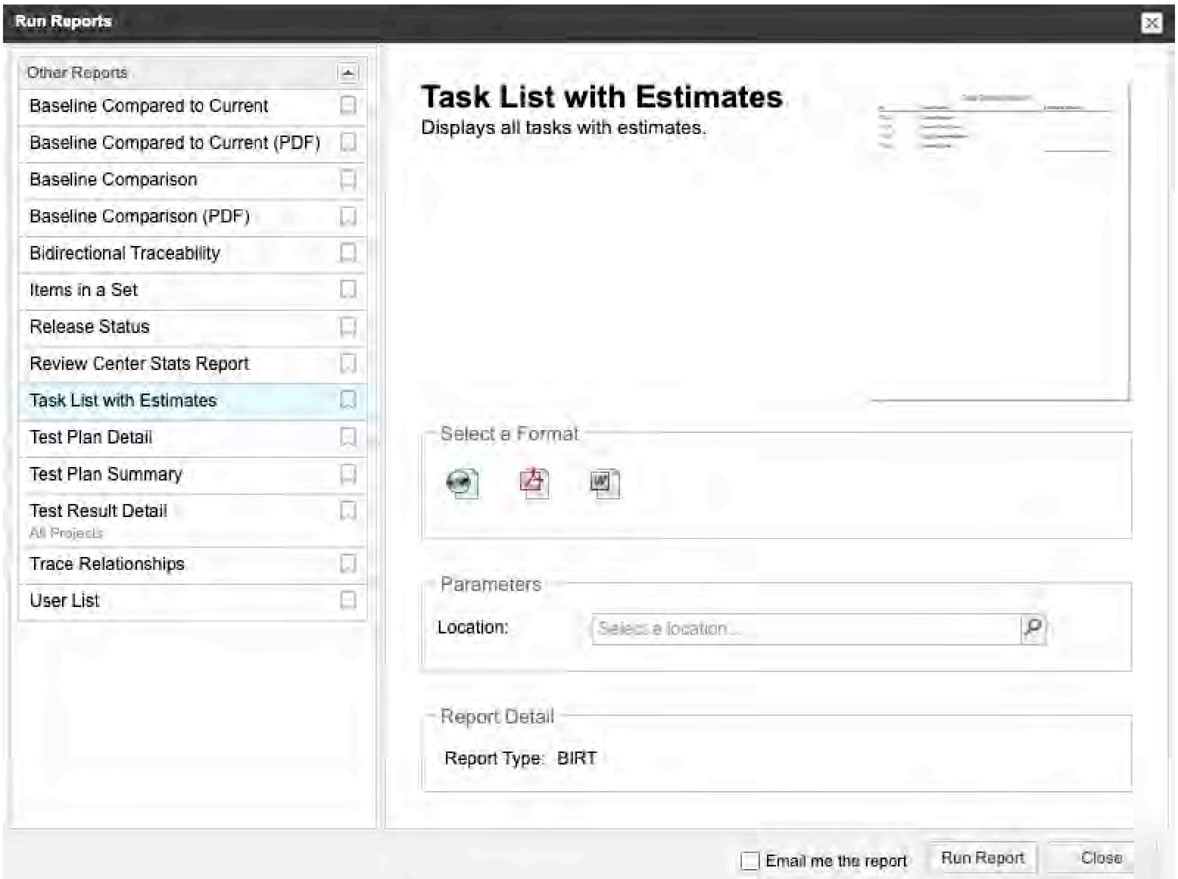
The Task List with Estimates report displays all item types and totals their estimates if applicable.

To run this report:

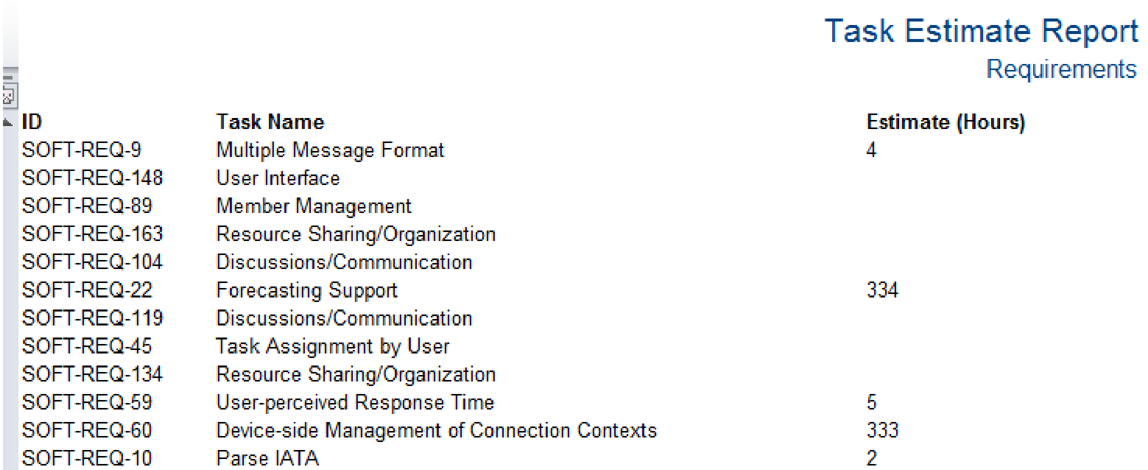
1. From the project with the items you want to include, select **Reports > Run report** in the upper-right corner of the header to open the **Run Reports** window.



2. From the list of reports in the Run Reports window, select **Task List with Estimates**.



3. Define the report:
   a. Select the format of the report (available formats are listed).
   b. Select the location of the items you want to include.
4. (Optional) Select **Email me the report** to receive it by email.
5. Select **Run Report**.



Task Estimate Report

Requirements

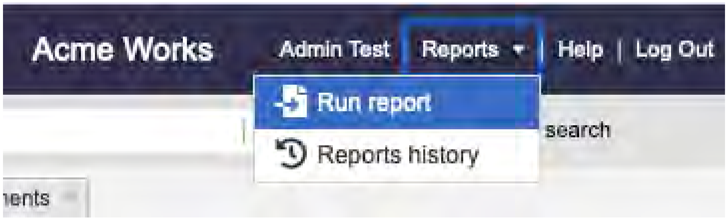
ID	Task Name	Estimate (Hours)
SOFT-REQ-9	Multiple Message Format	4
SOFT-REQ-148	User Interface	
SOFT-REQ-89	Member Management	
SOFT-REQ-163	Resource Sharing/Organization	
SOFT-REQ-104	Discussions/Communication	
SOFT-REQ-22	Forecasting Support	334
SOFT-REQ-119	Discussions/Communication	
SOFT-REQ-45	Task Assignment by User	
SOFT-REQ-134	Resource Sharing/Organization	
SOFT-REQ-59	User-perceived Response Time	5
SOFT-REQ-60	Device-side Management of Connection Contexts	333
SOFT-REQ-10	Parse IATA	2

Run a Test Plan Status Detail report

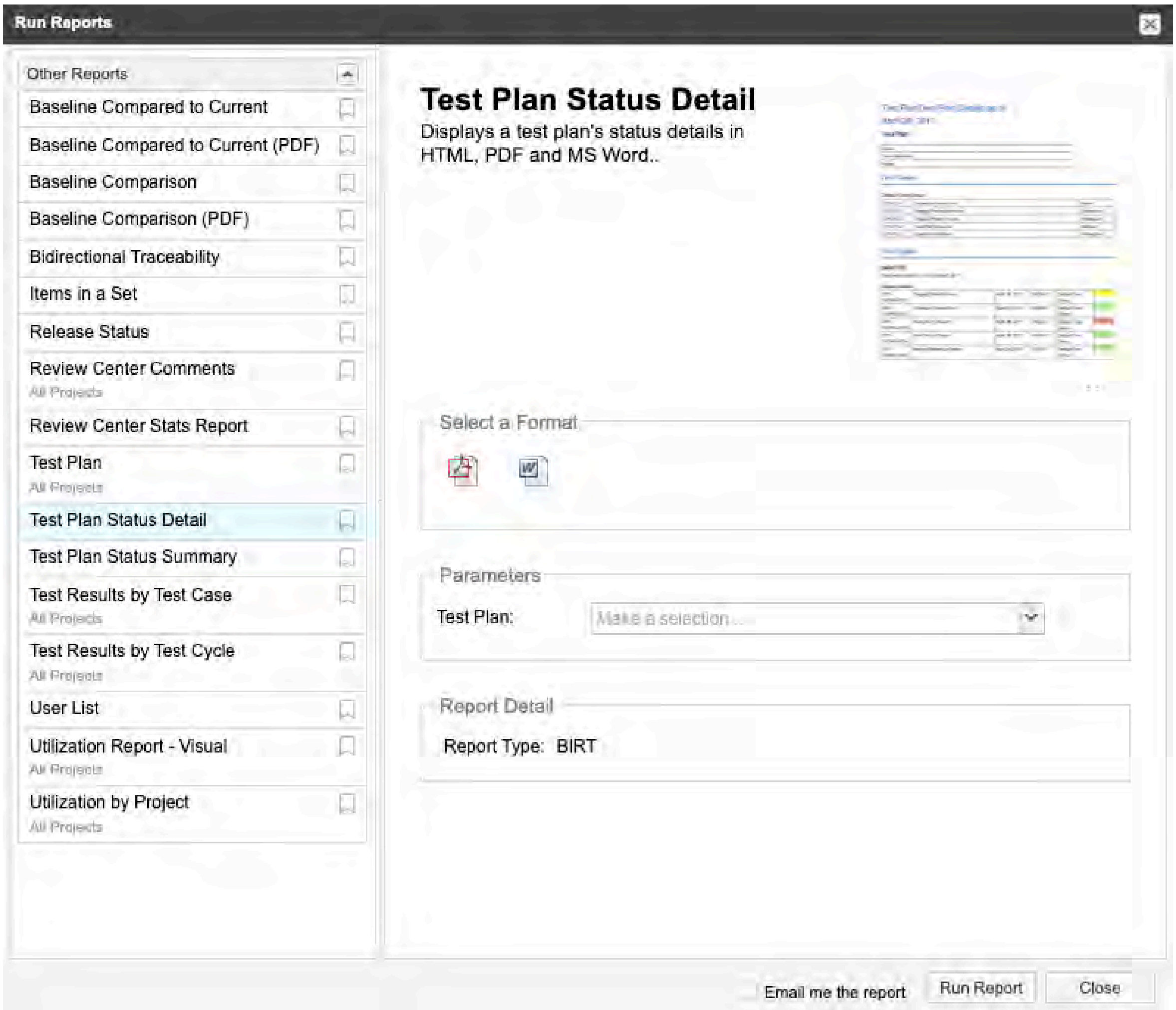
The Test Plan Status Detail report displays the details of a test plan.

To run this report:

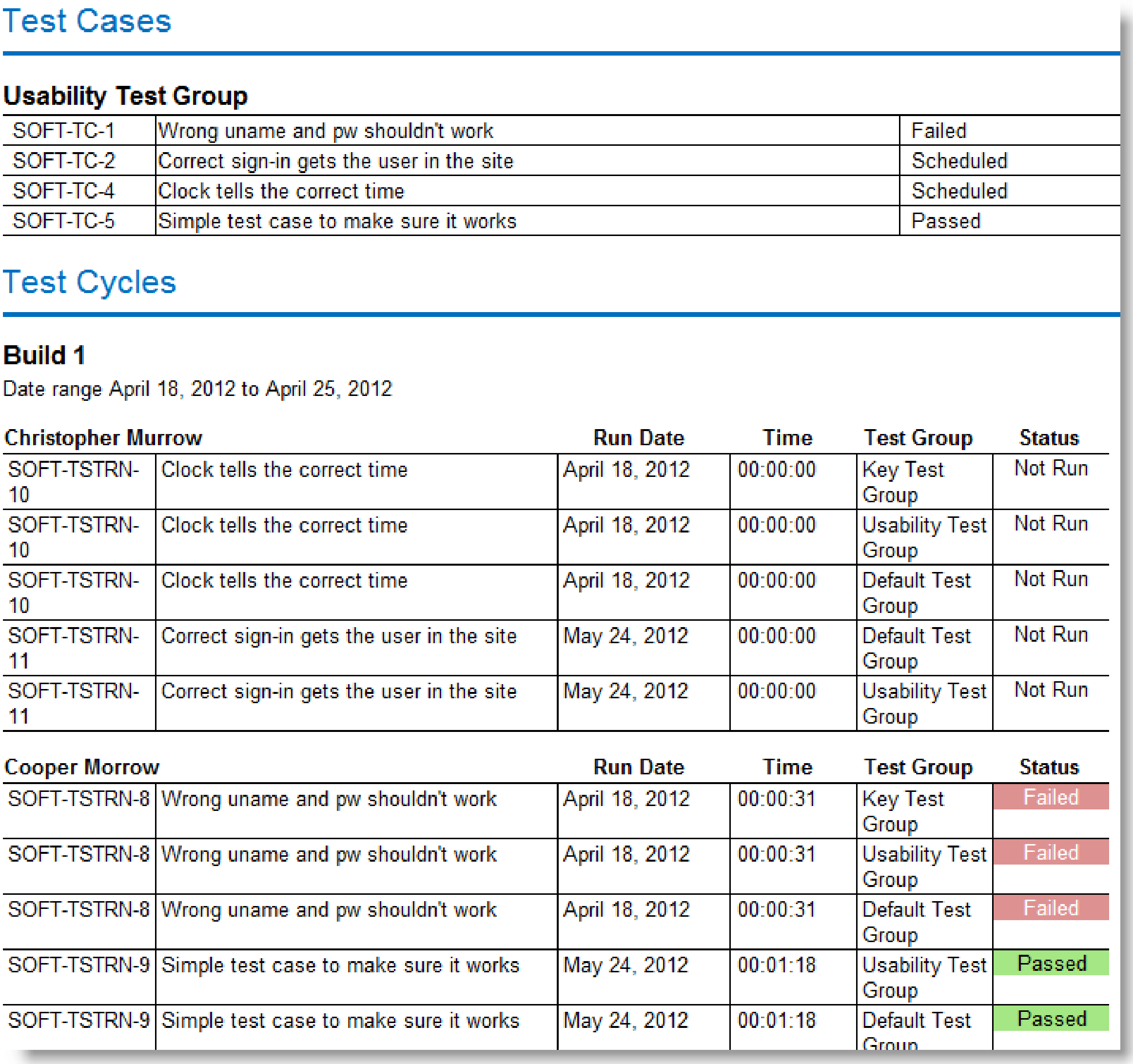
1. From the project with the test plan you want to include, select **Reports > Run report** in the upper-right corner of the header to open the **Run Reports** window.



2. From the list of reports in the Run Reports window, select **Test Plan Status Detail**.



3. Define the report:
   a. Select the format of the report (available formats are listed).
   b. Select the test plan you want to use.
4. (Optional) Select **Email me the report** to receive it by email.
5. Select **Run Report**.



Test Cases

Usability Test Group

SOFT-TC-1	Wrong uname and pw shouldn't work	Failed
SOFT-TC-2	Correct sign-in gets the user in the site	Scheduled
SOFT-TC-4	Clock tells the correct time	Scheduled
SOFT-TC-5	Simple test case to make sure it works	Passed

Test Cycles

Build 1

Date range April 18, 2012 to April 25, 2012

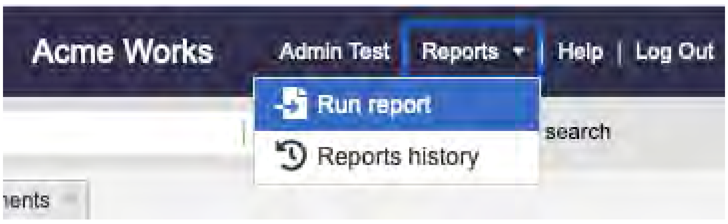
Christopher Murrow		Run Date	Time	Test Group	Status
SOFT-TSTRN-10	Clock tells the correct time	April 18, 2012	00:00:00	Key Test Group	Not Run
SOFT-TSTRN-10	Clock tells the correct time	April 18, 2012	00:00:00	Usability Test Group	Not Run
SOFT-TSTRN-10	Clock tells the correct time	April 18, 2012	00:00:00	Default Test Group	Not Run
SOFT-TSTRN-11	Correct sign-in gets the user in the site	May 24, 2012	00:00:00	Default Test Group	Not Run
SOFT-TSTRN-11	Correct sign-in gets the user in the site	May 24, 2012	00:00:00	Usability Test Group	Not Run

Cooper Morrow		Run Date	Time	Test Group	Status
SOFT-TSTRN-8	Wrong uname and pw shouldn't work	April 18, 2012	00:00:31	Key Test Group	Failed
SOFT-TSTRN-8	Wrong uname and pw shouldn't work	April 18, 2012	00:00:31	Usability Test Group	Failed
SOFT-TSTRN-8	Wrong uname and pw shouldn't work	April 18, 2012	00:00:31	Default Test Group	Failed
SOFT-TSTRN-9	Simple test case to make sure it works	May 24, 2012	00:01:18	Usability Test Group	Passed
SOFT-TSTRN-9	Simple test case to make sure it works	May 24, 2012	00:01:18	Default Test Group	Passed

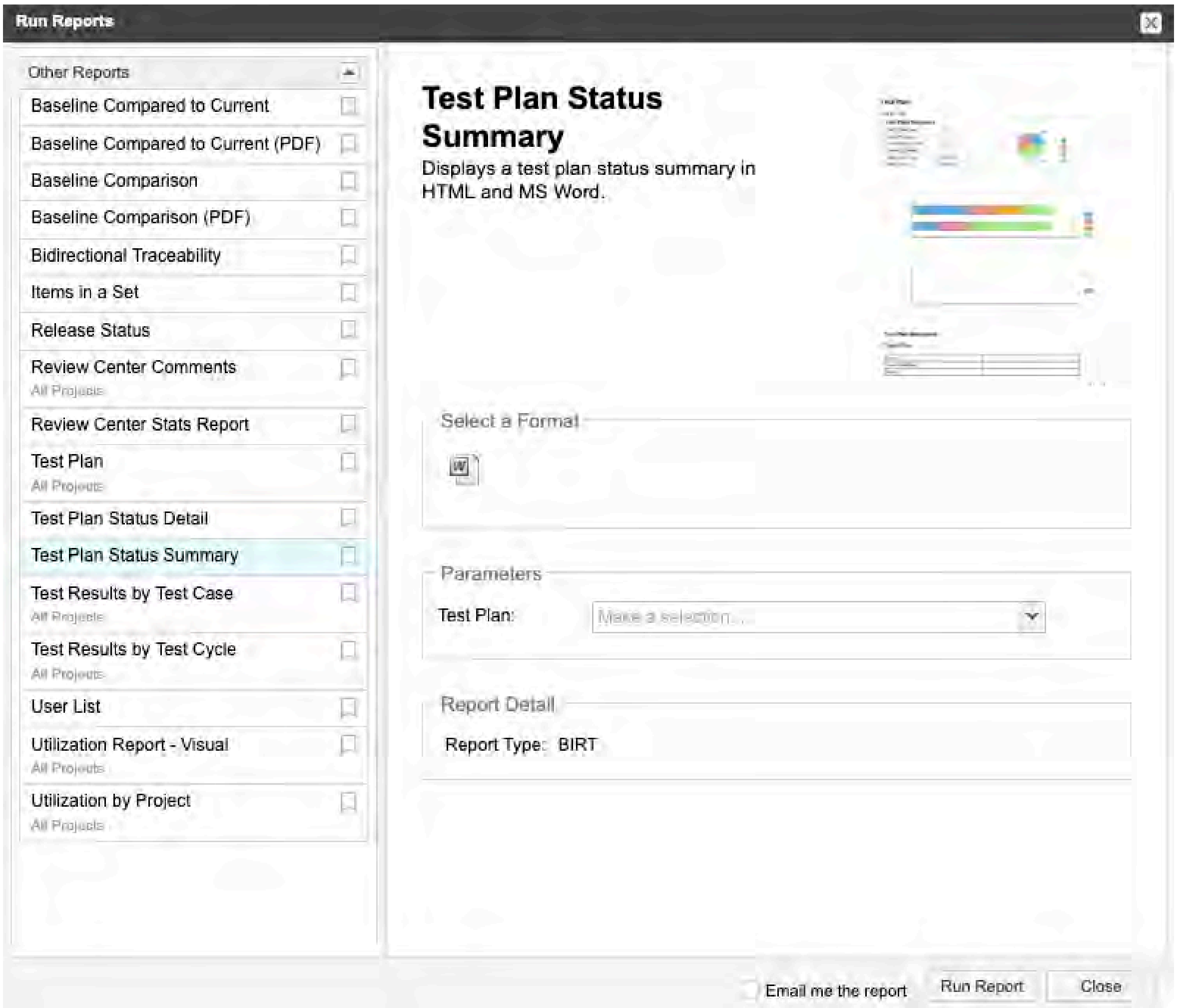
Run a Test Plan Status Summary report

The Test Plan Status Summary report displays a summary of the test plan with graphs and charts, by cycle and build.

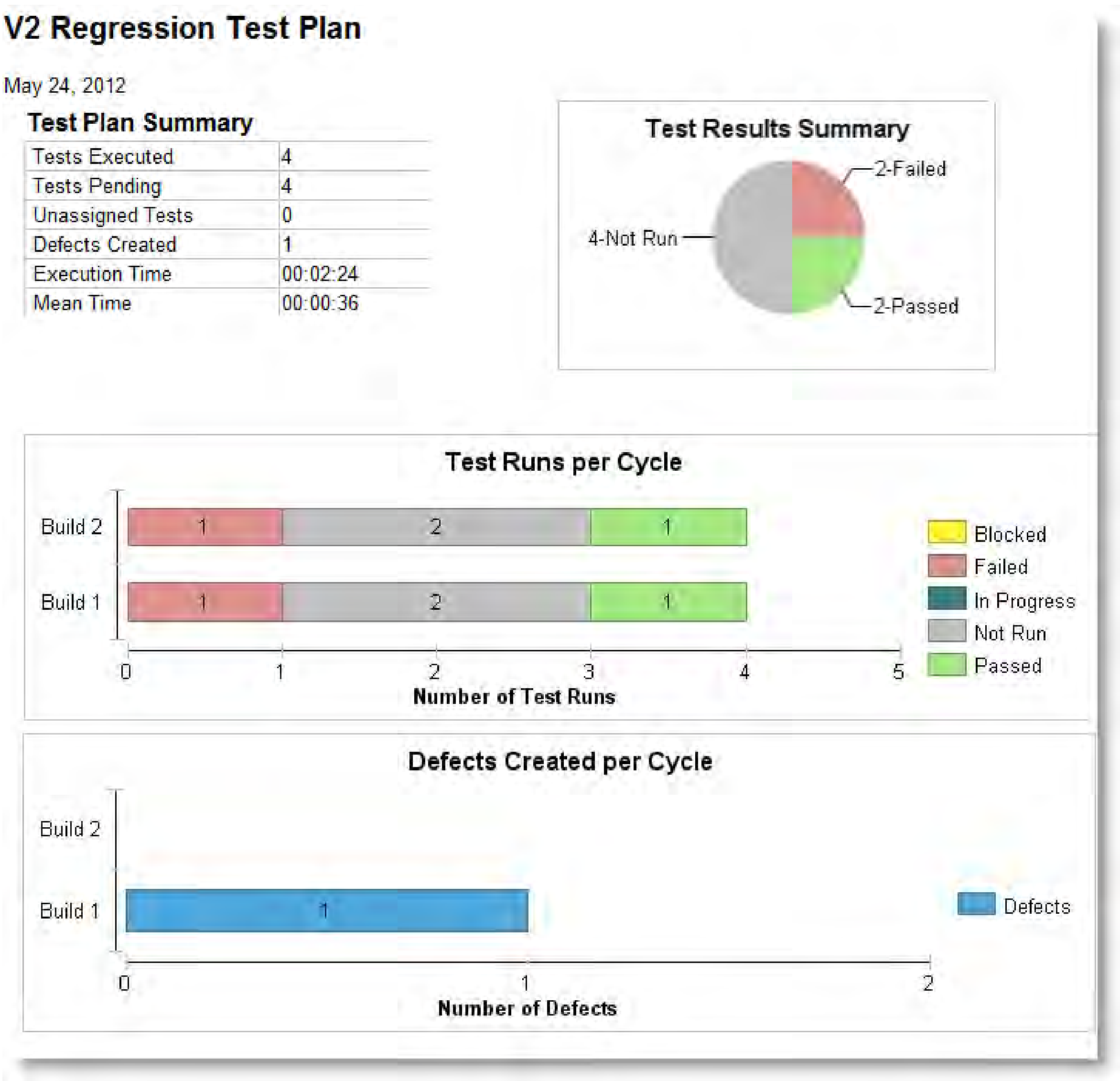
1. From the project with the test plan you want to include, select **Reports > Run report** in the upper-right corner of the header to open the **Run Reports** window.



2. From the list of reports in the Run Reports window, select **Test Plan Status Summary**.



3. Define the report:
   a. Select the format of the report.
   b. Select the test plan you want to use.
4. (Optional) Select **Email me the report** to receive it by email.
5. Select **Run Report**.



Run a User List report

The User List report displays a list of all the active and inactive users associated with the organization.

> **NOTE**
> When a floating creator license is unavailable, a new user logging in is granted a floating reviewer license if one is available. If the only available license is for named reviewers, the new user can't log in to Jama Connect.

The report includes:

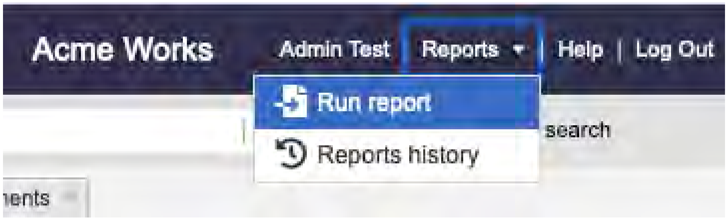
- Username
- Full name
- Disabled (Inactive) status
- Email
- License type

Table 1. License type key for User List Report

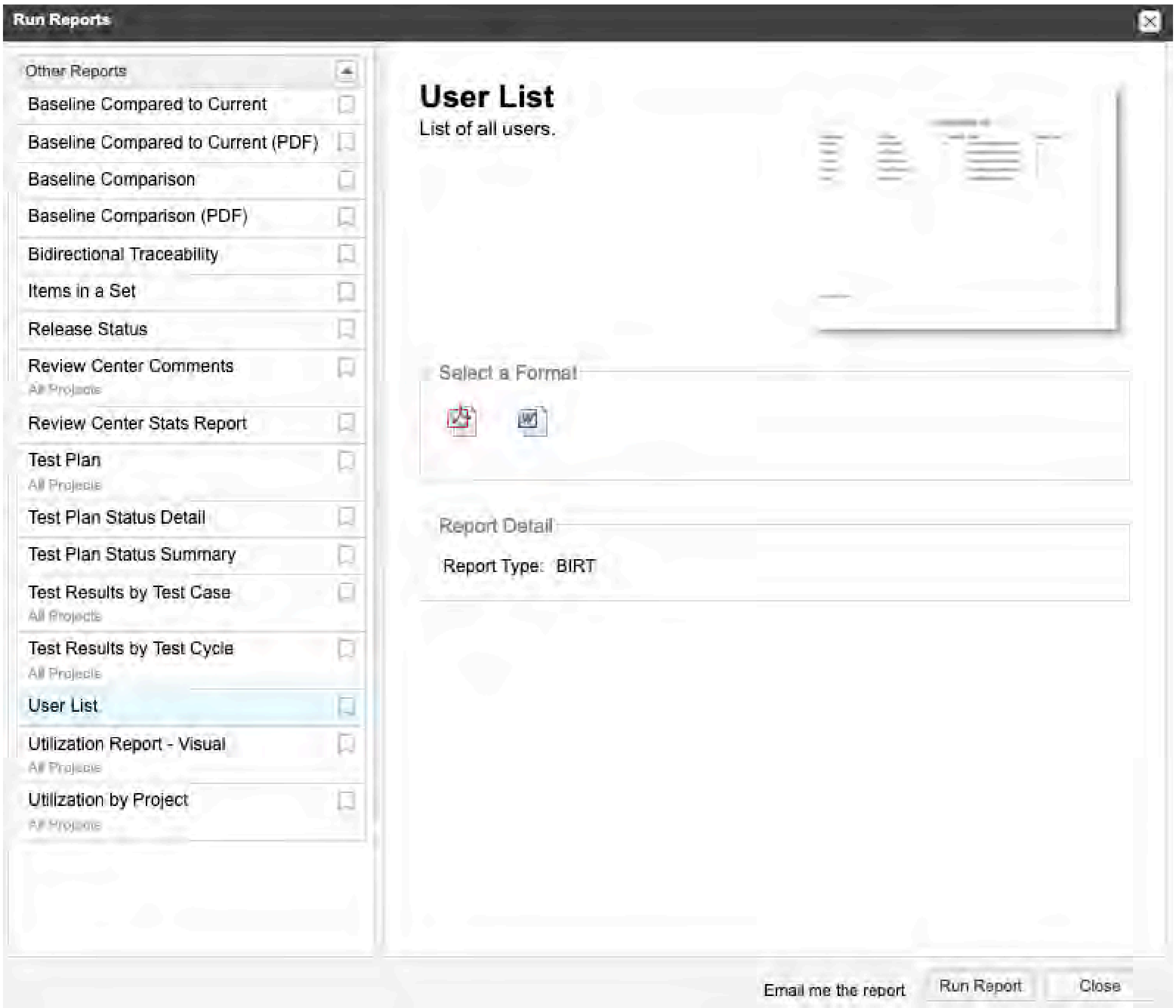
Creator (named)	N
Creator (float)	C
Test runner	TR
Stakeholder	S
Temporary	ET
Reviewer (named)	NV
Reviewer (float) - *legacy*	V
Reserved reviewer - *legacy*	RV
Reserved collaborator - *legacy*	R
Collaborator (float) - *legacy*	FC
Inactive	I

To run the User List report:

1. From the project with the data you want to include, select **Reports > Run report** in the upper-right corner of the header to open the Run Reports window.



2. From the list of reports in the Run Reports window, select **User List**.



3. Define the report by selecting the format of the report.
4. (Optional) Select **Email me the report** to receive it by email.
5. Select **Run Report**.

Custom reports

If your reporting needs go beyond built-in default reports [382], exports [321], and Office Templates [326] you can create custom reports.

Jama Software Consulting Services can help in creating:

- Reports with logic
- Reports with charts and graphs
- Reports with custom formatting

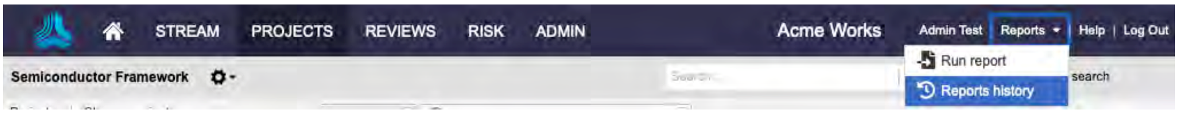
To get help, contact your account manager or Jama Software support at support@jamasoftware.com.

View reports history

Use the Reports history page to view and download reports. You can also see the status of reports that are generated.

> **NOTE**
> Organization admins see all reports. Users see only reports they create.

1. From the Jama Connect header, select **Reports > Reports history**.



2. **To download a report** — In the Actions column, select the **down arrow icon**.
3. **To remove a report** — In the Actions column, select the **trash icon**.

Export Velocity reports to Excel

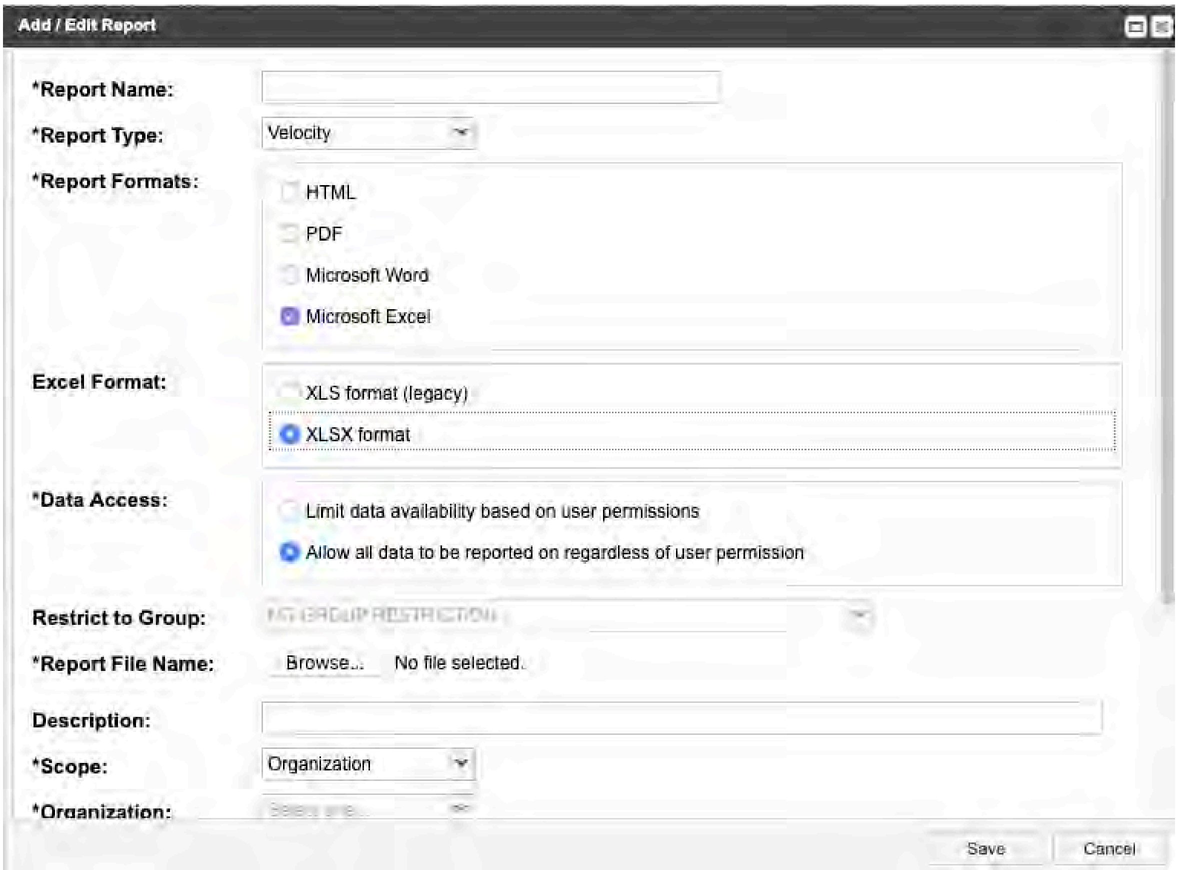
As a root user, you can configure settings that allow users to export a Velocity report to Excel in XLSX format. This option lets users export directly to Excel rather than using the legacy XLS format.

Important considerations

- This option is available only for Velocity reports.
- You must configure this option for each report.

To enable the Velocity report option:

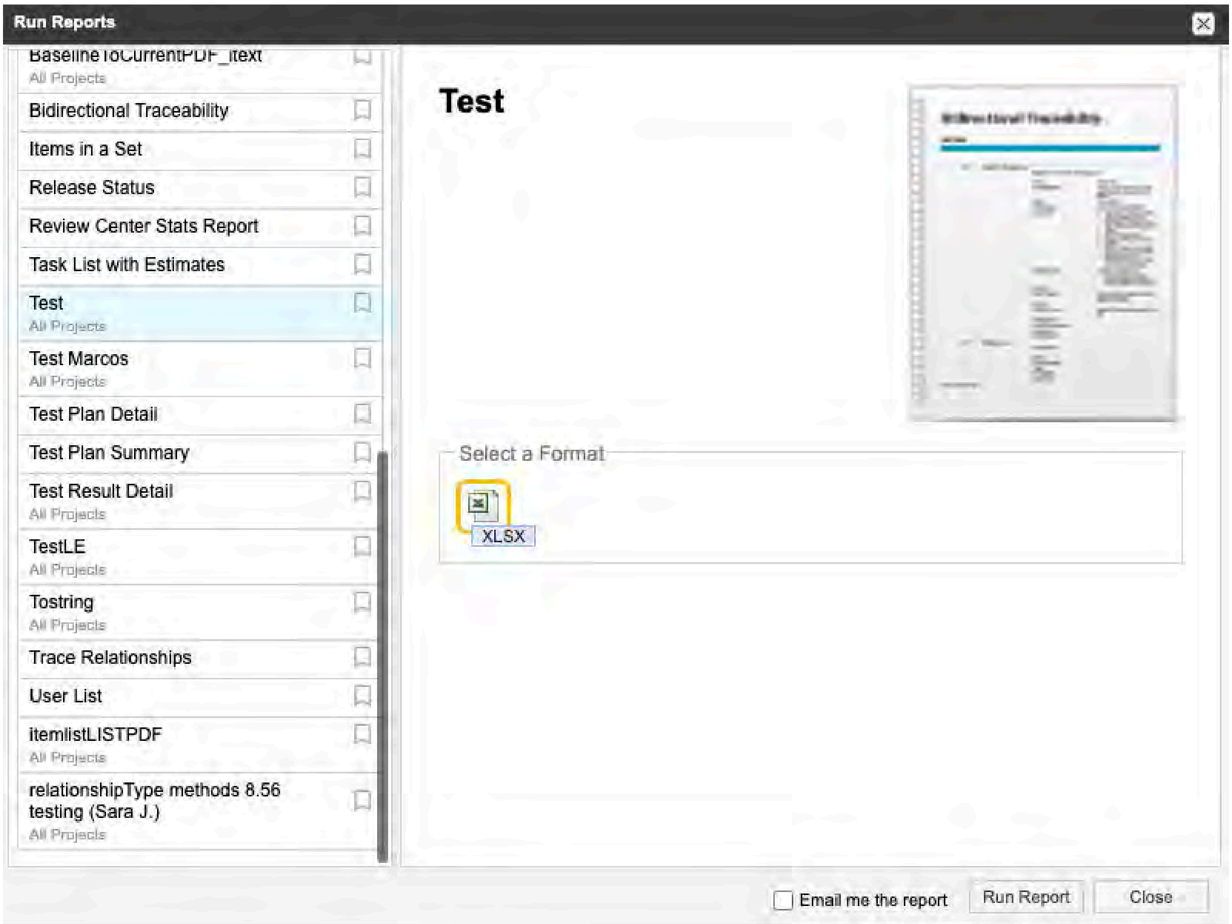
1. Log in to Jama Connect as root user.
2. Select **Reports > Add Report**.
3. In the Add/Edit Report window, enter the following information:



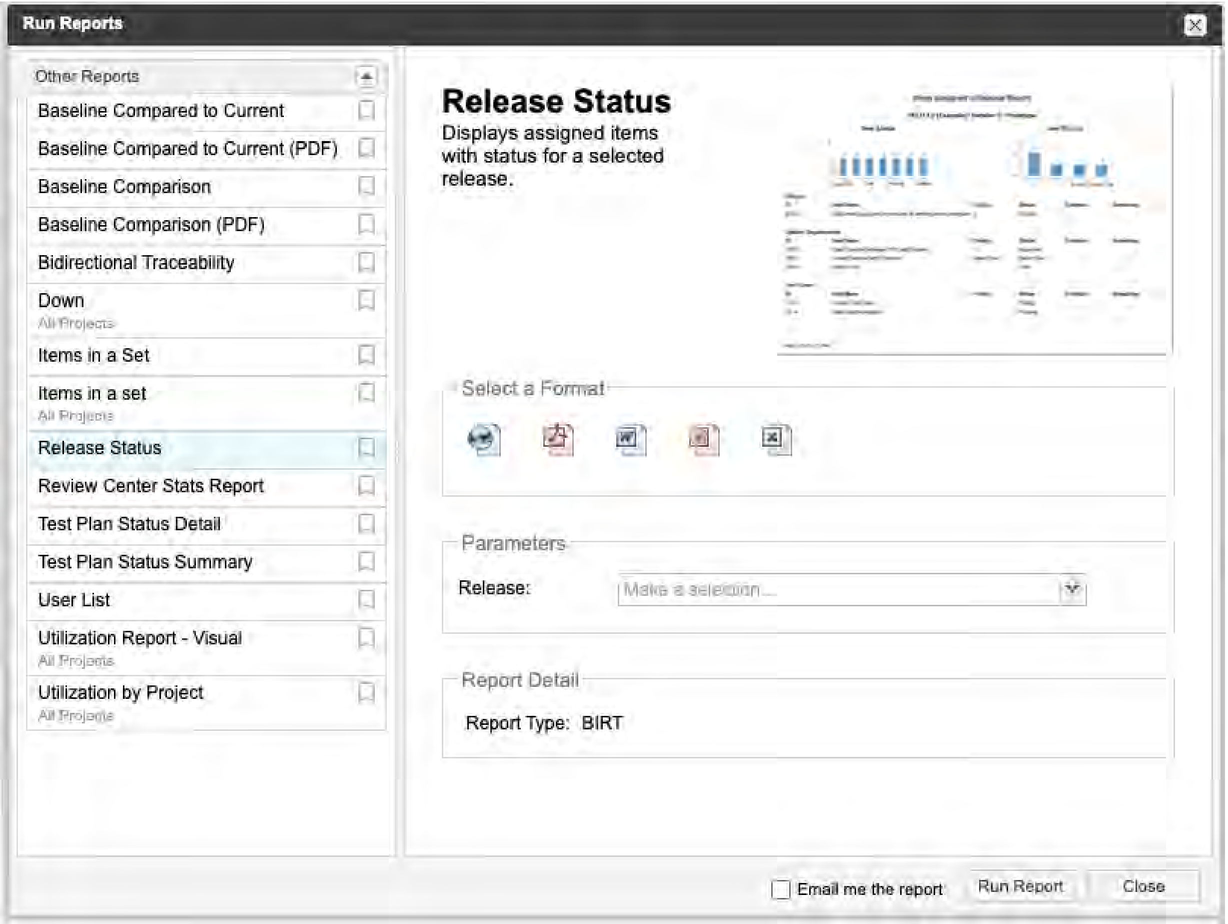
   - **Report Name** — Enter a name
   - **Report Type** — Velocity
   - **Report Format** — Microsoft Excel
   - **Excel Format** — XSLX format
4. Click **Save**.

When a user runs a report, they can now see the Excel format type when they hover over the "Select a format" icons.

XLSX format example



XLS format example



From the Jama Connect header, select **Reports** to view the Reports history section. You can see the XLS and XLSX format options and if a report type is Velocity. For more information, see Reports history [399].

Risk

With Risk Management, your organization can use Jama Connect to organize and conduct a risk analysis for your products.

The default starter templates are based on the FMEA and ISO 14971 standards and follow a common risk management process. However, they can be adjusted to better meet your needs.

Your framework might not include Risk Management Analysis templates. For more information, contact your Jama Software admin or consultant.

Installing Jama Connect

Jama Connect is a Linux-based application that runs on Docker containers and uses Replicated software to "orchestrate" deploying applications. The process of installing Jama Connect includes installing and configuring the software. These tasks deliver the components necessary to run Jama Connect.

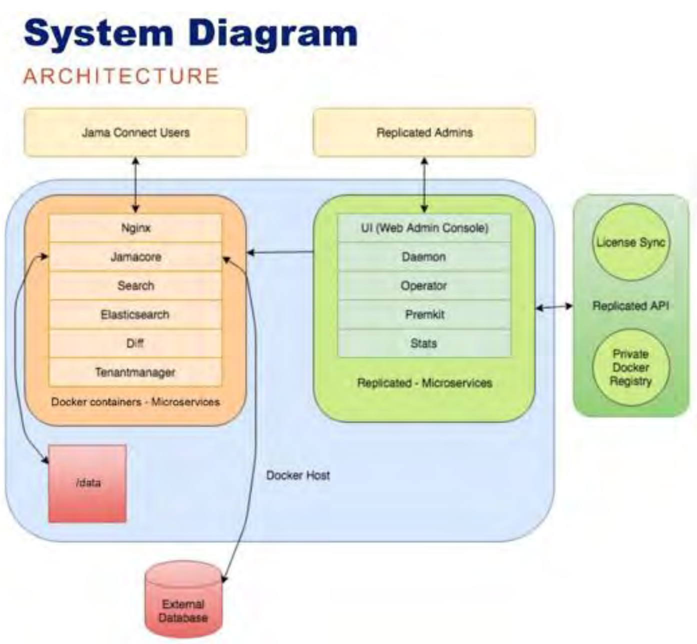
Components and what they do

Replicated (traditional) — A container-based platform for easily deploying cloud native applications inside customers' environments, providing greater security and control. The Admin Console is the interface for installing and administering the Jama Connect application. See https://www.replicated.com/ for details.

Docker containers — A standalone executable package of software that includes code, runtime, system tools, system libraries, and settings. See https://www.docker.com/resources/what-container for details.

Kubernetes-off-the-shelf (KOTS) software — KOTS is an open-source application for Kubernetes clusters. See https://www.replicated.com/blog/announcing-kots/ for details.

Jama Connect license — The license included in your Welcome email. You upload the license to your application server, then begin installing Jama Connect.



- Jama Connect users access Jama Connect by browsing to the instance URL (https://jamainstanceurl.customer.com/).
- Replicated administrators browse to the Admin Console using the same instance URL, but on port 8800 (https://jamainstanceurl.customer.com:8800/).
- Traditional Replicated and KOTS update Jama Connect and the license via API calls for internet-enabled environments. Our airgap option removes the need for remote API calls.
- Content that is added to your Jama Connect instance is stored in the database.
- (KOTS only) Uploaded artifacts, such as attachments and report templates, are stored in a Persistent Volume created by a Persistent Volume Claim (PVC) called **tenantfs**.

Which type of installation do you need?

According to the environment where you plan to install Jama Connect (internet or airgap, traditional or KOTS), review the server requirements and follow the installation guidance outlined in the table below.

Installation workflow

Component	Traditional Replicated	KOTS Replicated
MySQL	Install and configure MySQL [412]	Install and configure MySQL [412]
Microsoft SQL	Install and configure Microsoft SQL Server [413]	Install and configure Microsoft SQL Server [413]
Internet	Install the software with traditional Replicated (internet) [417]	Install KOTS software (internet) [434]
Airgap	Install the software with traditional Replicated (airgap) [424]	Install KOTS software (airgap) [437]
Local Elasticsearch	Included by default	Included by default
Remote Elasticsearch	Install remote Elasticsearch with Jama Connect [458]	Configure dedicated Elasticsearch nodes [447]

Planning your installation

Before you install the Admin Console and Jama Connect, make sure you have the following according to your type of installation.

All installations	• The license file sent from Jama Software (included in the Welcome email)
	• An application server with the necessary preparation and requirements:
	  • **Traditional installation** — See Preparing your application server [409] and Application server requirements [405]
	  • **KOTS installation** — See Preparing your application server (KOTS installation) [410] and Application server requirements [405]
	• A database server with the necessary preparation [411]
	• Supported 64-bit Linux distribution with a kernel of:
	  • 4.x or greater (recommended)
	  • 3.10 (minimum)
	• Supported version of Docker (traditional installation only)

Airgap installations	• URL to the airgap-safe portal (included in the Welcome email) for downloading the Jama Connect application file • A unique password (included in the Welcome email) to access the airgap-safe portal • PDF of this installation guide for the version of Jama Connect you are installing **IMPORTANT** If you lose the URL and password, contact support to generate new ones.
Optional	• TLS certificate and private key to secure the Admin Console and Jama Connect application

System requirements

Make sure that your environment conforms to all requirements and recommendations before installing Jama Connect software.

Use the following links for specific information about Jama Connect requirements.

Current requirements	See supported software and system requirements and follow the link for your version of Jama Connect.
Supported authentication types	See Authentication methods [479].

Application server requirements and resource sizing

To install and run Jama Connect successfully, your application server must meet these requirements.

Requirement	Notes
Be a dedicated application server	Make sure that Jama Connect is the only application running on the application server. External services can affect the stability of the application, for example by consuming memory resources.
Have sufficient storage, CPU, and memory	Performance depends on the amount of CPU and memory provided. Estimate the appropriate size and resources for your application server: • **Traditional installation** — See *Traditional installation – Resource sizing for application server* below • **KOTS installation** — See *KOTS installation – Resource sizing for application server* below
Have administrative rights to that server	An admin must have proper permissions to maintain the application, perform upgrades, and access the server for regular maintenance.
Use compatible software and environments	Verify that you're using supported software and environments compatible with the most recent self-hosted release.

Traditional installation — Resource sizing for application server

For optimal performance, estimate your server needs before you install Jama Connect.

The following table can help determine needed resources for your application server. Once you're up and running, you can monitor usage [536] and adjust settings as needed from the Config tab in the KOTS Admin Console.

Application server	Small	Medium	Large	Enterprise
Active items in system	≤600,000	≤2 million	2–4 million	4 million+
Active projects	≤100	≤500	≤1,000	1,000+
Concurrent users	≤50	≤500	≤1,000	1,000+
CPU cores	4	8	16	Contact Support
Total system RAM	16 GB	24 GB	32 GB	Contact Support

If your usage approaches the Enterprise threshold, contact Support for customized recommendations and advanced, multi-server setup.

Use this storage calculator to determine what you need for your application server.

Item	Default location	Recommended file system type	Explanation	Small example	Enterprise example	Calculate your own
Operating systems	N/A	N/A	Not included in this calculation	N/A	N/A	______ GB
Docker images	/var/lib/docker	XFS with ftype=1, or EXT4	Variable	30 GB	50 GB	______ GB
User data	/data	NFS	Filesystem can vary, but consider size of stored attachments	40–100 GB	100 GB	______ GB
Replicated	/var/lib/replicated/	EXT4	Configure snapshots to be stored in /data/replicated/snapshots/	20 GB	30 GB	______ GB
Log files	/logs	EXT4	10 GB (fixed)	10 GB	10 GB	10 GB
Total:				**100 + GB**	**160 + GB**	______ GB

Important considerations

- To avoid performance issues, use XFS with the *dtype* option of *ftype=1* or use EXT4. For Docker's default data root directory, /var/lib/docker, if an XFS filesystem doesn't have the *dtype* attribute set to *ftype=1*, performance can degrade for container creation at startup.
- Jama Software supports internally hosted network storage mounts (NFS). EBS is suggested in cloud-based environments. Cloud NFS (like EFS) isn't supported because Docker doesn't work with EFS.

KOTS installation — Resource sizing for application server

For optimal performance, estimate your server needs before you install Jama Connect.

Recommended operating system	Storage space
Ubuntu 18.04 or Ubuntu 20.04	Each node must have a minimum volume of 200 GB. Increase this size based on the size of the assets that you plan to save in Jama Connect. Recommended — Every node has the same storage space.

NOTE

KOTS must be up and running before you configure the application settings in the KOTS Admin Console.

The following tables can help determine resources for the primary node of your application server. Once you're up and running, you can monitor usage [536] and adjust settings as needed from the Config tab in the KOTS Admin Console.

IMPORTANT

Horizontal scaling used with minimum requirements can cause performance issues. Best to use the recommended requirements to avoid performance issues.

Table 2. Minimum size (AWS instance sizing = m5.2xlarge)

CPU	RAM	CPU + memory settings	CPU + memory setting with horizontal scaling jamacores
8	32 GB	N/A	jamacore application settings • Maximum CPU: 1000m • Maximum memory: 2 G • Maximum memory per container: 3 G • Number of ingress nodes: 2

Table 3. Recommended size (AWS instance size = m5.4xlarge)

<table>
<tr><th>CPU</th><th>RAM</th><th>CPU + memory settings</th><th>CPU + memory setting with horizontal scaling jama-cores</th></tr>
<tr><td rowspan="4">16</td><td rowspan="4">64 GB</td><td>Supports:
• 1,250 users with a ramp-up time of 30 seconds</td><td>Supports:
• 1,250 users with a ramp-up time of 10 seconds
• 2,500 users with a ramp-up time of 30 seconds</td></tr>
<tr><td>jamacore application settings:
• Maximum CPU: 12000m
• Maximum memory: 48 G
• Maximum memory for container: 60 G</td><td>jamacore application settings:
• Maximum CPU: 3000m
• Maximum memory: 12 G
• Maximum memory for container: 15 G
• Number of ingress nodes: 2</td></tr>
<tr><td>Elasticsearch settings:
• Maximum CPU: 8000m
• Maximum memory: 8 G
• Maximum memory for container: 10 G</td><td>Elasticsearch settings:
• Maximum CPU: 8000m
• Maximum memory: 8 G
• Maximum memory for container: 10 G</td></tr>
<tr><td>Diff Service settings:
• Maximum memory: 2 G</td><td>Diff Service settings:
• Maximum memory: 2 G</td></tr>
</table>

The following table can help determine resources for the secondary node of your application server. Once you're up and running, you can monitor usage [536] and adjust settings as needed from the Config tab in the KOTS Admin Console.

Table 4. Secondary nodes dedicated to Elasticsearch: Recommended size (AWS instance size = m5.2xlarge)

CPU	RAM	CPU + memory settings
8	32 GB	*Supports:* • 2,500 users with a ramp-up time of 10 seconds *Elasticsearch settings:* • Maximum CPU: 8000m • Maximum memory: 8 G • Maximum memory for container: 10 G

Database server requirements and resource sizing

The database must be hosted on a server separate from the Jama Connect application. This server can host other databases, but we don't support other applications running on the same server as the database.

- MySQL 5.7 and 8 (recommended)
- Microsoft SQL 2016, 2017, and 2019

What is NOT supported

- Azure database
- MariaDB
- Custom configurations of Jama Connect databases. Customizations such as query optimization and additional indexes that aren't shipped with Jama Connect aren't supported.

Resource sizing for database server

For optimal performance, we recommend that you estimate your server needs before you install Jama Connect.

The following table can help determine needed resources for your application server. Once you're up and running, you can monitor usage [536] and adjust your settings [496] as needed.

Database server	Small	Medium	Large	Enterprise
Active items in system	≤600,000	≤2 million	2–4 million	4 million+
Active projects	≤100	≤500	≤1,000	1,000+
Concurrent users	≤50	≤500	≤1,000	1,000+
CPU cores	4	8	16	Contact Support
Total systems of RAM	16 GB	32 GB	64 GB	Contact Support

If your usage approaches the Enterprise threshold, contact support for customized recommendations and advanced, multi-server setup.

Important considerations

- Total system RAM for your database server can vary if you're using memory intensive workflows such as reuse [300], exporting [321], move items [79], integrations [642], and batch updates [72]. Database sizing is based on your usage patterns and platform. You must have a minimum of 4–8 cores and 16–24 GB of memory. Consult with your database admin when determining database size.
- The memory allocation allows for minimum headroom. If you need to run additional software for monitoring and analysis, consider the system requirements for that software. Configure dynamic memory settings [496] as needed in the Admin Console.

- We recommend setting up dedicated volumes for the data your application writes. For information about setting up these volumes, see Preparing your application server, Example: Setting up dedicated volumes [409].

Things to do before installation

Whether your environment is internet-enabled or airgap, make sure that your application server and database server are ready before installing Jama Connect.

- Prepare your application server for traditional installation [409] or KOTS installation [410].
- Prepare your database server [411].
- Install and configure your database (MySQL [412] or SQL Server [413]).
- Configure custom memory settings for Elasticsearch [416].

Preparing your application server (traditional installation)

Make sure your application server meets all requirements. See Supported software and system requirements.

Ports

For users and administrators to properly access Jama Connect, the following ports must be accessible to inbound traffic. Work with your network admin to make sure your network is configured properly.

- **Port 22** — SSH port allows admins to make remote connections to the application server using SSH.
- **Port 8800** — Admin Console port allows admins to access the Admin Console, which is used to configure, install, and upgrade Jama Connect.
- **Port 80** — Jama Connect port for clear text communication (HTTP), which is used to access Jama Connect. It can be disabled or the port number can be reconfigured.
- **Port 443** — Jama Connect port for SSL/TLS communication (HTTPS), which is used to access Jama Connect. It can be disabled or the port number can be reconfigured.

User IDs

For Jama Connect to successfully run its processes, the following User IDs must be available and unused on the application server.

- **User ID 91** — Used by Tomcat to read and write to directories under /data.
- **User IDs 480 – 499** — Used by the various services.

Time sync schedule

To ensure accurate time on the application server, sync the time on a routine schedule (for example, set a cron job to sync time every day or hour).

To set up the cron job, use the command:

```
ntpdate pool.ntp.org
```

Important considerations

- To improve resolution time of any issues, keep ports open. Closing access to ports for communication within the server isn't supported and poses a risk to application accessibility.
- Docker pre-routes traffic, so be sure to set rules in the DOCKER-USER table, not the INPUT table.
- To avoid blocking issues when installing on RHEL or CentOS Linux distributions, disable firewall or add the docker0 interface to the "trusted" zone.

Setting up dedicated volumes

We recommend setting up dedicated volumes for the data your application is going to write.

Use this example to partition the logical volumes on your application server.

Start with a 100 GB disk.

1. Create a mountpoint:

   ```
   mkdir /data /logs /var/lib/docker /var/lib/replicated
   ```
2. Create a physical volume:

   ```
   pvcreate /dev/<your-disk-name>
   ```
3. Create a volume group:

   ```
   vgcreate vg_jama /dev/<disk-name>
   ```
4. Create logical volumes:

   ```
   lvcreate -L 30G -n lv_docker vg_jama
   lvcreate -L 20G -n lv_replicated vg_jama
   lvcreate -L 10G -n lv_logs vg_jama
   lvcreate -l 100%FREE -n lv_data vg_jama
   ```
5. Write file systems:

   ```
   mkfs.xfs -L docker -n ftype=1 /dev/vg_jama/lv_docker
   mkfs.ext4 -L replicated /dev/vg_jama/lv_replicated
   mkfs.ext4 -L data /dev/vg_jama/lv_data (ext4 or NFS)
   mkfs.ext4 -L logs /dev/vg_jama/lv_log
   ```
6. Edit the file /etc/fstab to include the following lines:

   ```
   LABEL=docker /var/lib/docker xfs defaults 0 0
   LABEL=replicated /var/lib/replicated ext4 defaults 0 0
   LABEL=data /data ext4 defaults 0 0
   LABEL=logs /logs ext4 defaults 0 0
   ```
7. Mount all volumes:

   ```
   mount -a
   ```
8. Confirm that all volumes were mounted properly:

   ```
   df -h
   ```

Preparing your application server (KOTS installation)

Make sure your application server meets all requirements. See Supported software and system requirements.

Inbound rules and ports for Kubernetes nodes

For users and admins to properly access Jama Connect, specific ports must be accessible to inbound traffic. Work with your network admin to make sure your network is configured properly.

The following table displays the inbound rules that must be configured for each server in the Kubernetes cluster.

> **IMPORTANT**
> In the Source column of this table, *Anywhere* means anyone or anything that must consume the resources in the environment.

Protocol	Port range	Source*	Inbound rule applies to node...	Description
HTTPS	443	Anywhere	All	Jama Connect port for SSL/TLS communication (HTTPS), which is used to access Jama Connect. It can be disabled or the port number can be reconfigured.
HTTP	80	Anywhere	All	Jama Connect port for clear text communication (HTTP), which is used to access Jama Connect. It can be disabled or the port number can be reconfigured.
TCP	8800	Anywhere	All	Allows admins to access the KOTS Admin Console, which is used to configure, install, and upgrade Jama Connect.
SSH	22	Anywhere	All	Allows admins to make remote connections to the nodes using SSH.
TCP	6443	Anywhere Any node	Primary	Allows admins and Kubernetes nodes to access the Kubernetes API server.*
TCP	2379–2380	Any node	Primary	Allows the Kubernetes nodes to access the etcd server client API.*
TCP	10250	Any node	All	Allows the Kubernetes nodes to access the Kubelet API server.*
TCP	6783	Any node	All	Allows Kubernetes (Weave Net) to create a virtual network that connects the services running inside the cluster.*
UDP	6783–6784	Any node	All	Allows Kubernetes (Weave Net) to create a virtual network that connects the services running inside the cluster.*

* Can be disabled in single node clusters.

User IDs

For Jama Connect to successfully run its processes, the following User IDs must be available and unused on the application server.

User ID	Notes
91	Used by Tomcat to read and write to directories inside jamacore pods.
480 – 499	Used by the various services.

Time sync setting

To ensure accurate time on the application server, sync the time on a routine schedule. For example, set a cron job to sync time every day or hour.

To set up the cron job, use the command:

```
ntpdate pool.ntp.org
```

Preparing your database server

The following information is needed when connecting the application server to the database server.

Information	Requirements
Type/vendor	Database must be one of the following: • MySQL (recommended) — Install and configure MySQL [412] • Microsoft SQL Server — Install and configure Microsoft SQL Server [413]
Database hostname	Example: *jama.companydb.com*

Information	Requirements
Listening ports	The application server must be allowed to communicate remotely with the database server over the listening ports. Default ports are: • MySQL = 3306 • Microsoft SQL Server = 1433
Database schema name	The database owner must be able to create one: • A new database schema • Tables inside an existing database schema of the given name The database name must follow these rules: • Start with a letter (a–z) • Contain any number of characters: a–z, 0–9 or an underscore ("_") • Letters must be lowercase
Username	*jamauser*
Password	
Connections	The database must be able to accept a minimum of 300 concurrent connections.
SAML schema username	*samluser*
OAuth database username	*oauthuser*

The username and password for SAML and OAuth must match what's entered in the Microsoft SQL Server upgrade preparation script. See Upgrade and configure Microsoft SQL Server [471] for more details.

Install and configure MySQL

MySQL is the recommended database server. Follow these steps to install and configure it.

Important considerations

- Before installing Jama Connect 8.62.x, you must create two additional database schemas for the installation/upgrade to succeed (see step 3).
- If you want to upgrade MySQL, see Upgrade and configure MySQL [470].

To install and configure MySQL:

1. Make sure that the InnoDB engine is enabled.
2. Download and install a supported version of MySQL. To find out which version of MySQL you need, see Supported software, environments, and system requirements and click the link for your version of Jama Connect.
3. On the MySQL database server:
   a. Create an empty Jama Connect schema / database that uses UTF8:

      ```
      CREATE DATABASE jama character set utf8mb4;
      ```

   b. On the MySQL database server, create two additional database schemas and a user ("jamauser") with the ability to access, create, and update tables within the database:

      ```
      CREATE DATABASE jama character set utf8mb4;
      CREATE DATABASE saml;
      CREATE DATABASE oauth;
      CREATE USER 'jamauser'@'%' IDENTIFIED BY 'password';
      CREATE USER 'oauthuser'@'%' IDENTIFIED BY 'password';
      CREATE USER 'samluser'@'%' IDENTIFIED BY 'password';
      GRANT ALL PRIVILEGES ON jama.* TO 'jamauser'@'%';
      ```

```
GRANT ALL PRIVILEGES ON oauth.* TO 'oauthuser'@'%';
GRANT ALL PRIVILEGES ON saml.* TO 'samluser'@'%';
```

c. (KOTS only) To enable horizontal scaling in KOTS, run these commands:

```
CREATE DATABASE quartz;
CREATE USER 'quartzuser'@'%' IDENTIFIED BY 'password';
GRANT ALL PRIVILEGES ON quartz.* TO 'quartzuser'@'%';
```

4. Restart the database server.

The following recommended settings require 8 GB of memory allocated to MySQL Server for a typical installation and 16 GB for an enterprise installation.

Depending on your database server's operating system, this can be added to your my.cnf file (Linux) or my.ini file (Windows). You can also make these changes directly to the database.

Property	Typical Installation	Enterprise Installation
max_allowed_packet	1 GB	1 GB
tmp_table_size	2 GB	2 GB
max_heap_table_size	2 GB	2 GB
table_open_cache	512	512
innodb_buffer_pool_size	2 GB	12 GB
innodb_log_file_size	256 MB	256 MB
innodb_log_buffer_size	12 MB	12 MB
innodb_thread_concurrency	16	16
max_connections	151	351
wait_timeout	259200	259200

Here is a sample text config file at an enterprise level. You must add the following values for your environment:

```
bind-address=0.0.0.0
key_buffer_size=16M
max_allowed_packet=1G
thread_stack=192K
thread_cache_size=8
tmp_table_size=2G
max_heap_table_size=2G
table_open_cache=512
innodb_buffer_pool_size=12G
innodb_log_file_size=256M
innodb_log_buffer_size=12M
innodb_thread_concurrency=16
max_connections=351
wait_timeout=259200
```

Install and configure Microsoft SQL Server

If you are using Microsoft SQL Server for your database, follow these steps to install and configure it.

Important considerations

- You must have full database admin permissions to the server hosting the SQL Server database.
- If you want to upgrade the Microsoft SQL Server, see Upgrade and configure Microsoft SQL Server [471].

Before installing Jama Connect 8.62.x

- Install Microsoft SQL 2016–2019 for the database server.
- Create an empty Jama Connect database and two additional database schemas for the installation to succeed.

Organizations using Microsoft SQL Server must enter database users in Replicated. Without these entries, the installation will fail.

The new schema must be created for a successful installation. Otherwise, the system continues to attempt to connect to the databases and produces log failures. After you create the database schemas, you must restart Jama Connect.

For more information, go to Supported software, environments, and system requirements and select your version of Jama Connect.

Follow these steps for a first-time installation of Jama Connect:

1. Connect to the SQL Server using a SQL management application (such as SQL Server Management Studio).
2. Replace the following values in the installation script: **<JAMA_LOGIN_Psswd>, <SAML_LOGIN_Psswd> & <OAUTH_LOGIN_Psswd>**.
3. Copy and store the passwords you create here. You will need them later to configure the Admin Console settings.
4. In a new query window, run this SQL query script:
   a.
```
-- Fresh Install Preparation SCRIPT
/*
Jama Connect Preparation Commands for a fresh install. It is
required to run
 these command / script on the Microsoft SQL Server BEFORE running
the Jama
Connect 8.62.x install
for ON-PREM installation using Microsoft SQL Server 2016 - 2019
DATE: 05/10/2021
NOTES:
This script assumes this is a new Installation of JAMA Connect. DO
NOT RUN
THIS SCRIPT ON AN EXISTING JAMA INSTALLATION.
The script will create a new empty JAMA database, add 2 new schemas
(empty) to
the Jama Database, 2 new DB Logins and Database users to support the
Multi-
Auth functionality released in Jama Connect 8.62.0.

INSTRUCTIONS:
This script must be run prior to Jama installation or installation
may fail to
complete.
Modify the <JamaUser_LOGIN_Psswd>, <SAML_LOGIN_Psswd> &
<OAUTH_LOGIN_Psswd>
values in the script below before Execution.
Passwords must be enclosed in single quotes.
*/

USE master;
CREATE LOGIN jamauser with password = 'password';
CREATE LOGIN samluser with password = 'password';
CREATE LOGIN oauthuser with password = 'password';
```

```
GO

USE master;
CREATE DATABASE jama;
GO
ALTER DATABASE jama SET READ_COMMITTED_SNAPSHOT ON WITH ROLLBACK IMME
DIATE
GO

USE jama;
EXEC ('CREATE SCHEMA oauth');
EXEC ('CREATE SCHEMA saml');
GO

USE jama;
CREATE USER jamauser for LOGIN jamauser;
CREATE USER samluser for LOGIN samluser with DEFAULT_SCHEMA=saml;
CREATE USER oauthuser for LOGIN oauthuser with DEFAULT_SCHEMA=oauth;
GO

EXEC sp_addrolemember N'db_owner', jamauser;
EXEC sp_addrolemember N'db_owner', samluser;
EXEC sp_addrolemember N'db_owner', oauthuser;
GO
```

b. (KOTS only) To enable horizontal scaling in KOTS, run these commands:

```
USE master;
CREATE LOGIN quartzuser with password = 'password';
GO

USE jama;
EXEC ('CREATE SCHEMA quartz');
GO

USE jama;
CREATE USER quartzuser for LOGIN quartzuser with
DEFAULT_SCHEMA=quartz;
GO

EXEC sp_addrolemember N'db_owner', quartzuser;
GO
```

5. Confirm that these actions were successful:
   1. **Script completed** — Check the Query Execution results for errors.
   2. **Users created** — Run the following SQL script in a new query window.

      ```
      USE jama
      SELECT * from master.sys.sql_logins
      SELECT * from Jama.sys.sysusers
      ```

      The results include **jamauser**, **samluser**, and **oauthuser** in the "Name" column of the result panes.
   3. **Users granted the DB_owner role** — Run the following SQL script in a new query window.

      ```
      USE jama
      SELECT DP1.name AS DatabaseRoleName,
      isnull (DP2.name, 'No members') AS DatabaseUserName
      ```

```
FROM sys.database_role_members AS DRM
RIGHT OUTER JOIN sys.database_principals AS DP1
ON DRM.role_principal_id = DP1.principal_id
LEFT OUTER JOIN sys.database_principals AS DP2
ON DRM.member_principal_id = DP2.principal_id
WHERE DP1.type = 'R'
ORDER BY DP1.name;
```

The results show that db_owner role is granted to **jamauser**, **samluser**, and **oauthuser**.

6. Keep the database from locking users' accounts while they are logging in or working in Jama Connect (you must have db_owner permissions):

   ```
   ALTER DATABASE jama SET READ_COMMITTED_SNAPSHOT ON WITH
   ROLLBACK IMMEDIATE;
   ```
7. Make sure the flag was successfully enabled:

   ```
   SELECT is_read_committed_snapshot_on FROM sys.databases WHERE
   name='jama';
   ```

   If the returned value is 1, the flag is on.

Configure custom memory settings for Elasticsearch

To prepare for installing Jama Connect, you must first update the system that hosts the application. The update consists of configuring memory settings for Elasticsearch.

> **IMPORTANT**
> The memory settings must be configured on each server in the Kubernetes cluster for Elasticsearch to run on these servers. If you use the remote Elasticsearch setting, the memory settings can be applied only to servers that are dedicated to Elasticsearch.

1. Open the /etc/sysctl.conf file, add the following line to the file, then save the file.

   ```
   vm.max_map_count=262144
   ```
2. Reload the sysctl.conf file:

   ```
   sysctl -p
   ```
3. To confirm, type this command:

   ```
   sudo sysctl -a | grep max_map_count
   ```

   The system responds with:

   ```
   vm.max_map_count=262144
   ```

Installing Jama Connect (traditional installation)

A traditional installation consists of installing the Replicated Admin Console, Docker, and Jama Connect.

Follow the instructions for your environment:

- Internet
- Airgap

Installing the software with traditional Replicated (internet)

If your organization is internet-enabled, follow these instructions to download, install, and configure the software you need for your Jama Connect instance. The software includes Admin Console (Replicated), Docker, and Jama Connect.

Jama Software sends a Welcome email that includes your Jama Connect license (.rli) file.

The installation process consists of these tasks:

Prepare	• Prepare application server [409] and database server [411] • Configure memory settings for Elasticsearch [416] • Install database [409] • Download Replicated and Docker [417]
Install	• Install Admin Console (Replicated) [417] • Install Jama Connect [419]
Set up	• Add organization admin account [505] • Configure email/collaboration settings [507] • Configure authentication [479] • Configure backups [527]

Downloading traditional Replicated and Docker (internet)

You can download the Admin Console (Replicated) and Docker files to your desktop system, then move and extract them to the /data/install directory on your application server.

Software	Steps
Replicated	Go to: https://community.jamasoftware.com/blogs/kristina-king/2016/11/11/standard-channel-on-premises-release-notes
	Click **Notes for Administrators** for your version of Jama Connect to get the correct cURL command to install Replicated.
Docker	Go to: https://help.replicated.com/community/t/installing-docker-enterprise-edition-ee/58
	If you are using Docker Enterprise Edition, you must: • Follow the installation instructions in the *Mirantis Container Runtime (MCR) Deployment Guide*: https://docs.mirantis.com/mcr/20.10/install.html • Use a supported version of Docker: 1.10.3 – 19.03.8-ce

Install the traditional Admin Console (internet)

The Admin Console (Replicated) is the interface where you can configure, update, and manage Jama Connect. To install the latest supported version of Replicated and Docker, you use the Replicated installation script.

Important considerations

- During installation, the application server must have access to the internet, including the Replicated listed domains.
- The Admin Console isn't compatible with Internet Explorer.
- If you receive a warning that Docker is using the devicemapper storage driver, cancel the installation and configure Docker to use the overlay2 storage driver.
- The Jama Connect Release Notes might include the unique cURL command for your version of Jama Connect.
- The Community supported software specifies which versions were used during regression testing of the version of Jama Connect you want to install.

To install the Admin Console:

1. Connect to the command shell of the application server using SSH.
2. As root user or a user with sudo bash privileges, download and install the Admin Console using one of these methods:

- cURL command from the Release Notes
- cUrl command for a specific version:

```
curl -sSL "https://get.jamasoftware.com/docker?
replicated_tag=<REPLICATED_VERSION>"| sudo bash -s no-auto
```

Replace **<REPLICATED_VERSION>** with the version number recommended in the Release Notes.

> **NOTE**
> Include the **no-auto** option so that the installation don't time out for the prompts (default setting is 20 seconds).
>
> If the cURL command displays an error message, the Admin Console must be installed manually.

3. Respond to each installation prompt, then you can leave the installation unattended.

> **IMPORTANT**
> If you didn’t include the no-auto option in the cURL command, the prompts are displayed for 20 seconds. If you skip the step to choose an IP address, the URL that’s displayed after this step isn’t valid. You must run the cURL command again and select an IP address.

```
Please choose one of the following network interfaces:

[0] eth0 10.0.2.15
[1] eth1 172.28.128.3
[2] docker0 172.17.0.1
Enter desired number (0-2):
```

- Enter the number (0–2) of the network used to access Jama Connect (your DNS entry also routes to this network).

```
Does this machine require a proxy to access the Internet?
(y/N)
```

- If using a proxy, enter **Y** and input the proxy information. When prompted, enter Y for the installer to configure the proxy.
- When prompted for a service IP address, leave it blank and press **Enter**.

When the installation is complete, you see this message with the URL you need to access the Admin Console:

```
==> default: To continue the installation,
visit the following URL in your browser:
https://<your_ip_address>:8800
```

4. Copy the URL to use when you configure Replicated settings.
5. In the /data directory, create a custom folder for Replicated snapshots.
6. Change the ownership of the folder to the Replicated user:

```
mkdir -p /data/replicated/{snapshots,statsd,support-bundle}
chown -R replicated /data/replicated
```

After changing ownership to Replicated with the command, the permissions look something like this:

```
# ll /data/replicated/
total 20
drwxr-xr-x 5 replicated root 4096 Oct 21 21:27 ./
drwxrwxrwx 10 root root 4096 Nov 7 18:48 ../
drwxr-xr-x 5 replicated root 4096 Oct 21 21:29 snapshots/
drwxr-xr-x 6 replicated docker 4096 Oct 21 22:11 statsd/
drwxr-xr-x 2 replicated root 4096 Oct 21 21:27 support-bundle/
```

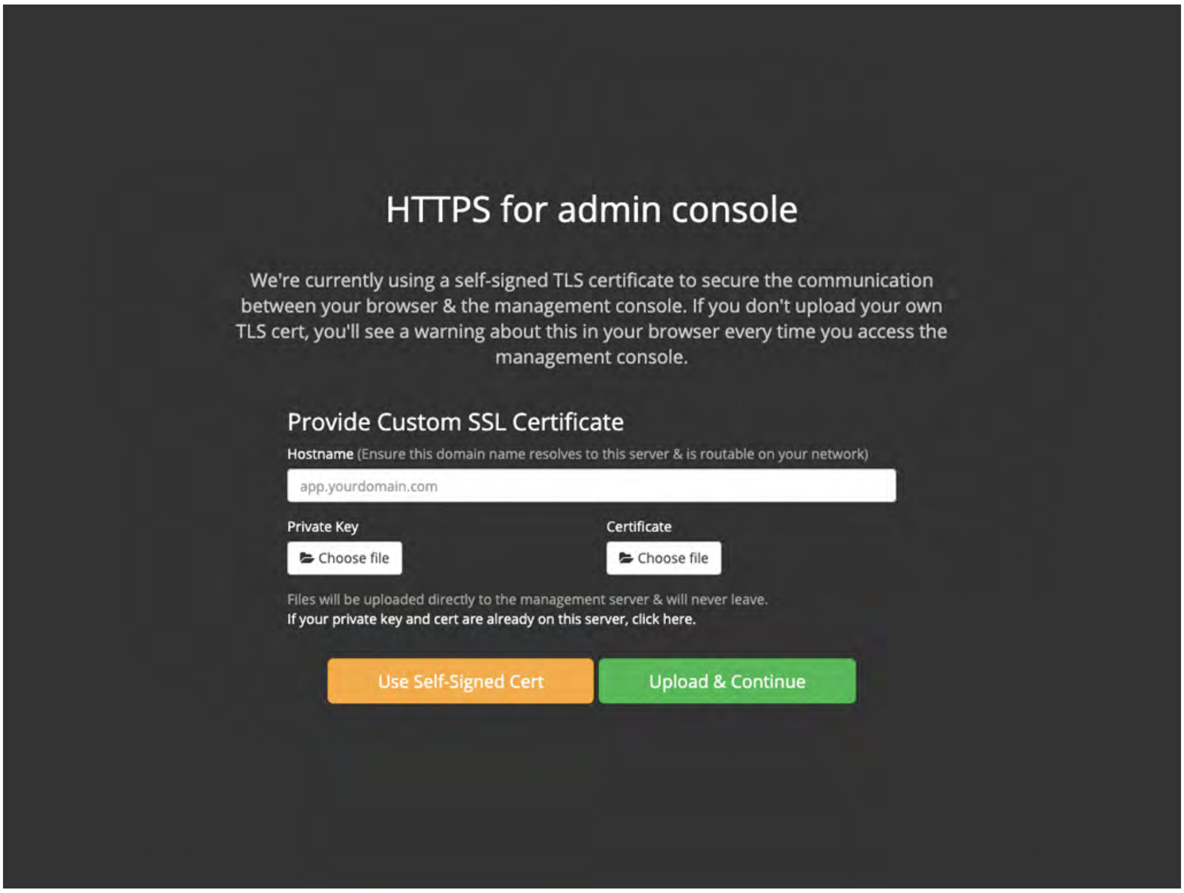
Later you can configure the Admin Console to store snapshots in the Replicated snapshots folder.

Install Jama Connect (internet)

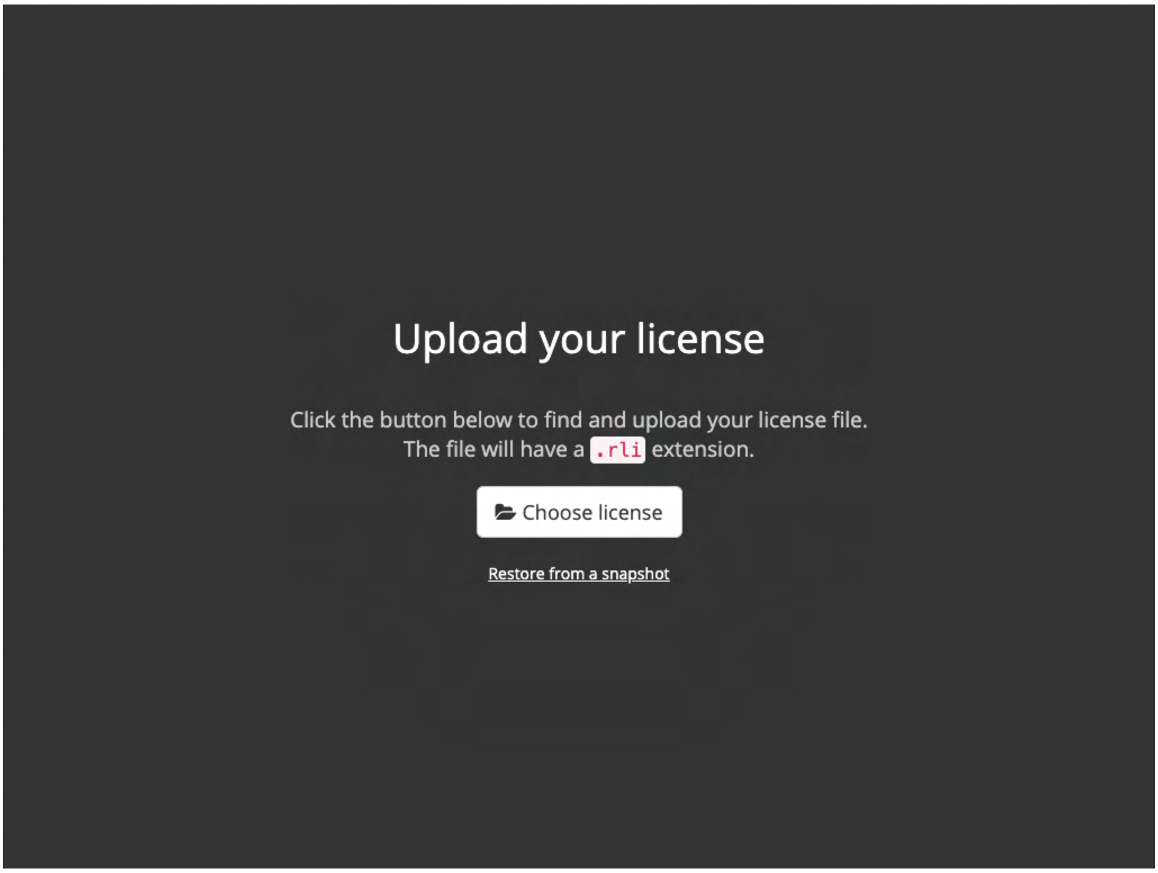
An installation wizard walks you through the process of uploading the license file, installing Jama Connect, and configuring the Admin Console. To start the wizard, you use the URL that was generated when you installed the Admin Console.

The license file is included in the Welcome email you received from Jama Software.

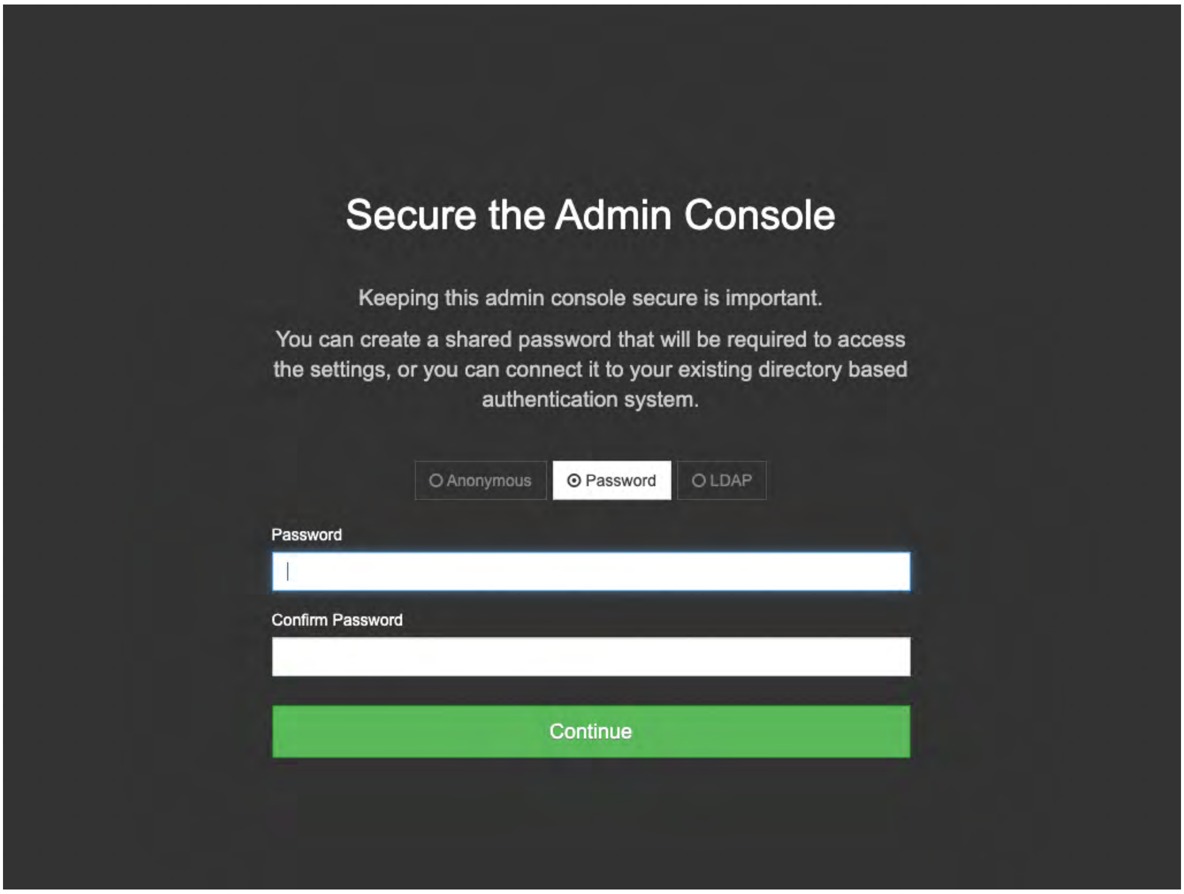
1. Open the Welcome email and download the attached license file to your local system.
2. In a supported browser, enter the URL for the Admin Console.



3. Enter your hostname.
4. Select the appropriate option:
   - **Have key/certificate** — Select **Choose file** under Private key and Certificate, navigate to the files, then click **Upload & Continue**.
   - **No key/certificate** — Click **Self-Signed Cert**.



5. Click **Choose license** to upload your license file.



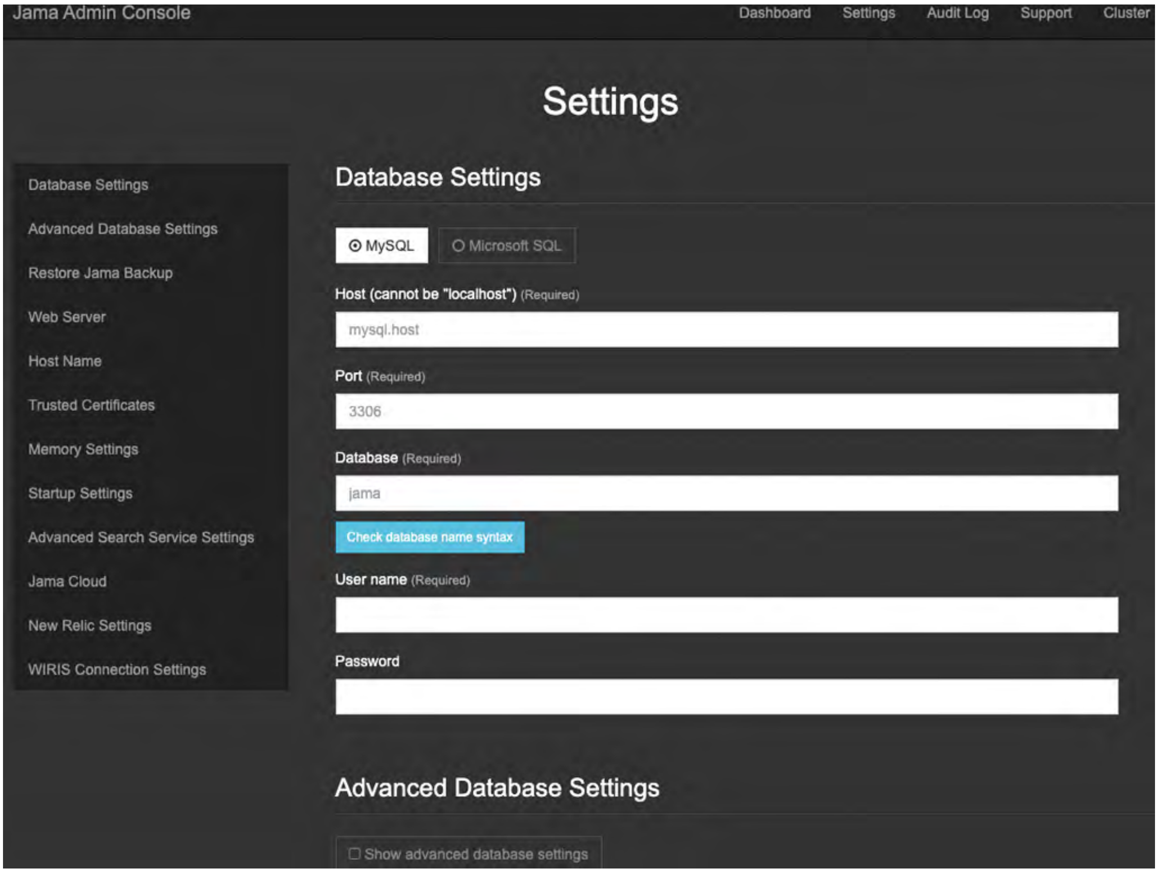
6. Enter and confirm a password for access to the Admin Console, then click **Continue**.

The system performs the preflight checks.

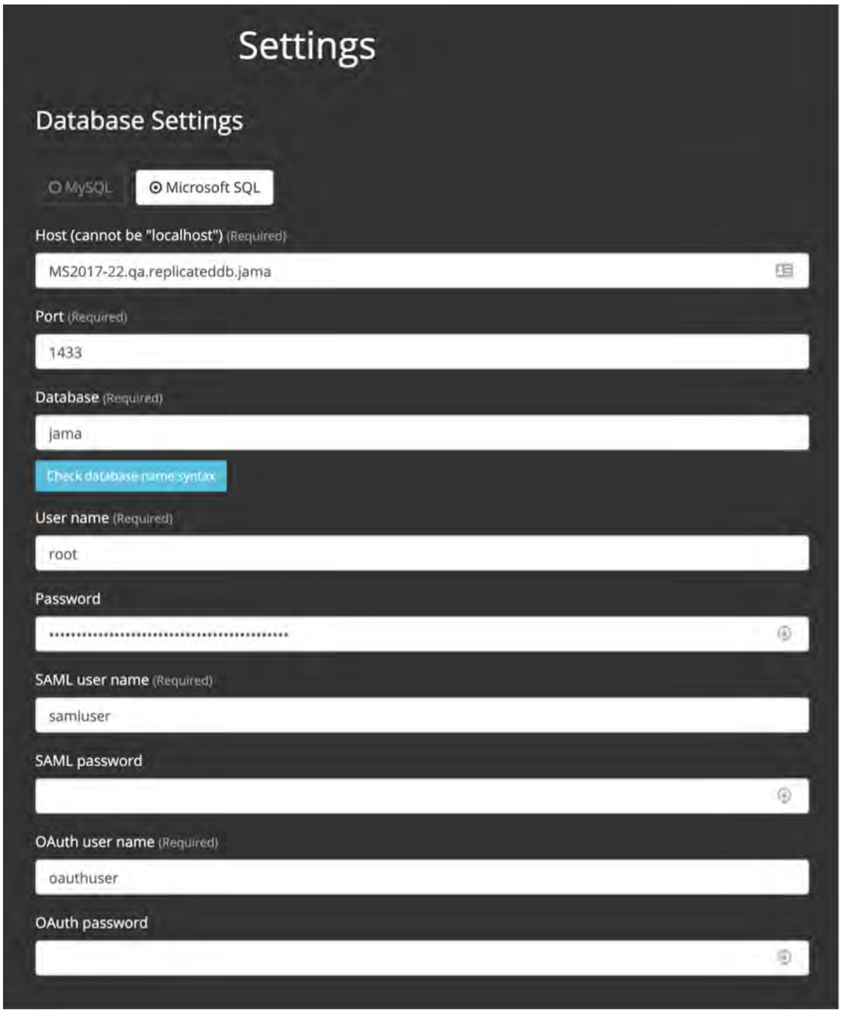
7. When the preflight checks are complete, click **Continue** to open the Settings page for the Admin Console.
8. Configure the settings for each group, as needed. Scroll down to see each group of settings.

   Database Settings — Use the information from Preparing your database server [411].

   - **MySQL**

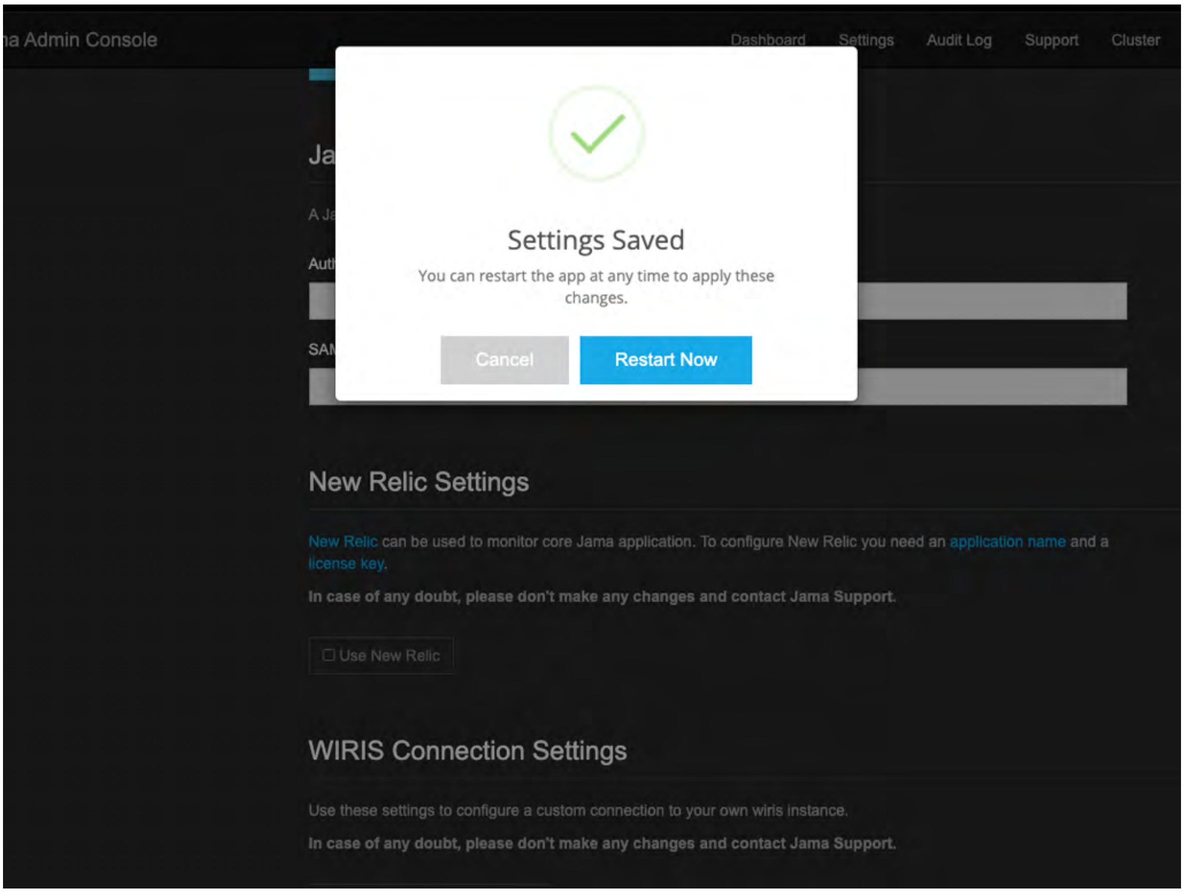


   - **Microsoft SQL Server**

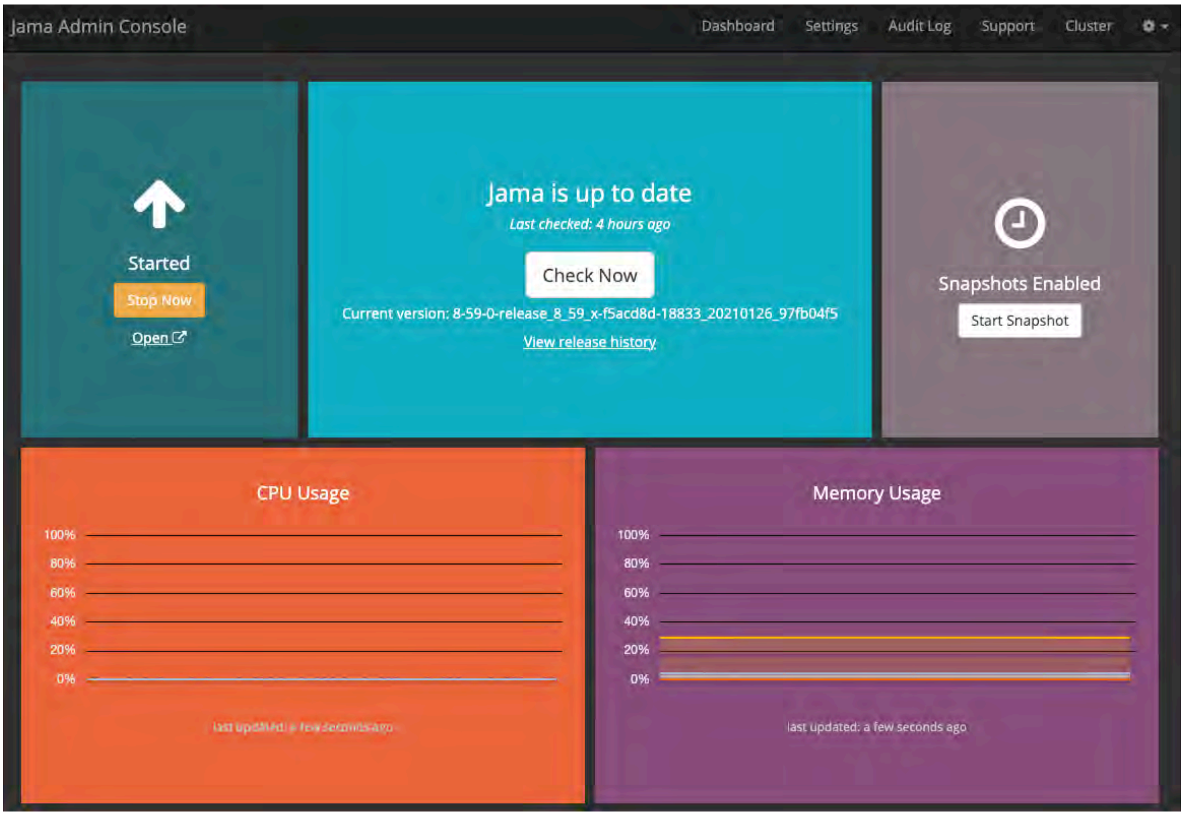


TLS Key & Cert — (Optional) If you have the key and certificate, click **Choose file** to select them.

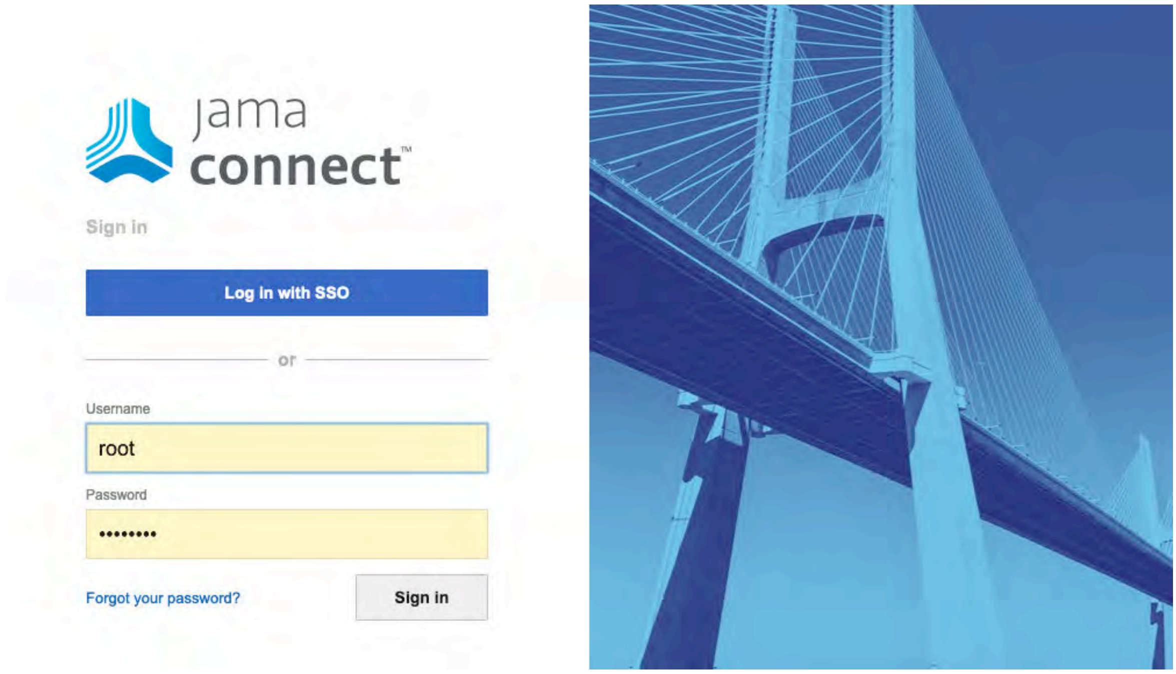
9. Scroll to the bottom of the page and click **Save**. You see a confirmation that your settings were saved.



10. Select **Restart now**.
    The system restarts and opens the Admin Console.



11. Log in to Jama Connect as root [503].



Your installation of Jama Connect is complete.

Installing the software with traditional Replicated (airgap)

If your organization needs the extra security of an airgap installation, Jama Software provides access to an airgap-safe portal.

Jama Software sends a Welcome email that includes:

- Special URL to the airgap-safe portal
- Password
- Your Jama Connect license (.rli) file

You must also download the software for Admin Console (Replicated) and Docker.

Once you have access to the airgap-safe portal, you can download the Jama Connect images, move them to your server, and run the installation script to install the software.

An airgap installation consists of these tasks:

Prepare	• Prepare application server [409] and database server [411] • Install database [409] • Download Replicated and Docker [425] • Configure memory settings for Elasticsearch [416] • Retrieve Jama Connect images [424]
Install	• Install Admin Console (Replicated) [426] • Install Jama Connect [426]
Set up	• Add organization admin account [505] • Configure email/collaboration settings [509] • Configure authentication [479] • Configure backups [527]

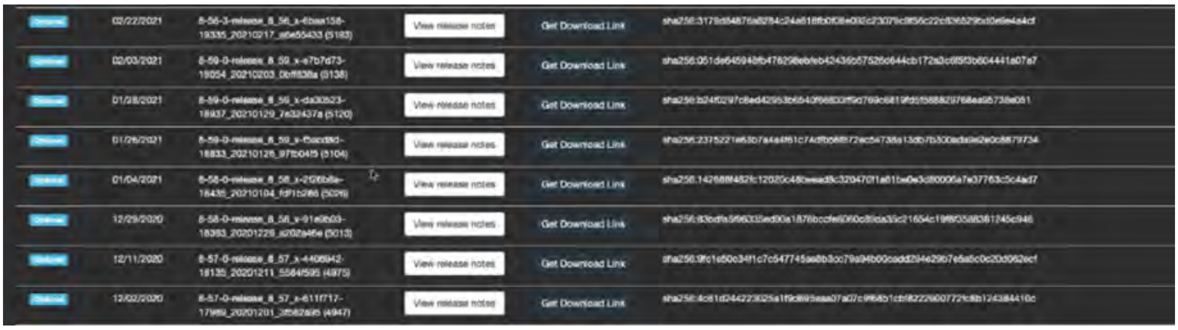
Retrieve Jama Connect images (airgap installation)

Before you can install the software in an airgap environment, the Jama Connect images must be downloaded to a desktop system, then transferred to the /data/install directory on your airgap application server.

TIP

Because the download might take a long time, we recommend doing this on a different day than when you install the software.

1. Open the Welcome email from Jama Connect to access the airgap-safe portal URL and password.
2. In a supported browser, enter the URL and the password.
   You see a list of available releases since your license was issued, along with a download link and a checksum for each.
3. Find the version you want to install and select **Get Download Link** to generate a new temporary download link.



4. Click **Download** to download the files directly to your desktop system.

5. Move the downloaded airgap files to this directory on your application server:

```
/data/install
```

Downloading Replicated and Docker (airgap)

You can download the Admin Console (Replicated) and Docker files to your desktop system, then move and extract them to the /data/install directory on your application server.

Software	Steps
Replicated	Go to: https://s3.amazonaws.com/replicated-airgap-work/stable/replicated-2.48.0%2B2.48.0%2B2.48.0.tar.gz
Docker	Go to: https://help.replicated.com/community/t/installing-docker-in-airgapped-environments/81
	If you are using Docker Enterprise Edition, you must: • Follow the installation instructions in the *Mirantis Container Runtime (MCR) Deployment Guide*: https://docs.mirantis.com/mcr/20.10/install.html • Use a supported version of Docker: 1.10.3 – 19.03.8-ce

Install the Admin Console and Docker (airgap)

Once you have retrieved the Jama Connect images [424] and transferred them to the data/install directory of your airgap application server, install the Admin Console (Replicated) and Docker in the same directory.

1. Make sure the Admin Console (Replicated) and Docker files have been transferred and extracted to the /data/install directory on your application server.
2. At the server's command line, enter this command:

   ```
   tar -xzvf replicated.tar.gz
   ```

   You see this output:

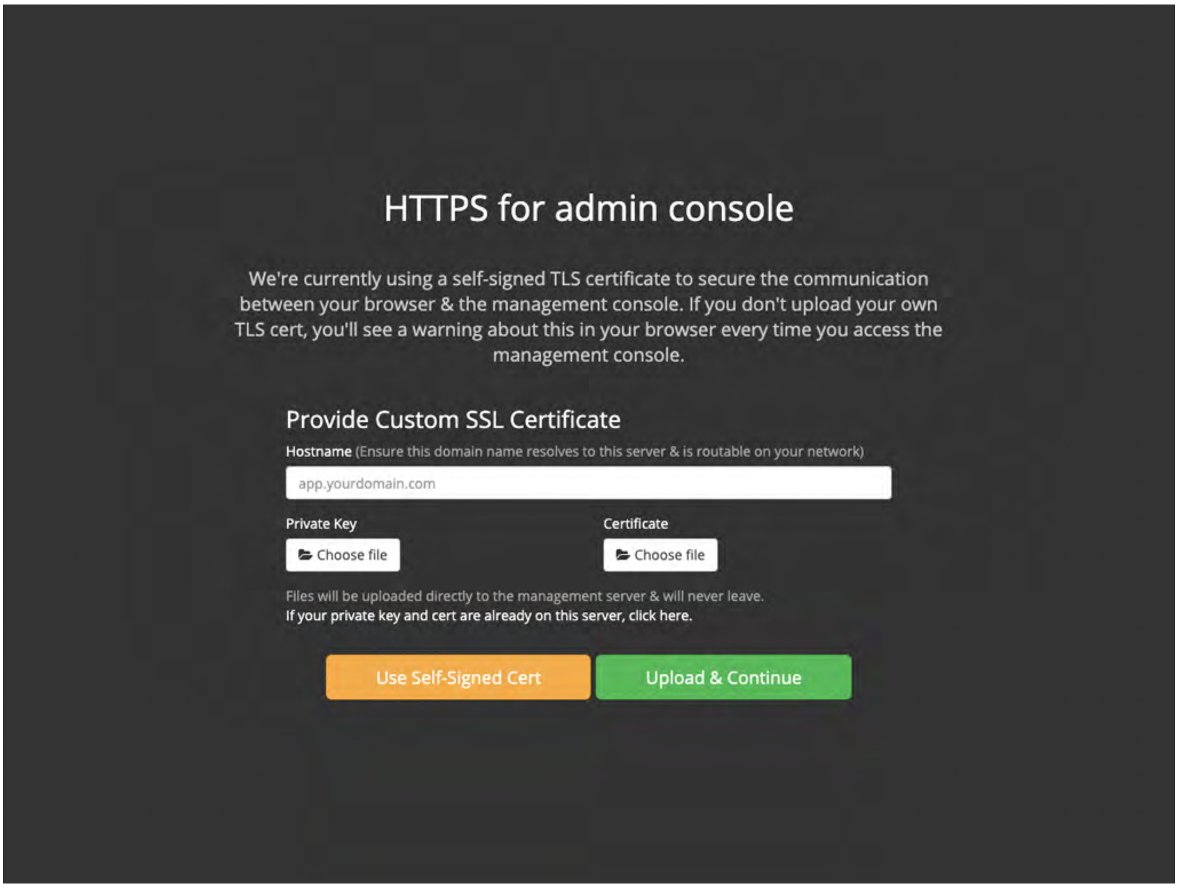
   ```
   install.sh
   operator_install.sh
   replicated-operator.tar
   replicated-ui.tar
   replicated.tar
   ```
3. In the same directory, execute the application installation script, which identifies the airgap installation file.

   ```
   cat ./install.sh | sudo bash -s airgap
   ```
4. Complete these questions as the script runs:
   - **Network interface** — Enter the number (**0–2**) of the network used to access Jama Connect.
   - **Proxy (Y/N)** — Enter **N** (not needed for an airgap system).
5. Copy the URL to use when you install Jama Connect (airgap).

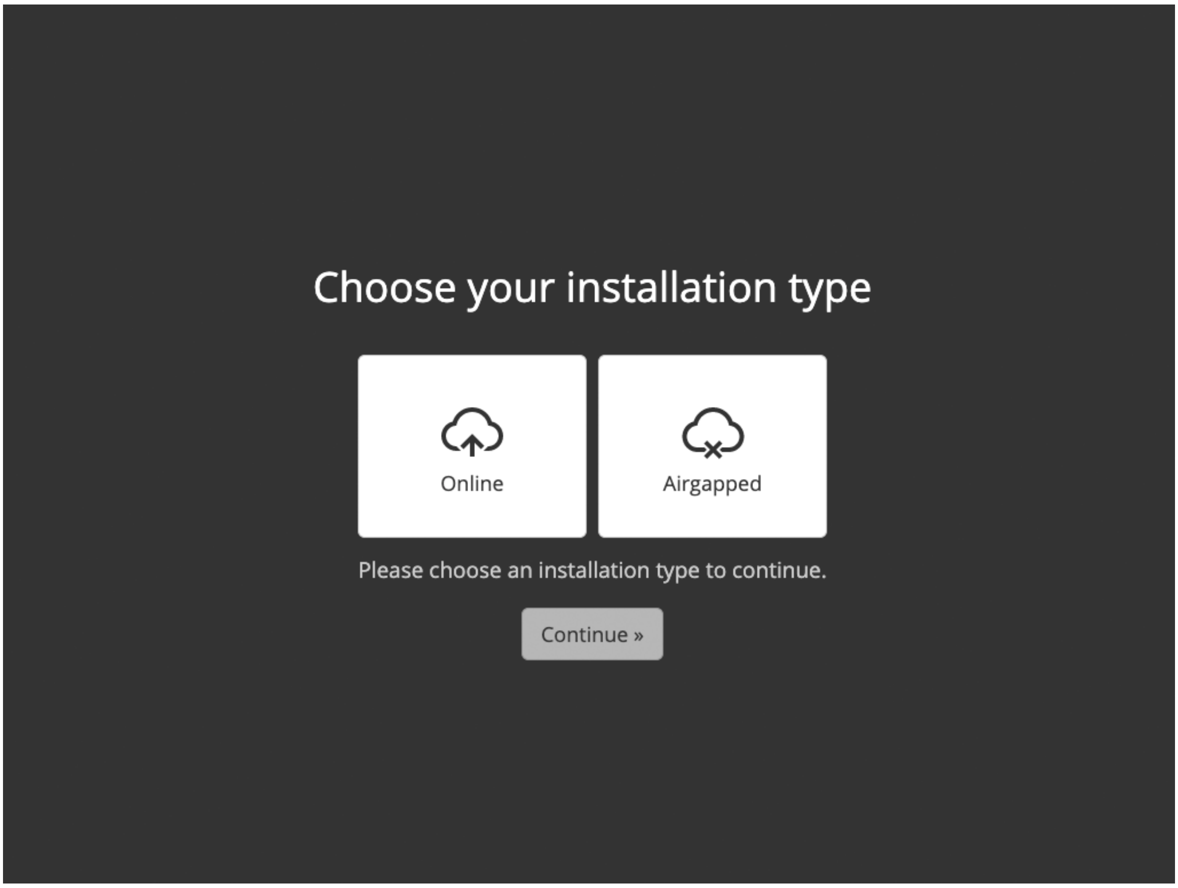
Install Jama Connect (airgap)

An installation wizard walks you through the process of uploading the license file, installing Jama Connect, and configuring the Admin Console. To start the wizard, you use the URL that was generated when you installed the Admin Console [426].

1. Open the Welcome email from Jama Connect and save the license file to the /data/install directory on your application server.
2. In a supported browser, enter the URL for the Admin Console.



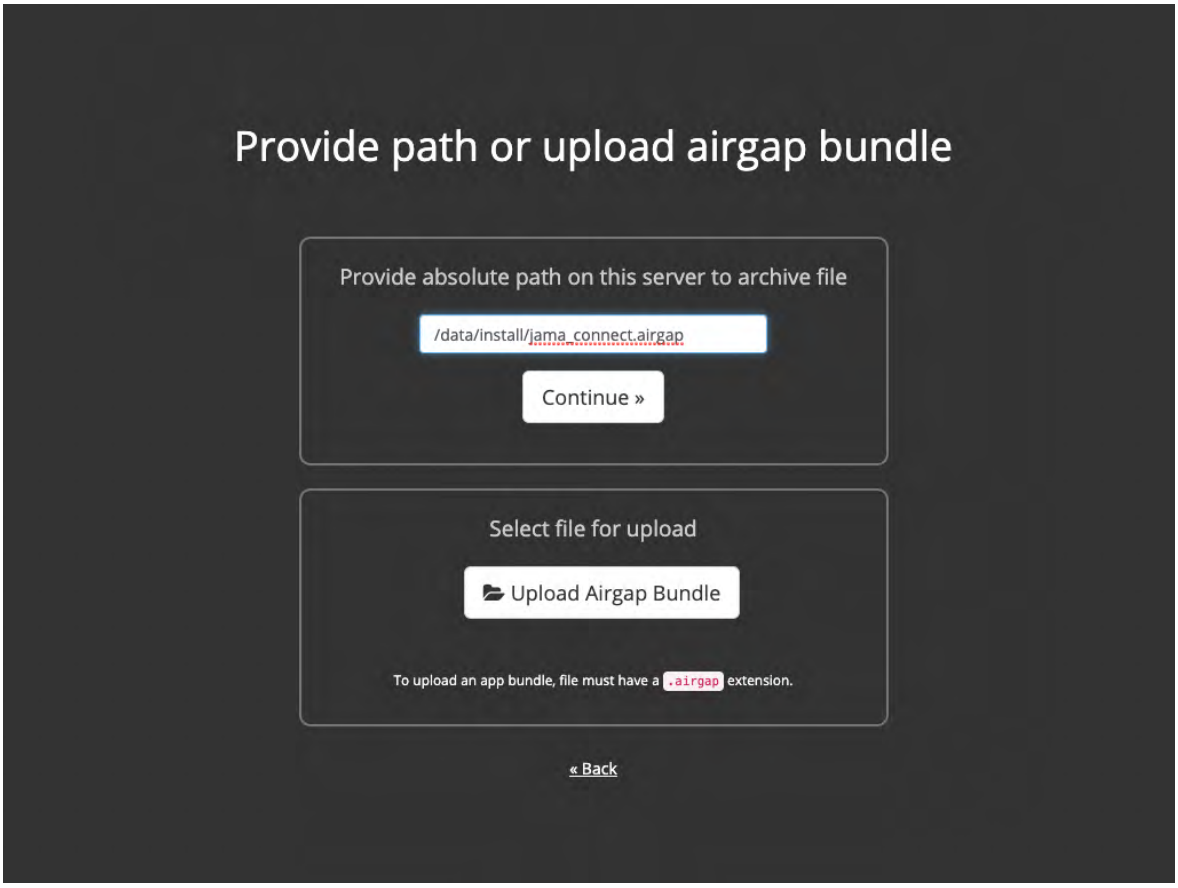
3. Enter your hostname.
4. Select the appropriate option:
   - **Have key/certificate** — Select **Choose file** under Private key and Certificate, navigate to the files, then click **Upload & Continue**.
   - **No key/certificate** — Click **Use Self-Signed Cert**.
5. Click **Choose license** to upload your license file.



6. Select **Airgapped** for your installation type, then click **Continue**.

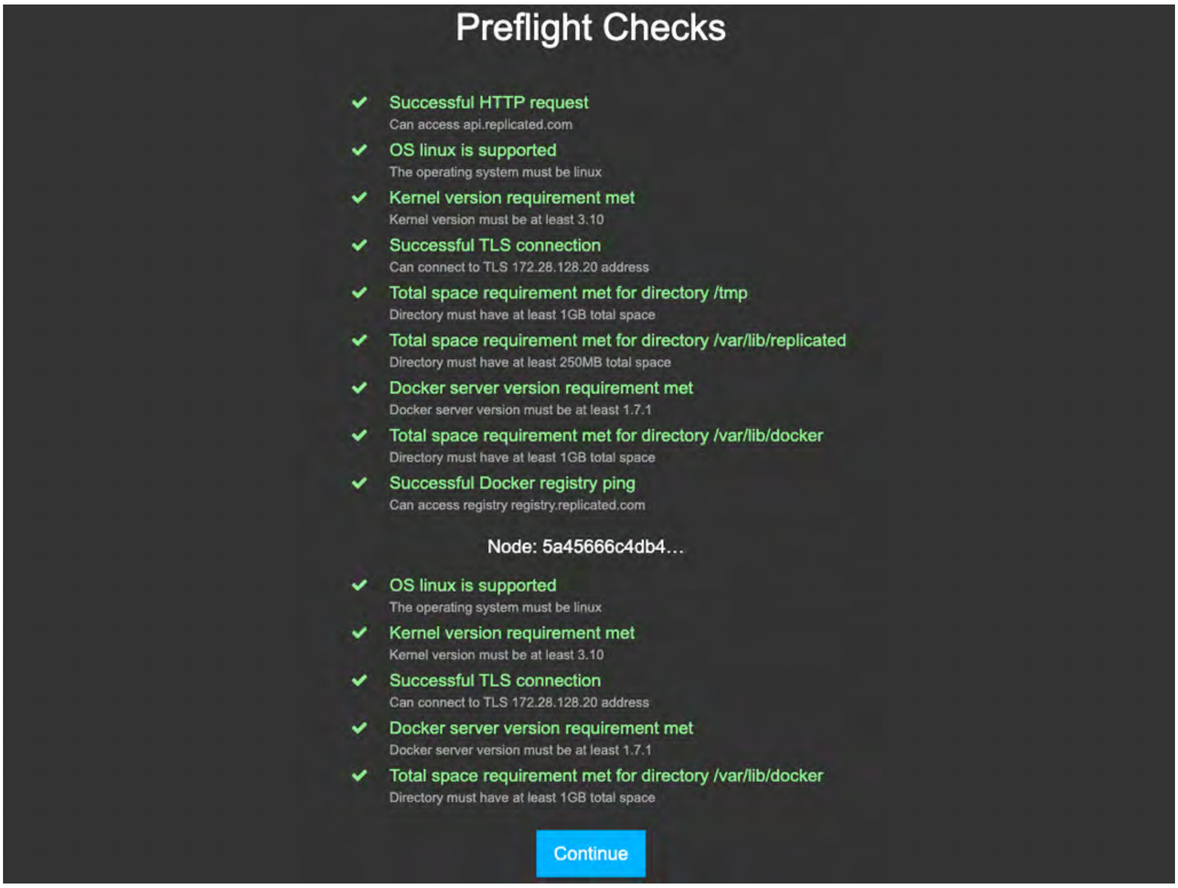
IMPORTANT

If you select **Online** as your installation type, an internet installation begins. The only way to correct this is to uninstall Replicated, reinstall it, and start this task again from the beginning.

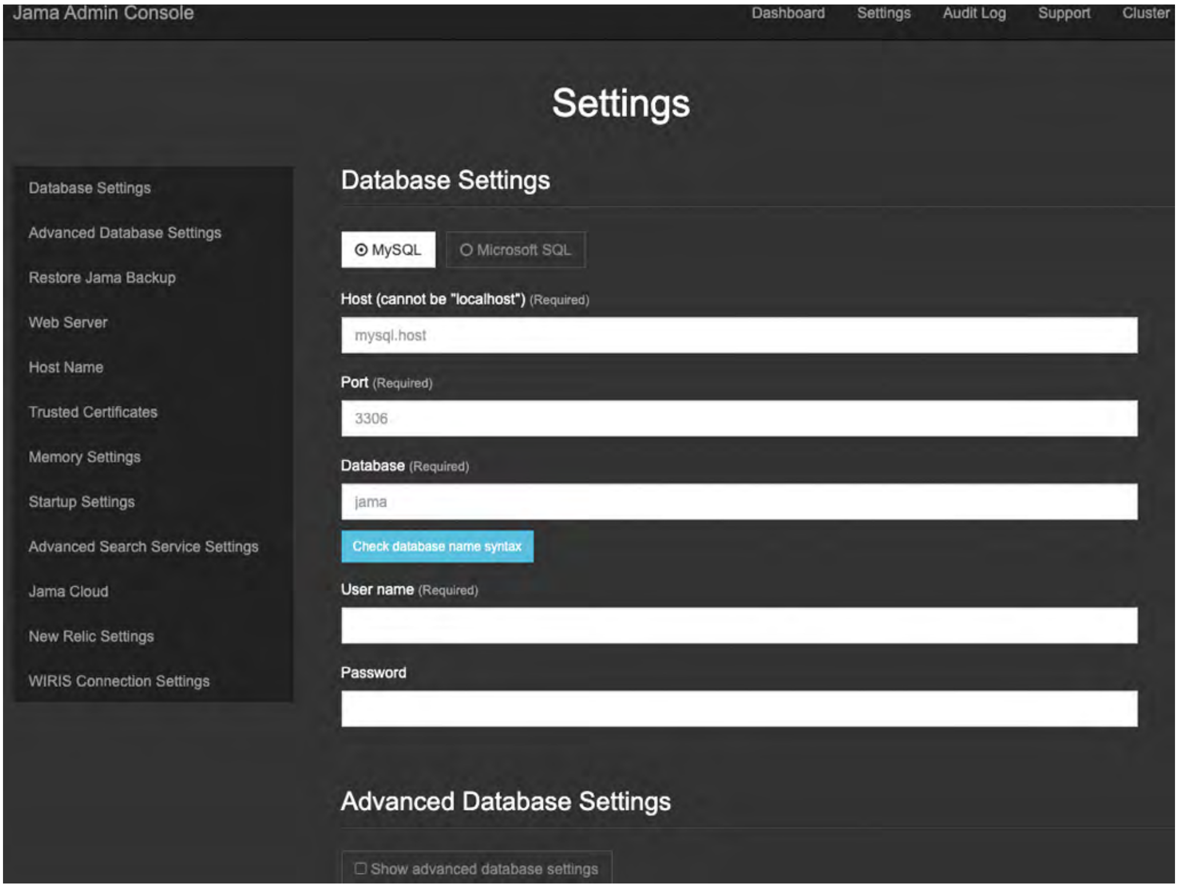


7. Upload your license using one of these methods:
   - Enter **/data/install** (the path of directory where you saved the license file on your application server), then click **Continue**.
   - Click **Upload Airgap Bundle**.

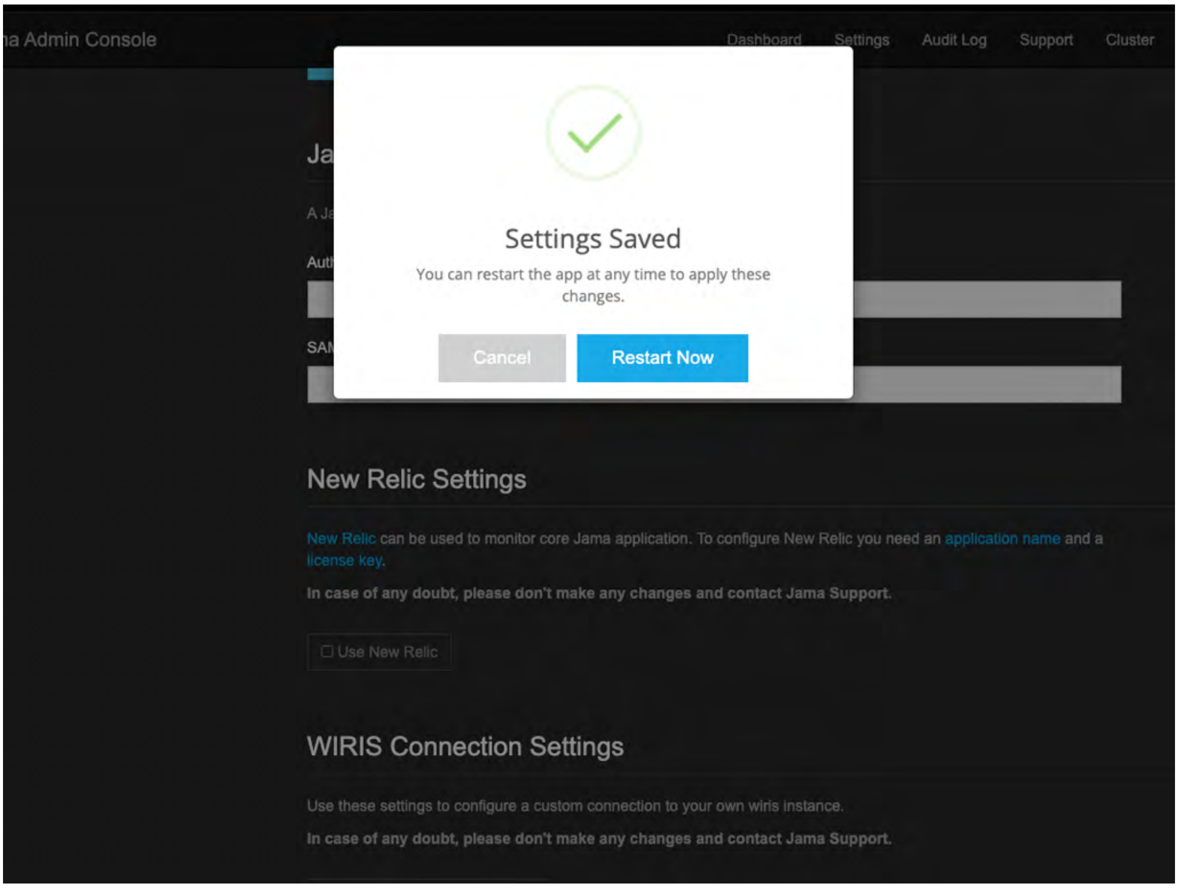
   The system installs the airgap package, then performs the preflight checks.



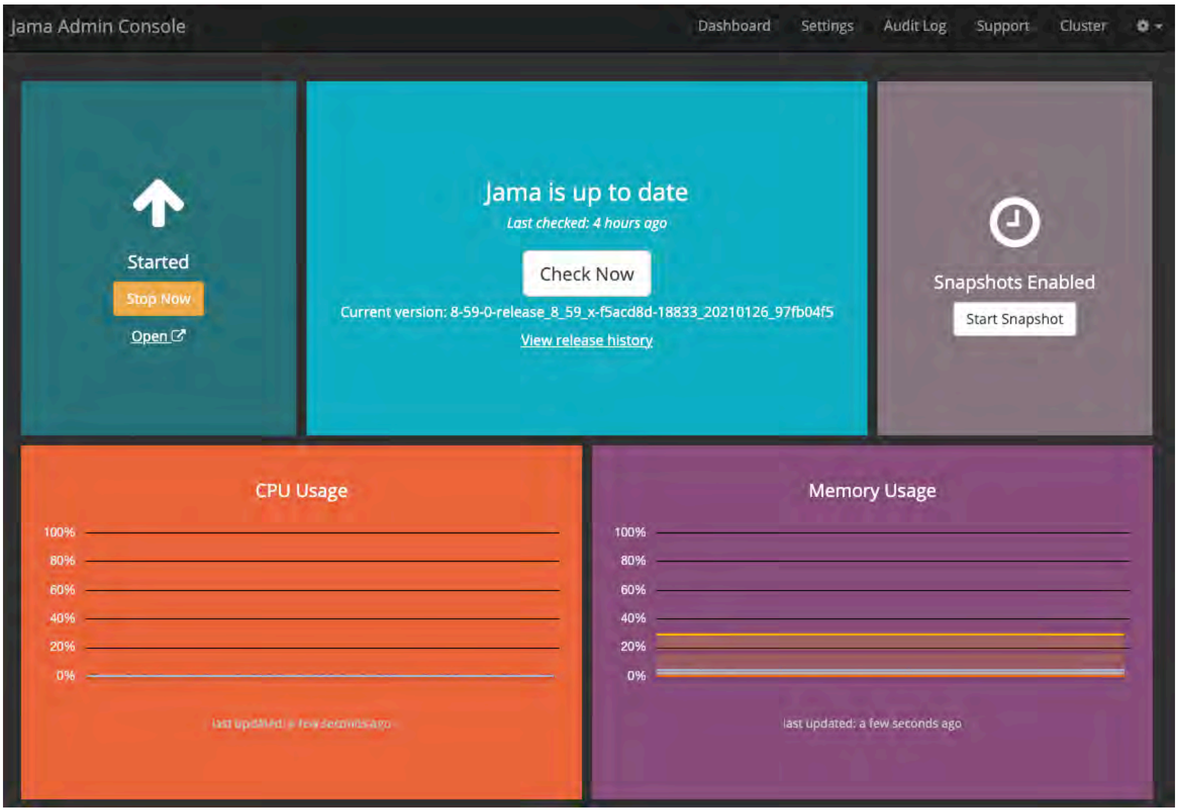
8. When the preflight checks are complete, click **Continue** to open the Settings page for the Admin Console.



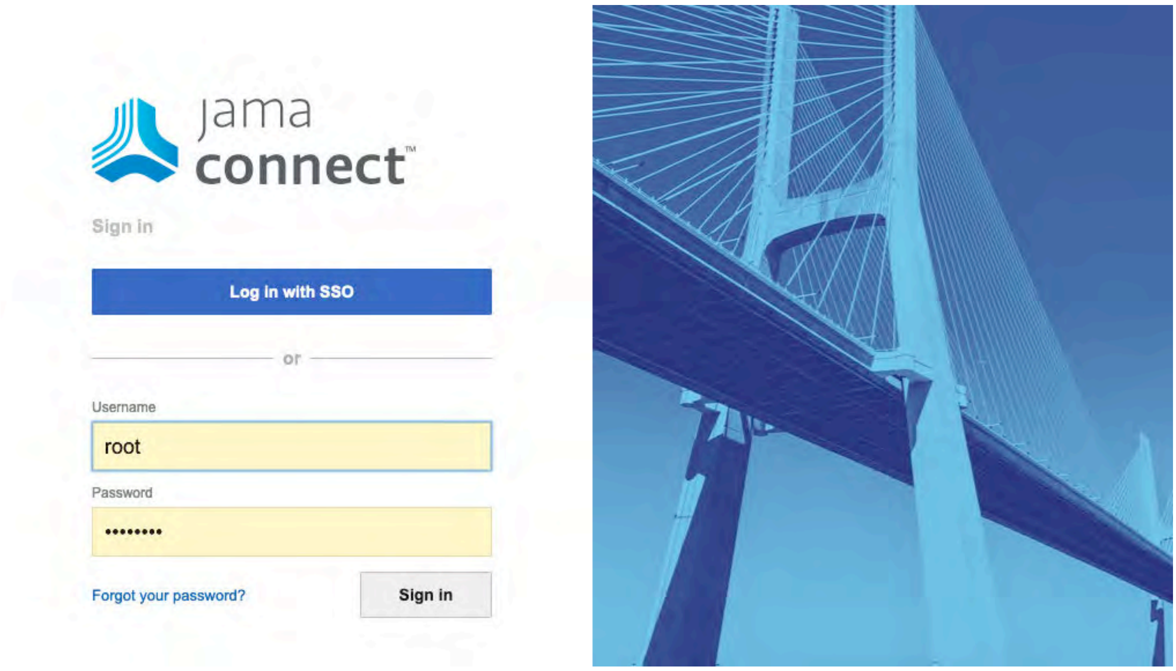
9. Configure the settings for each group, as needed. Scroll down to see each group of settings.
   - **Database Settings** — Use the information from Preparing your database server [411].
   - **TLS Key & Cert** — (Optional) If you have the key and certificate, click **Choose file** to select them.
   - **Airgapped Settings** — (Optional) Enter a new path for airgap update packages and for the license file.
10. Scroll to the bottom of the page and click **Save**. You see a confirmation that your settings were saved.



11. Select **Restart now**. The system restarts and opens the Admin Console.



12. Log in to Jama Connect as root [503].



Your installation of Jama Connect is complete.

Provision your Jama Connect dataset (traditional)

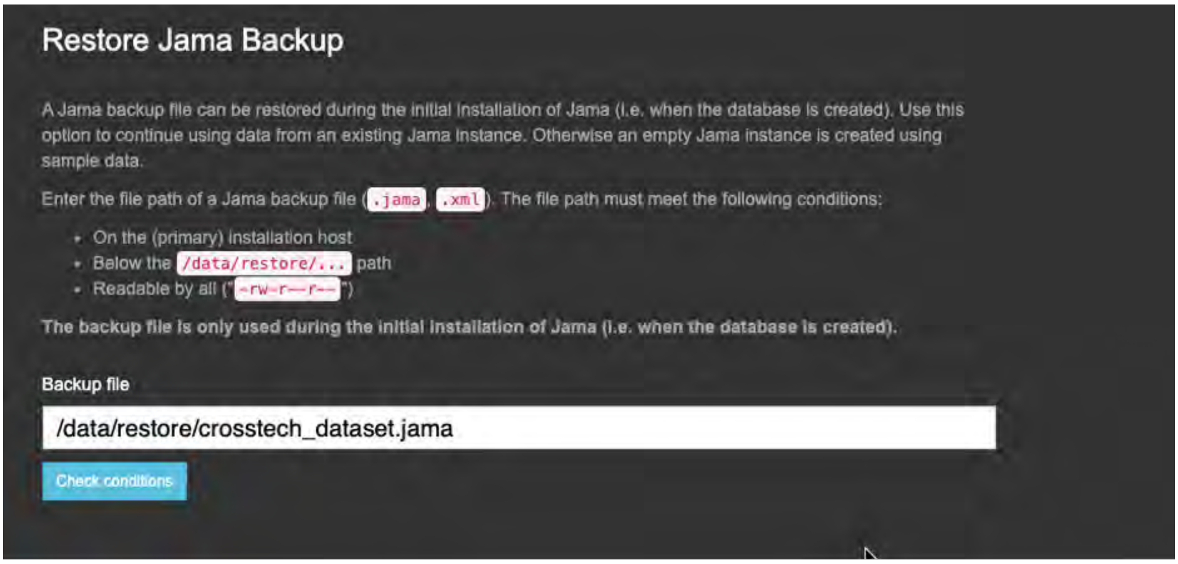
While provisioning an industry dataset is optional, we strongly recommend doing this. It ensures that your organization has a sample framework as you begin to use Jama Connect. If you don't provision an industry dataset in your installation, you don't see sample data or an industry framework when you log in and begin using Jama Connect. Otherwise, your use of Jama Connect isn't impacted.

Your purchase confirmation email includes the .jama license file and a link to the industry dataset. If you don't have this link, contact your Customer Success Manager.

1. Using the link that was included in your purchase confirmation email, download the .jama file for the industry dataset.
2. Move the file to the /data/restore directory on the application server.
3. Configure the permissions for the backup file to be read by all users:

   ```
   chmod a+r /data/restore/<filename>.jama
   ```

   The name of the .jama file changes based on the dataset you moved to your application server.
4. Configure the Admin Console to restore from a backup file: Select **Settings > Restore from backup** enter the path to the backup file, then click **Check conditions**.

   The name of the .jama file changes based on the dataset you moved to your application server.
5. On the application server, navigate to the /data/tenant directory and remove the tenant.properties file (if it exists).
6. Create a new database.
   For Jama Connect 8.62, follow the steps for SQL Server [413] or MySQL [412].
7. From the Admin Console, scroll to the bottom, and select **Save > Restart**.

In the Application section of the dashboard, the status changes to **Ready**. The provisioning of your dataset is complete.

Installing Jama Connect (KOTS)

Replicated Kubernetes Off-The-Shelf (KOTS) is an open-source application for Kubernetes clusters. It streamlines the process to remotely install, manage, and update applications that run on Kubernetes clusters, all from the KOTS Admin Console or command-line interface (CLI).

Use Replicated KOTS to manage Jama Connect, which runs on a Kubernetes cluster, instead of managing the cluster itself.

IMPORTANT

KOTS and Jama Connect must be installed on a new cluster that is created during installation and dedicated to KOTS. During the installation, a cluster is created that is dedicated to KOTS.

Whether your organization is internet-enabled or requires an airgap installation, follow these instructions to download, install, and configure the software you need for your Jama Connect instance.

The software includes:

- KOTS Admin Console (Replicated)
- Kubernetes
- Jama Connect

Jama Software sends a Welcome email that includes your Jama Connect license file.

The installation process consists of these tasks:

Prepare	• Prepare application server [410] and database server [411] • Install database [409] • Configure memory setting for Elasticsearch [416]
Install	• Run command to install KOTS and Jama Connect (internet [434]) or (airgap [437])
Set up	• Add organization admin account [505] • Configure email/collaboration settings [509] • Configure authentication [479] • Configure backups [527] • Configure Federated Authentication for KOTS Admin Console [454]

For more information about KOTS, see https://www.replicated.com/blog/announcing-kots/

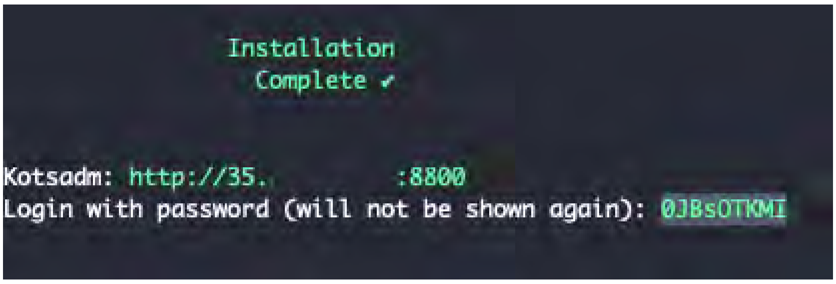
Install KOTS software (internet)

The installation script and the installation wizard guide you through the process of installing the KOTS-required software, Jama Connect, and configuring the KOTS Admin Console.

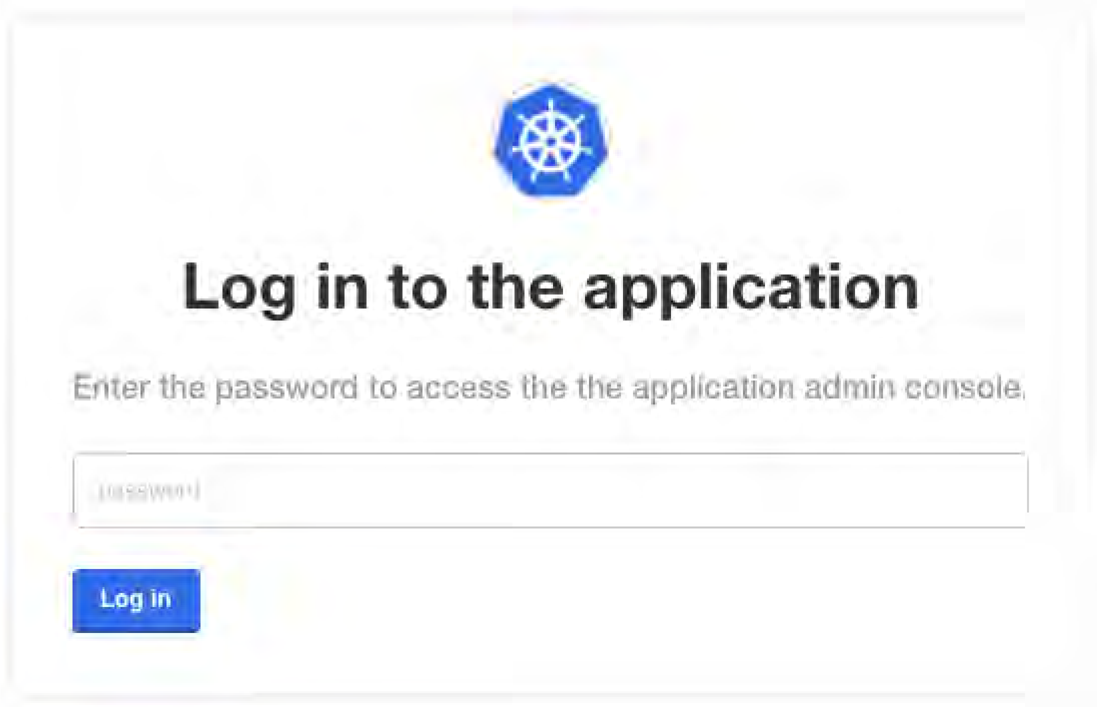
The license file is included in the Welcome email you received from Jama Software.

1. Open the Welcome email from Jama Connect, then save the attached license file on your local system.
2. Run the command on the application server provisioned for Jama Connect:

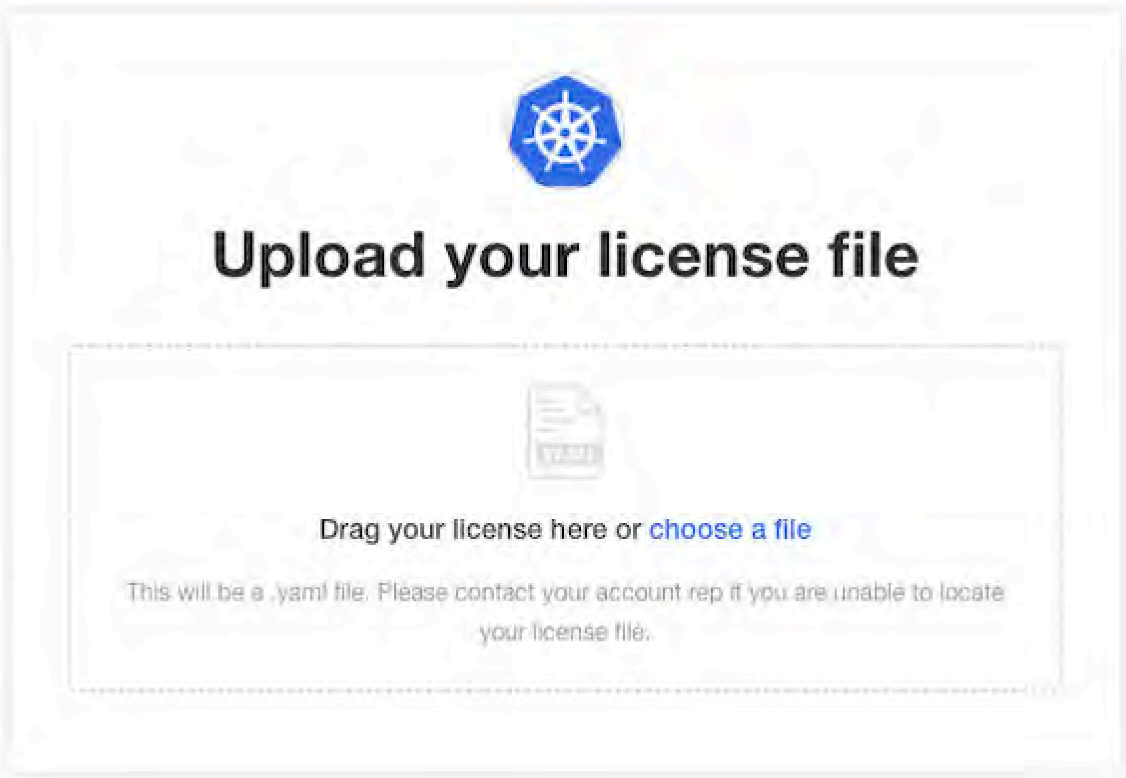
   ```
   curl -sSL https://k8s.kurl.sh/jama-k8s-standardkots | sudo bash
   ```
3. When the command has finished running, save the KOTS admin URL, password, and other configuration options for future reference. This is the only time these credentials appear so make sure you save them.

4. In a supported browser, enter the URL for **Kotsadm**, which was generated when you installed KOTS.
5. Log in to the KOTS Admin Console using the password you just saved.



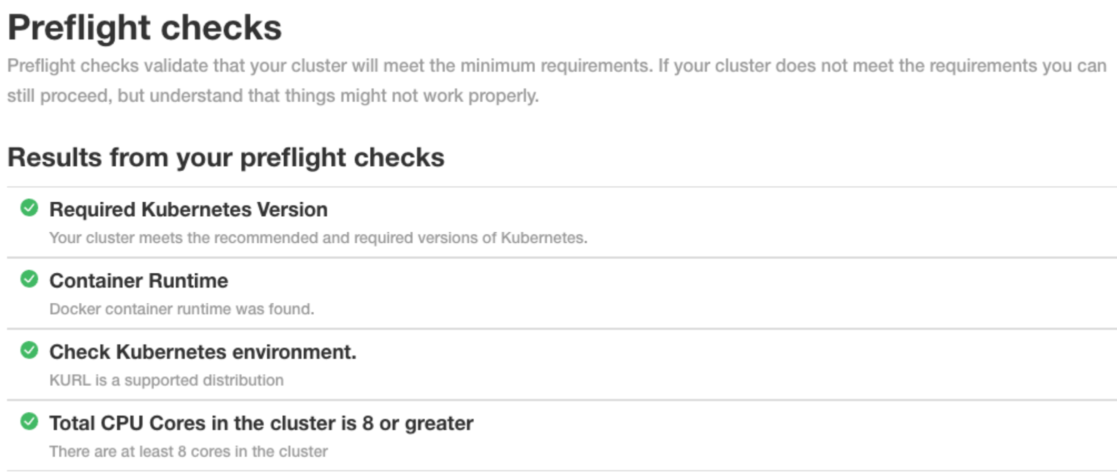
6. Select the appropriate option:
   - **Have key/certificate** — Click **Choose file** under Private key and Certificate, navigate to the files and select them, then click **Upload & Continue**.
   - **No key/certificate** — Select **Self-Signed Cert**.
7. Upload the license file that you saved on your local system.



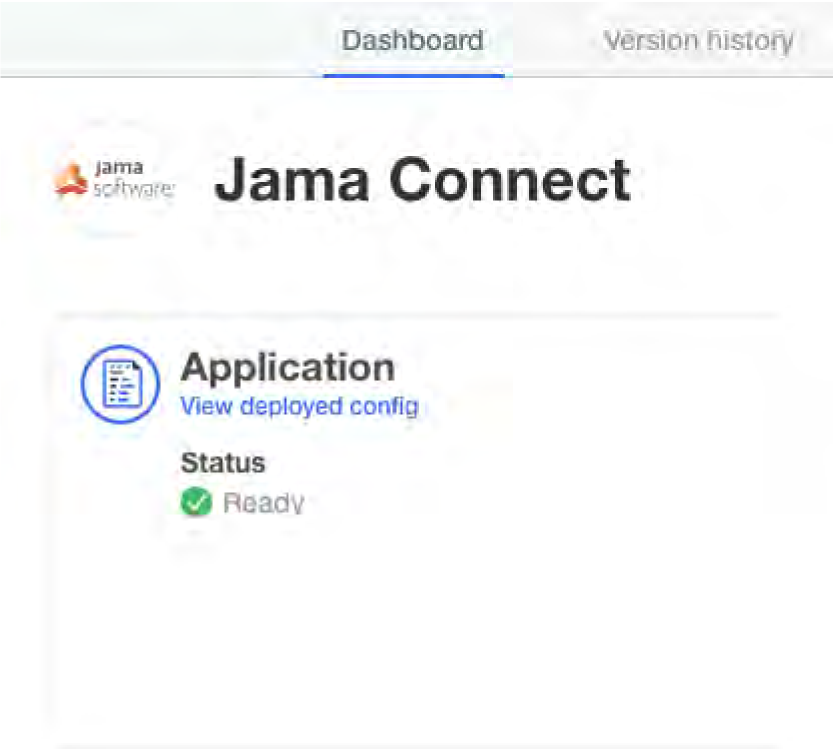
8. Click **download the application from the Internet**.
   The Config tab in the KOTS Admin Console opens, where you can configure Jama Connect.
9. Configure the settings for each group, as needed. Scroll down to see each group of settings.

- **Database Settings** — Select your database type (**MySQL** or **Microsoft SQL Server**), then use the information from Preparing your database server (KOTS installation) [411] to complete the settings.
- **Host Name** — Enter the host name for the cluster.
- **TLS Key Pair Source** — (Optional) If you have a custom key and certificate for the host name, select **Custom TLS Configuration**. In the TLS Configuration section, upload the key and certificate.
- **Assets Size** — Enter the estimated size of the assets that you are planning to store in Jama Connect.
- **Elasticsearch Settings > Volume Size** — Enter the amount of disk space that each Elasticsearch node is allowed to use.

10. (Optional) From the Config tab in the KOTS Admin Console, follow the steps to Configure KOTS to save tenant assets in the Amazon EFS [449].
11. Scroll to the bottom of the page and click **Save config**.
    The system performs the preflight checks.



12. From the Preflight checks screen, click **Continue** to open the KOTS Admin Console.
13. In the Application section of the dashboard, wait until the status changes to **Ready**.



14. Log in to Jama Connect as root [503] using the host name configured for Jama Connect.

Your installation of Jama Connect is complete.

Install KOTS software (airgap)

The installation script and the installation wizard guide you through the process of installing the KOTS-required software and Jama Connect, and configuring the KOTS Admin Console.

The following information is included in the Welcome email you received from Jama Software:

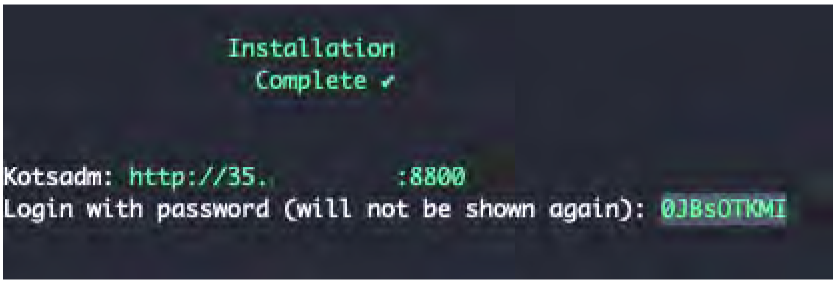
- License file
- URL to the airgap-safe portal for downloading the Jama Connect application file
- A unique password to access the airgap-safe portal

1. Open the Welcome email from Jama Connect and save the attached license file to your local system.
2. From the air-gap safe portal, download the **jama-k8s airgap bundle** for embedded clusters to your local system.
3. Run the following command on the application server provisioned for Jama Connect to download the Kubernetes Installer for your channel and install it.

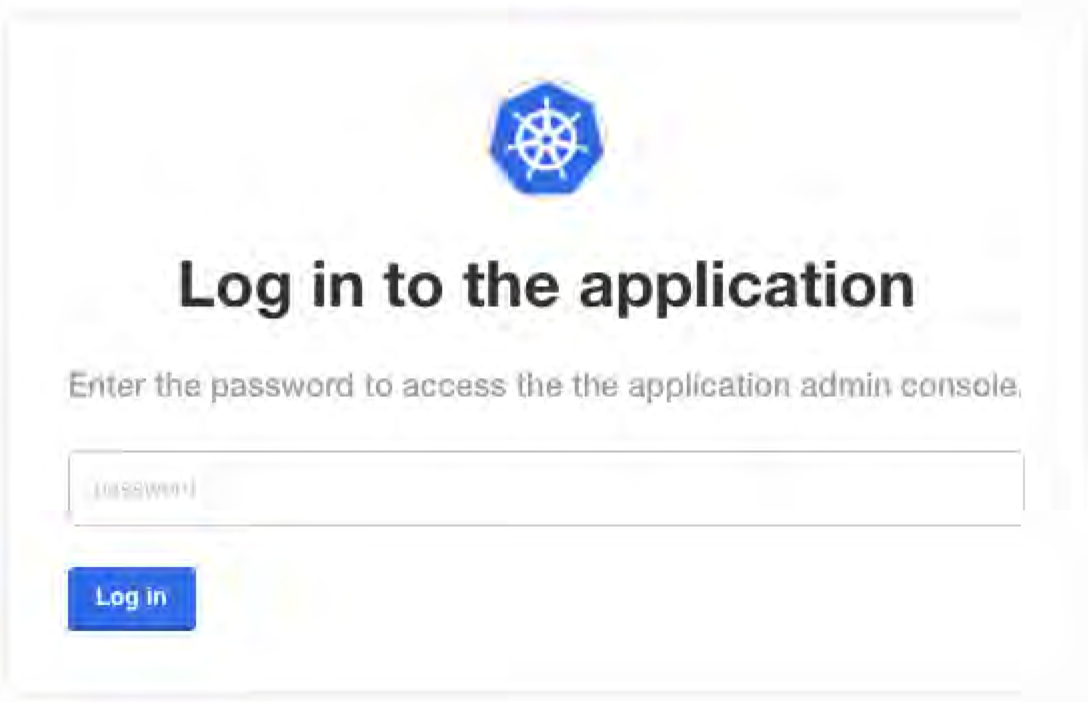
   ```
   export REPLICATED_APP=jama-k8s
   export REPLICATED_CHANNEL=standardkots

   curl -LS https://k8s.kurl.sh/bundle/$REPLICATED_APP-
   $REPLICATED_CHANNEL.tar.gz -o $REPLICATED_APP-$REPLICATED_CHANNEL.tar.gz
   tar -zxvf $REPLICATED_APP-$REPLICATED_CHANNEL.tar.gz

   cat install.sh | sudo bash -s airgap
   ```

   If your application server doesn't have internet access, you can download the Kubernetes Installer from the airgap-safe portal and upload it to the application server.

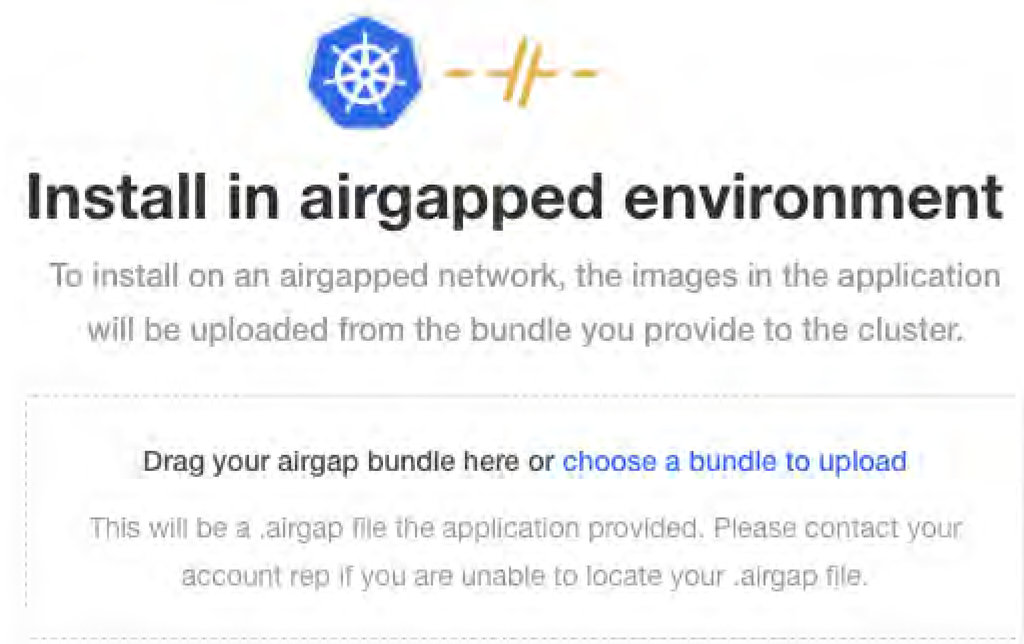
4. After the command runs (which might take several minutes), save the KOTS admin URL, password, and other configuration options for future reference. This is the only time these credentials appear, so make sure you save them.
5. In a supported browser, enter the URL for **Kotsadm**, which was generated when you installed KOTS.



6. Log in to the KOTS Admin Console using the password you just saved.



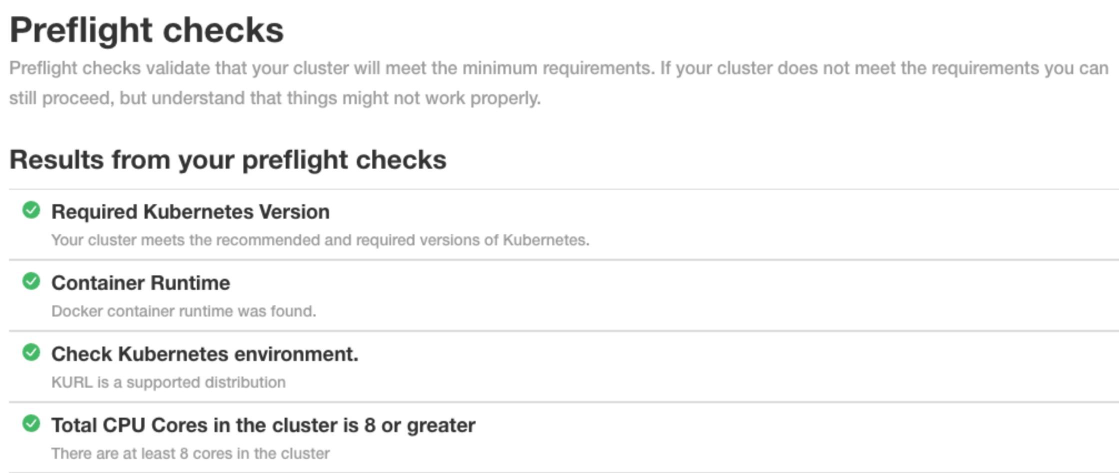
7. Select the appropriate option:
   - **Have key/certificate** — Select **Choose file** under Private key and Certificate, navigate to the files and select them, then click **Upload & Continue**.
   - **No key/certificate** — Select **Use Self-Signed Cert**.
8. Upload the license file saved on your local system.
9. Upload your jama-k8s airgap bundle, then click **Continue**.



The Config tab in the KOTS Admin Console opens, where you can configure Jama Connect.

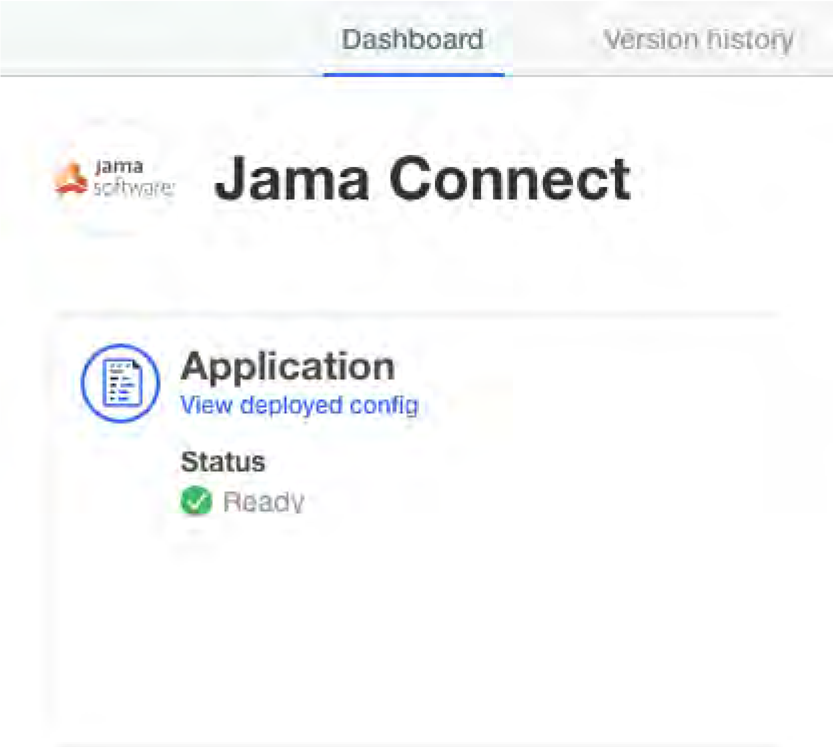
10. Configure the settings for each group, as needed. Scroll down to see each group of settings.
    - **Database Settings** — Select your database type, then use information from Preparing your application server (KOTS installation) [410] to complete the settings.
    - **Host Name** — Enter the host name for the cluster.
    - **TLS Key Pair Source** — (Optional) If you have a custom key and certificate for the host name, select **Custom TLS Configuration**. In the TLS Configuration section, upload the key and certificate.
    - **Assets Size** — Enter the estimated size of the assets that you are planning to store in Jama Connect.
    - **Elasticsearch Settings > Volume Size** — Enter the amount of disk space that each Elastic-search node is allowed to use.
11. (Optional) From the Config tab in the KOTS Admin Console, you can follow the steps to Configure KOTS to save tenant assets in the Amazon EFS [449].
12. Scroll to the bottom of the page and click **Save config**.

    The system performs the preflight checks.



13. From the Preflight checks screen, click **Continue** to open the KOTS Admin Console.

14. In the Application section of the dashboard, wait until the status changes to **Ready**.



15. Log in to Jama Connect as root [503] using the host name configured for Jama Connect.

Your installation of Jama Connect is complete.

Create a Replicated Snapshot (KOTS)

Full snapshots consist of a backup of the KOTS Admin Console and application data, and can be used for full Disaster Recovery by restoring over the same instance or in a new cluster. Tenant assets are included in the snapshot. Elasticsearch data is included by default.

A Replicated Snapshot can be taken while Jama Connect is running without interruption.

Requirements

- Replicated Snapshots must be enabled for your Replicated customer license.
- KOTS Admin Console 1.79 and later.
- Replicated Snapshots don't include your database. You must use a proprietary backup/restore system for MySQL and SQL Server databases.

Important considerations

- When restoring from a snapshot in a new cluster, you must reinstall KOTS.
- Recommended — Include Elasticsearch data in snapshots to avoid having to reindex your data after performing a restore. However, if your snapshot is not recent, we recommend reindexing your data.
- Replicated Snapshots don't support IAM authentication against EFS. Saving Replicated Snapshots in EFS requires that you use the default file system policy to allow all nodes in the cluster to mount the EFS.

To create a Replicated snapshot:

1. Capture the Kubernetes installer [441].
2. (Recommended) Include Elasticsearch data in snapshots: From the KOTS Admin Console under the Elasticsearch Settings section, select **Include Elasticsearch in Replicated Snapshots**.

3. *Airgap only* — Capture the IP address of the private registry, which is the IP address value in the Cluster-IP column:

   ```
   kubectl get service/registry -n kurl
   ```
4. Configure the storage destination:
   a. In the KOTS Admin Console, select **Snapshots > Settings & Schedule**.
   b. From the Destination drop-down menu, select a storage destination for your snapshots.
      - **For AWS S3** — The IAM role assigned to the underlaying servers or the user associated with the credentials (access and secret key) must have the Policy template attached.
        Use the following template to create a policy, replacing the **<arn-S3>** parameter with ARN of the S3 bucket. For example: arn:aws:s3:::jama-snapshots.

        ```
        {
            "Version": "2012-10-17",
            "Statement": [
                {
                    "Effect": "Allow",
                    "Action": [
                        "s3:PutObject",
                        "s3:GetObject",
                        "s3:AbortMultipartUpload",
                        "s3:DeleteObject",
                        "s3:ListMultipartUploadParts"
                    ],
                    "Resource": "<arn-s3>/*"
                },
                {
                    "Effect": "Allow",
                    "Action": "s3:ListBucket",
                    "Resource": "<arn-s3>"
                }
            ]
        }
        ```
      - **For NFS** — If using EFS as an NFS server, the **Server** field = the **DNS name** of the EFS and the **Path** field = a directory inside the EFS, writable by the user:group 1001:1001.
   c. Click **Update storage settings** to save your preferences.
5. Schedule Full Snapshots:
   a. In the KOTS Admin Console, select **Snapshots > Settings & Schedule**.
   b. Select **Enable automatic scheduled snapshots**, then click **Update schedule**.
6. Create a Full Snapshot (follow the steps provided by Replicated).

Capture Kubernetes Installer

When you restore a snapshot in a new cluster, the version of Kubernetes and its add-ons must match those of the original cluster. Capture each Kubernetes Installer that was used to create or update your clusters.

Why capture the kurl URL?

A hashed kurl URL (for example, https://kurl.sh/c601b1e) points to a website where you can get the installation script or Kubernetes airgap bundle. Both require you to install the same version of Kubernetes and add-ons. You must capture this kurl URL because the Replicated Channel URL that was used to install KOTS always pulls the latest Kubernetes installer that has been promoted. If you rerun the installer from the channel to enable an advanced option or you create a cluster to restore a snapshot, you might accidentally update the Kubernetes version and it's add-ons.

To capture the Kubernetes Installer:

1. Use the following installer resource information to create a .yaml file named **installer.yaml**:

    ```
    cat <<EOT >> installer.yaml
    apiVersion: cluster.kurl.sh/v1beta1
    kind: Installer
    metadata:
      name: latest
    EOT
    ```
2. Get all installer resources in your cluster, and copy down the name of the installer that you used to download it:

    ```
    kubectl get installers
    ```
3. Gather the installer details, replacing the **<installer-name>** parameter:

    ```
    kubectl get installers <installer-name> -o yaml
    ```
4. From the results, copy the **spec** section and paste it at the end of the installer.yaml file that you created.
    The file looks similar to this example of a Kubernetes Installer:

    ```
    apiVersion: "cluster.kurl.sh/v1beta1"
    kind: "Installer"
    metadata:
      name: "latest"
    spec:
      certManager:
        version: 1.0.3
      contour:
        version: 1.20.1
      docker:
        version: 20.10.5
      ekco:
        version: 0.13.0
      kotsadm:
        applicationSlug: jama-k8s/standardkots
        version: 1.79.0
      kubernetes:
        version: 1.21.14
      kurl:
        airgap: true
        installerVersion: v2022.08.23-0
      longhorn:
        version: 1.2.4
      metricsServer:
        version: 0.4.1
      minio:
        version: 2020-01-25T02-50-51Z
      prometheus:
        version: 0.49.0-17.1.3
      registry:
        version: 2.7.1
      velero:
        version: 1.7.1
      weave:
        version: 2.6.5
    ```
5. Send the installer.yaml file to the create installer API from Replicated to receive a hashed URL:

```
curl -X POST -H "Content-Type: text/yaml" --data-binary
"@installer.yaml" https://kurl.sh/installer && echo ""
```

6. Save the kurl URL that is displayed. It looks similar to https://kurl.sh/c601b1e.

Replicated Vendor maintains a history of every installer that has been promoted to a channel. If for any reason the kurl URL captured in this procedure doesn't work, it can be provided to Jama Software and we might be able to find an equivalent installer in our Kubernetes Installer History.

Restore KOTS Admin Console and Jama Connect from a Replicated Snapshot (KOTS)

When you set up a new application server for Jama Connect, you can restore the KOTS Admin Console settings that you saved in a Replicated snapshot.

Snapshots include the registry images and data for Jama Connect.

Requirements

- If you restore to a new cluster, it must match the specifications and settings of the cluster where the backup was taken:
  - Amount of nodes
  - Inbound and outbound traffic rules
  - Virtual memory settings for Elasticsearch
  - Connectivity to external services and resources. For example: AWS EFS, AWS S3

To restore from a snapshot:

1. Configure servers for a new cluster:
   a. After the servers for the cluster are provisioned, install Kubernetes and KOTS on one node using the captured Kubernetes Installer [441]. You must pass the same flags to the installation script that were passed to the original cluster.
      - **Restoring an online cluster** — Run the appropriate installation script.
      - **Restoring an airgap cluster** — Download the appropriate Kubernetes installer bundle. Make sure you use the IP address of the private registry from the original cluster:

        ```
        cat install.sh | sudo bash -s airgap kurl-registry-ip=<ip>
        ```
   b. When the installer has finished, run the command displayed on the screen so the other servers join the cluster. If required, label the nodes dedicated for Elasticsearch [447].
   c. Install any Kubernetes add-ons that were manually installed in the cluster. For example, the EFS Driver.
2. Configure the storage destination:
   - From the KOTS CLI, point the cluster to the storage destination where the Replicated Snapshots were saved.

AWS S3	See configure-aws-s3.
Azure	See configure-azure.
GCP	See configure-gcp.
S3-Other	See configure-other-s3.
NFS	See configure-nfs. If the cluster uses EFS or NFS, also see Configuring an NFS Storage Destination. Note: If using EFS as an NFS server, **Server** field = **DNS name** of the EFS and **Path** field = a directory inside the EFS, writable by the user:group 1001:1001.

3. Locate the snapshot and restore it: From the KOTS CLI, run a backup ls and full restore.

   ```
   backup ls
   ```

   This can take a few minutes. Rerun this command if the snapshots don't appear after a few minutes.

4. If you changed the host name for Jama Connect:
   a. Update the Host Name field in the KOTS Admin Console and deploy the change.
   b. From your browser, log in to Jama Connect and change your URL using Change URL [542].
5. View scheduled jobs [545] to verify that the list isn't empty.
6. If the Elasticsearch data wasn't included in the snapshot or if the snapshot isn't recent, reindex all search items [545].
7. Verify that you can locate your assets.

Enable horizontal scaling in KOTS

If your current Jama Connect KOTS environment is experiencing performance issues, you can enable horizontal scaling and add more instances of Jama Connect. When you add Kubernetes nodes to your cluster, you can configure each Jama Connect instance to use more CPU and memory.

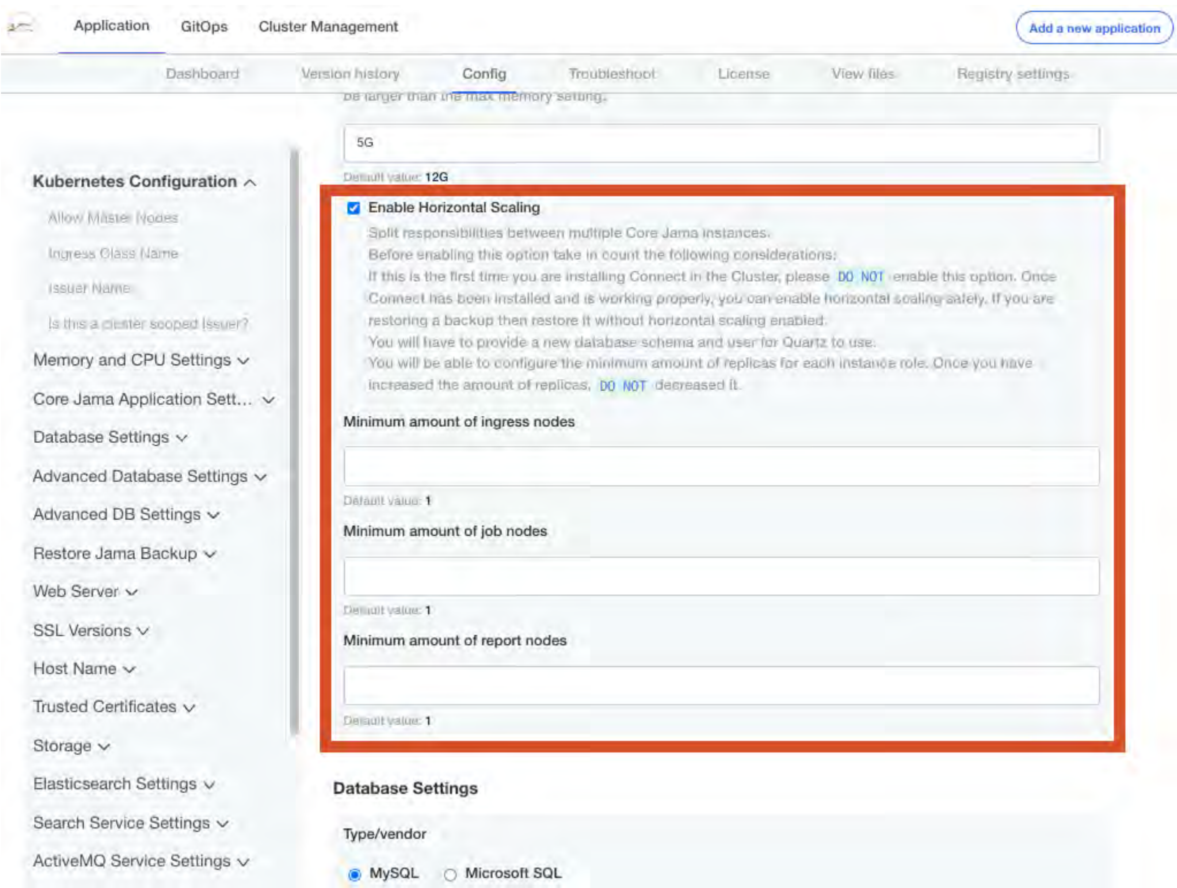
Requirements

- Jama Connect must already be installed and running before enabling this option.
- If restoring your environment from a backup, restore it without horizontal scaling enabled.
- To use horizontal scaling, you must provide a new database schema and user.
- Once you increase the number of replicas for each instance role, don’t decrease the number.

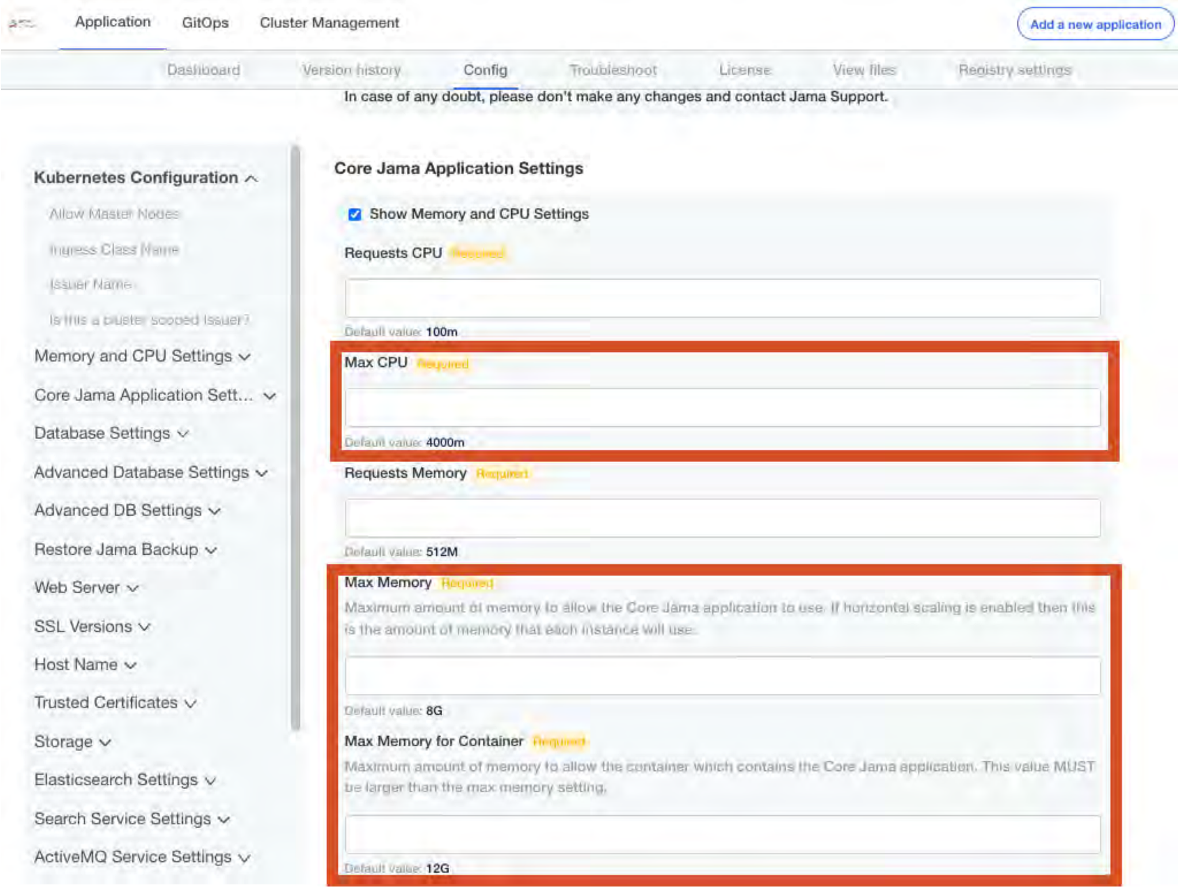
> **IMPORTANT**
> Horizontal scaling used with minimum requirements can cause performance issues. Instead, use the recommended requirements [405] to avoid performance issues.

To enable horizontal scaling:

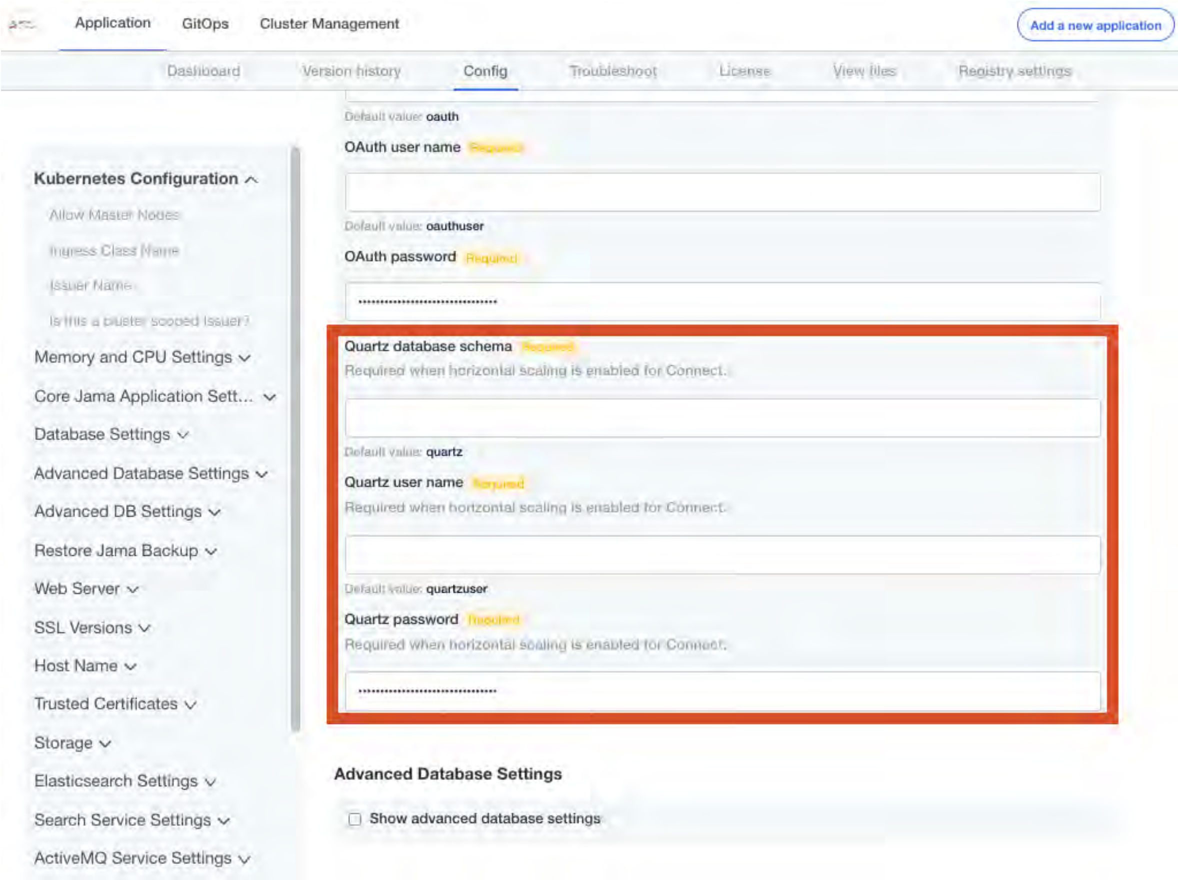
1. On the KOTS Admin Console, go to the **Config** tab.
2. Scroll down to the Core Jama Application Settings section [405], and select **Enable Horizontal Scaling**.
   Extra fields are displayed for setting horizontal scaling.



3. Specify the number of nodes that you want per role (default is 1); for recommended values, see Application server requirements [405].
   - Minimum number of ingress nodes
   - Minimum number of job nodes
   - Minimum number of report nodes
4. Adjust the maximum memory and CPU for each node; for recommended values, see Application server requirements [405].



5. Scroll down to the **Database Settings** section and specify the Quartz schema information.



You can use the following scripts as a base to create the schema for Quartz in your database. They were created assuming that you already set up your database [411].
In the scripts, change the schema name, username or user password to match what you specified in the KOTS Admin Console.

MySQL

```
CREATE DATABASE quartz;
CREATE USER 'quartzuser'@'%' IDENTIFIED BY 'password';
GRANT ALL PRIVILEGES ON quartz.* TO 'quartzuser'@'%';
```

Microsoft SQL

```
USE master;
CREATE LOGIN quartzuser with password = 'password';
GO

USE jama;
EXEC ('CREATE SCHEMA quartz');
GO

USE jama;
CREATE USER quartzuser for LOGIN quartzuser with DEFAULT_SCHEMA=quartz;
GO

EXEC sp_addrolemember N'db_owner', quartzuser;
GO
```

6. Click **Save**.
7. Deploy the new version: Select the **Version history** tab and click **Deploy** in the row of your newly configured version.
8. Verify the status of your application: Select the **Dashboard** tab and make sure the status is **Ready**.
9. (Optional) Verify that the new pods are ready:

```
kubectl get pods -o wide
```

Configure dedicated Elasticsearch nodes

Your primary Kubernetes server (node) is referred to as a KOTS stack. To run Elasticsearch, you must add one or more secondary nodes where Elasticsearch will run, and configure the nodes to run Elasticsearch.

Important considerations

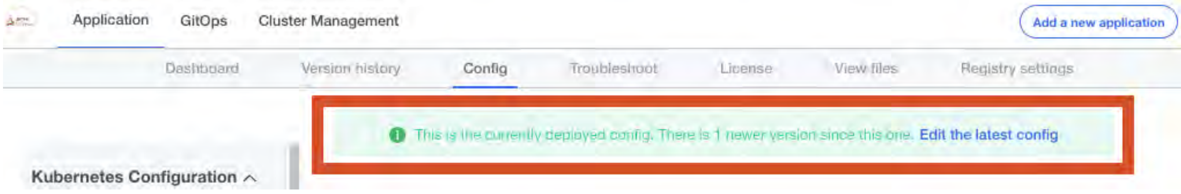
- You must have a functioning primary KOTS server and a secondary server where Replicated KOTS has not yet been installed. For secondary node specifications, see Application server requirements [405].
- This task is appropriate for a new node and an existing node.
- Contact support to enable remote Elasticsearch for your Replicated license.

To configure your primary node:

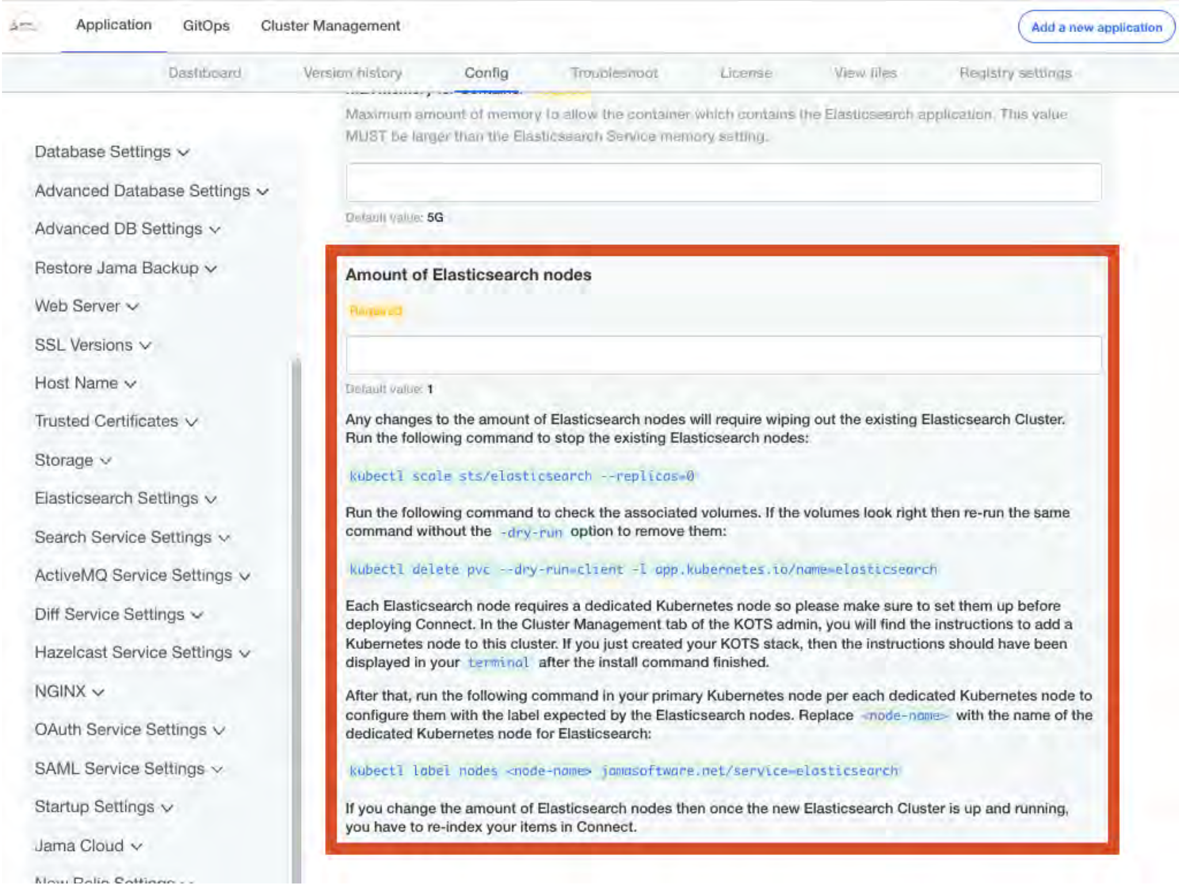
1. Make sure communication is established between primary (KOTS stack) and secondary (where Elasticsearch will run) Kubernetes nodes.
   For more information, see Preparing your application server (KOTS installation) [410].
2. On the secondary node, configure the memory settings for Elasticsearch [416].

```
echo "vm.max_map_count=262144" | sudo tee -a /etc/sysctl.conf
sudo sysctl -p
```

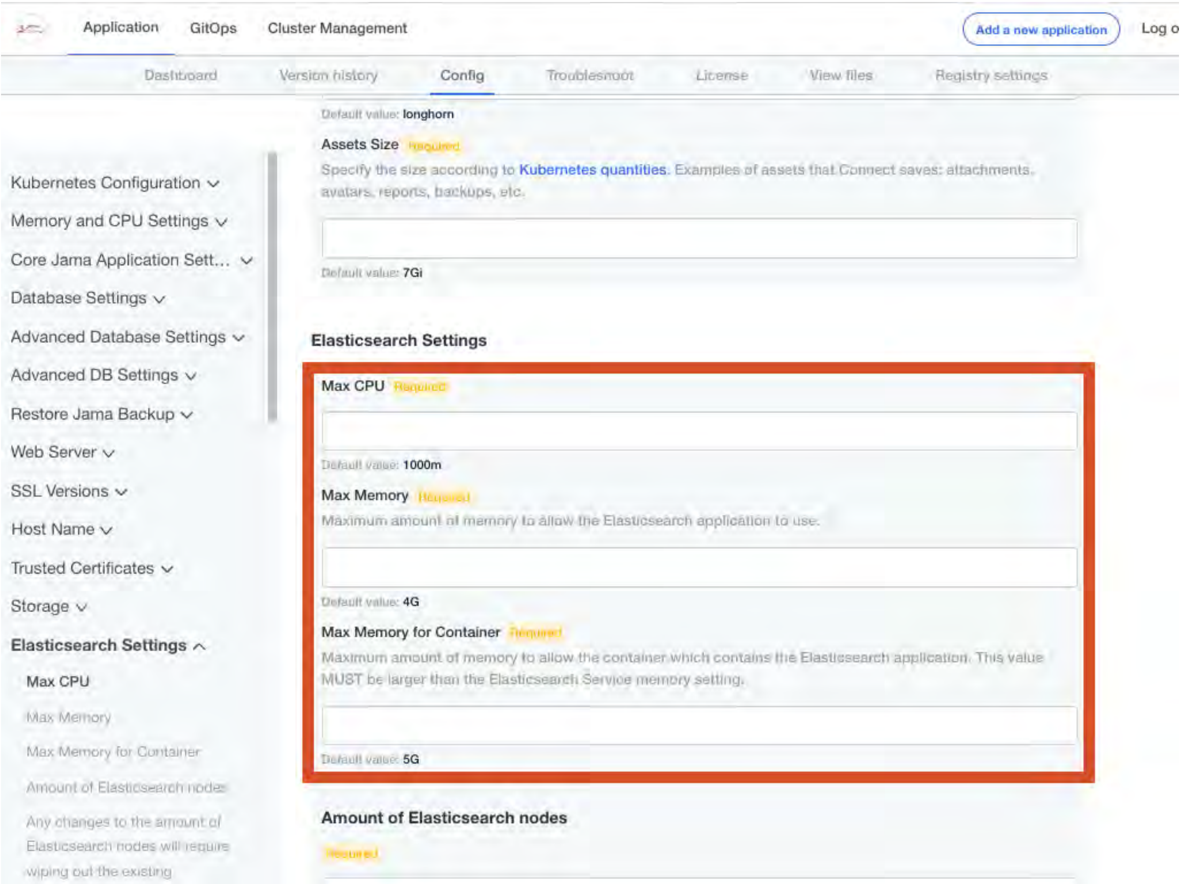
3. On the Admin Console of the primary node below Version history, select **Check for updates** to synch the changes made to your license.
4. Select the **Config** tab and, if you see the following message, select **Edit the latest config**.



5. Scroll down to the **Elasticsearch Settings** section and follow the steps shown to add a dedicated Kubernetes node for an Elasticsearch node.



6. Set the number of Elasticsearch nodes to match the number of dedicated Kubernetes nodes that you configured.
7. Adjust the maximum memory and CPU that each Elasticsearch node can use based on the specifications of each dedicated Kubernetes node set up for Elasticsearch. For more information, see Application server requirements and resource sizing [405].



8. Click **Save**.
9. Deploy the changes.
10. When the Elasticsearch cluster is up and running, reindex all items [545].

Configure KOTS to save tenant assets in Amazon EFS

When you configure KOTS to save tenant assets in Amazon EFS, the tenant assets are saved if a cluster fails. EFS provides automatic backups of the tenant assets and EFS is automatically scaled as you add and remove assets.

> **IMPORTANT**
>
> Complete this task before Jama Connect is deployed. Otherwise, if you want to move your assets to EFS, you must first back up tenant assets to a TAR in KOTS [453].

Requirements

- A Kubernetes cluster with KOTS must be up and running.
- You must be able to create and modify these AWS resources: IAM roles, IAM policies, security groups, EC2 instances, and EFS file systems.
- The cluster must have internet access to download the EFS driver and associated Docker images.
- Ports 9909 and 9809 must be available for the EFS driver to function successfully.

- Create a new EFS dedicated to your KOTS stack because each Persistent Volume requires an EFS Access Point, which are very limited. Currently, each EFS can have a maximum of 120 access points. A dedicated EFS allows you to future-proof the cluster. The steps are provided below.

> **NOTE**
> Make sure you copy the Amazon Resource Names (ARNs) for the IAM role that is assigned to the EC2 instances included in the Kubernetes cluster.

To save tenant assets:

1. Create a new security group for the EFS that allows inbound access for the TCP protocol on the NFS port (2049) from all EC2 instances that are included in the Kubernetes cluster.
   a. Select a security group that is assigned to the EC2 instances as the source.
   b. Confirm that the EC2 instances included in the Kubernetes cluster have a security group that allows outbound access on the NFS port to the security group created in the previous step.
2. Create the Amazon EFS file system:
   a. From the Amazon EFS Management Console, select **Create file system**.
   b. In the Create file system window, click **Customize**.
   c. On the File systems setting page, configure the following, then click **Next**:
      - **Name** — Enter a name that allows you to easily identify the EFS.
      - **Availability and Durability** — Regional.
      - **Automatic backups** — Enable automatic backups during off hours to avoid backup inconsistencies.
      - **Performance mode** — General Purpose.
      - **Thoroughput mode** — Bursting.
      - **Encryption** — Enable encryption of data at rest.
   d. On the Network access page, configure the following, then click **Next**:
      - **Virtual Private Cloud (VPC)** — Enter the name of the VPC where the Kubernetes cluster is running.
      - **Mount targets** — Verify that a mount target is created per Availability Zone, then assign the security group you created earlier.
   e. Generate a file system policy for the EFS using the template below, then attach it to the EFS. Replace the **<arn-cluster-role>** parameter with the ARN of the cluster role.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Deny",
      "Principal": {
        "AWS": "*"
      },
      "Action": "*",
      "Condition": {
        "Bool": {
          "aws:SecureTransport": "false"
        }
      }
    },
    {
```

```
      "Effect": "Allow",
      "Principal": {
        "AWS": "<arn-cluster-role>"
      },
      "Action": [
        "elasticfilesystem:ClientRootAccess",
        "elasticfilesystem:ClientWrite",
        "elasticfilesystem:ClientMount"
      ]
    }
  ]
}
```

f. On the Review and create page that opens, review the file system configuration groups, then select **Create** to create your file system and return to the File systems page.

3. Edit the cluster role:

a. Generate the ARN of the newly created EFS, replacing **<region>**, **<account-id>**, and **<file-system-id>** parameters:

```
arn:aws:elasticfilesystem:<region>:<account-id>:file-system/<file-system-id>
```

b. Generate the ARN for the access points, replacing **<region>** and **<account-id>** parameters:

```
arn:aws:elasticfilesystem:<region>:<account-id>:access-point/*
```

> **IMPORTANT**
> You can't create a policy statement that targets only the access points of a specific EFS.

c. Create a new IAM policy using the template below and the ARNs generated in the previous steps, then attach it to the cluster role.
Replace the **<arn-efs>** and <**arn-access-points>** parameters with ARN of the EFS created and the one for the access points.

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Effect": "Allow",
      "Action": [
        "ec2:DescribeAvailabilityZones"
      ],
      "Resource": "*"
    },
    {
      "Effect": "Allow",
      "Action": [
        "elasticfilesystem:DescribeAccessPoints",
        "elasticfilesystem:DescribeFileSystems",
        "elasticfilesystem:DescribeMountTargets"
      ],
      "Resource": "<arn-efs>"
    },
    {
      "Effect": "Allow",
```

```
        "Action": "elasticfilesystem:CreateAccessPoint",
        "Resource": "<arn-efs>",
        "Condition": {
          "StringLike": {
            "aws:RequestTag/efs.csi.aws.com/cluster": "true"
          }
        }
      },
      {
        "Effect": "Allow",
        "Action": "elasticfilesystem:DeleteAccessPoint",
        "Resource": "<arn-access-points>",
        "Condition": {
          "StringEquals": {
            "aws:ResourceTag/efs.csi.aws.com/cluster": "true"
          }
        }
      }
    ]
  }
```

4. Install the AWS EFS driver.
   a. Install driver version **1.3.8** in your cluster:

      ```
      kubectl apply -k "github.com/kubernetes-sigs/aws-efs-csi-driver/
      deploy/kubernetes/overlays/stable/?ref=tags/v1.3.8"
      ```

      The following Docker images are downloaded to your EFS driver: amazon/aws-efs-csi-driver, public.ecr.aws/eks-distro/kubernetes-csi/node-driver-registrar, public.ecr.aws/eks-distro/kubernetes-csi/livenessprobe.
   b. Verify that the was driver was successfully installed:

      ```
      kubectl get daemonset.apps/efs-csi-node csidriver/efs.csi.aws.com
      deployments/efs-csi-controller -n kube-system
      ```

      ```
      NAME                          DESIRED   CURRENT   READY   UP-TO-DATE   AVAILABLE   NODE SELECTOR                 AGE
      daemonset.apps/efs-csi-node   1         1         1       1            1           beta.kubernetes.io/os=linux   26m

      NAME                                    ATTACHREQUIRED   PODINFOONMOUNT   STORAGECAPACITY   TOKENREQUESTS   REQUIRESREPUBLISH
      csidriver.storage.k8s.io/efs.csi.aws.com   false            false            false             <unset>         false

      NAME                                 READY   UP-TO-DATE   AVAILABLE   AGE
      deployment.apps/efs-csi-controller   1/2     2            1           26m
      ```
5. Enable the EFS Storage Class.
   a. Log in to the KOTS Admin Console, select the **Config** tab, then scroll to the **AWS Resources** section.
   b. Select **Enable EFS Storage Class**.
   c. In the AWS EFS Storage Class section under File System ID, enter the ID of the newly created EFS.
6. Remove existing PVC and assets.

   > **IMPORTANT**
   >
   > If Jama Connect has been deployed and you want to move your assets to EFS, you must first back up tenant assets to a TAR in KOTS [453].

   a. From the primary node, delete the StatefulSets of the core pods:

      ```
      kubectl delete sts/core sts/core-ingress sts/core-reports sts/core-
      jobs
      ```

b. Delete the PVC that contains the assets, so that a new PVC can be created that points to EFS:

```
kubectl delete pvc/tenantfs
```

7. Save assets in EFS.
   a. From the KOTS Admin Console, scroll to the Storage section, then in the **Assets Storage Class** field, enter the name assigned to the EFS Storage Class.
   b. Save your changes and deploy Jama Connect.
   c. (Optional) Once the core pods are running, restore tenant assets from a TAR in KOTS [454].
8. Run this command:

```
kubectl get pvc/tenantfs
```

The output displays **storage class** as the name assigned to the EFS storage class.

Back up tenant assets to a TAR file in KOTS

If Jama Connect was deployed to KOTS and you want to move your assets to EFS, you must first back up tenant assets to a Tape Archive file (TAR) in KOTS.

> **IMPORTANT**
> You must have a core-0 pod running, unless you have horizontal scaling enabled for jamacore, then a core-ingress-0 pod is running.

1. Set an environment variable with your tenant name [456]:

```
export TENANT_NAME=jama
```

2. Copy the assets from a core pod to an **assets** local directory in the Kubernetes node. To reduce the backup size, exclude the **tempreports**.

```
kubectl cp -c core default/core-0:/home/contour/tenant/${TENANT_NAME}/
attachments assets/attachments
kubectl cp -c core default/core-0:/home/contour/tenant/${TENANT_NAME}/
avatars assets/avatars
kubectl cp -c core default/core-0:/home/contour/tenant/${TENANT_NAME}/
diagrams assets/diagrams
kubectl cp -c core default/core-0:/home/contour/tenant/${TENANT_NAME}/
equations assets/equations
kubectl cp -c core default/core-0:/home/contour/tenant/${TENANT_NAME}/
reports assets/reports
kubectl cp -c core default/core-0:/home/contour/tenant/${TENANT_NAME}/
tempreports assets/tempreports
```

3. List the contents of the assets directory inside the core pod:

```
kubectl exec --tty -c core pods/core-0 -- ls -la /home/contour/tenant/$
{TENANT_NAME}/
```

4. Verify that the commands from step 2 included every folder and file displayed.
5. Create a TAR file from the local directory:

```
tar -zcvf assets.tar.gz assets/
```

6. Copy the TAR file from the node to a different system and review its content:

```
scp <user>@<ip-another-machine>:<destination-path> assets.tar.gz
```

You now have a backup file that includes all the assets.

Restore tenant assets from TAR in KOTS

Follow this process when you have an existing cluster and want to save your tenant assets on an external storage.

Requirements

- In EFS, the tenant assets must be backed up in a TAR file [453] and restored once EFS has been configured.
  Make sure that you use our process to create the TAR file; the commands to restore expect a TAR file with a certain structure.

1. Set an environment variable with your tenant name [456]:
   ```
   export TENANT_NAME=jama
   ```
2. Copy the TAR file from its current location to a master node:
   ```
   scp assets.tar.gz <user>@<ip-master-node>:~/assets.tar.gz
   ```
3. Log in to the master node and extract the TAR file:
   ```
   tar -xvzf assets.tar.gz
   ```
4. Copy the assets to a core pod:
   ```
   cd assets
   kubectl cp -c core . default/core-0:/home/contour/tenant/${TENANT_NAME}/
   kubectl exec --tty -c core pods/core-0 -- chmod -R 755 /home/contour
   kubectl exec --tty -c core pods/core-0 -- chown -R tomcat:tomcat /home/
   contour
   ```
5. Verify that the assets were copied:
   ```
   kubectl exec --tty -c core pods/core-0 -- ls -la /home/contour/tenant/$
   {TENANT_NAME}/
   kubectl exec --tty -c core pods/core-0 -- du -shc /home/contour/tenant/$
   {TENANT_NAME}/
   ```

Configure Federated Authentication for KOTS Admin Console

By default, you can log in to the KOTS Admin Console with a shared password. To improve security, configure this feature so that KOTS admin authentication is managed by your Identity Provider.

Requirements

- You must have the KOTS software installed.
- Identity Service must be enabled by Jama Software Support for your Replicated license.
- You must have an Identity Provider that is compatible with OpenID.

Important considerations

- When you enable identity provider access to the KOTS Admin Console, shared password authentication is disabled. To reset authentication and reenable shared password authentication:
  ```
  kubectl kots identity-service enable-shared-password --namespace default
  ```

To configure Federated Authentication:

1. Update the KOTS license [540] if Support enabled Identity Service for your license.
2. Connect KOTS Admin Console to the Identity Provider.

a. Log in to the KOTS Admin Console, then select the **Access** tab.
b. In the Configure Identity Provider section:
   - Verify that the Admin Console URL matches the URL for your KOTS Admin Console.
   - **Connector name** — Enter a name that works best for your team.
   - **Issuer** — Enter the Issuer or OpenID Configuration URL from your IdP application.
   - **Client ID** and **Client secret** — Enter the Client ID and Client Secret from your IdP application.
c. Select the **Access** tab to expand the Advanced options menu, complete the following, then click **Save provider settings**:
   - **Scopes** — Enter the OpenID, profile, and email.
   - **Skip email verification** — Enable or disable this option based on your organization's needs and IdP support.
   - **Remaining fields** — Use the default values.
d. Click **Logout**.

You are redirected to a new login screen, where you can log in to Jama Connect. If a "Failed to attempt login" error appears, see Troubleshooting KOTS errors [455].

Troubleshooting KOTS errors

if you run into problems with your KOTS installation, here are some resources that might help.

- Troubleshoot connection errors [455]
- Troubleshoot Federated Authentication errors [455]
- Troubleshoot backup and restore errors [456]

Troubleshoot connection errors (KOTS)

The KOTS installation process includes using the Kubernetes command line tool (kubectl). If you see an error message that relates to kubectl, use the workaround tips for the issue.

Error message	Reason	Workaround
The connection to the server localhost:8080 was refused - did you specify the right host or port? error: error loading config file "/etc/kubernetes/admin.conf": open /etc/kubernetes/admin.conf: permission denied	kubectl might not be configured properly for the user and/or node where you tried to use it.	• **Wrong user** — Switch to the user that installed KOTS or to root (**sudo su -**), then rerun the **kubectl** command. • **Wrong node** — Switch to the server where KOTS was installed initially or to a primary node, then rerun the **kubectl** command. kubectl can be configured for other users and nodes but it requires some research. See Embedded Cluster: How to get kubectl working for other users.
Waited for 1.184446141s due to client-side throttling, not priority and fairness	When using kubectl with Ubuntu 18.04, you might see this warning message.	Log in to Jama Connect as the root user (**sudo su -**).
Application status is not accurate	This error usually occurs when the cluster is restarted or if a cluster was restored from a snapshot. The Application status in the KOTS Admin Console might differ from what you see in the UI when using kubectl.	Redeploy the latest license version from the Version history tab in the KOTS Admin Console.

Troubleshoot Federated Authentication errors (KOTS)

The "Failed to attempt login" error can occur when you log in to the KOTS Admin Console from a browser for the first time. This error can occur if you didn't specify the host name and chose to upload custom certificates, or you specified the host name but it wasn't retained by the KOTS Admin Console.

To resolve this issue:

1. Review the KOTS Admin pod logs:
   a. Check the name for your KOTS Admin pod:

      ```
      kubectl get pods -o wide
      ```
   b. Check the logs for your KOTS Admin pod:

      ```
      kubectl logs -f pods/<kotsadm-pod-name>
      ```

      Review the logs and confirm that the following error appears:

      ```
      {
        "level": "error",
        "ts": "2022-08-25T18:36:03Z",
        "msg": "failed to get kotsadm oidc provider: failed
      to query provider \"https://<your-kots-admin-hostname>:8800/dex\":
      Get \"https://<your-kots-admin-hostname>:8800/dex/.well-known/openid-
      configuration\": x509: certificate is valid for kotsadm,
      kotsadm.default, kotsadm.default.svc, kotsadm.default.svc.cluster,
      kotsadm.default.svc.cluster.local, not <your-kots-admin-hostname>"
      }
      ```
2. Restore the ability to configure the TLS certificates:

   ```
   kubectl -n default annotate secret kotsadm-tls acceptAnonymousUploads=1
   --overwrite
   ```
3. Restart the kurl-proxy pod:

   ```
   kubectl delete pod $(kubectl get pod | grep kurl-proxy | awk '{print
   $1}')
   ```
4. Open the KOTS Admin Console with this link: http://<your-kots-admin-hostname>8800/tls
5. Choose one:
   - Select **Skip & continue** if you don't want to provide custom certificates.
   - Upload the files and select **Upload & continue** if you want to provide custom certificates.

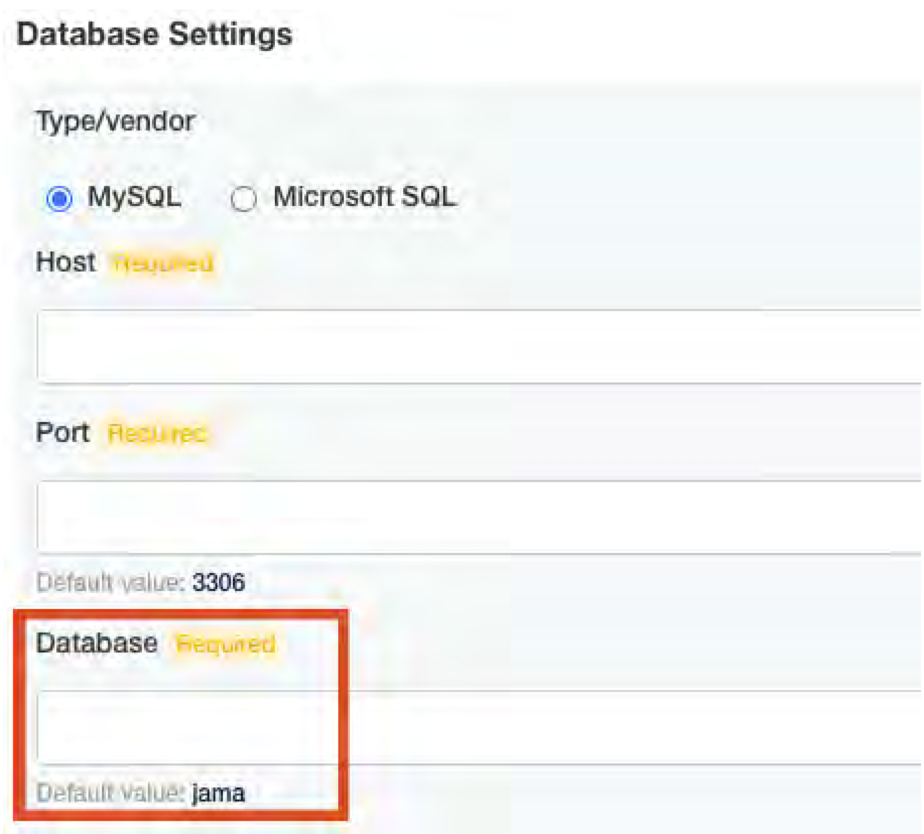
If provided, the KOTS Admin Console uses the custom certificate. If none was provided, a new self-signed certificate is generated with the host name you specified. The KOTS Admin Console retains the host name.

Troubleshoot backup and restore errors (KOTS)

Replicated has documented the following scenarios. For more information, see Troubleshooting Backup and Restore.

Error message	Reason	Workaround
Error executing hook	When a cluster is restarted, some pods might be in a **Shut-down** state, meaning they were likely replaced by new pods.	Delete the pods that are in a **Shutdown** state: `kubectl delete pods/<pod-name>`
Connect is not reachable after a restore even when pods are ready	If you restored a cluster on a new server with a different host name than the original, and updated the Host Name field in the KOTS Admin Console and deployed it, the httpproxy resource for nginx might not have been updated.	Delete the httpproxy resource for nginx and redeploy it: `kubectl delete httpproxy/nginx`

KOTS FAQ

Question	Answer
What is my tenant name?	Your tenant name is the text you entered as the database name from the Config tab in the KOTS Admin Console. 
How can I find the name of a node?	Run this command, then check the **Name** column: `kubectl get nodes -o wide`
How do I shut down my cluster?	Ideally, your cluster is always up and running. If all nodes require maintenance, shut down and perform maintenance on one node at a time. The KOTS installer deploys EKCO, which is a utility tool to perform maintenance operations on the cluster. Run this command to prepare the node for a reboot: `sudo /opt/ekco/shutdown.sh` When the process is finished, shut down the node.

After installing Jama Connect

Whether your environment is internet-enabled or airgap, after you install Jama Connect you can continue to set up your Jama Connect environment.

Follow any post installation instructions that apply to your organization.

The setup tasks to configure your environment include:

- Add Organization Admin account [505]
- Modify organization details [507]
- Configure proxy settings (optional) [465]
- Configure email/collaboration settings [509]
- Configure user authentication [479]
- Create XML backups (optional) [532]
- Update the license for internet [538], airgap [539], or KOTS [540] environments (optional)

If you have further questions about Jama Connect installation and setup, visit the Jama Support Community or contact support.

Installing remote Elasticsearch with Jama Connect (traditional installation)

After installing Jama Connect, you have the option to install remote Elasticsearch in an internet-enabled or airgap environment.

When you install Jama Connect, Elasticsearch is installed on your application server by default. However, if you want to have one or more servers dedicated to Elasticsearch, you can configure remote Elasticsearch for use with Jama Connect. To streamline the management of Elasticsearch, your organization might want to use remote Elasticsearch instead of the one that is installed as part of the Jama Connect installation process. For example, if you prefer to manage one Elasticsearch configuration instead of multiple configurations.

The process consists of the following steps:

1. Implement the pre-flight checks and configure proxy settings
2. Set the Elasticsearch memory
3. Install Replicated for Elasticsearch (internet or airgap)

For more information about Elasticsearch, see the Elasticsearch Guide.

Prerequisites

Before installing Elasticsearch, make sure that your environment conforms to these requirements.

- Jama Core must be installed on a separate server and running Jama 8.10+.
- System-compliant servers for Elasticsearch nodes (see System Requirements [460]).
- A license file for remote Elasticsearch.
- Open ports:

Jama Core host	Elasticsearch host
9500	9200
9875–9880	9300
8125	

- During installation, the servers running Elasticsearch must be able to download and run the operator script from https://get.replicated.com/operator.
- If Jama Core and Elasticsearch nodes are behind a proxy, you must add the Jama Core IP address to the NO_PROXY environment variable on each of the Elasticsearch nodes.
- This table illustrates how ports are used for communication between the main application server (Jama Core host) and nodes in the Elasticsearch cluster. The arrows (→, ↔) indicate the direction of communication between servers.

Description	TCP/UDP	Port range
Jama Core → Elasticsearch node(s)	TCP	9200 and 9300
Elasticsearch node(s) ↔ Elasticsearch node(s)	TCP	9300
Elasticsearch node(s) → Jama Core	TCP	9500 9874–9880
Elasticsearch node(s) → Jama Core	UDP	8125

Pre-flight checks

Before you begin the installation process, you must verify that the required ports are open on each host with a command-line tool, such as Netcat.

Here is an example:

Description	Commands
Jama Core → Elasticsearch node(s)	nc -vz -w 2 <IP address> 9200 nc -vz -w 2 <IP address> 9300
Elasticsearch node(s) ↔ Elasticsearch node(s)	nc -vz -w 2 <IP address> 9300
Elasticsearch node(s) → Jama Core	nc -vz -w 2 <IP address> 9500 nc -vz -w 2 <IP address> 9874–9880

When you check port status from the command line, you see these possible responses:

Response	Meaning
Connection to <DESTINATION> <PORT> port [<TCP/UDP>] succeeded!	The port is open on the remote host and a process is listening.
nc: connect to <DESTINATION&> port <PORT> [<TCP/UDP>] failed: Connection refused	The port is open on the remote host, but no process is listening.
nc: connect to <DESTINATION> port <PORT> [<TCP/UDP>] timed out: Operation now in progress	The port is not open on the remote host.

Configure proxy settings

If using a proxy server, you must add the IP address of the Jama Connect application server to the no_proxy Docker variable. This variable prevents the application server's traffic from being proxied. Work with your Linux system administrator to set this value.

The steps to do this depend on your operating system.

> **NOTE**
> The steps related to Replicated are only necessary if you have already installed the Admin Console.

1. Stop Replicated with the following commands.
   - For Red Hat-derived systems version 7 and later:
     ```
     sudo systemctl stop replicated replicated-ui replicated-operator
     ```
   - For all other distributions:
     ```
     sudo service replicated-operator stop
     sudo service replicated-ui stop
     sudo service replicated stop
     ```
2. Follow the instructions from Docker to configure the no_proxy settings and to set the appropriate IP addresses and hostnames that identify the Jama Connect server.
3. Restart Replicated with the following commands.
   - For Red Hat-derived systems version 7 and greater:
     ```
     sudo systemctl start replicated replicated-ui replicated-operator
     ```
   - For all other distributions:
     ```
     sudo service replicated start
     sudo service replicated-ui start
     sudo service replicated-operator start
     ```

Elasticsearch system requirements

For a complete and up-to-date list of compatible operating systems in our most recent self-hosted release, see our supported software page.

Data size	Large	Enterprise
CPU cores	2	2
Total system RAM	4 GB	8 GB
Elasticsearch Heap	2 GB	4 GB
Disk Space	25 GB	100 GB

IMPORTANT

The Elasticsearch heap must be at least 50% less than the total system memory for the node. For example, if you have 6 GB of total system memory, Elasticsearch must have no more than 3 GB allocated to the heap.

Set the Elasticsearch memory

Use the Advanced Memory Settings to set the memory allocation used by Elasticsearch.

IMPORTANT

You must set this manually if using a remote node. Do not use the default formula for calculating the memory used.

1. In the Jama Core Admin Console, select **Settings > Memory Setting > Advanced Memory Settings**.
2. In the **Elasticsearch** field, type the amount of memory to be used by Elasticsearch.
3. Click **Save**.

Install Replicated for Elasticsearch (internet)

Installing Replicated for Elasticsearch consists of updating the Docker host system, installing Replicated on the Elasticsearch nodes, and tagging the nodes from the Admin Console.

IMPORTANT

Elasticsearch must be running on a version of Replicated greater than 2.2. All Elasticsearch nodes and the jamacore node must run the same version of Replicated and Replicated-operator.

1. Make sure your systems meet all prerequisites [458].
2. Update the Docker host system:
   a. Open the /etc/sysctl/conf file and add this line:

   ```
   vm.max_map_count=262144
   ```

b. Stop Jama Connect:

```
replicatedctl app stop --attach
```

c. Stop the Docker service:

```
sudo systemctl stop docker
```

d. Reload the sysctl.conf file:

```
sysctl -p
```

e. Confirm that the file is reloaded:

```
sudo sysctl -a | grep max_map_count
```

The system responds with this message:

```
vm.max_map_count=262144
```

f. Restart the Docker service:

```
sudo systemctl start docker
```

g. Restart Jama Connect:

```
replicatedctl app start
```

3. Install Replicated on the Elasticsearch nodes with one of the following commands. You must have root permissions.
The **<DAEMON_ADDRESS:PORT>** (Daemon Address) and **<SECRET_TOKEN>** (Secret Token) can be found at the top of the Cluster page of the Admin Console. Use the Elasticsearch server's private IP address for the **<NODE_PRIVATE_IP_ADDRESS>**.

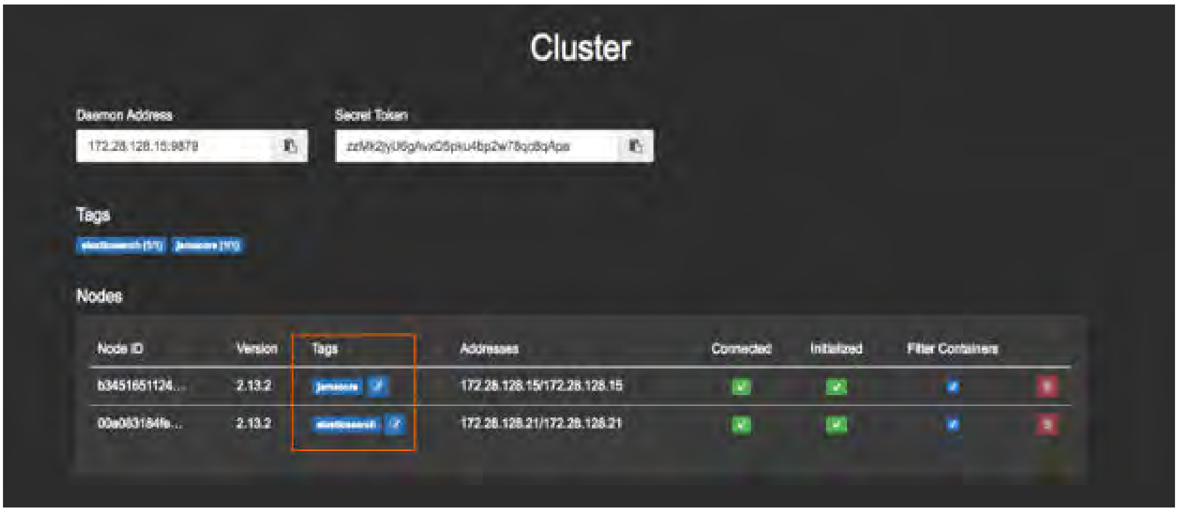
- To install the current Replicated version:

```
curl -sSL https://get.replicated.com/operator | bash -s \
daemon-endpoint="<DAEMON_ADDRESS:PORT>" \
daemon-token="<SECRET_TOKEN>" \
private-address="<NODE_PRIVATE_IP_ADDRESS>" \
public-address="<NODE_PRIVATE_IP_ADDRESS>" \tags="elasticsearch"
```

- To install a specific Replicated version:

```
curl -sSL https://get.replicated.com/operator?
replicated_operator_tag=<replicated version from jama core host> |
bash -s \
daemon-endpoint="<DAEMON_ADDRESS:PORT>" \daemon-token="<SECRET_TOKEN>"
\
private-address="<NODE_PRIVATE_IP_ADDRESS>" \
public-address="<NODE_PRIVATE_IP_ADDRESS>" \tags="elasticsearch"
```

4. After installing all the remote Elasticsearch nodes, tag the nodes accordingly on the Cluster page of the Admin Console.



If you need to run Elasticsearch locally on the host server with the remote Elasticsearch license enabled, tag the host node as both **jamacore** and **Elasticsearch**.

Install Replicated for Elatsicsearch (airgap)

The Admin Console (Replicated) is the interface where you can configure, update, and manage Jama Connect. To install the latest supported version of Replicated, you use the Replicated installation script.

1. Make sure your systems meet all prerequisites [458].
2. Update the Docker host system:
   a. Open the /etc/sysctl/conf file and add this line:

      ```
      vm.max_map_count=262144
      ```
   b. Stop Jama Connect:

      ```
      replicatedctl app stop --attach
      ```
   c. Stop the Docker service:

      ```
      sudo systemctl stop docker
      ```
   d. Reload the sysctl.conf file:

      ```
      sysctl -p
      ```
   e. Confirm that the file is reloaded:

      ```
      sudo sysctl -a | grep max_map_count
      ```

      The system responds with this message:

      ```
      vm.max_map_count=262144
      ```
   f. Restart the Docker service:

      ```
      sudo systemctl start docker
      ```
   g. Restart Jama Connect:

      ```
      replicatedctl app start
      ```
3. Copy the replicated.tar.gz that was used in the jamacore node to the remote elasticsearch nodes.
4. Enter this command in the server's command line:

   ```
   tar -xzvf replicated.tar.gzinstall.shoperator_install.shreplicated-
   operator.tarreplicated-ui.tarreplicated.tar
   ```

5. In the same directory, run the following command to run the Replicated airgap installation script:

```
  sudo ./operator_install.sh airgap \ daemon-
endpoint="<DAEMON_ADDRESS:PORT>" \  daemon-token="<SECRET_TOKEN>"
\  private-address="<NODE_PRIVATE_IP_ADDRESS>" \  public-
address="<NODE_PRIVATE_IP_ADDRESS>"\  tags="elasticsearch"
```

Uninstall Elasticsearch

To uninstall an Elasticsearch node on a server, uninstall Replicated.

1. Stop the Replicated service:

```
service replicated-operator stop
```

2. Run this command:

```
docker ps -a | grep replicated | awk '{print $3}' | xargs docker rm -f
```

3. Run this command:

```
docker images | grep replicated | awk '{print $3}' | xargs docker rmi -f
```

4. Run this command:

```
rm -rf /var/lib/replicated* /etc/
replicated* /etc/init/replicated* /etc/init.d/replicated* /etc/default/
replicated* /var/log/upstart/replicate /etc/systemd/system/replicated*
```

5. Restart the Replicated service:

```
service docker restart
```

Appendix

Troubleshooting your installation

If any errors occurred during installation, use this table to fix the issues.

Error message	Solution
This webpage is not available	Verify that the "Host Name" section of the settings was correctly entered to point to the application server.
Not private or *Not secure*	This might happen if you chose a self-signed certificate or uploaded an invalid certificate. Verify that you correctly entered the **Custom TLS configuration** in the **Host Name** window. If this happens only for other users and not the system administrator, and the Admin Console is using a self-signed certificate, you might have already told your web browser to "Proceed ... (unsafe)" or "Add exception," while other users haven't. Verify that you selected the setting you want for **Reuse admin console TLS configuration** in the **Host Name** window.
Problem: Cannot create database jama: Connections could not be acquired from the underlying database!	Most likely, something is wrong with your Admin Console database settings (for example, bind-address, DBO credentials), or the connection between the application server and the database server. Double-check your database settings in the Admin Console.

Sample airgap installation script

A full airgap installation script looks like this example script.

```
tar -xzvf replicated.tar.gz$ cat ./install.sh | sudo bash -s airgapThe
installer was unable to automatically detect the private IP address
```

```
of this machine.Please choose one of the following network interfaces:
[0] eth0 10.0.2.15[1] eth1 172.28.128.3[2] docker0 172.17.0.1Enter
desired number (0-2): 1The installer will use network interface 'eth1'
(with IP address '172.28.128.3').Does this machine require a proxy
to access the Internet? (y/N) nWARNING: No swap limit supportLoading
replicated and replicated-ui images from package2314ad3eeb90:
Loading layer [==================================================>]
5.037 MB/5.037 MB20cf0ca78550: Loading
layer [==================================================>]
1.395 MB/1.395 MB79da1e49a9ec: Loading
layer [==================================================>]
39.57 MB/39.57 MB10127b12860b: Loading
layer [==================================================>]
2.56 kB/2.56kB54c848181027: Loading layer
[==================================================>] 1.024
kB/1.024 kBf8559cfb1d7e: Loading layer
[==================================================>] 1.024
kB/1.024 kBd07f68c6454a: Loading layer
[==================================================>] 3.072
kB/3.072 kBe7ebe443cebe: Loading layer
[==================================================>] 1.024
kB/1.024 kBe26ab0a00993: Loading layer
[==================================================>] 1.024
kB/1.024 kB2314ad3eeb90: Loading layer
[==================================================>] 5.037
MB/5.037 MB20cf0ca78550: Loading layer
[==================================================>] 1.395
MB/1.395 MB90dd48adb644: Loading layer
[==================================================>] 2.56
kB/2.56kBbcfb6537f172: Loading layer
[==================================================>] 40 .86
MB/40.86 MB9f84694e322f: Loading layer
[==================================================>] 11.78
kB/11.78 kBd88f3b6fbcb2: Loading layer
[==================================================>] 11.73
MB/11.73 MBab1f2e0fdc51: Loading layer
[==================================================>] 1.024
kB/1.024 kBe0dd0d7697b0: Loading layer
[==================================================>] 1.024
kB/1.024 kBc58a11ad5860: Loading layer
[==================================================>] 1.024 kB/1.024
kBStopping replicated and replicated-ui serviceInstalling replicated
and replicated-ui serviceStarting replicated and replicated-ui
servicereplicated start/running, process 21870replicated-ui start/running,
process 21879Installing replicated command aliasInstalling local
operatorLoading replicated-operator image from package2314ad3eeb90: Loading
layer [==================================================>] 5.037 MB/5.0
37 MB20cf0ca78550: Loading layer
[==================================================>] 1.395
MB/1.395 MB94be066a32a4: Loading layer
[==================================================>] 12.04
MB/12.04 MB10f95420dba3: Loading layer
[==================================================>] 1.024 kB/1.024
kBStopping replicated-operator serviceInstalling replicated-operator
serviceStarting replicated-operator servicereplicated-operator start/
```

```
running, process 22155Operator installation successfulTo continue
the installation, visit the following URL in your browser:https://
<this_server_address>:8800To create an alias for the replicated cli command
run the following in your current shell or log out and log back
in:source /etc/replicated.alias
```

Configure proxy settings

If using a proxy server, you must add the Jama Connect application server's IP to the no_proxy Docker variable to prevent traffic from the application server from being proxied. Work with your Linux system administrator to set this value.

The steps to do this depend on your operating system.

> **NOTE**
> The steps related to Replicated are only necessary if you have already installed the Admin Console.

1. Stop Replicated with the following commands:
   - For Red Hat-derived systems version 7 and later:

     ```
     sudo systemctl stop replicated replicated-ui replicated-operator
     ```
   - For all other distributions:

     ```
     sudo service replicated-operator stop
     sudo service replicated-ui stop
     sudo service replicated stop
     ```
2. Follow the instructions from Docker on configuring the no_proxy settings, setting the appropriate IPs and hostnames that identify the Jama Connect server.
3. Restart Replicated with the following commands:
   - For Red Hat-derived systems version 7 and greater

     ```
     sudo systemctl start replicated replicated-ui replicated-operator
     ```
   - For all other distributions

     ```
     sudo service replicated start
     sudo service replicated-ui start
     sudo service replicated-operator start
     ```

Uninstall Jama Connect

If for any reason you need to uninstall your instance of Jama Connect, follow this procedure.

> **IMPORTANT**
> Uninstalling removes the Admin Console, the installed components that make up Jama Connect, the default snapshot directory, /var/lib/replicated/snapshots, snapshots (if they were left in the default directory), and your license. It doesn't remove user data or log files.

1. Stop the Jama Connect application [535].
2. Connect to the shell of the application server using SSH.
3. Make sure any snapshots that you need are in a safe location.
4. Execute the following commands for your flavor of Linux.
   - **Debian and Ubuntu**

```
service replicated stop
service replicated-ui stop
service replicated-operator stop
docker stop replicated-premkit
docker stop replicated-statsd
docker rm -f replicated replicated-ui replicated-operator replicated-
premkit replicated-statsd
docker images | grep "quay\.io/replicated" | awk '{print $3}' | xargs
sudo docker rmi -f
apt-get remove -y replicated replicated-ui replicated-operator
apt-get purge -y replicated replicated-ui replicated-operator
rm -rf /var/lib/replicated* /etc/replicated* /etc/init/
replicated* /etc/init.d/replicated* /etc/default/replicated* /var/log/
upstart/replicated* /etc/systemd/system/replicated*
```

> **NOTE**
> You might see an error while running the apt-get commands regarding packages not being located. These errors won't cause issues with the commands.
>
> While running the apt-get commands, if you see an error about packages not located, you can ignore it.

   - **RHEL, CentOS and Fedora**

```
systemctl stop replicated replicated-ui replicated-operator
service replicated stop
service replicated-ui stop
service replicated-operator stop
docker stop replicated-premkit
docker stop replicated-statsd
docker rm -f replicated replicated-ui replicated-operator replicated-
premkit replicated-statsd
docker images | grep "quay\.io/replicated" | awk '{print $3}' | xargs
sudo docker rmi -f
yum remove -y replicated replicated-ui replicated-operator
rm -rf /var/lib/replicated* /etc/
replicated* /etc/init/replicated* /etc/default/replicated* /etc/
systemd/system/replicated* /etc/sysconfig/replicated* /etc/systemd/
system/multi-user.target.wants/replicated* /run/replicated*
```

When the final command is completed, Jama Connect is uninstalled.

IMPORTANT

Uninstalling removes the Admin Console, the installed components that make up Jama Connect, snapshots (if they were left in the default /var/lib/replicated/snapshots directory), and your license. It doesn't remove user data or log files [546].

Upgrading Jama Connect (KOTS)

When a new version of KOTS is available, you can retrieve and deploy it from the KOTS Admin Console.

- Upgrade Jama Connect with KOTS (internet)
- Upgrade Jama Connect with KOTS (airgap)

Upgrade Jama Connect with KOTS (internet)

When a new version of KOTS is available, you can retrieve and deploy it from the KOTS Admin Console.

1. From the KOTS Admin Console, select the **Version history** tab, then click **Check for update**.
2. When the preflight checks are complete, click **Deploy**.

The new version is tagged as **Currently deployed version**.

Upgrade Jama Connect with KOTS (airgap)

When a new version of KOTS is available, you can retrieve and deploy it from the KOTS Admin Console.

1. From the air-gap safe portal, download the new jama-k8s airgap bundle for embedded clusters.
2. From the KOTS Admin Console, select the **Version history** tab:
   a. Click **Upload new version**.
   b. Select the new airgap bundle.

   A new version is created, and the system performs the preflight checks.
3. When the preflight checks are complete, click **Deploy**.

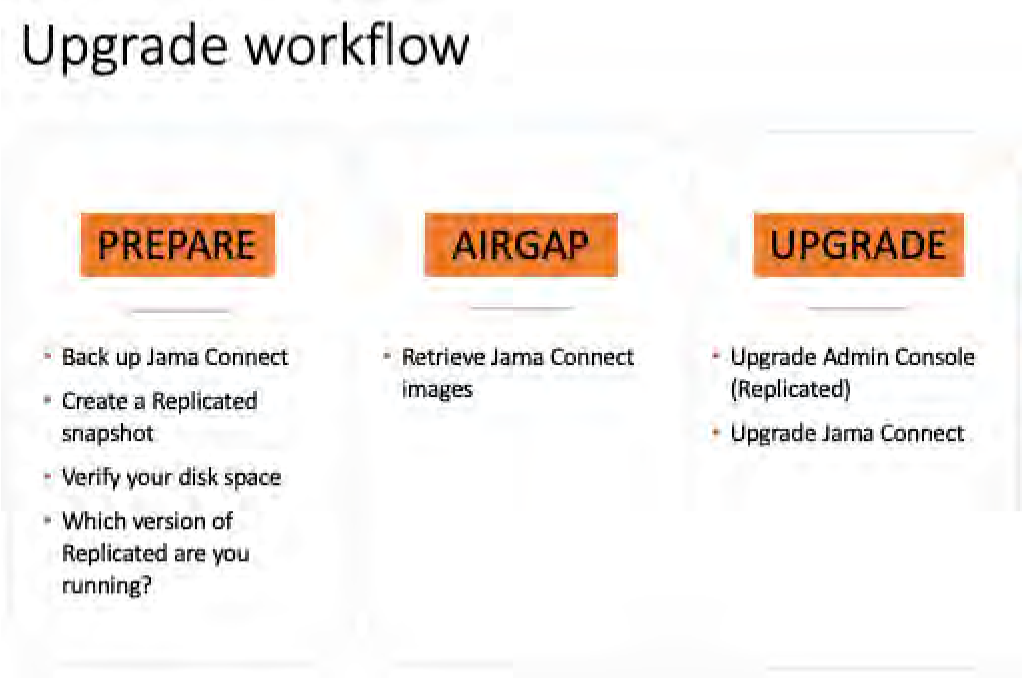
The new version is tagged as **Currently deployed version**.

Upgrading Jama Connect (traditional)

Whether your organization is internet-enabled or airgap, follow these instructions to download and install the upgrade software you need for your Jama Connect instance.

If your organization needs the extra security of an airgap installation, Jama Software provides access to an airgap-safe portal to retrieve your Jama Connect images.

You might need to upgrade only the Jama Connect application. Or you might need to upgrade Jama Connect and the Admin Console (Replicated) at the same time.



Upgrading to Jama Connect 8.62.x only

- Create two additional database schemas [471] for the upgrade to succeed.
- Be running a version of Jama Connect (8.62.x or earlier) that uses Microsoft SQL 2016-2019 for the database server.
  For more information, go to Supported software, environments, and system requirements and select your version of Jama Connect.

Things to de before upgrading

- Be aware of the supported software for your current installation and the production system requirements [405].
- Upgrade and configure Microsoft SQL Server [471].
- Create a backup of Jama Connect [532].
- Make sure you have enough disk space for the upgrade:
  - Remove old Docker images [544].
  - Remove or move old Replicated snapshots.
- Determine your version of Replicated.
- ***Airgap only***: Retrieve the Jama Connect images.

Important considerations

- Always perform the upgrade in a test environment before upgrading your production environment.
- Jama Connect versions 8.0 and later don’t work in a Windows Server environment or with an Oracle database. For details, see Application server requirements [405].
- If you're on a version of Jama Connect earlier than 8.36.0, you must perform a step upgrade. First upgrade to version 8.36.0, then upgrade to version 8.49.0. You can’t skip the step upgrades. See Incremental Step Upgrade for Jama 8.x and Beyond for details.

Upgrade and configure MySQL

MySQL is the recommended database server. Follow these steps to upgrade and configure it.

If you want to install MySQL for the first time, see Install and configure MySQL [412].

IMPORTANT

Before upgrading Jama Connect 8.62.x, you must create two additional database schemas for the installation/upgrade to succeed. To create the database schemas, run these SQL commands on the MySQL database server:

```
CREATE DATABASE saml;
CREATE DATABASE oauth;
CREATE USER 'oauthuser'@'%' IDENTIFIED BY 'password';
CREATE USER 'samluser'@'%' IDENTIFIED BY 'password';
GRANT ALL PRIVILEGES ON oauth.* TO ‘oauthuser’@‘%’;
GRANT ALL PRIVILEGES ON saml.* TO ‘samluser’@‘%’;
```

1. Make sure that the InnoDB engine is enabled.
2. Download and install a supported version of MySQL. To find out which version of MySQL you need, see Supported software, environments, and system requirements and click the link for your version of Jama Connect.
3. Create an empty Jama Connect schema / database that uses UTF8.

   ```
   create database jama character set utf8;
   ```
4. Use the following commands to create a user called "jamauser" with the ability to access, create, and update tables within the database.

   ```
   CREATE USER 'jamauser'@'%' IDENTIFIED BY 'password';
   GRANT ALL PRIVILEGES ON jama.* TO 'jamauser'@'%'.
   ```
5. Restart the database server.
   The following recommended settings require 8 GB of memory allocated to MySQL Server for a typical installation and 16 GB for an enterprise installation.
   Depending on your database server's operating system, this can be added to your my.cnf file (Linux) or my.ini file (Windows). You can also make these changes directly to the database.

Property	Typical Installation	Enterprise Installaton
max_allowed_packet	1 GB	1 GB
tmp_table_size	2 GB	2 GB
max_heap_table_size	2 GB	2 GB
table_open_cache	512	512
innodb_buffer_pool_size	2 GB	12 GB
innodb_log_file_size	256 MB	256 MB
innodb_log_buffer_size	12 MB	12 MB

Property	Typical Installation	Enterprise Installaton
innodb_thread_concurrency	16	16
max_connections	151	351
wait_timeout	259200	259200

Here is a sample text config file at an enterprise level. You must add the following values for your environment:

```
bind-address=0.0.0.0
key_buffer_size=16M
max_allowed_packet=1G
thread_stack=192K
thread_cache_size=8
tmp_table_size=2G
max_heap_table_size=2G
table_open_cache=512
innodb_buffer_pool_size=12G
innodb_log_file_size=256M
innodb_log_buffer_size=12M
innodb_thread_concurrency=16
max_connections=351wait_timeout=259200
```

Upgrade and configure Microsoft SQL Server

If you are using Microsoft SQL Server for your database, follow these steps to upgrade and configure it.

You must have full database admin permissions to the SQL Server.

If you want to install the Microsoft SQL server for the first time, see Install and configure Microsoft SQL Server [413].

Before upgrading

Before upgrading to Jama Connect 8.62.x, you must:

- Be running a version of Jama Connect that's earlier than 8.62.x and using Microsoft SQL 2016-2019 for the database server.
- Create two additional database schemas for the installation/upgrade to succeed.

Organizations using Microsoft SQL Server must enter database users in Replicated. Without these entries, the upgrade will fail.

The new schema must be created for a successful installation. Otherwise, the system continues to attempt to connect to the databases and produces log failures. After you create the database schemas, you must restart Jama Connect.

For more information, go to Supported software, environments, and system requirements and select your version of Jama Connect.

To upgrade and configure Microsoft SQL Server:

1. Use a SQL management application (such as SQL Server Management Studio) to connect to the SQL Server.
2. Replace the following values in the installation script: **<SAML_LOGIN_Psswd> & <OAUTH_LOG-IN_Psswd>**.

> **NOTE**
> Copy and store the passwords you create here. You will need them later to configure the Admin Console settings.

3. In a new query window, run the following SQL query code:

```
-- UPGRADE SCRIPT
/*
Jama Connect Upgrade Commands. Required to run these on the
Microsoft SQL Server BEFORE running the Jama Connect 8.62.x Upgrade
for ON-PREM installation using Microsoft SQL Server
DATE: 05/10/2021
NOTES: This script assumes it is running against a pre-existing
installation
with the JAMA Database already present on the Server.
The Script will add 2 new schemas (empty) to the Jama Database, 2
new DB Logins and Database users to support the Multi-Auth
functionality released in Jama Connect 8.6.2.
This script must be run prior to actual Jama Upgrade or the upgrade
installation may fail to complete.
INSTRUCTIONS: Ensure a Full backup of the Jama database is made before
execution.
Modify the <SAML_LOGIN_Password> & <OAUTH_LOGIN_Password> values in the
script below before Execution. Passwords must be enclosed in single
quotes.

USE master;
CREATE LOGIN samluser with password = 'password';
CREATE LOGIN oauthuser with password = 'password';
GO

USE jama;
EXEC ('CREATE SCHEMA oauth');
EXEC ('CREATE SCHEMA saml');
GO

USE jama;
CREATE USER samluser for LOGIN samluser with DEFAULT_SCHEMA=saml;
CREATE USER oauthuser for LOGIN oauthuser with DEFAULT_SCHEMA=oauth;
GO

EXEC sp_addrolemember N'db_owner', samluser;
EXEC sp_addrolemember N'db_owner', oauthuser;
GO
```

4. Confirm that these actions were successful:
   a. **Script completed** — Check the Query Execution results for errors.
   b. **Users created** — Run the following SQL script in a new query window.

      ```
      USE jama
      SELECT * from master.sys.sql_logins
      SELECT * from Jama.sys.sysusers
      ```

      The results include **samluser** and **oauthuser** in the "Name" column of the result panes.
   c. **Users granted the DB_owner role** — Run the following SQL script in a new query window.

```
SELECT DP1.name AS DatabaseRoleName,
isnull (DP2.name, 'No members') AS DatabaseUserName
FROM sys.database_role_members AS DRM
RIGHT OUTER JOIN sys.database_principals AS DP1
ON DRM.role_principal_id = DP1.principal_id
LEFT OUTER JOIN sys.database_principals AS DP2
ON DRM.member_principal_id = DP2.principal_id
WHERE DP1.type = 'R'
ORDER BY DP1.name;
```

The results will show that db_owner is granted to **oauthuser** and **samluser**.

5. Run the following query to keep the database from locking users' accounts while they are logging in or working in Jama Connect. You must have db_owner permissions.

   ```
   ALTER DATABASE jama SET READ_COMMITTED_SNAPSHOT ON WITH ROLLBACK
   IMMEDIATE;
   ```
6. Run this question to make sure the flag was successfully enabled:

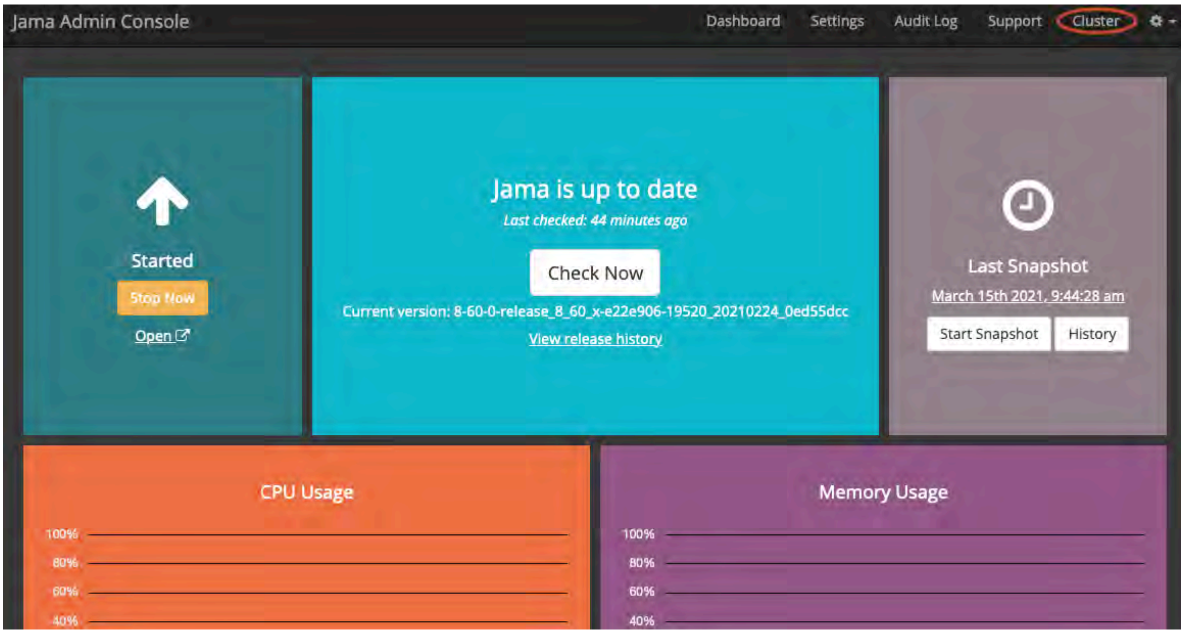
   ```
   SELECT is_read_committed_snapshot_on FROM sys.databases WHERE
   name='jama';
   ```

   If the returned value is 1, the flag is on.

Determine your version of Replicated

To be able to upgrade the Admin Console to the latest version, you must be running Replicated 2.x.

1. In the Admin Console, click the **Cluster** link.

   The first entry on the Cluster page lists your version of the Admin Console (Replicated).

2. To upgrade your version of the Admin Console (Replicated):
   - Version 2.x
     - Upgrade the Admin Console (internet) [474]
     - Upgrade the Admin Console (airgap) [475]

Upgrade the Admin Console (internet)

The Admin Console (Replicated) can be updated whenever a new version is available. When upgrading both Replicated and Jama Connect, upgrade Replicated first.

> **IMPORTANT**
> Users are logged out during the upgrade process, which can take up to 45 minutes. Best to upgrade during off hours.

These steps upgrade Replicated in an internet-enabled environment. If Docker is out of date, it is also updated.

1. In the Admin Console, select **Dashboard** to view whether a new version is available.
2. Check the supported software page to find the correct version of Replicated to use for your installation of Jama Connect.
3. As root user or a user with sudo bash privileges, download and install the Admin Console using one of these methods:
   - Use the cURL command from the Release Notes.
   - Download and install a specific version of the Admin Console with this command:

     ```
     curl -sSL "https://get.jamasoftware.com/docker?
     replicated_tag=<REPLICATED_VERSION>" | sudo bash -s no-auto
     ```

     Replace **<REPLICATED_VERSION>** with the Replicated versions recommended in the Release Notes for your version of Jama Connect. For example:

     ```
     curl -sSL "https://get.jamasoftware.com/docker?replicated_tag=2.38.1"
     | sudo bash -s no-auto |
     ```
4. Follow the installation prompts, then you can leave the installation unattended.
5. Once the process is finished, go to the Admin Console and confirm that Replicated was upgraded to the correct version.

Upgrade the Admin Console (airgap)

The Admin Console (Replicated) can be updated whenever a new version is available. To do so for an airgap installation, you first download the files to an internet-enabled system, then move and extract them to the /data/install directory on your airgap application server.

When upgrading both Replicated and Jama Connect, upgrade Replicated first.

These steps upgrade Replicated in an airgap environment. If Docker is out of date, it is also updated.

1. Use this URL to download the Replicated files to an internet-enabled system.
   https://s3.amazonaws.com/replicated-airgap-work/stable/replicated-2.48.0%2B2.48.0%2B2.48.0.tar.gz
2. Transfer the Replicated files to the same location on your airgap application server as your original airgap installation files.
3. Execute the following command in the same directory where the airgap installation files were originally installed.

   ```
   tar -xzvf replicated-A.BC.D+A.BC.D+A.BC.D.tar.gz --overwrite
   ```

   To find the original file, look in the Admin Console:
   Gear icon > Console settings > Airgap settings
   Note the update path. The filename looks like this, where A.BC.D is the version ID: "replicated-A.BC.D+A.BC.D+A.BC.D.tar.gz"
4. Run the installation script in the same directory where the files were extracted. You must have system administration permissions to do this.

   ```
   cat ./install.sh | sudo bash -s airgap
   ```
5. Follow the installation prompts, then you can leave the installation unattended.
6. Once the process is finished, go to the Admin Console and confirm that Replicated was upgraded to the correct version.

Retrieve Jama Connect images (airgap upgrade)

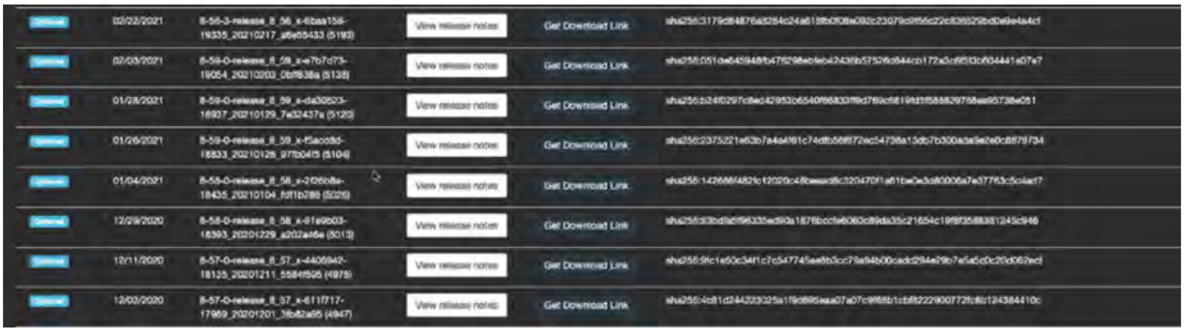
Before you can upgrade the software in an airgap environment, the Jama Connect images must be downloaded to a desktop system, then transferred to the /data/install directory on your airgap application server.

TIP

Because the download might take a long time, we recommend doing this on a different day than when you upgrade the software.

To retrieve the images, you need the airgap-safe portal URL and password provided in the original Welcome email sent from Jama Software.

1. In a supported browser, enter the URL and the password for the airgap-safe portal.
   You see a list of available releases since your license was issued, along with a download link and a checksum for each.



2. Find the version you want to install and select **Get Download Link** to generate a new temporary download link.
3. Select **Download** to copy the files directly to your desktop system.
4. Log in to the application host via SSH and move the downloaded files to the /data/install directory.

Upgrade Jama Connect

Whether your environment is internet-enabled or airgap, you can upgrade an existing installation of Jama Connect to a newer version using the Admin Console.

An installation script walks you through the process of upgrading Jama Connect. To start the wizard, you use the URL that was generated when you installed or upgraded the Admin Console (Replicated).

Important considerations

- If you are upgrading both the Admin Console (Replicated) and Jama Connect, upgrade the Admin Console first.
- If you're on a version of Jama Connect earlier than 8.36.0, you must perform a step upgrade. First upgrade to version 8.36.0, then upgrade to version 8.49.0. You can't skip the step upgrades. See Incremental Step Upgrade for Jama 8.x and Beyond for details.
- ***Airgap only:*** Before you can upgrade the application in an airgap environment, you must first retrieve Jama Connect images [475] and transfer them to your application server.

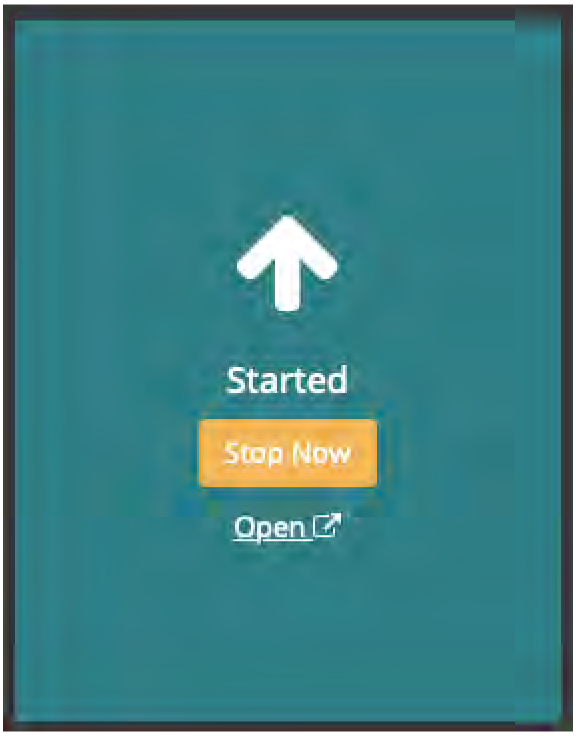
To upgrade Jama Connect:

1. Use a browser to navigate to **Admin Console > Dashboard** and make sure that the Admin Console is up to date.
2. Depending on whether an update is available, select the following:
   - If an update was already discovered, the dashboard reads "There is an update available." Select **View update**.
   - If no update was already discovered, the dashboard reads: "Jama is up to date." Select **Check now**.

   If an update is then discovered, the dashboard reads "Update Available." Select **View update**.
3. Review the proposed update or updates and select **Install Update**.

4. Go to the dashboard, which displays the progress of the upgrade.
   - **Updating** — The Jama Connect components are downloaded from our private and secure registry on the Internet.
   - **Starting... Queued** — The components are started and initialized, as well as the database is updated.
5. When the dashboard reads “Started,” the update is complete. Select the **Open** link under Started to open Jama Connect in a new browser window.



6. Log in to Jama Connect [503].
7. Rebuild the search index [545].

Upgrade from a version prior to 8.0

If you are upgrading from a version of Jama Connect prior to 8.0 (for example, 2015.5), the upgrade process is different from previous upgrades because the deployment model has changed.

> **CAUTION**
> Perform the upgrade in a test environment before upgrading your production environment.

Prerequisites

1. Configure a supported environment with proper application server preparation [409].
2. Choose your upgrade channel.
3. Locate your production and staging environment licenses.
4. Make sure that your current version of Jama Connect doesn't have a build date older than 2015/11/20. If you are running an older version of Jama Connect, the upgrade won't be able successful.
   Note: Our recommended upgrade path is **3.x > 4.x > 4.2.x > 2014.x > 2015.x > 2015.5 >** 8.79

Upgrade

Depending on your current environment setup, the steps in the upgrade process to 8.79 vary. Before upgrading, review the Supported Software for your channel and the Production System Requirements [405]. Jama Connect 8.0 and earlier won't work in a Windows Server environment or with an Oracle database.

Migrating from Oracle

If you are upgrading from a version of Jama Connect using Oracle, you must migrate to a supported database before upgrading to 8.79. See Migrating Databases [549] for more information on the process.

Migrating from Windows

If you are upgrading a version of Jama Connect running on Windows, you must migrate to a supported Linux operating system [405]. Once the Linux environment is properly configured, move on to **Migrating to** 8.79.

Migrating to 8.79

Since this is your first time upgrading to Jama Connect version 8.79, this process will consist of a migration.

Migrating on the same server

If Jama Connect is running a supported OS, you can stage the new installation on the same server. However, your environment must meet these requirements:

1. Your previous version of Jama Connect must not be running at the time of installation.
2. No other applications can run on the server.
3. Once you have completed the migration, you must remove your previous Jama Connect installation.

Migration process

1. Migrate existing data [548] from **[contour_home]** on your current Jama Connect server to **/data/contour/** on the Jama 8.79 server.
2. If you are migrating your database, see Migrating database server [549].
3. Follow the installation instructions [403].
   Follow the installation instructions for airgap [424].
4. Verify that the installation was successful.
5. Remove any previous installations of Jama Connect from the server.

Once Jama Connect is successfully installed, upgrading [469] to future releases is done from the Admin Console.

Administration

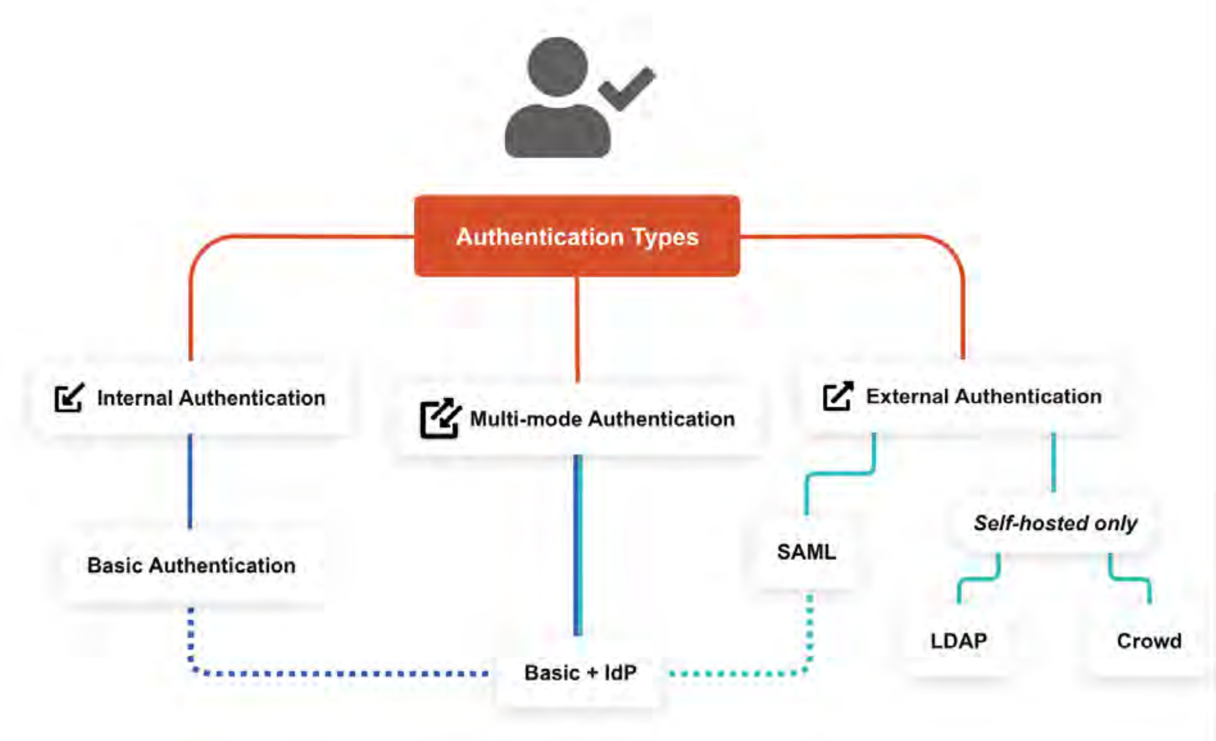
Jama Connect administrators have special roles in working with your organization's content.

A role is a set of permissions granted to a user so that they can perform particular functions.

- System administrators [482] set up and install Jama Connect. They are able to access the server settings and log in as the root user. Jama Connect manages system administration for hosted customers. For self-hosted customers, this role holds the initial license and can't be assigned.
- Organization administrators [555] have the highest level of permissions in Jama Connect and can configure settings for the organization. All Jama Software customers have at least one organization administrator, and there might be multiple within a single organization. They must have a creator license.
- Project administrators [644] have the necessary permissions to manage many aspects of a project that those with create/edit permissions can't. They must have a creator license.
- Review administrators [183] have the necessary permissions to manage reviews. They must have a creator or reviewer license.
- Reuse administrators [300] have the necessary permissions to create advanced reuse and synchronization rules. They must have a creator license.
- Process administrators [595] have the necessary permissions to configure content and connections in Jama Connect. They must have a creator license.
- User administrators [575] have the necessary permissions to manage licenses, users, and groups. They must have a creator license.
- Report administrators [399] have the necessary permissions to upload and manage reports and exports. They must have a creator license.

Authentication methods

Jama Connect supports a wide range of authentication methods to keep your data safe and secure by authenticating users. The default method, Basic authentication, verifies users with the login data that is stored in the Jama Connect database. However, different integrations are available for cloud or self-hosted environments.



Supported combinations for self-hosted and cloud

- SAML for SSO and OAuth for REST
- Multi-mode for user authentication and OAuth for REST

For information about using the Jama Connect REST API with OAuth, see Set API credentials [40].

Supported third-party authentication methods

- SAML [513] — Cloud and self-hosted option. Open standard for transferring identity data between two parties: an identity provider (IdP) and a service provider (SP).
  Electronic signatures are enabled by default, but can be disabled by a system administrator.
  To set up SAML, your company must meet these requirements:
  - Have a **SAML 2.0-compliant** Identity Provider (IdP).
  - Identify a technical person, often an IT administrator, who can provide the URL of the Identity Provider. Name this person before engaging with Jama Software and, for testing purposes, provide them access to Jama Connect.
  - Cloud customers — You must contact support to schedule enablement.
  - Self-hosted customers — If you're on a version of Jama Connect earlier than 8.62, you must follow instructions for that release instead of the instructions here. Contact support for help accessing the correct instructions and with the process.
- LDAP [518] — Self-hosted option. Centralizes the management of user accounts. Jama Connect includes a built-in integration of LDAP and Microsoft Active Directory.
- Crowd [523] — Self-hosted option from Atlassian. Manages users and groups within a single system. Jama Connect accepts user details from Crowd, then syncs them with authentication data in the application.

Internal authentication methods

- Basic [512] — The default authentication for Jama Connect. Basic authentication uses a username and password that's stored in the Jama Connect application database.
- Basic + IdP [515] — The combination of Basic and SAML creates **multi-mode authentication**, so you can separate your internal users from your external partners, vendors, and contractors.

Multi-mode authentication provides access for external users so they can be part of the requirement, approval, and tracking process in Jama Connect.

> **NOTE**
> To use multi-mode authentication [515], you must be running Jama Connect 8.62 or later.

As a self-hosted user, you can update or change the authentication type for an organization. To do this, log in as root user and select **System Properties > Authentication Properties**.

SCIM provisioning for user management

System for Cross-domain Identify Management (SCIM) is a standard for automating the exchange of user identity information between identity domains or IT systems. (source)

SCIM provides a predefined schema for common user attributes like name, username, first name, last name, and email address. Attributes for organization-level groups are included to create and delete groups and manage group membership. This schema allows your organization to automatically provision users into your Jama Connect environment directly from your identity provider (IdP). It also helps you manage users within the application.

Supported identity providers

Jama Connect currently supports SCIM provisioning with the following IdPs:

- Okta Custom Application
- Microsoft Azure AD

For more information, see Jama Connect SCIM configuration with Okta.

Configuring SCIM provisioning

- **Cloud customers** — Contact Support to schedule enablement.
- **Self-hosted customers** — Contact Support to assist with enablement and ensure successful implementation.

> **NOTE**
> Before enabling SCIM provisioning, some data sanitization is required.

REST API

Jama Software REST API is an application program interface to assist developers in a clean, straightforward integration with the application.

A system administrator can enable REST API in system properties [509].

Get more information about REST API, features and documentation.

Supported image extensions and attachment types

Jama Connect only allows attaching file types that exist in the Allow List, which provides improved security and prevents uploading harmful file types that aren’t blocked.

To prevent uploading file types that might be harmful, Jama Connect filters the file types that you can upload as an attachment.

Uses this method to filter attachment types...	Supported version
Allow List	Cloud, Jama Connect 2015.2 and later
Block List	Jama Connect 2015.1 and earlier

Jama Connect allows these attachment types. We collected this list based on the usage pattern of our current customers. Each type has been screened for potential security risks.

APK, AVI, BMP, CSV, DOC, DOCM, DOCX, DOT, DOTX, DWG, GIF, GZ, JAMA, JPEG, JPG, MD, MOV, MP3, MP4, MPEG, ODG, ODP, ODS, ODT, PAGES, PDF, PGP, PNG, PPT, PTM, PPTX, RAR, RTF, TGZ, TIF, TIFF, TRA, TXT, VCS, VSD, VSDX, VSS, WAR, WAV, WMA, WMV, WPS, XCF, XLS, XLSB, XLSM, XLSX, XLT, XPS, ZIP, ZIPX

System administrator (self-hosted only)

NOTE
This information applies to self-hosted environments only.

System administrators are in charge of the following tasks.

- Logging in to the application server operating system and Jama Connect as root user
- Installing, updating, and maintaining the Jama Connect platform
- Setting up the database and application servers
- Installing the admin console and Jama Connect
- Configure settings such as authentication and mail servers
- Regular maintenance such as updates and uploading custom reports

Ideally a system administrator has expertise in these areas of administration:

- **Database**
  System administrators set up and administer the database including database sizing, resource allocation, recommended backups, and availability of the database engine.
- **Linux**
  Jama Connect must be installed on a Linux based system. System administrators need to use Command Line Interface (CLI) for basic navigation, file manipulation, permissions, and network configuration when they are installing, upgrading, allocating resources, and maintaining availability and security of the server.
- **Directory server**
  If you're not using Jama Connect native authentication, system administrators must perform setup and administration or your organization's supported directory server [512].
- **Mail server**
  If you're using these functions in Jama Connect, system administrators perform setup and administration of your organization's mail server.

System administration are necessary for customers who are self-hosting Jama Connect. For cloud customers, Jama Software manages system administration. If you're interested in an implementation that doesn't require system administration at your organization, contact your sales representative regarding our cloud solution.

Configuring the Admin Console settings

> **NOTE**
> This information applies to self-hosted environments only.

Jama Connect uses Replicated technology to deliver all microservices to self-hosted customers. Replicated software is a container orchestration tool that provides the interface, **Admin Console**, for Jama Connect.

Replicated and Jama Connect are hosted on the same application server, running on different ports.

The Admin Console stores settings, such as SSL certificates and database connection information, that Jama Connect uses to start and run correctly. Some of its functions include:

- Manage the run state of Jama Connect
- Perform upgrades
- Synchronize license renewals

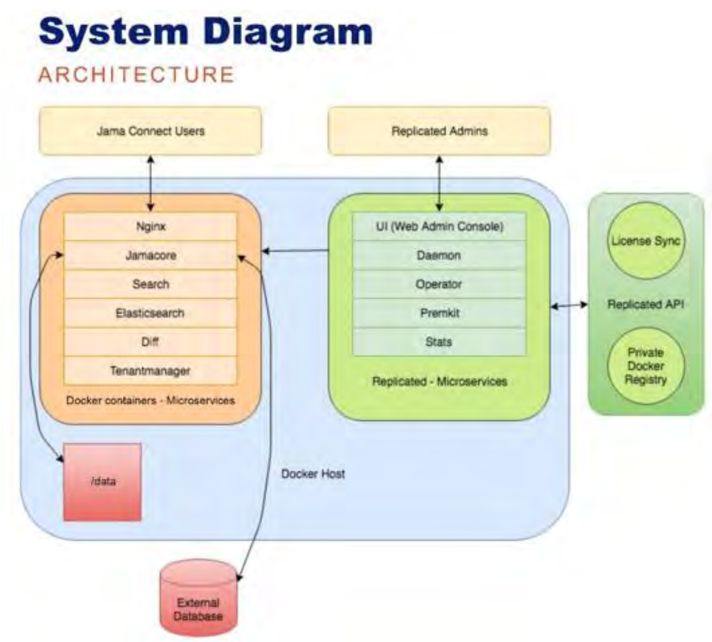
Many of the settings for the Admin Console are configured during installation. However, you can make changes to the settings whenever you need.

Application server overview

Your application server hosts the Jama Connect application, Docker containers, and the Admin Console (Replicated software). It also stores data such as attachments, images, reports, and a micro-service cache.

Docker containers — A standalone executable package of software that includes code, runtime, system tools, system libraries, and settings. See https://www.docker.com/resources/what-container for details.

Replicated — A container-based platform for easily deploying cloud native applications inside customers' environments to provide greater security and control. The Admin Console is the user interface for installing the Jama Connect application. See https://www.replicated.com/ for details.



- Jama Connect users access Jama Connect by browsing to the instance URL (https://jamainstanceurl.customer.com/).
- System administrators access the Admin Console by browsing to the same instance URL, but on port 8800 (https://jamainstanceurl.customer.com:8800/).
- Replicated updates Jama Connect and the license via API calls for internet-enabled environments. Our airgap option removes the need for remote API calls.
- Any content added to your Jama Connect instance is stored in the database. Uploaded artifacts are stored in the file system in the /data directory.

Restart the Admin Console

Occasionally, you might need to restart the Admin Console. For example, when you need to sync a new license.

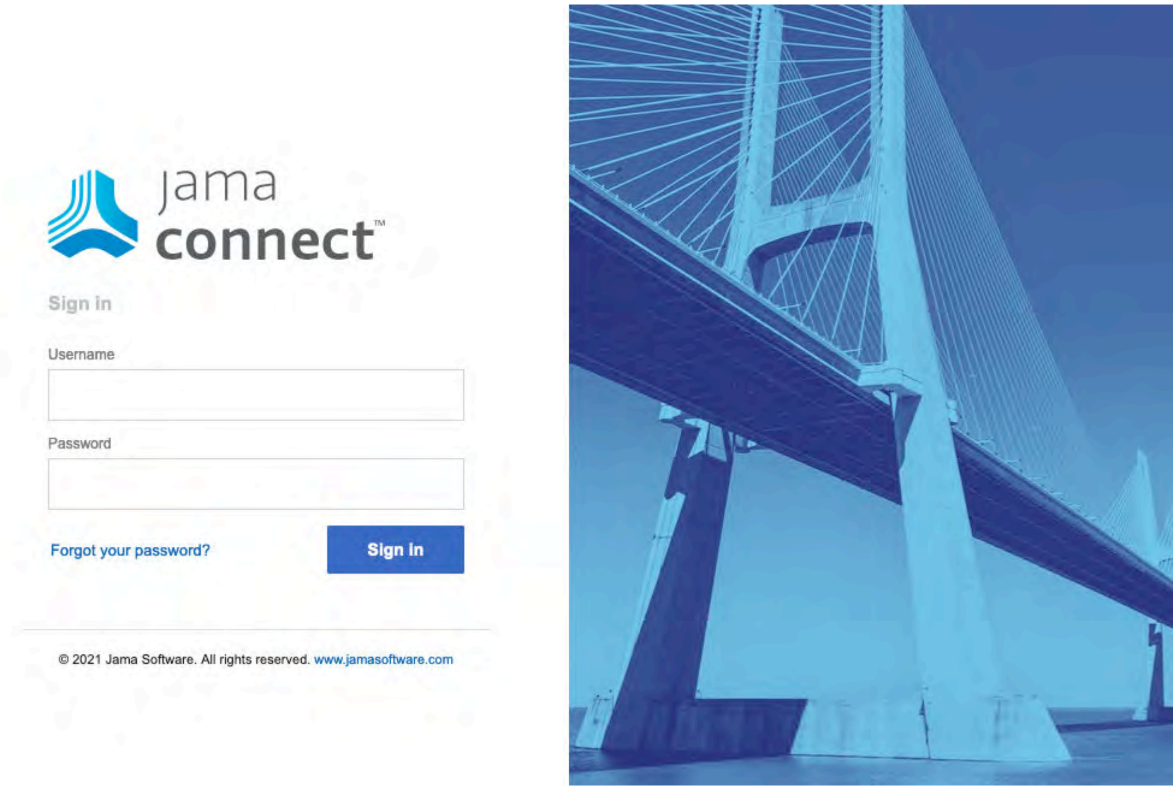
The commands to restart the Admin Console depend on the flavor of Linux you're using.

1. To restart the Admin Console on **Debian** or **Ubuntu** systems, execute these commands:

   ```
   sudo service replicated restart
   sudo service replicated-ui restart
   sudo service replicated-operator restart
   ```
2. To restart the Admin Console on **CentOS**, **RHEL**, or **Fedora** systems, execute these commands:

   ```
   sudo systemctl restart replicated replicated-ui replicated-operator
   ```

Once restarted, the Admin Console displays the login page.



Create a Replicated snapshot

A Replicated snapshot is a backup of the Admin Console environment. It includes the Replicated database, registry images, and container volumes (when specified).

A Replicated snapshot can be taken while Jama Connect is running without interruption.

> **IMPORTANT**
> Replicated snapshots don't include the contents of the Jama Connect database, the contents of the /data directory, or the log files. To back up those items, see Back up to .jama or XML file [532].

When to create a snapshot

- When migrating Jama Connect to new hardware [548]. When you replace one server with another (create a clone), you can perform a fresh installation of Docker and Replicated, then restore from the snapshot.
- During disaster recovery.
- Before upgrading your software (Jama Connect or Replicated).

Snapshot location

By default, Replicated snapshots are stored in this location:

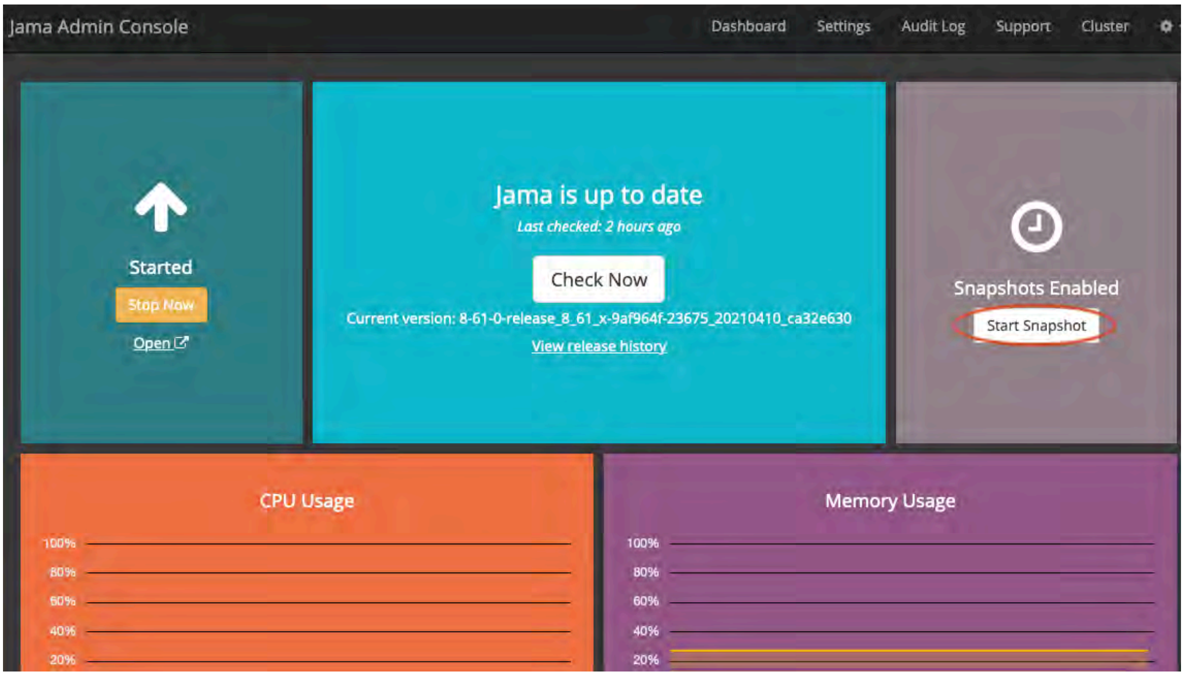
```
/var/lib/replicated/snapshots
```

To include the Replicated snapshots in your regular backups of Jama Connect, you can change the location for the snapshots, like this:

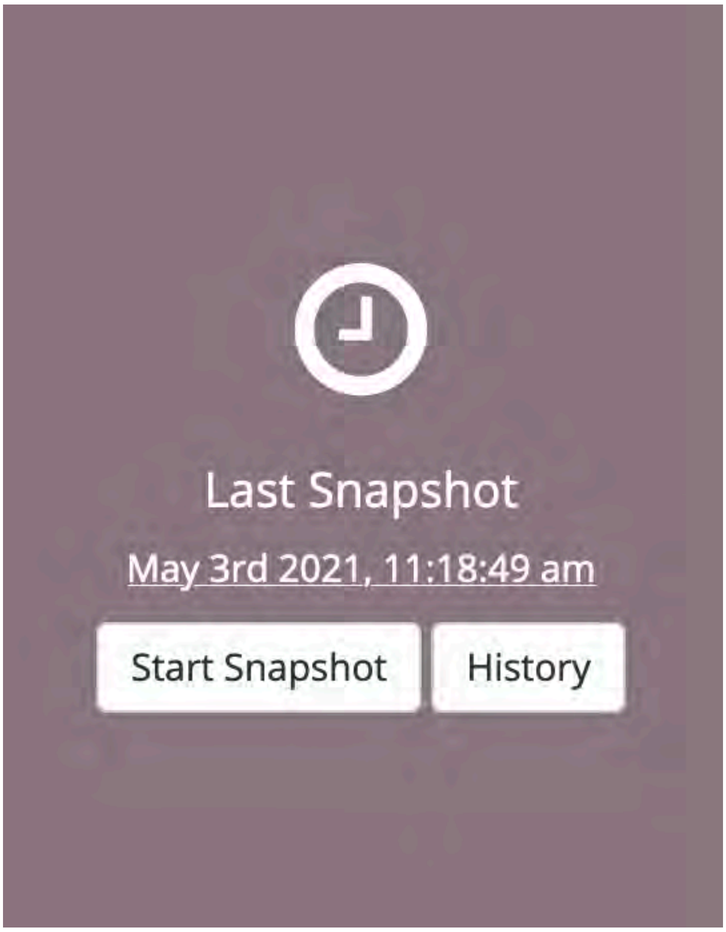
```
/data/replicated/snapshots
```

To create a Replicated snapshot:

1. (Optional) Identify and configure a custom directory for your snapshots: Select **Admin Console > Settings** (gear icon) **> Console Settings > Snapshots**.
2. Create a snapshot: Open the Admin Console and select **Start Snapshot**.



Snapshots Enabled changes to **Snapshotting** and a progress spinner appears while it backs up the registry data and container volumes. When the snapshot is ready, you see a timestamp for the last snapshot.



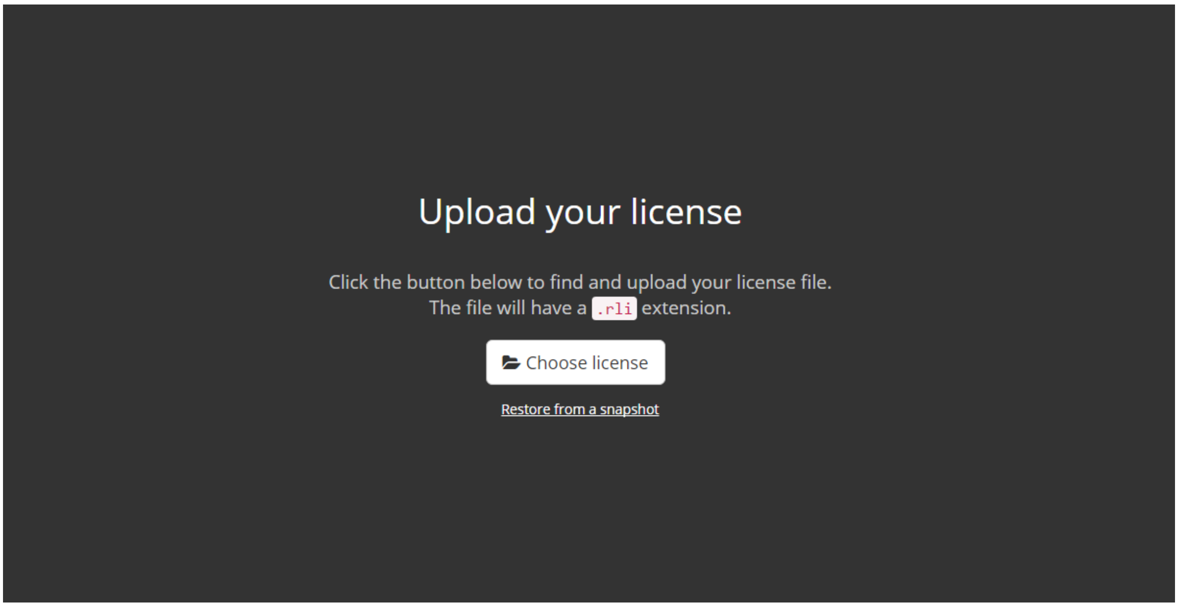
If the Replicated snapshot fails, the dashboard displays an error message with technical detail of the failure, including the file or folder involved. This error message is generated from the underlying file system (for example, readdirent: errno 523), which means the problem is likely with the underlying file system and not the Jama Connect installation.

Restore all settings from a Replicated snapshot

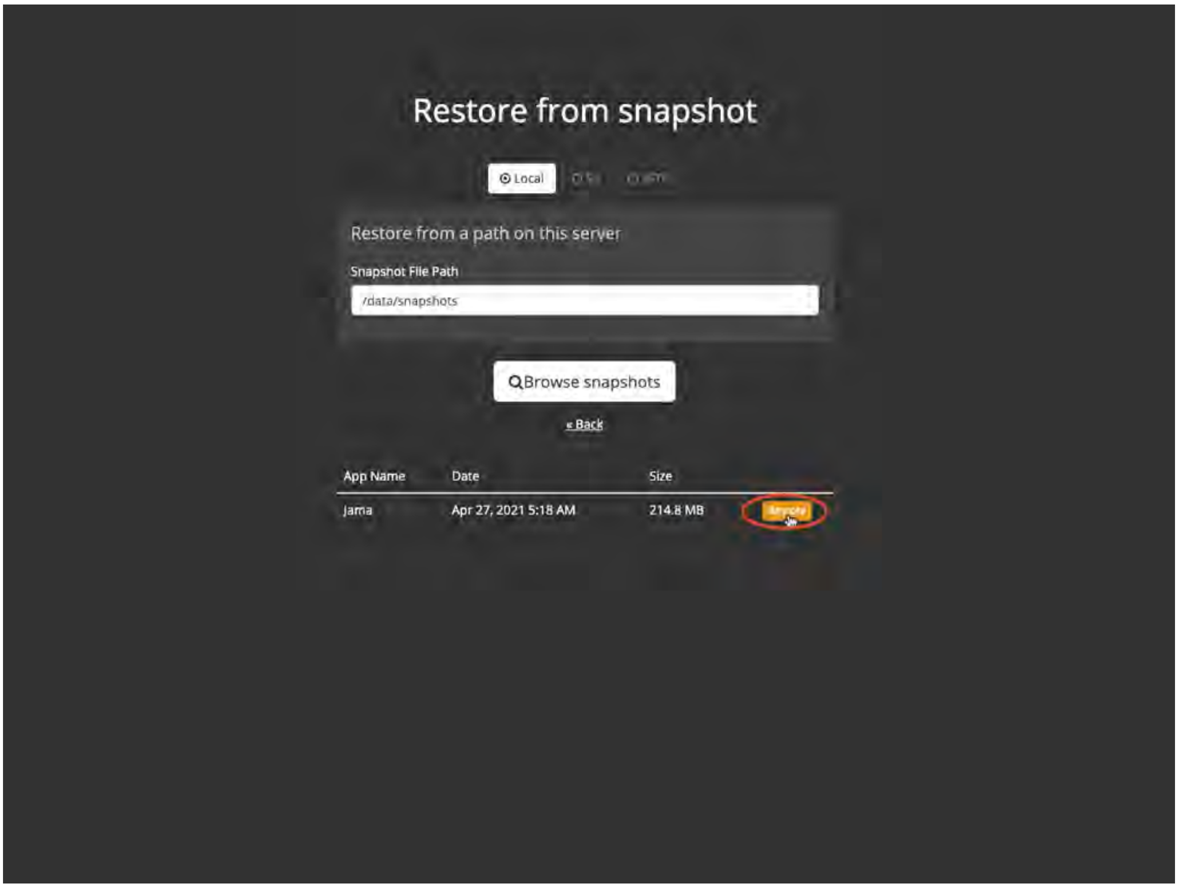
When you set up a new application server for Jama Connect, you can restore the Admin Console settings that you saved in a Replicated snapshot.

Snapshots include the Replicated database, registry images, and container volumes (when specified).

1. Install Jama Connect on the new server.
2. When the page Upload your license is displayed, select **Restore from a snapshot**.



3. When the Restore from snapshot page is displayed, enter the path to your snapshot and click **Restore**.
   Use the same path on the new server as you did on the old server. For example, **/var/lib/replica-ted/snapshots** or **/data/snapshots**.



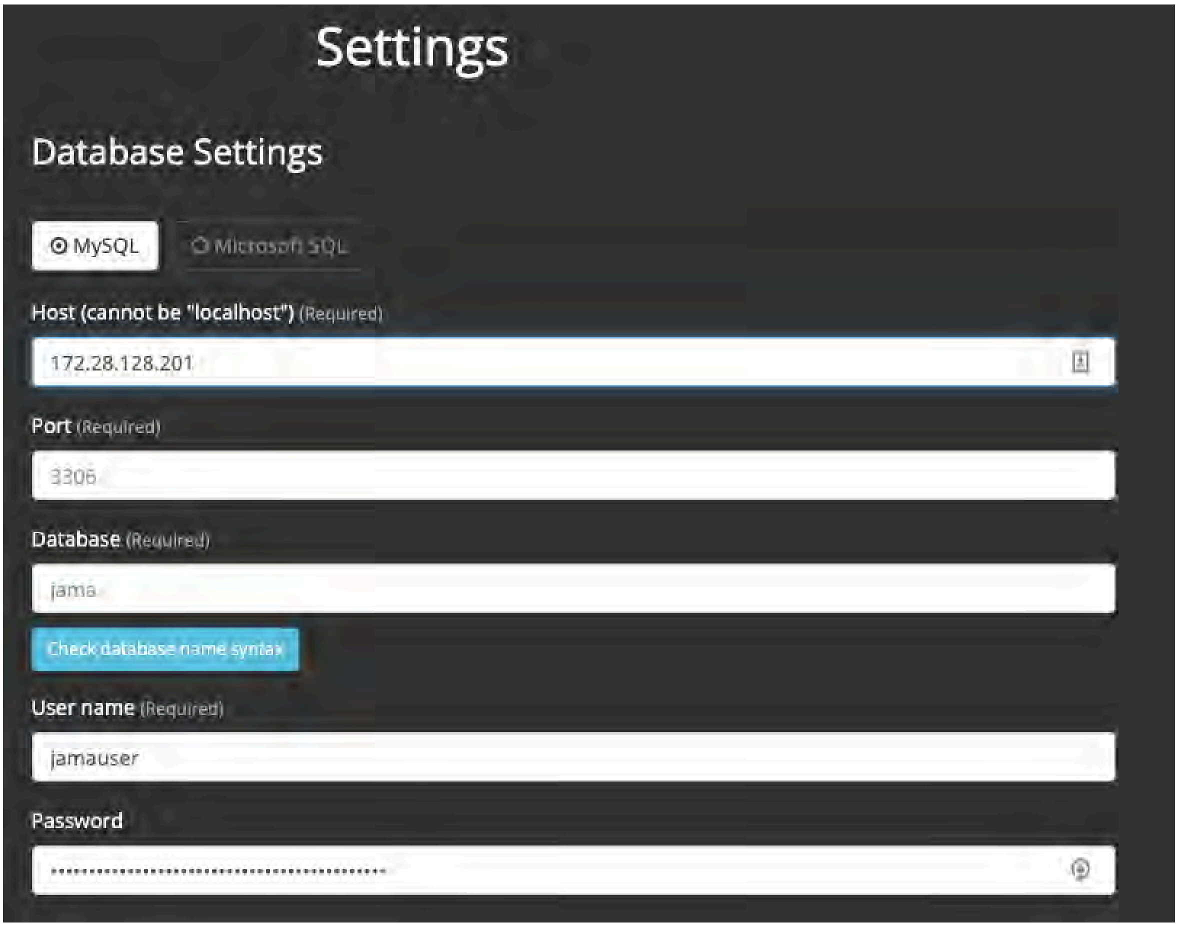
4. On the Restore Cluster page, click **Restore**.

The system displays a progress page as it restores your data from the snapshot.

Configure database settings

Database settings can be configured as part of your initial installation of Jama Connect or any time you need to make changes.

1. In the header of the Admin Console, select **Settings** to open the Settings page.
2. Scroll to the **Database Settings** section of the page.

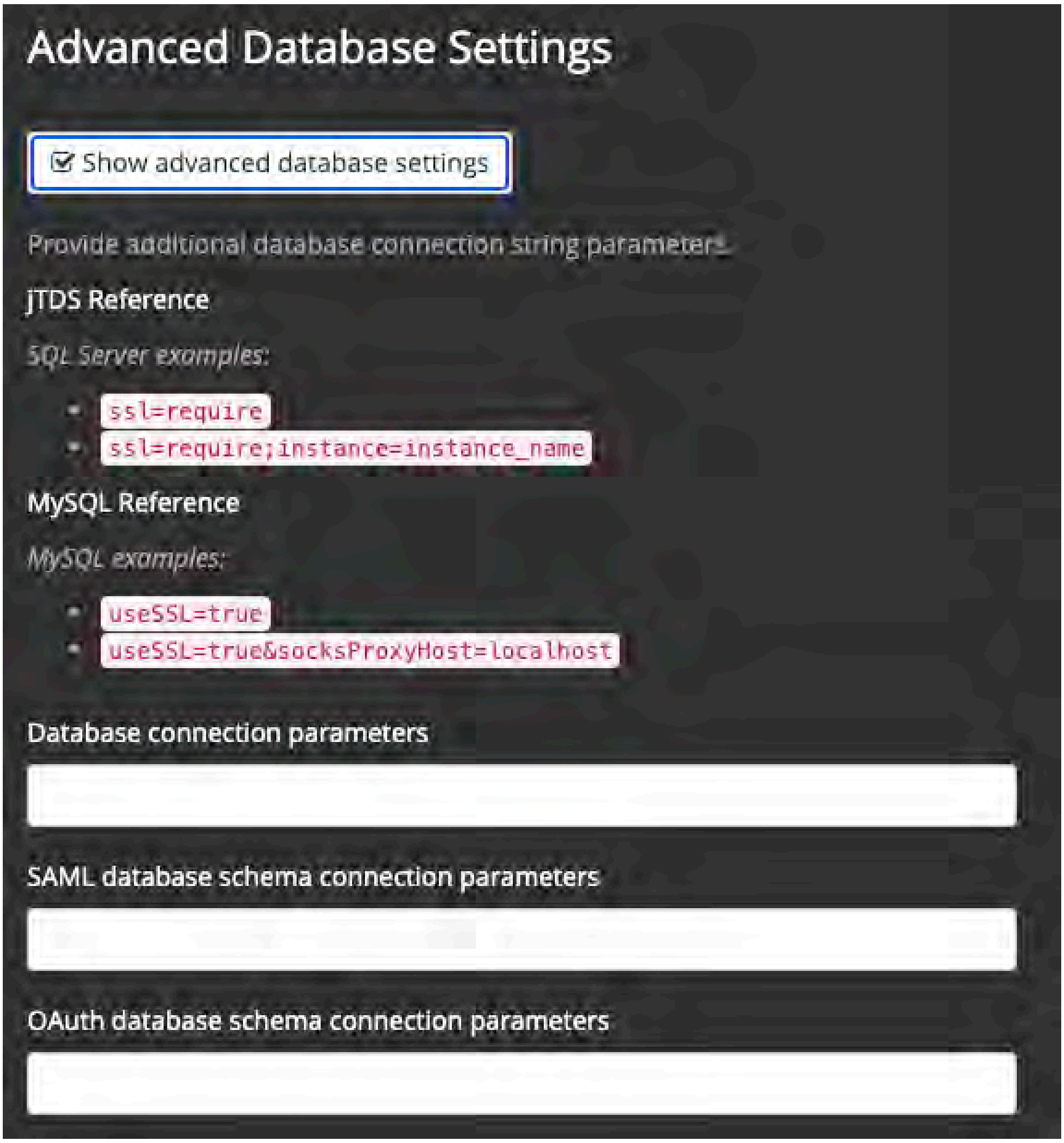


3. Select the type of database you're using, MySQL [412] or Microsoft SQL [413], then complete or change the database settings as needed.
4. (Optional) If you need to connect to your database through an SSL-encrypted connection, provide additional connection string parameters. These parameters specify key/value pairs in the format appropriate to your database.
   - **MySQL**

     ```
     useSSL=true&requireSSL=tru
     ```
   - **SQL Server**

     ```
     ssl=require;appName=jama;bufferMinPackets
     ```

   More options are available for MySQL and SQL Server



5. Scroll to the bottom of the page and click **Save**. A message confirms that your settings were saved.
6. To apply settings, you must restart the application:
   - Immediately — Select **Restart now**.
   - Later — Select **Cancel** and **Restart later**.

Configure web server settings

Web server settings can be configured as part of your initial installation of Jama Connect or any time you need to make changes.

The web server configuration allows the use of SSL (TLS) or plain text connections.

1. In the header of the Admin Console, select **Settings** to open the Settings page.
2. Scroll down to the **Web Server** section of the page.
3. Enter the context path for Jama Connect, for example, https://<hostname>. Don't use this configuration unless you need to specify a sub-path or sub-directory.
4. (Optional) Select **Check context path syntax**.

5. (Optional) Set the TLS and plain text port as needed.
6. Scroll to the bottom of the page and click **Save**. A message confirms that your settings were saved.
7. To apply settings, you must restart the application:
   - Immediately — select **Restart now**.
   - Later — Select **Cancel** and **Restart later**.

Configure host name

Your Host Name settings can be configured as part of your initial installation of Jama Connect or any time you need to make changes.

If possible, choose a host name that's meaningful to users. Be sure the domain name matches your TLS certificate.

If you need to change this host name, you must also change the base URL. [542]

1. In the header of the Admin Console, select **Settings** to open the Settings page.
2. Scroll down to the **Host Name** section of the page.

3. Enter or change the host name.
4. (Recommended) Select **Reuse admin console TLS configuration** to use the same certificate configured in the Admin Console.
5. Scroll to the bottom of the page and click **Save**. A message confirms that your settings were saved.
6. To apply settings, you must restart the application:
   - Immediately — Select **Restart now**.
   - Later — Select **Cancel** and **Restart later**.

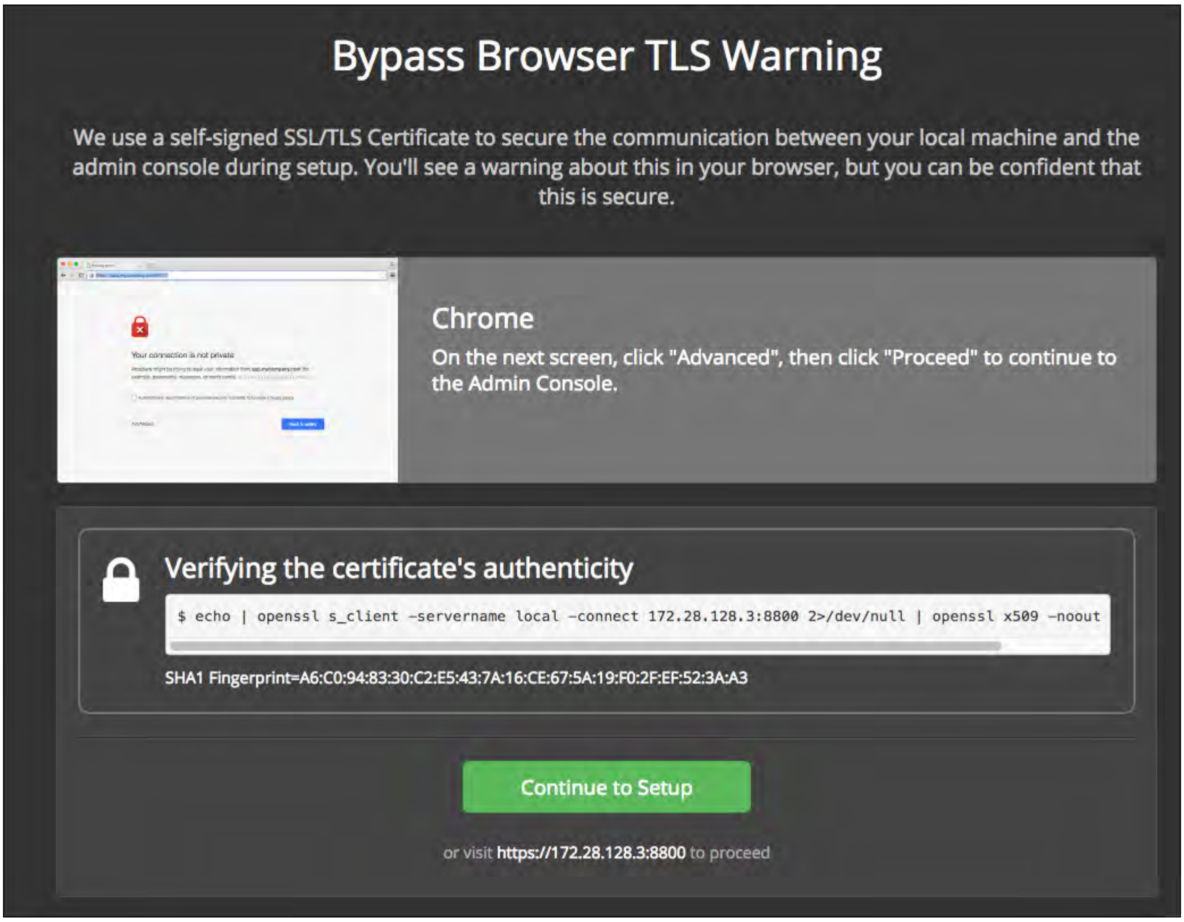
Bypass browser TLS warning

A Transport Layer Security (TLS) or Secure Sockets Layer (SSL) certificate is required to establish a link between the Admin Console (Replicated) and your browser.

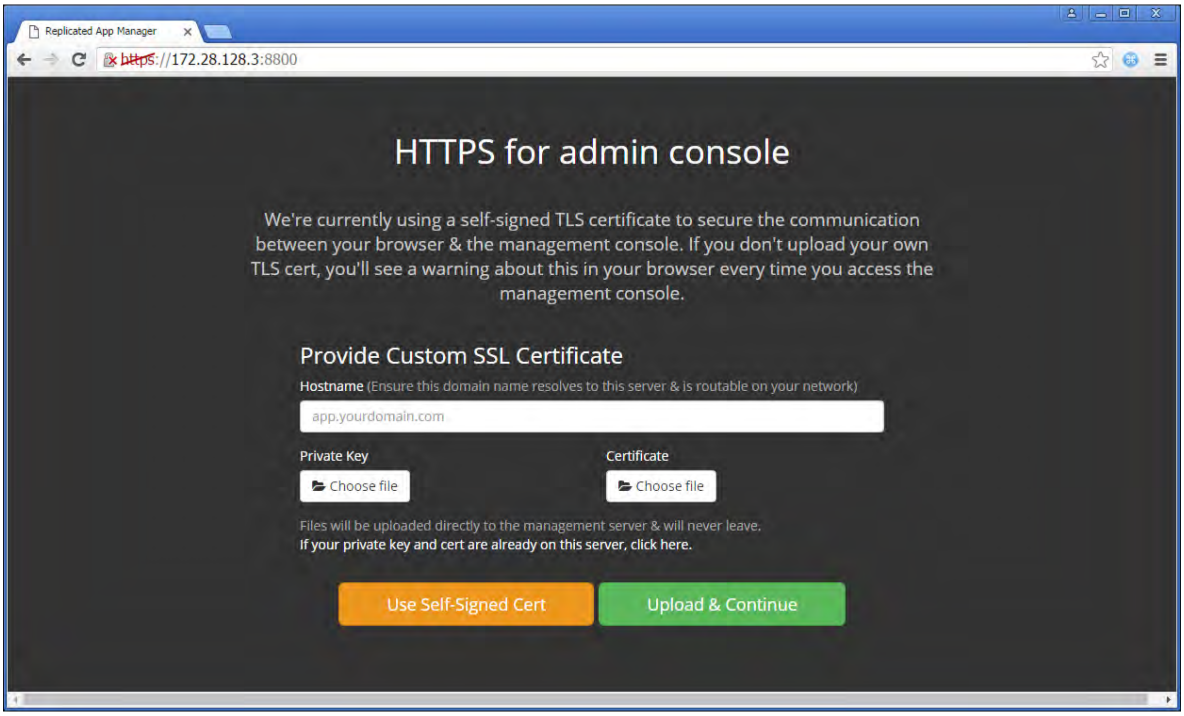
When configuring the Admin Console for the first time, you see a TLS warning with an option to bypass it with a self-signed certificate. If you have a trusted certificate, you can configure the certificate at any time [495]. If you continue with the self-signed certificate, you see a warning every time you access the Admin Console.

You can upload a TLS certificate and provide a private key if you have one. Private keys can't be password-protected. The key and primary certificate must be in PEM format, that's a base64 encoded x509 certificate.

1. In the header of the Admin Console, select **Settings** to open the Settings page.
2. Scroll down to the **Bypass Browser TLS Warning** section of the page.



3. Click **Continue to Setup** to upload a TLS certificate.



4. Click **Choose file** to select the key and certificate, then click **Upload & Continue**.
5. Scroll to the bottom of the page and click **Save**. A message confirms that your settings were saved.
6. To apply settings, you must restart the application:
   - Immediately — Select **Restart now**.

- Later — Select **Cancel** and **Restart later**.

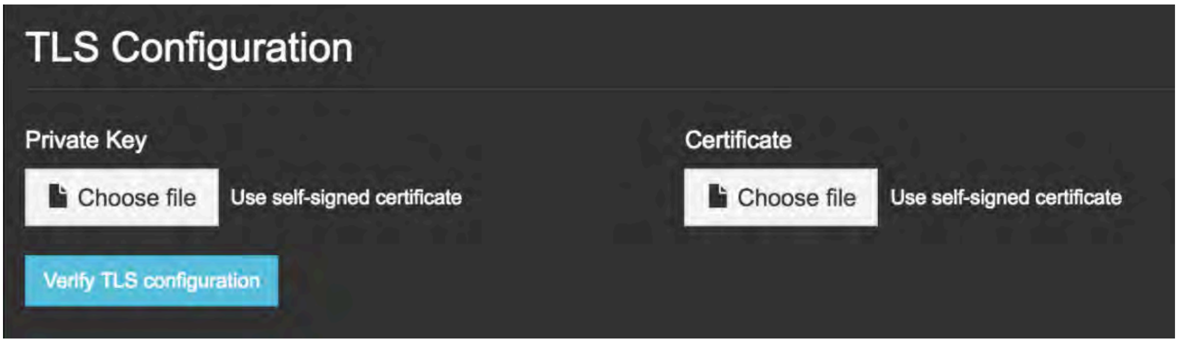
Configure TLS certificate

The settings for the TLS certificate can be configured as part of your initial installation of Jama Connect or any time you need to make changes.

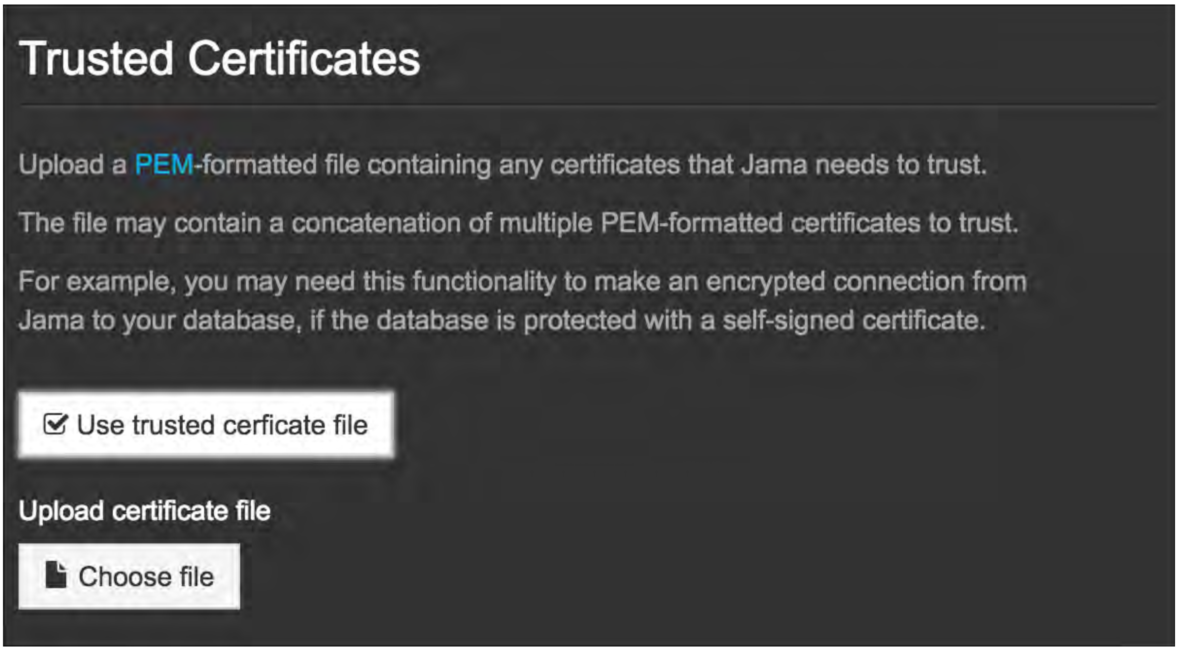
You can provide custom private key and TLS certificates to secure the application, or you can reuse the Admin Console certificate. You can also update your certificate [540] if it expires.

The certificate ensures that Jama Connect trusts the issuer.

1. In the header of the Admin Console, select **Settings** to open the Settings page.
2. Scroll down to the **TLS Configuration** section of the page.



3. To link Jama Connect to a service protected by a certificate (self-signed or issued by a local authority):
   - **Private Key** — Click **Choose file** and select your private key.
   - **Certificate** — Click **Choose file** and select your self-signed certificate.
4. Select **Use trusted certificate file** to upload a PEM-formatted public certificate or multiples that are concatenated into a single file. These certificates are added to the default Java trust store. You might need this functionality to connect to your MySQL, SQL Server, LDAP, Crowd, IMAP, SMTP, or other internal servers from Jama Connect.



5. Scroll down to the bottom of the page and click **Save**. A message confirms that your settings were saved.
6. To apply settings, you must restart the application:
   - Immediately — Select **Restart now**.

- Later — Select **Cancel** and **Restart later**.

Configure memory settings

Memory settings can be configured as part of your initial installation of Jama Connect or any time you need to make changes.

Use the advanced memory settings to change the memory allocation of containers that are running Java processes.

jamacore service	Uses 6.5 GB plus a portion of the remaining total memory. *Recommended:* 6.5 GB + ($total-15 GB)*50%
Search service	Uses 1 GB plus a portion of the remaining total memory. *Recommended:* 1 GB + ($total-15 GB)*5%
Diff service	Default recommendation is 128 MB.
Elasticsearch	Uses 3.5 GB plus a portion of the remaining total memory. *Recommended:* 3.5 GB + ($total-15 GB)*20%
SAML service	Uses 1 GB plus a portion of the remaining total memory.
OAuth service	Uses 512 MB plus a portion of the remaining total memory.

Memory settings can be expressed as a simple formula, using:

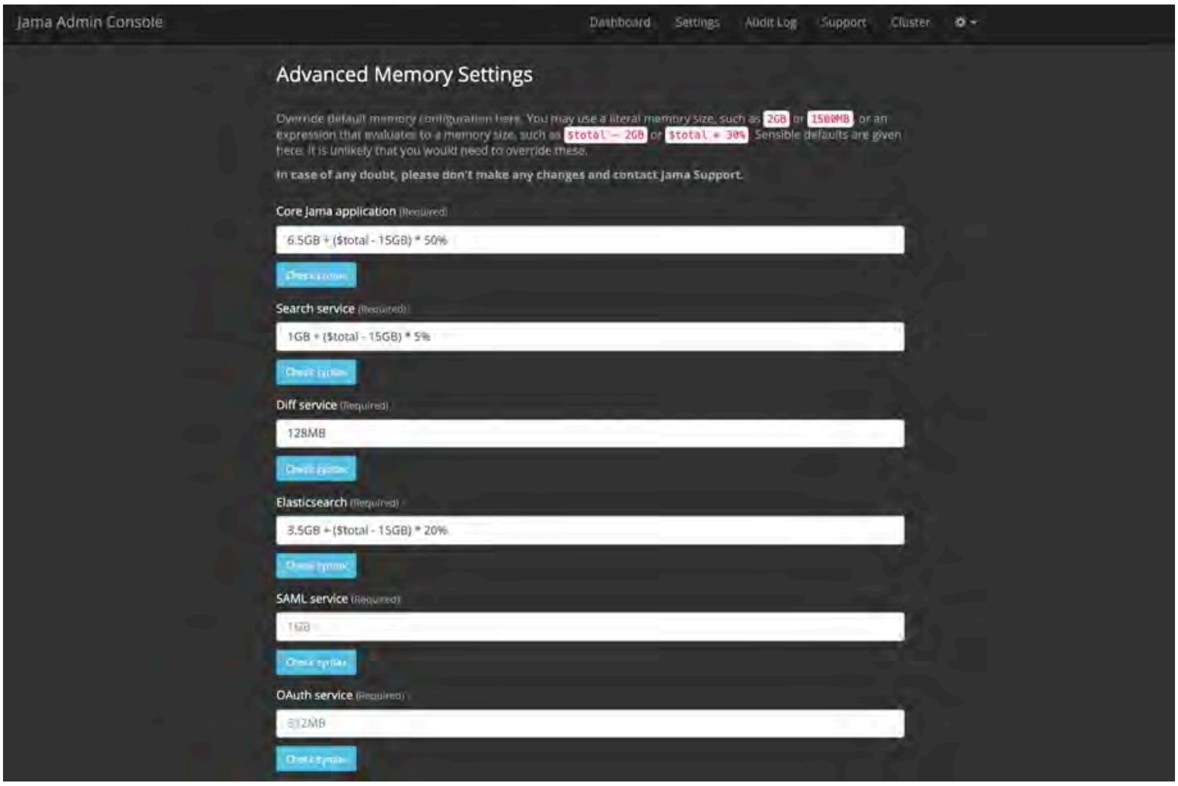
Operators	+ - / *
Brackets	( ) to specify order of operations
Variable	$total to reference the total memory of the application server
Numbers	with units KB, MB, or GB
Numbers	with percentages %

NOTE

When changing memory settings, make sure you don't over-allocate the total memory of the application server [405]. Monitor usage [536] and make sure to leave enough memory for system processes to run smoothly. For information, see Resource sizing for your application server [405].

To configure memory settings:

1. In the header of the Admin Console, select **Settings** to open the Settings page.
2. Scroll down to the **Advanced Memory Settings** section of the page.



3. Use the default values. If you have performance issues, contact Support for help configuring these values.
4. Scroll to the bottom of the page and click **Save**. A message confirms that your settings were saved.
5. To apply settings, you must restart the application:
   - Immediately — Select **Restart now**.
   - Later — Select **Cancel** and **Restart later**.

Configure advanced startup settings

Startup settings can be configured as part of your initial installation of Jama Connect or any time you need to make changes.

Enable Java Management Extensions (JMX) and set additional Java Virtual Machine JVM options (JAVA_OPTS) for the following containers that are running Java processes:

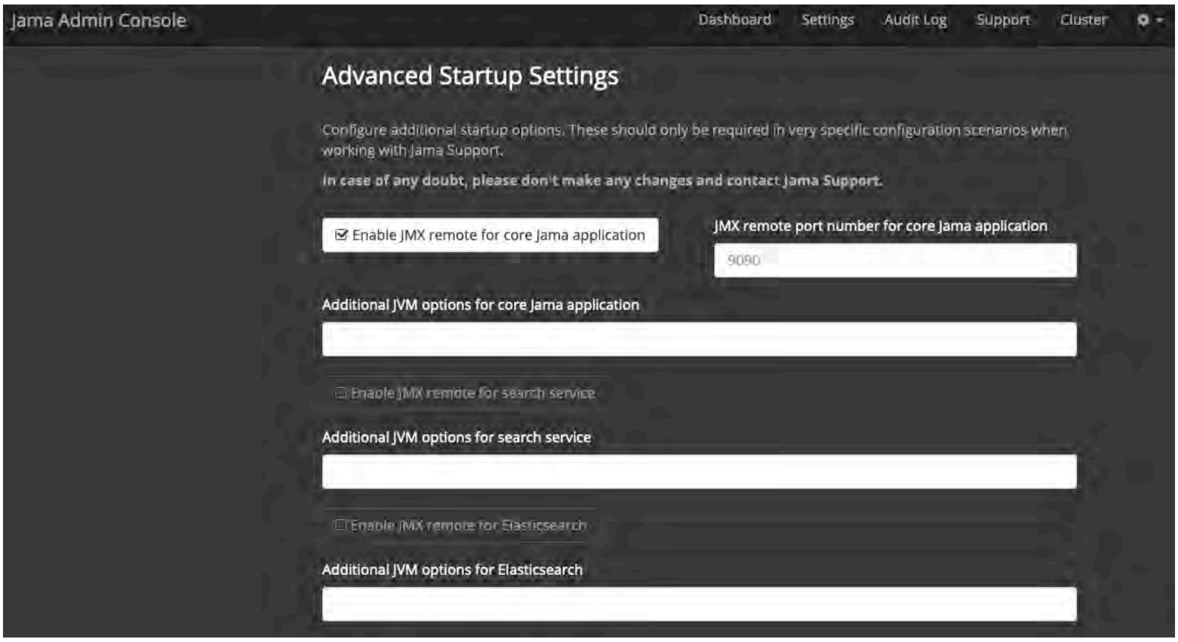
- The jamacore application
- Search service
- Elasticsearch

> **IMPORTANT**
> Each of these containers already adds a number of their own JVM options that might clash with additional JVM options configured here.

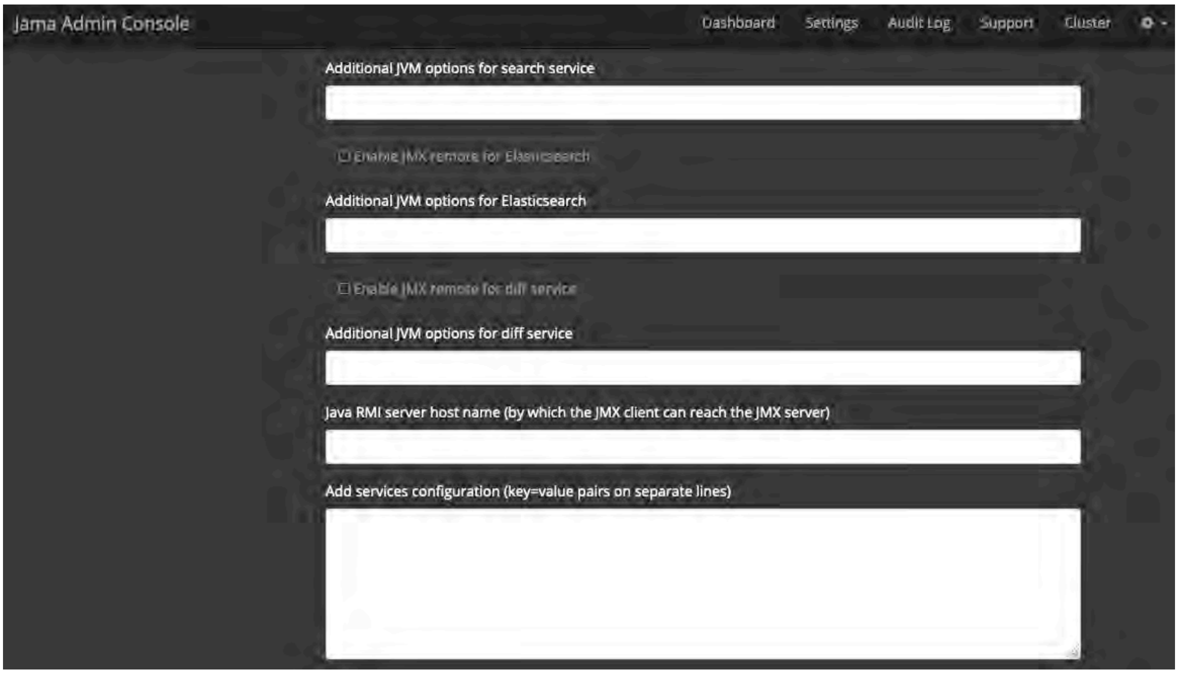
Use JMX support in a secure environment, because JMX ports have no authentication on the JMX ports when JMX is enabled. A formula can also be used [496] to set an exact memory amount.

To configure advanced startup settings:

1. In the header of the Admin Console, select **Settings** to open the Settings page.
2. Scroll down to the **Advanced Startup Settings** section of the page.



3. Select **Enable JMX remote for core Jama application**.
4. Enter the JMX remote port number for the core Jama application.
   Don't overlap JMX ports between containers and don't overlap other ports that are already in use on the application server.
5. (Optional) Enter additional Java JVM options for Jama core, search service, and Elasticsearch.



6. Enter a Java RMI server hostname.
   A single Java RMI server hostname can be given that works across all containers that have JMX enabled. The host IP address is used by default. However, if the host IP address isn't accessible by the JMX client for the configured JMX ports, the public hostname or the public host IP is set here. If an SSH tunnel is used, set the hostname to "localhost."
7. (Optional) In the **Add services configuration** field, add services configuration specific to Jama Connect, such as throttling.
8. Scroll to the bottom of the page and click **Save**. A message confirms that your settings were saved.
9. To apply settings, you must restart the application:
   - Immediately — Select **Restart now**.

- Later — Select **Cancel** and **Restart later**.

TIP

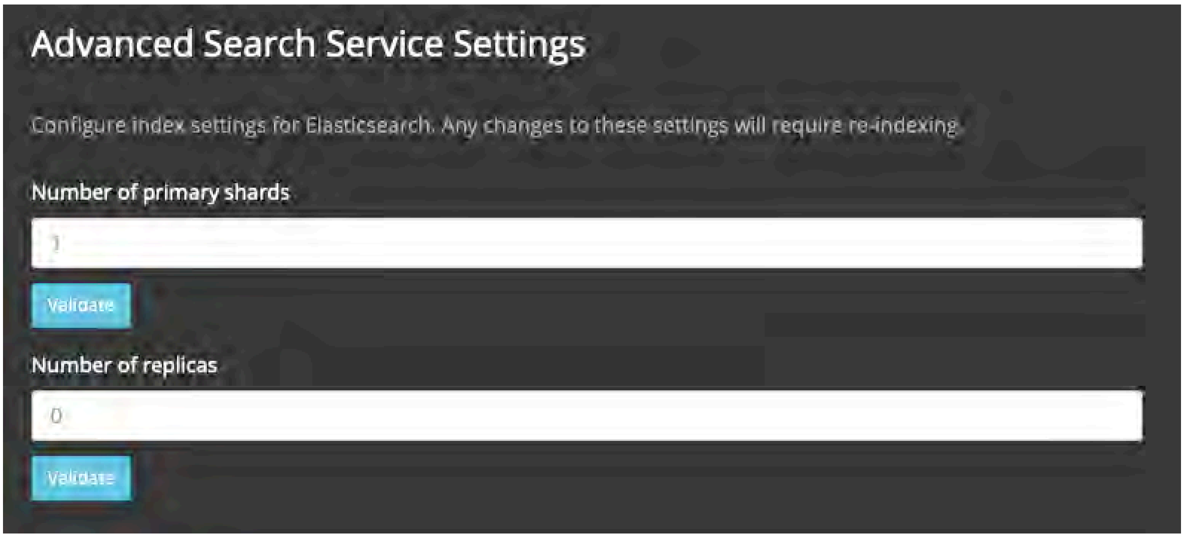
Garbage collection logging (GC logging) is automatically enabled for containers that are running Java processes. GC log files are available alongside other log files for the respective container [546]. When you restart Jama Connect [535], previous GC log files are packaged as a ZIP file. Typically, the default GC logging configuration is sufficient, but it's possible to override GC logging parameters through the **Additional JVM options for Jama core** field in admin console advanced startup settings [497].

Configure Advanced Search Settings

Advanced Search settings can be configured as part of your initial installation of Jama Connect or any time you need to make changes.

Configure index settings for Elasticsearch. Making changes to these settings requires re-indexing.

1. In the header of the Admin Console, select **Settings** to open the Settings page.
2. Scroll down to the **Advanced Search Service Settings** section of the page.

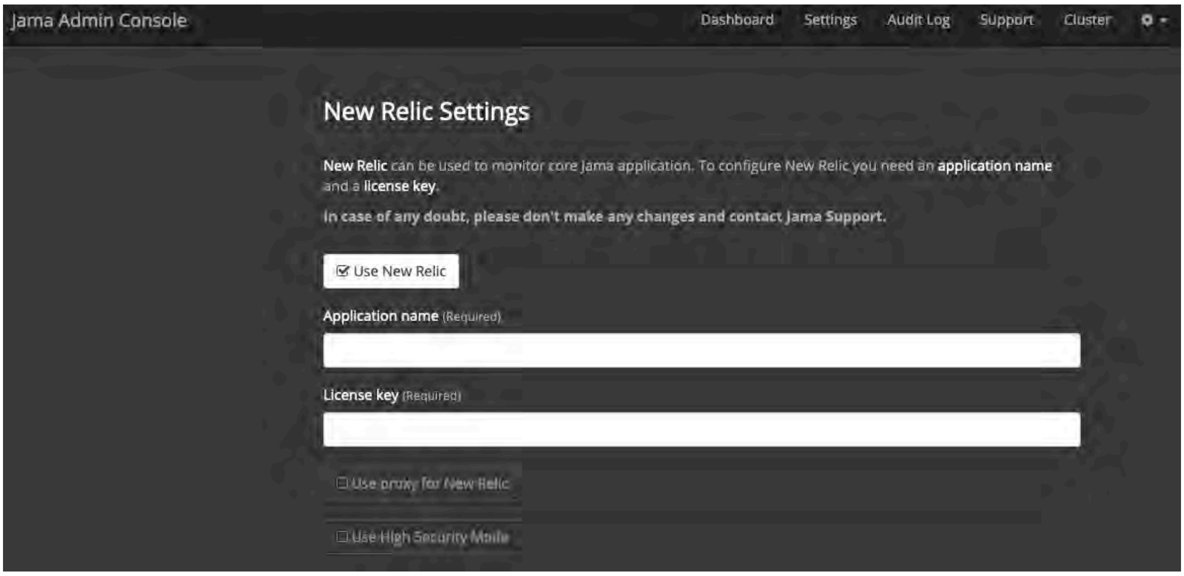


3. Accept the default values.
4. Scroll to the bottom of the page and click **Save**. A message confirms that your settings were saved.
5. To apply settings, you must restart the application:
   - Immediately — Select **Restart now**.
   - Later — Select **Cancel** and **Restart later**.

Configure New Relic settings

New Relic settings can be configured as part of your initial installation of Jama Connect or any time you need to make changes.

1. In the header of the Admin Console, select **Settings** to open the Settings page.
2. Scroll down to the **New Relic Settings** section of the page.
   The "Application name" and "License key" are required to connect jamacore to New Relic.
3. For the Application name, enter **Jama**. If unsure where to find your license key, see the New Relic instructions.
4. (Optional) Select **Use proxy for New Relic** to expand the proxy settings. If you're using High Security Mode, make that selection to expand the settings.



5. Click **Save**. A message confirms that your settings were saved.
6. To apply settings, you must restart the application:
   - Immediately — Select **Restart now**.
   - Later — Select **Cancel** and **Restart later**.

Set a custom location for the MathType Equations Editor

Settings for the MathType Equations Editor can be configured as part of your initial installation of Jama Connect or any time you need to make changes.

> **NOTE**
>
> The MathType Equations Editor requires a separate license. After your organization has purchased the license, and the system administrator sets up a location for the editor, users can access the editor in the Rich Text Editor [91] in Jama Connect.

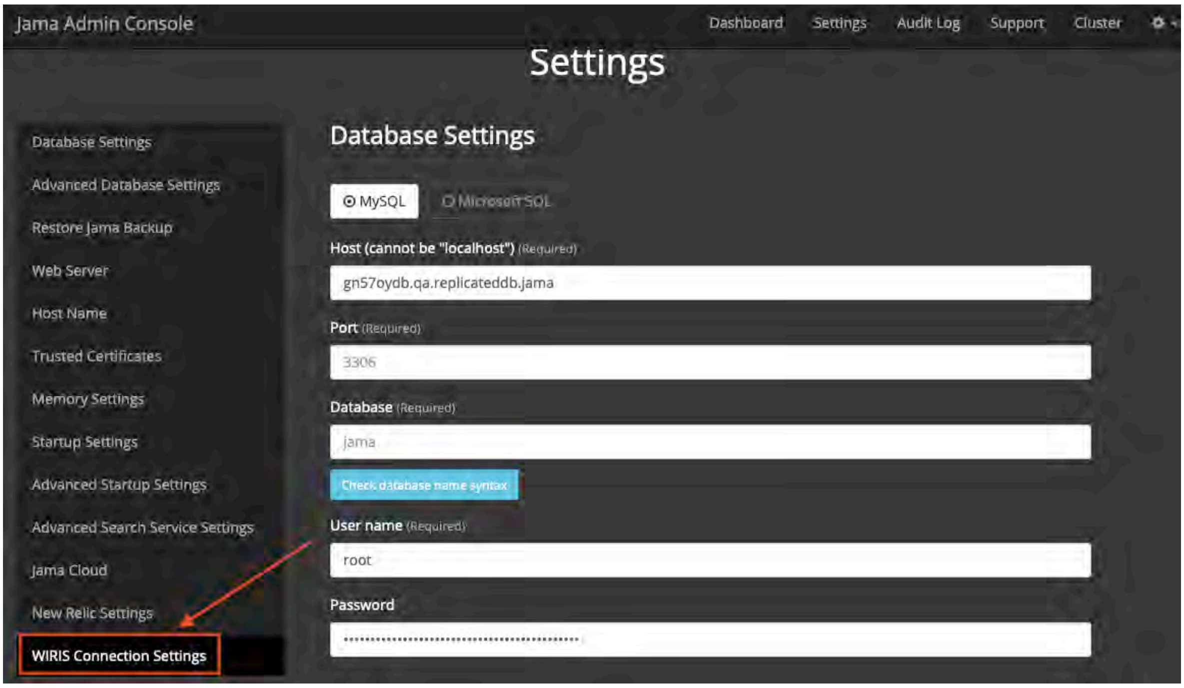
Airgap or self-hosted instances of Jama Connect can add math and chemical equation options to the rich text editor without making calls to an external server.

Before enabling the MathType Equations Editor, you must:

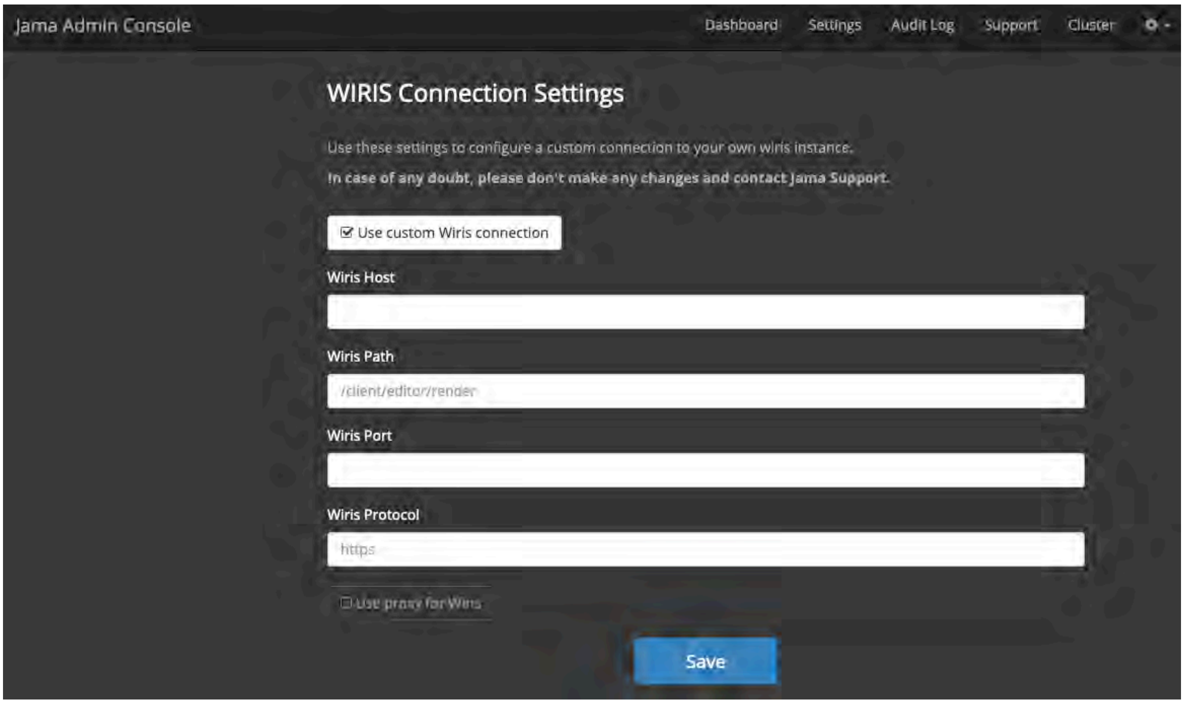
- Designate a server inside your environment that can listen for MathType calls and responses. Check for the latest supported version on the Community.
- Acquire a MathType license from Jama Software.

To configure settings for MathType Editor:

1. Log in to the Admin Console.
2. In the side panel, select **WIRIS Connection Settings**.



3. Select **Use custom WIRIS connection** to override default settings for communication with the WIRIS cloud servers.



4. Enter the following information for your designated MathType server:
   - **WIRIS host** (Required) — Enter the hostname of your MathType server. This must be accessible from both the Jama Connect application server and the user's browser. Don't include the port or protocol.
   - **WIRIS path** — Enter the context path followed by "render." Depending on how your server is set up, it might look like this:

     ```
     /editor/render
     ```
   - **WIRIS port** — The defaults are 80 for http and 443 for https. You can override these values by entering a different port number.

- **WIRIS protocol** — This is https or http. If you use https to link to Jama Connect, you must also use https for WIRIS.

> **NOTE**
> Additional settings for proxy are available but haven't been fully tested. You can use these settings if your Jama Connect instance needs to use a proxy to connect to the MathType server. However, these settings don't change how your browser connects to the MathType server.

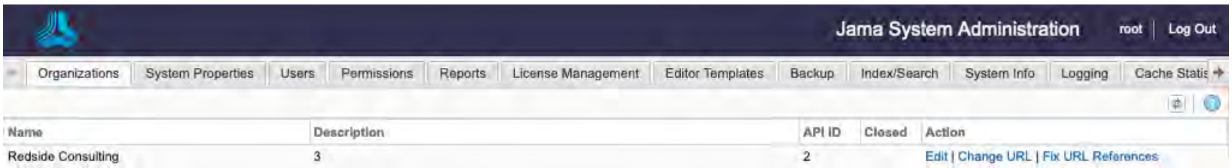
5. Scroll to the bottom of the page and click **Save**. A message confirms that your settings were saved.
6. To apply settings, you must restart the application:
   - Immediately — Select **Restart now**.
   - Later — Select **Cancel** and **Restart later**.

Setting up Jama Connect

> **NOTE**
> This information applies to self-hosted environments only.

Once you finish installing Jama Connect, continue with a few tasks for the initial setup of the application.

When logged in as root, you can access the System Administration page. From there you can complete the tasks for setting up and maintaining Jama Connect.



Administrator tasks

System administrators complete basic setup and maintenance tasks in the System Administration page. Some of these tasks can also be completed by an organization administrator.

Task	System admin	Org admin
Modify organization details [507]	X	
Configure general properties [509]	X	
Configure authentication properties [512]	X	
Manage users [575]	X	X
Manage permissions [668]	X	X
Manage reports [382]	X	
Monitor license usage [587]	X	X
Create editor templates [619]	X	X
Create a backup [527]	X	
Reindex search [545]	X	
View log and profile [552]	X	

Task	System admin	Org admin
Clear cache [545]	X	
View scheduled jobs [545]	X	
View applied patches [545]	X	

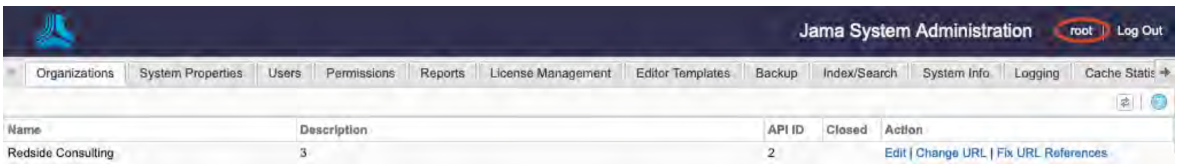
Log in as root for the first time

As a system administrator, you are the root user with a unique set of permissions [585] that allow you to access the System Administration page in Jama Connect.

The first time you log in as root, change the default password for the root user and edit any details in the My Profile page, such as email address, phone number, or location.

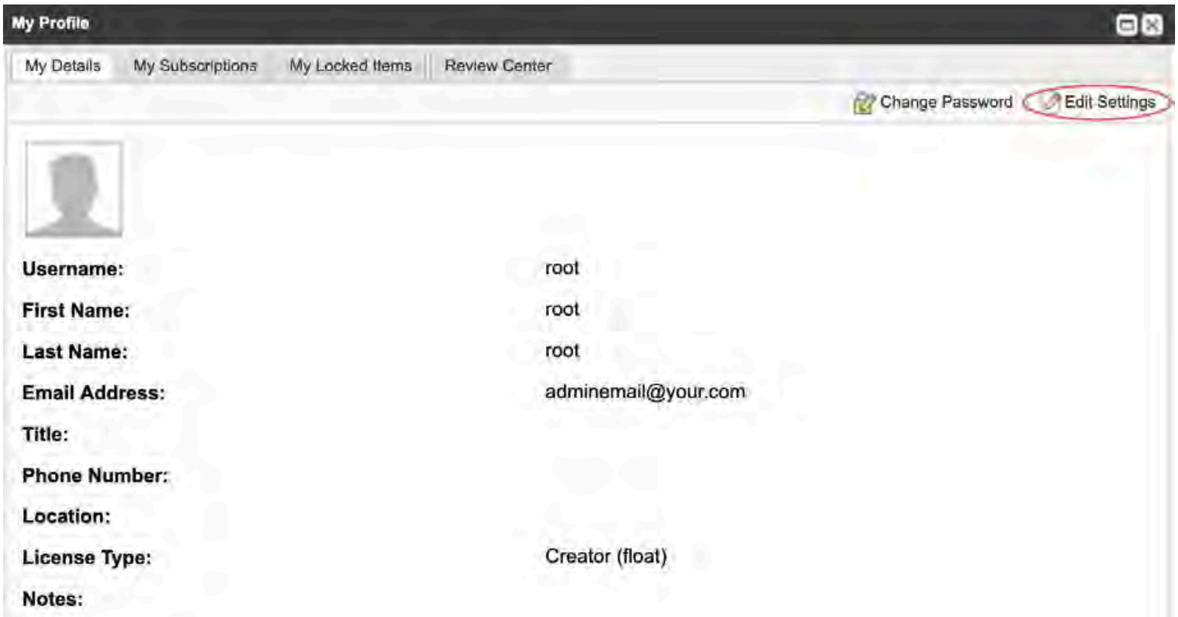
1. At the Jama Connect login page, enter the default credentials for root, then select **Sign In**.
   - **Username** = root
   - **Password** = password

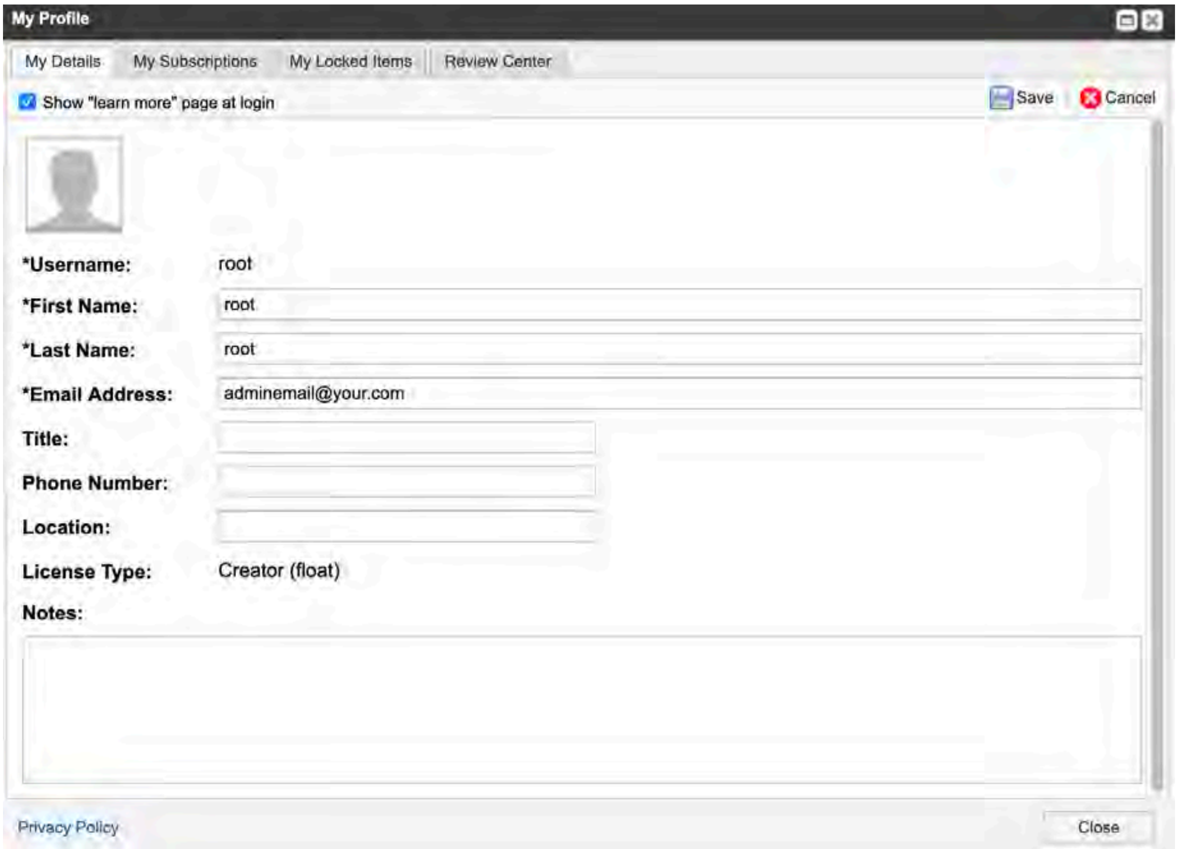
2. In the top right header, select **root**.



3. On the root user's My Profile page, select **Change Password**.

4. Enter the existing password, enter and confirm a new secure password, then select **Save**.
5. (Optional) Select **Edit Settings** to configure the root user email and any other details as needed.





6. Select **Save**, then select **Close**

Assign a new user as organization admin

Only system and organization administrators can assign roles or grant permissions to other users. If you configure an organization admin right after you install Jama Connect, you can share the tasks of setting up user accounts and permissions.

You must be have system administrator permissions to complete this task.

1. Log in to Jama Connect as the root user [503] or as an organization admin.
2. Select **Users > Add user**.

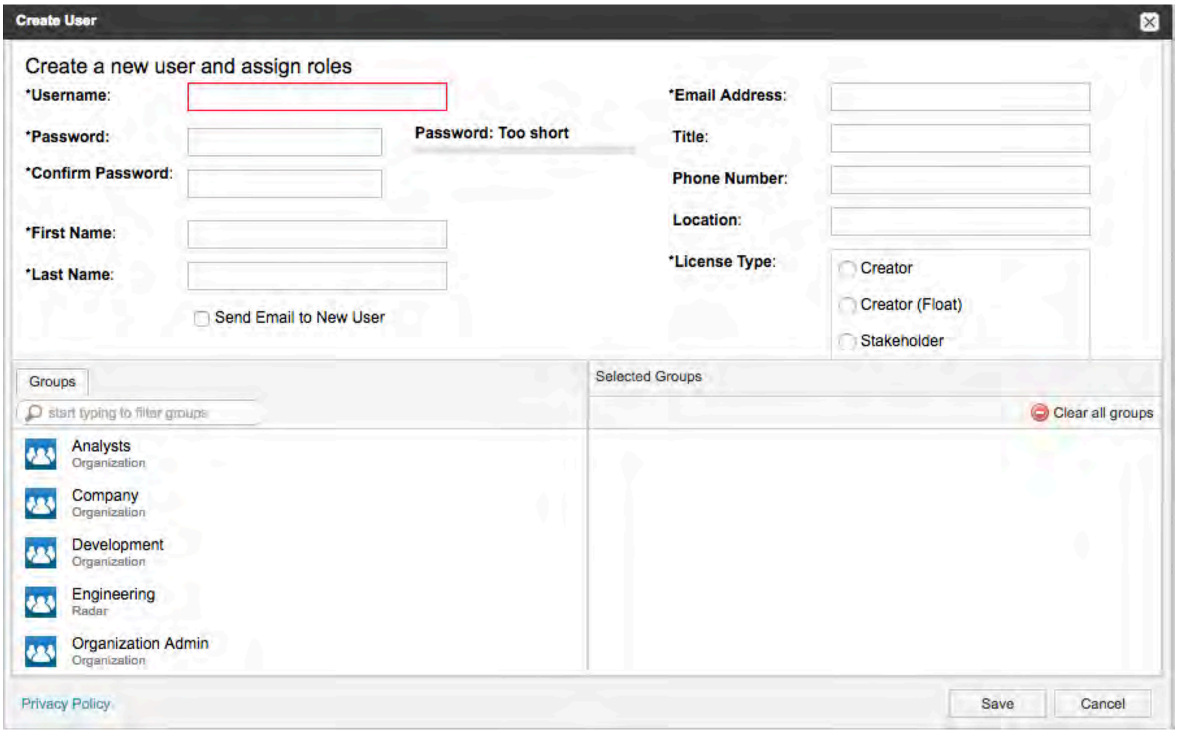
3. Select a user if LDAP is enabled [518]:
   1. From the LDAP column that is added, select **Add user from LDAP**, enter the name of an existing LDAP user in the search box, then press **Enter**.

      TIP

      You can add wildcards to a search but don't add them at the beginning of a search term. Wildcards at the beginning can result in slow performance. For large directories, expect several minutes.

   2. From the search results, choose a user, then select **Add**.

4. Select a user if LDAP isn't enabled — Select **Add user**.
5. In the Create User page that opens, complete the information for a single user.



6. For License Type, select **Creator**.
7. Under Groups, select **Organization Admin** from the list.
8. Select **Save**.

Grant permissions to users

Permissions allow users access to create, read, and edit items. They are granted at different levels in your environment.

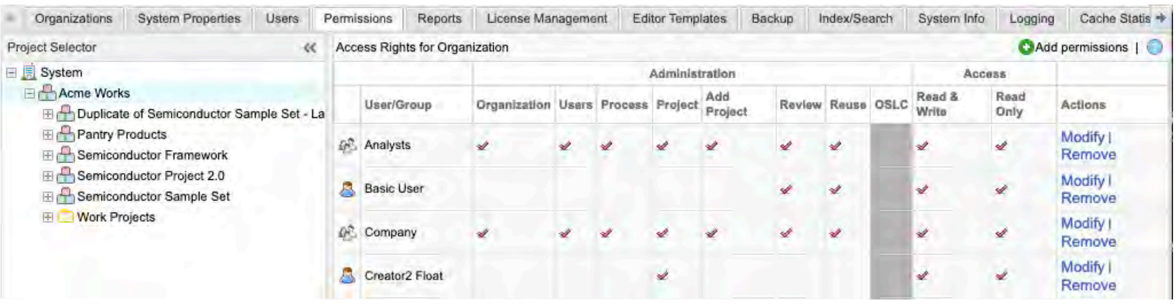
Types of permissions	Level	Notes
Roles [594] and access permissions	Organization level	Org-level permissions are passed on to lower levels.
Project admin permissions	Project level	
Access permissions	Container level and above	

TIP

Organization admin permissions can't be overridden. In releases prior to Jama Connect 8.62, there was the appearance that you could control an organization admin's access. However, that user could still see all projects and content, and if they wanted they could give themselves access. The addition of User, Process, and Add project roles decreases the need for a large group of organization admins. No updates or overrides that you created in the past have been removed, so we recommend that you remove them as your organization adopts these new admin roles.

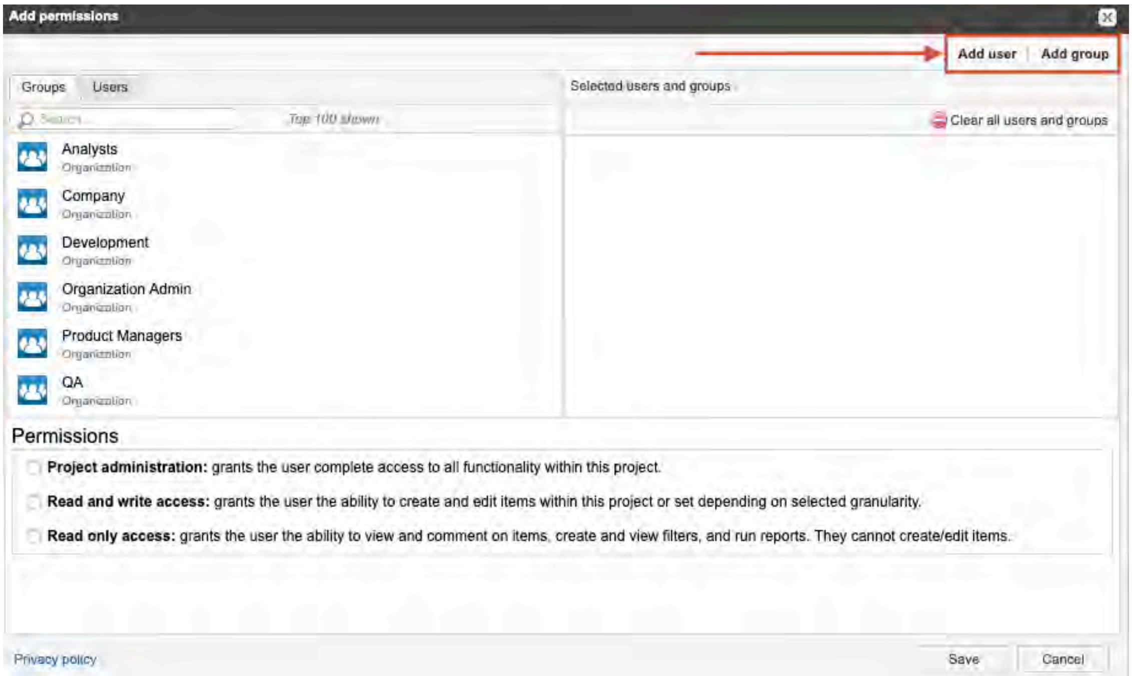
You can create new permissions for a user or group as well as modify existing permissions.

1. Log in to Jama Connect as the root user [503] or as an organization admin.
2. Select **Admin > Permissions**.



3. In the Project Selector on the left, choose the level where you want to access permissions.
   - Organization (**System**)
   - Individual project
   - Container

   The main page displays current permissions.
4. To change existing permissions for a user or group:
   1. Select **Modify** in the row of the user or group you want to change, select the permissions you want to include, and deselect what you don't want to include.
   2. Select **Remove** in the row of the user or group where you want to delete permissions.
5. To add permissions for a user or group:
   1. Select **Add permissions** in the top right.
   2. In the Add permissions page that opens, select **Add user** or **Add group**.

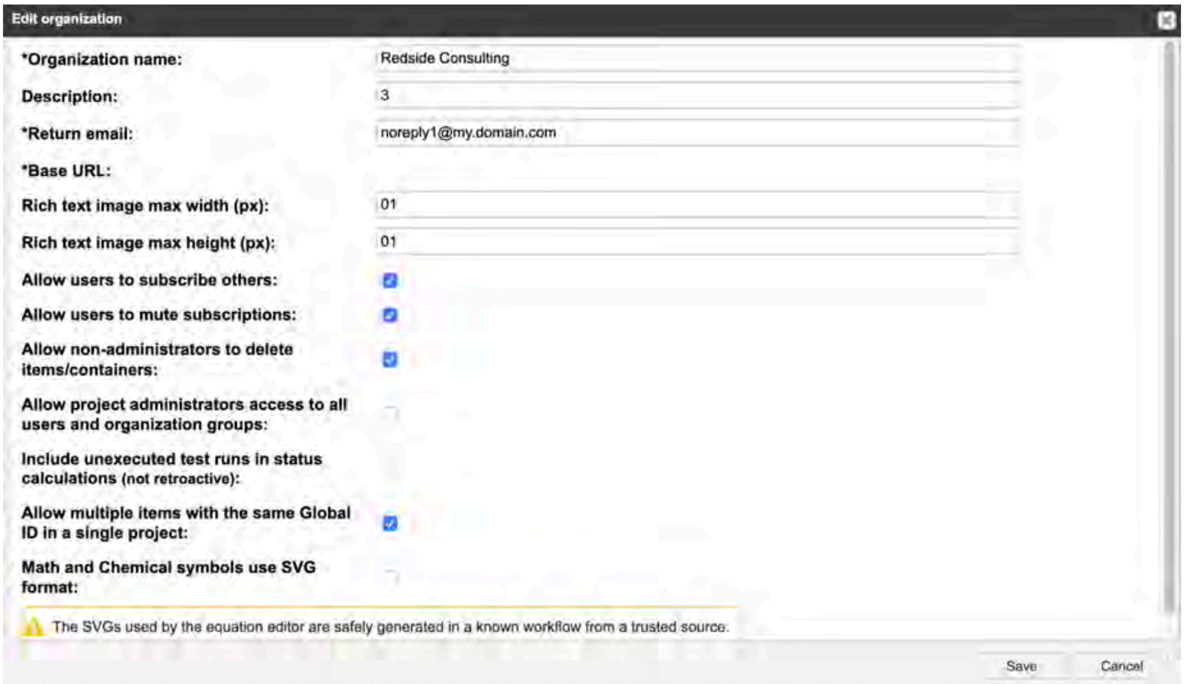
      

      - **Existing user or group** — Select a user or group from the list on the left, then under Permissions, select the role (access permissions) for that user or group.
      - **New user or group** — Select **New user** or **New group** in the top right corner of the page. Then under Permissions, select the role or access permissions for that user or group.
   3. Select **Save**.

Edit organization details

As a system administrator, you can change your organization’s information such as the name, description, or return email address.

1. Log in to Jama Connect as the root user [503].
2. Select **Organizations > Edit**.



3. Enter or change any of the following information:
   - **Organization name** — Typically the name of your company or team. This name appears in the application as well as in reports.
   - **Description** — Additional information about your company.
   - **Return email** — Email notifications automatically sent by the application. Typically, the organization administrator's email address is used or noreply@example.com.
   - **Base URL** — The base URL is used to create URLs sent in email notifications and embed images in exports.
   - **Rich text image max width (px)** — Maximum pixel width setting that shrinks all images embedded into rich text fields. Default 0 means no max width is applied.
   - **Rich text image max height (px)** — Maximum pixel height setting that shrinks all images embedded into rich text fields. Default 0 means no max height is applied.

   > **NOTE**
   >
   > Images retain their aspect ratio when adjusted to fit the maximum setting of height or width. The adjustment only happens during an upload or document import. Images that already exist on the server are not adjusted. Compression is based on the width and height setting applied.

   - **Allow project admins to subscribe to others** — Allows project administrators to subscribe other users to items.
   - **Allow users to mute subscriptions** — Allows users to turn off a subscription that was subscribed to by another user.
   - **Allow non-administrators to delete items/containers** — Allows a user to delete items even if they don't have organization admin permissions. Default is On.
   - **Include unexecuted test run in status calculations (Not retroactive)** — Jama Connect uses all associated test runs to automatically calculate test case status.

> **NOTE**
> For test cases associated with a single plan, test case status reflects the status of the test run with the *most recent activity*, which includes unexecuted tests (if enabled). When the case is associated with multiple plans, the *most urgent status* is chosen in this priority order: unexecuted, failed, blocked, scheduled, passed.

Select this box to include unexecuted test runs in the calculation of test case status (default). Uncheck this box to remove unexecuted test runs from the status priority order.

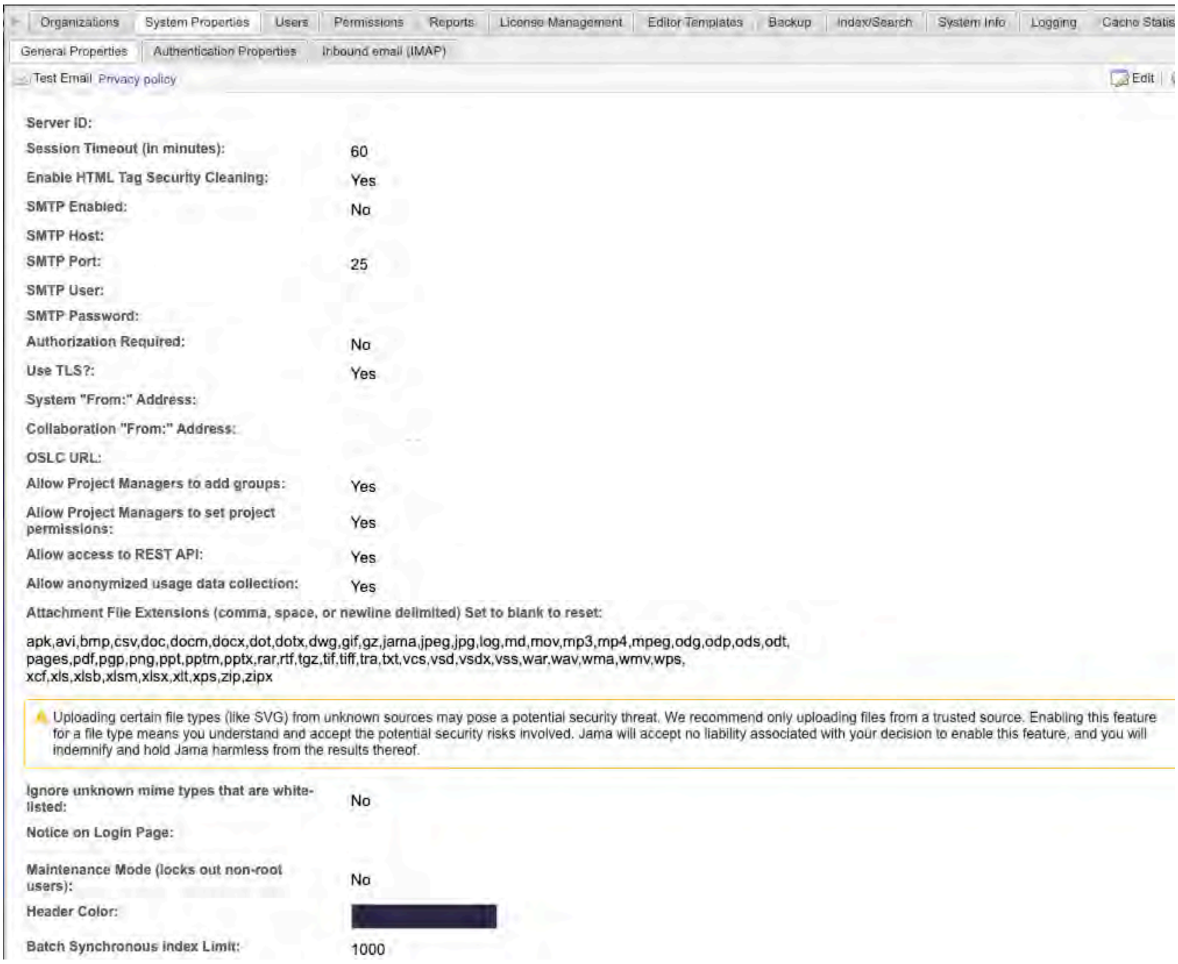
If you don't include unexecuted test runs and there are no executed test runs, the system defers to including unexecuted test runs.

- **Allow multiple items with the same Global ID in a single project** — Allows items to be reused multiple times within one project. Default is off.

Configure general properties

The general properties need to be configured for all Jama Connect installations. Properties include configuring email, the session timeout value, and any messages you want to display on the login page.

1. Log in to Jama Connect as the root user [503].
2. Select the **System properties** tab in the Jama System Administration panel, then select **Edit** in the top, right corner.



3. Change any of the following settings.

- **Session Timeout** — Automatically disconnects idle users after a set time (default is 120 minutes). When a session times out, the user is prompted to log in and their license is released. Recommended when using floating licenses.
- **Enable HTML Tag Security Cleaning** — Prevents suspicious HTML tags from being added to new and modified rich text fields and test steps. Doesn't clean up data retroactively. Enabled by default.
- **SMTP Settings** — Settings that affect notifications and subscriptions.

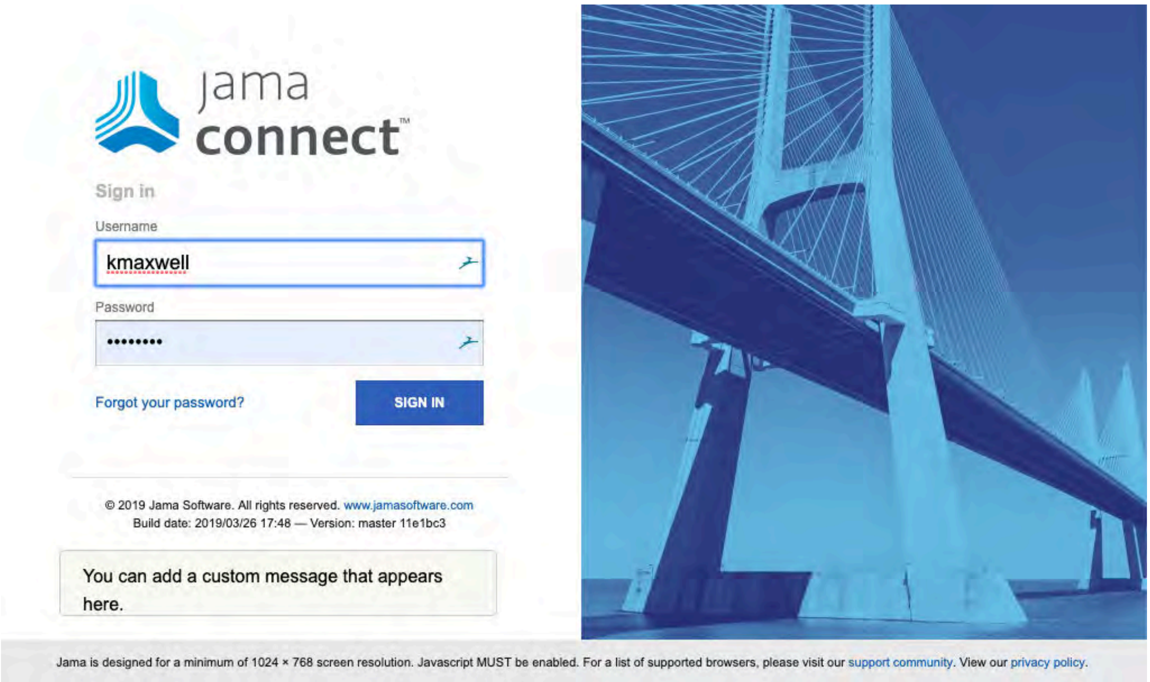
SMTP Enabled	Select **Yes** to use SMTP.
SMTP Host	The domain address of your SMTP server.
SMTP Port	The port for SMTP access.
SMTP User	User account to access SMTP.
SMTP Password	Password for the user account.
Authorization Required	Select **Yes** if authorization is required for the SMTP server.
Use TLS?	Select **Yes** if your mail server uses TLS. Jama Connect supports only Explicit (Opportunistic) SSL/TLS connections for SMTP.

- **System "From" address** — Enter an address for the system to use when it sends notifications or other system messages (for example, info@mycompany.com).
- **Collaboration "From" address** — IMAP must be supported to enable reply-to e-mails in the stream [235]. The Collaboration "From" address must match the email address used for IMAP, so replies to stream emails are sent to the same account that processes incoming mail (for example, replyto@mycompany.com). To enable IMAP, see Configure Inbound email (IMAP) settings [511].
- **Allow Project Administrators to add groups** — Select **Yes** for project administrators to add groups [662]. Otherwise, only system and organization administrators can add groups.
- **Allow Project Administrators to set project permissions** — Select **Yes** for project administrators to grant project permissions [664]. Otherwise, only system and organization administrators can grant permissions.
- **Allow access to REST API** — Enables users to perform actions in Jama Connect from outside the user interface.
- **Attachment file extensions** — List of file types (lowercase, separated by commas, periods, spaces, or newline characters) that can be uploaded as an attachment.

  NOTE

  Files are rejected if the content of the file doesn't match the file extension, or if the MIME type is not understood by the system, even if the file type is listed here. To allow files of an unknown type, set the option to a blank string.

  File extensions must be lowercase even if the actual extension on the file is uppercase. Learn more.
- **Notice on login page** — Displays a notice to users below the login page and in a yellow bar at the base of the application page.



> **NOTE**
> This login page might not be visible if you are using SSO or SAML logins.

- **Maintenance mode** — Logs out and locks out all users except the root user until this option is disabled.
- **Set header color** — Helps to differentiate test or staging instances from the production instance of Jama Connect.
- **Set Batch Synchronous Index Limit** — Select a limit that determines whether items in a batch update are indexed synchronously or asynchronously. Synchronous indexing can add time to the index process, so the default value is set to 1000. The added time depends on the number of items and the complexity of fields for those items.
  - **Synchronous indexing** — The number of items in a batch update is equal to or less then the limit.
  - **Asynchronous indexing** — The number of items in a batch update is greater than the limit.

4. Select **Save**.

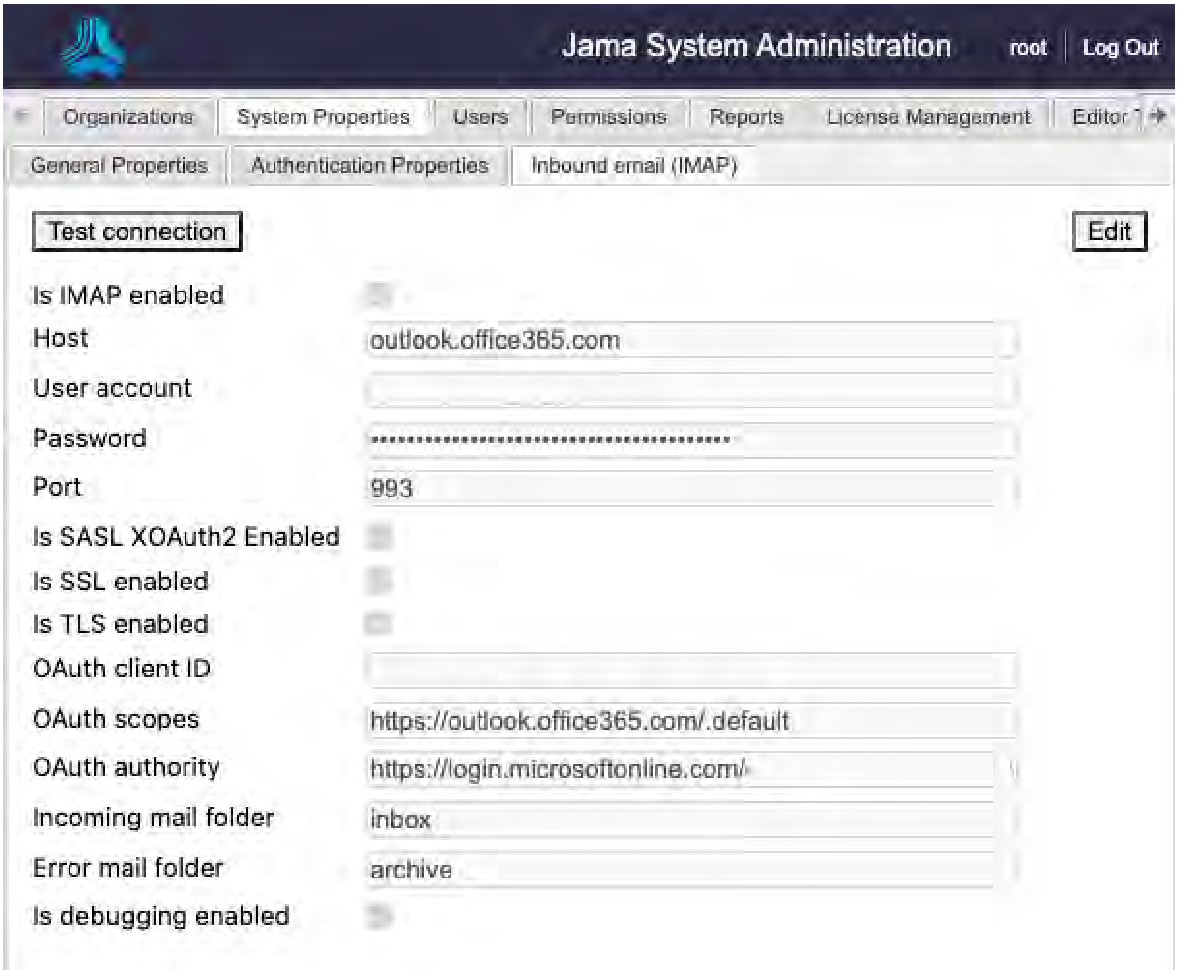
Configure Inbound email (IMAP) settings

Before configuring IMAP, verify that your email server supports IMAP. Your server must support IMAP to enable reply-to emails in the stream [224].

For more information, see Authenticate an IMAP, POP or SMTP connection using OAuth.

To configure IMAP:

1. Log in to Jama Connect as root user [503].
2. Select **System Properties > Inbound email (IMAP)**.
3. Click **Edit**, then select **Is IMAP enabled**.
4. Configure the following settings:



Host	Enter the IMAP server URL.
User account	Enter a user account for someone with access to the folder where IMAP emails are saved.
Password	Enter the password for the user account or the OAuth secret.
Port	The port for IMAP connection, typically different from SMTP. Standard ports are Non-SSL:143, SSL:993.
Is SASL XOAuth2 Enabled	Select to enable OAuth authentication and token-based authorization for Microsoft based IMAP connections.
Is SSL Enabled	Select to enable SSL IMAP connections.
Is TLS Enabled	Select to enable TLS IMAP connections.
OAuth Client ID	Enter the client ID (Microsoft AAD Application ID).
OAuth scopes	Enter the resource URLs defining the token authorization request.
OAuth authority	Enter the URL of the authenticating authority or security token service. Microsoft security token service example: https://login.microsoftonline.com/{microsoft_tenant_id}
Incoming mail folder	(Required) Enter the name of the mail folder to read collaboration replies from.
Error mail folder	(Required) Enter the name of the mail folder to move unknown emails to. Unknown emails are non-collaboration emails.
Is debugging enabled	Select to enable debug level logging for failing IMAP connections. After enabling, check the server logs and test the connection.

5. Click **Save**.

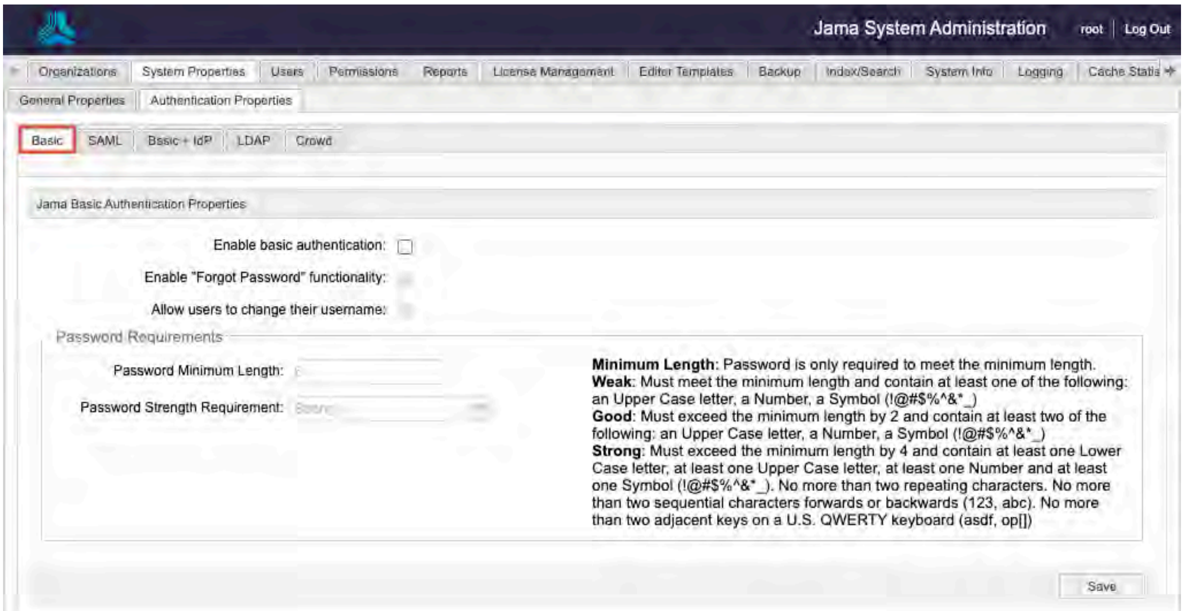
Configure Basic authentication

The default authentication method is Jama Connect Basic, which authenticates users by their username and password that are stored in the Jama Connect database. Passwords are encrypted before they are stored in the database.

> **NOTE**
> You must be a system administrator to complete this task.

To configure the Basic authentication properties:

1. Log in to Jama Connect as the root user [503].
2. Select **System Properties > Authentication Properties > Basic**.



3. Configure the authentication properties for the method you are using.
   - **Enable basic authentication** — Enabled by default. You must deselect this option to use LDAP or Crowd.
   - **Enable "Forgot Password" functionality** — Users who forget their password can request a new password without notifying the system admin.
   - **Allow users to change their username** — Users can change their username when they manage their profile [39].
   - **Password requirements** — Set the required password strength for all future passwords. New user passwords must meet the required password strength to be saved. Changes to these settings do not affect passwords already in the system.
4. Click **Save**.

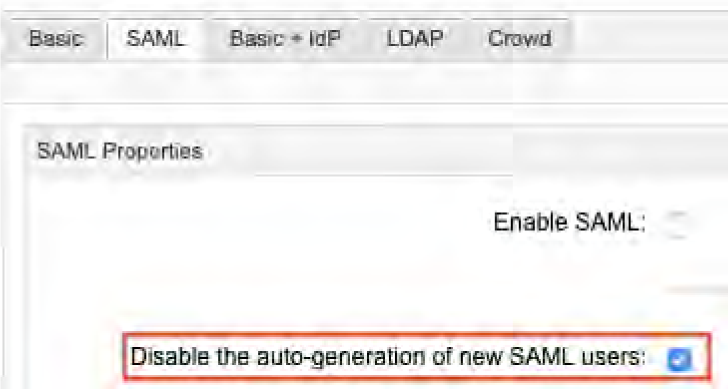
Configure SAML authentication

To configure SAML authentication, you must first update the authentication properties.

Important considerations

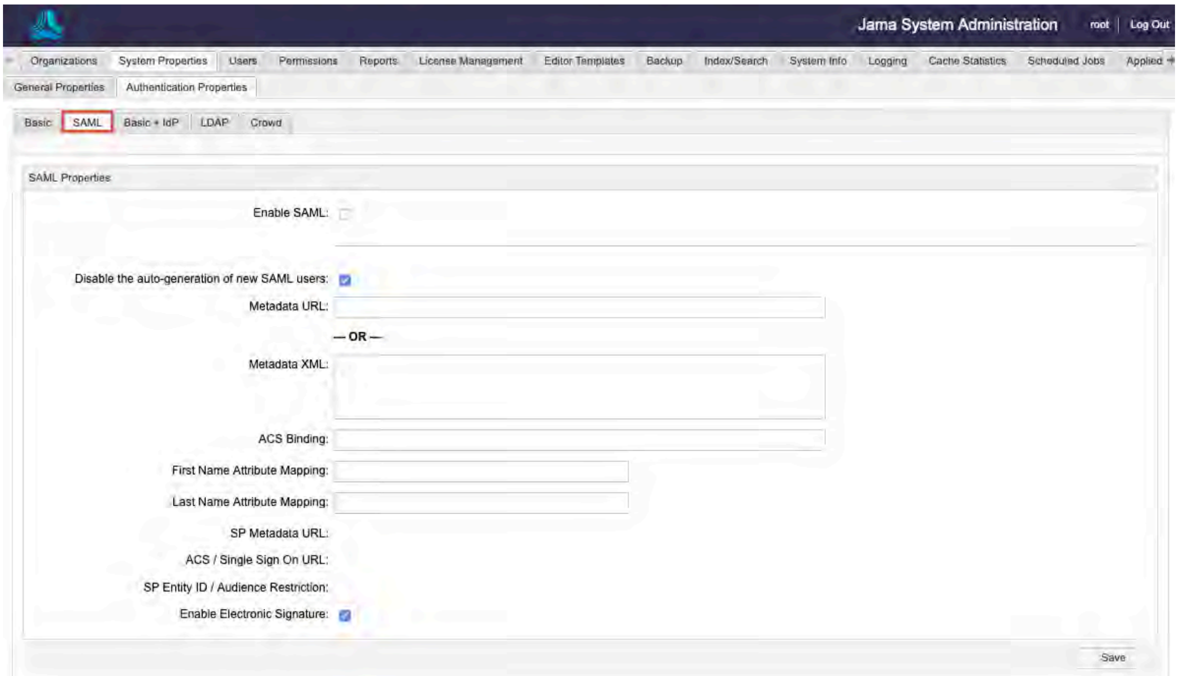
- **Cloud customers** — Contact support to schedule enablement.
- **Self-hosted customers** — Follow these steps to configure multi-mode authentication.
- To connect multiple instances of Jama Connect to the SAML service, you must create unique metadata or applications for each instance through the identity provider. This is true for any combination of production, sandboxes, or self-hosted instances. The entity ID is a unique value that allows the service and identity provider to locate each other and send users to the correct Jama Connect instance.
- We recommend testing an integration instance before using SAML on a production instance. For example, disable a sandbox instance from SAML before connecting on a production instance.

- Starting with Jama Connect 8.48, organizations that use SAML can use electronic signatures [245], which are enabled by default. If your identity provider (IdP) can't process the re-authentication, you can disable signatures.
- You can enable a different authentication method at any time. If you do, SAML is disabled.
- You can control the auto-provisioning of new SAML users in both single SAML and multi-mode. If your users are set up in SAML but not yet added to your Jama user table, this option allows you to control whether users can auto-provision in Jama Connect.
  When this option is selected and properties are saved, your SAML users (SAML and multi-mode) can’t sign in to Jama Connect until you add them to the Jama user table. A message tells them to finish the authentication process with their administrator.
  This option is selected by default after you upgrade to 8.62.



To configure SAML authentication:

1. Log in to Jama Connect as the root user [503].
2. Select **System Properties > Authentication Properties > SAML**.
3. *Before you enter data*, select **Enable SAML**, then click **Save**.



4. Contact your identity provider for the metadata URL or XML, then paste it in the appropriate field.
   If a connection is established, the last three read-only fields are auto-populated with a URL.
   - **SP metadata URL** — https://saml-or.jamacloud.com/saml/metadata/alias/defaultAlias
   - **ACS / single-sign-on URL** — https://saml-or.jamacloud.com/saml/SSO/alias/defaultAlias

- **SP entity ID / Audience restriction** — https://saml-or.jamacloud.com/saml/metadata/alias/defaultAlias

If the connection doesn't work, you might need to adjust the information in the **ACS binding**, **First name attribute mapping**, and **Last name attribute mapping** fields or contact support.

> **TIP**
> The mapping fields serve as the key that connects user identity between Jama Connect and your identity provider. If name attribute mapping fields aren't specified, then a new user's full name defaults to their email address.

5. Click **Save**.

Once SAML is enabled, Jama Connect redirects all users to the identity provider's login page. The Jama Connect login page is only accessible for system administrators if they log in as the root user with this URL:

```
https://your-jama-url/casper/login.req
```

Configure multi-mode authentication

The combination of Jama Connect Basic and SAML authentication (**Basic + IdP**) provides extra security by separating your internal users from external partners.

Important considerations

- **Cloud customers** — Contact support to schedule enablement.
- **Self-hosted customers** — Follow the steps in this task to configure multi-mode authentication.

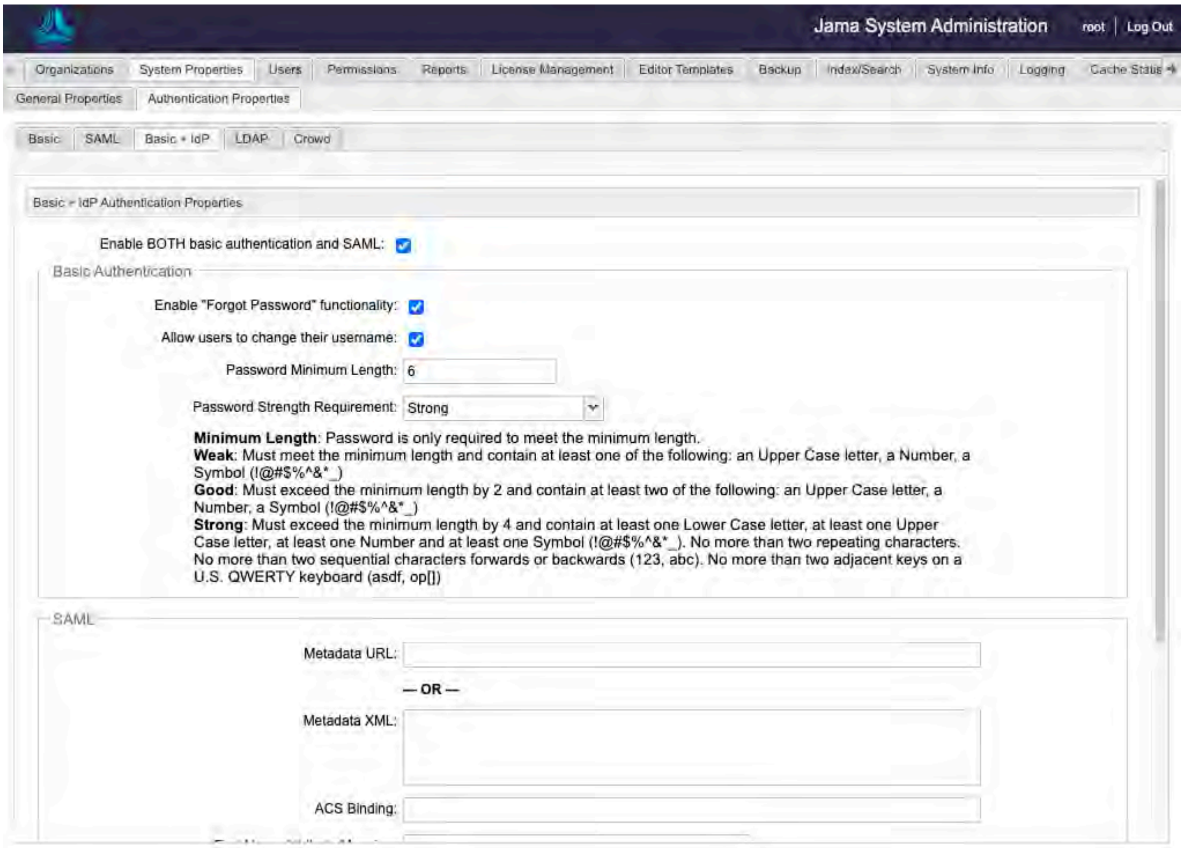
To configure multi-mode authentication:

1. If you haven't entered the SAML metadata in the root menu, go to the SAML tab and enter it there.
   - Contact your identity provider for the metadata URL or XML, then paste it in the appropriate field. If a connection is established, the last three read-only fields are auto-populated with a URL.
     - **SP metadata URL** — https://saml-or.jamacloud.com/saml/metadata/alias/defaultAlias
     - **ACS / single-sign-on URL** — https://saml-or.jamacloud.com/saml/SSO/alias/defaultAlias

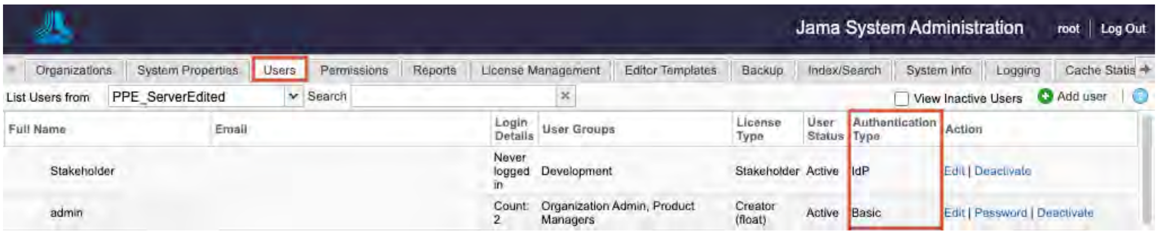
- **SP entity ID / Audience restriction** — https://saml-or.jamacloud.com/saml/metadata/alias/defaultAlias
  If the connection doesn't work, you might need to adjust the information in the **ACS binding**, **First name attribute mapping**, and **Last name attribute mapping** fields or contact support.

> **TIP**
> The mapping fields are the key that connects user identity between Jama Connect and your identity provider. If name attribute mapping fields aren't specified, a new user's full name defaults to their email address.

2. Log in to Jama Connect as the root user [503].
3. Select **System Properties > Authentication Properties > Basic + IdP**.



4. Select **Enable BOTH Basic authentication and SAML**, then click **Save**.
   The Basic + IdP tab transitions can now accept input. While the Basic and SAML tabs are now read-only This type of input is the same on both tabs: Basic and SAML.
5. Complete the Basic and SAML sections in the Basic + IdP tab:
   Basic — Fill out the the Basic Authentication section.
   SAML — If you haven't entered the SAML metadata in the root menu, complete the following steps in the SAML section of the Basic + IdP tab.
6. Click **Save**.
7. Confirm the configuration was successful.
   - Select the **Users** tab, then verify that the Authentication Type column appears in the table.
     If you see the Authentication Type column, Basic + IdP authentication is now enabled.



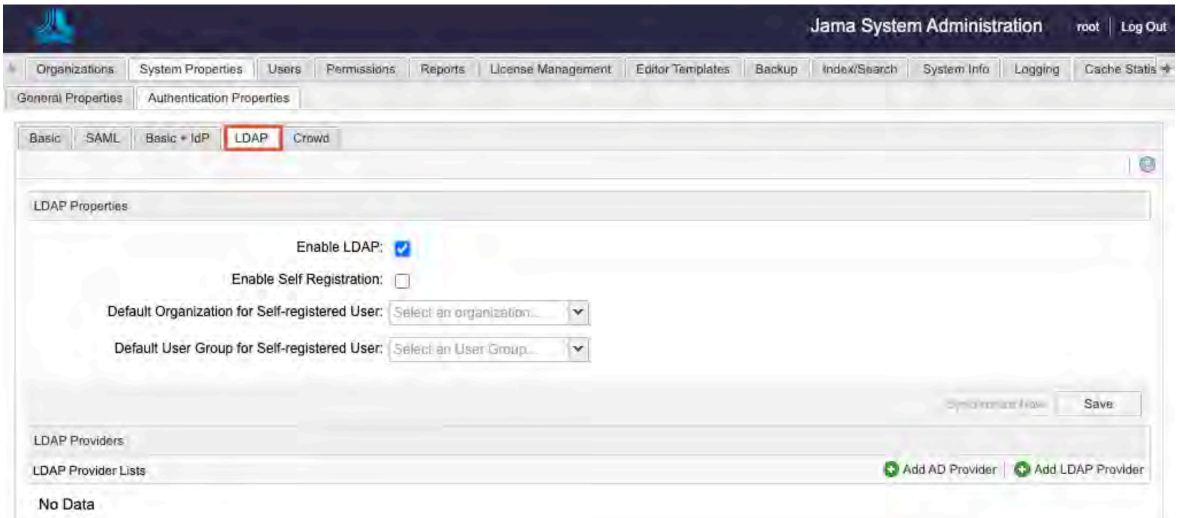
Configure LDAP authentication

LDAP (Lightweight Directory Access Protocol) is a tool for organizations to centralize the management of user accounts. Jama Connect includes a built-in integration for LDAP and Microsoft Active Directory.

LDAP must be configured before it can be used in Jama Connect to authenticate users against your LDAP server.

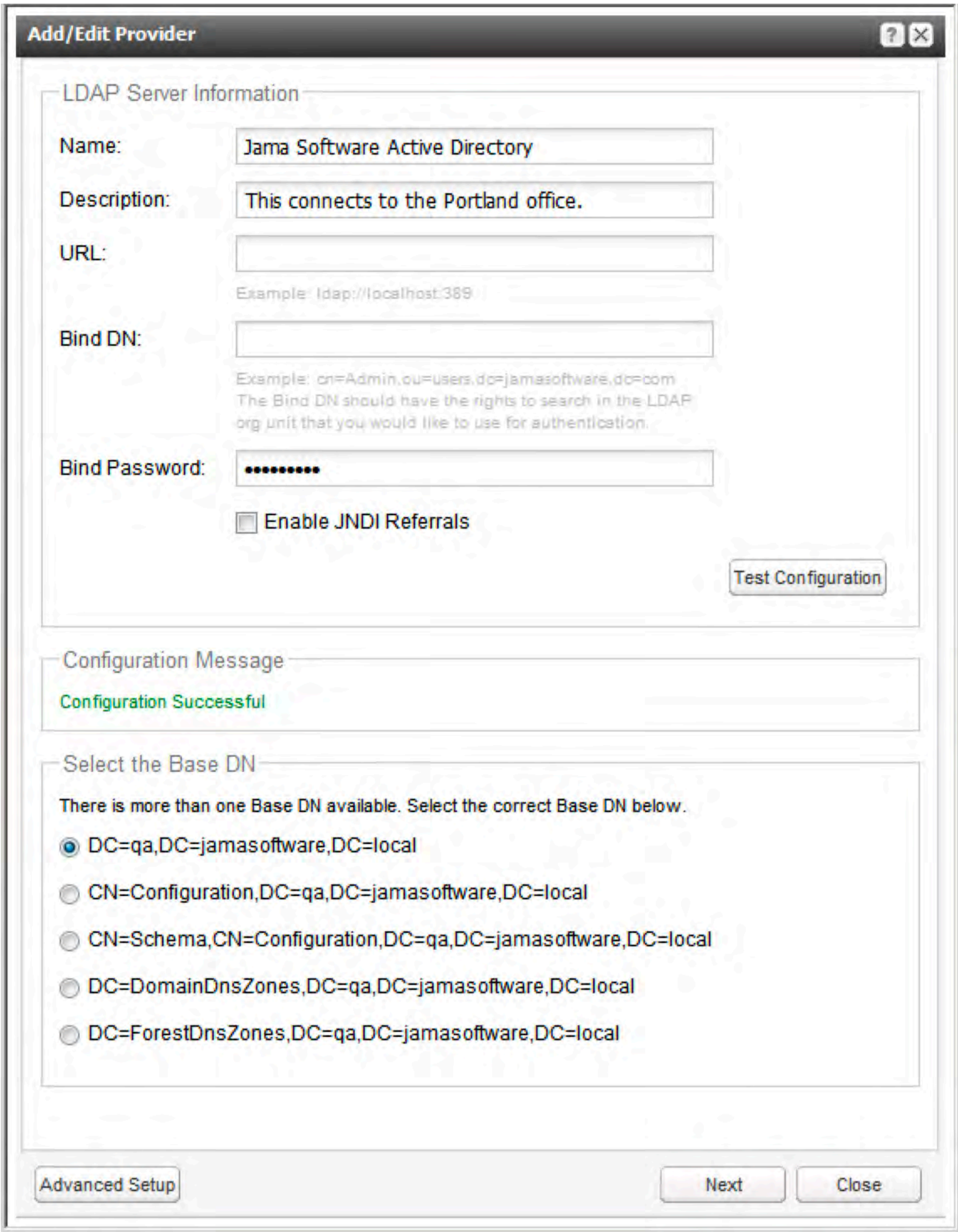
To configure LDAP authentication:

1. Log in to Jama Connect as the root user [503].
2. Select **System Properties > Authentication Properties > LDAP**.



3. Configure the authentication properties for the method you are using.
   - **Enable LDAP** — Select this to enable LDAP and disable the default Jama Connect authentication. Save the settings for changes to take effect.
   - **Enable Self Registration** — Users can register themselves by logging in to Jama Connect using their LDAP credentials. If successfully authenticated, they get a prompt to register for Jama Connect. Without self-registration, users must be added manually by an organization administrator. Once registered, users will be assigned a license type based the rules below. An organization or project administrator must then assign permissions for that user.
     - If there are available creator licenses, they are assigned a creator license.
     - If there are no named creator licenses, users are assigned floating creator licenses (shared among others).
     - If there are no creator or floating creator licenses available, you can still create users, but they are set to inactive. An organization administrator must manually assign the user an active license when one becomes available.
   - **Default organization for self-registered user** — Select the organization that self-registered users are assigned by default. There should only be one option.
   - **Default user group for self-registered user** — Select the default group to which a self-registered user should be assigned. Organization administrators will need to assign permissions to self-registered users.
4. You can configure multiple directories with LDAP authentication. To add a new provider, select **Add AD Provider** or **Add LDAP Provider**, depending on the LDAP tool you use.

5. In the window that opens, provide the following server information used to connect to the Active Directory or LDAP server, then click **Next**.

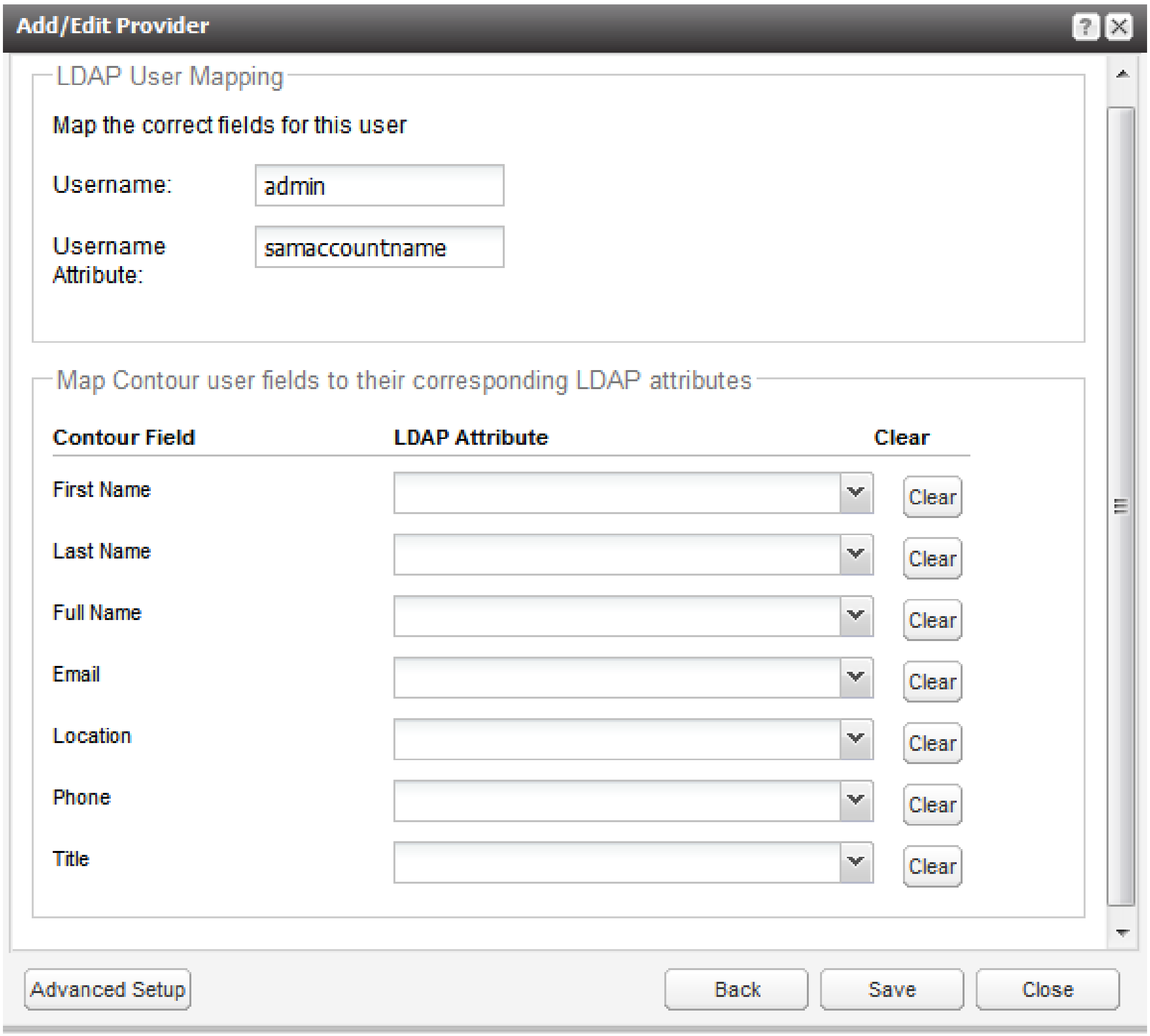


- **Name** — Name of the connection that will appear in the Jama Connect interface.
- **Description** — Description of the connection that will appear in the Jama Connect interface.
- **URL** — The URL to the Active Directory or LDAP server.
- **Bind DN** — The reference to the account that Jama Connect will use to perform all actions against the Active Directory or LDAP server. This field accepts the Distinguished Name of the account ("cn=John Doe,ou=Users,dc=jamasoftware,dc=com").

Some Active Directory servers support the use of Full Name ("John Doe") or Email ("jdoe@do-main.com").

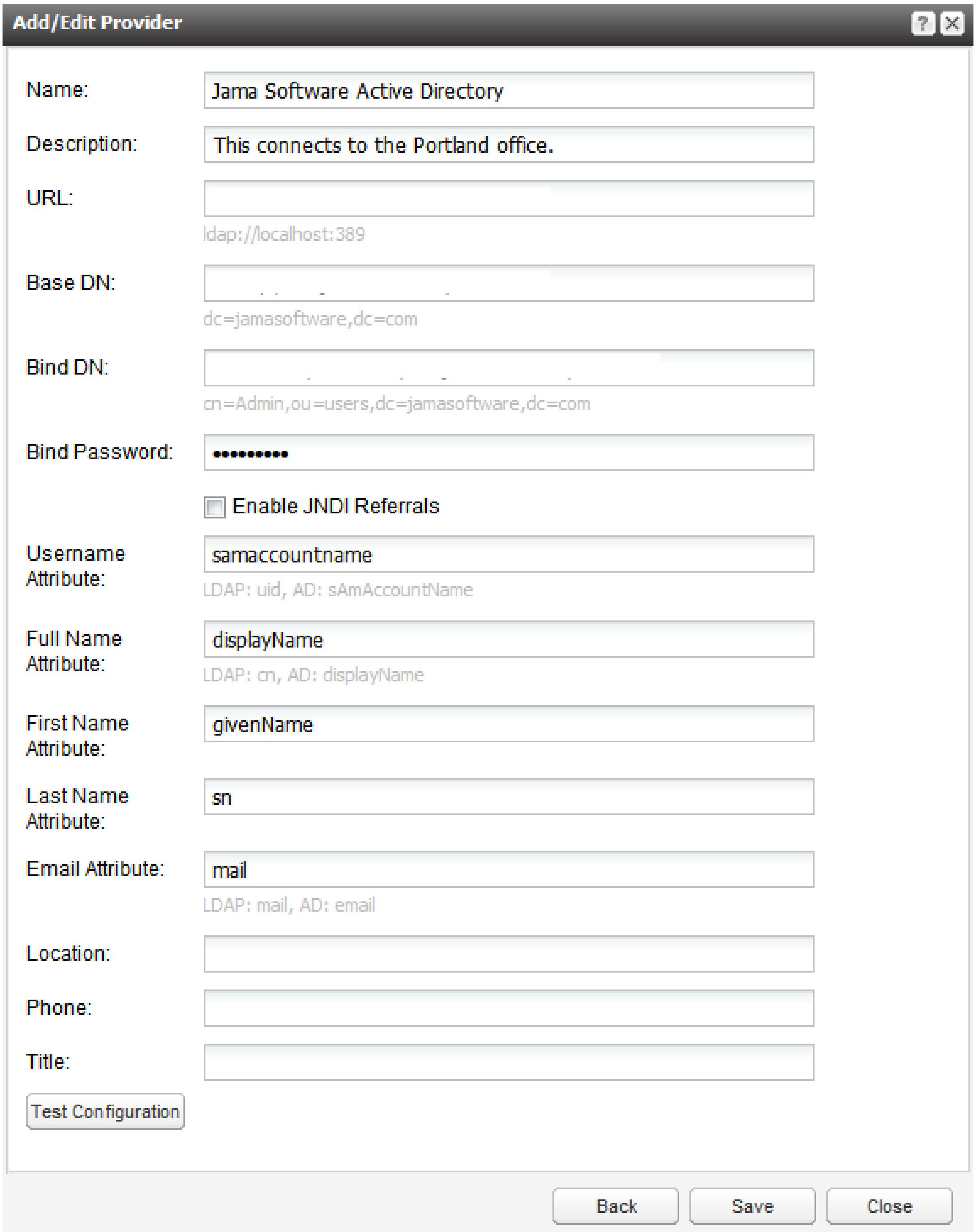
- **Bind Password** — The password of the Bind DN account.
- **Test Configuration** — Select **Test configuration** to test for a successful connection to the specified server and bind account information. If successful, a "Configuration Successful" message will display in the window and the Base DN selection screen will expand.
- **Select the Base DN** — The Base DN is the directory where users in Active Directory or LDAP exist that need to be added to Jama. Successfully tested configurations will load a radio button selection list of all available Base DNs.

6. Specify the attributes in Active Directory and LDAP that automatically populates the Jama Connect user attributes.



- **Username** — Enter the username of a sample user that exists in the specified Base DN.
- **Username Attribute** — Enter the attribute where the username value is stored (for example, Active Directory commonly uses "samaccountname").

7. Select **Next** to validate that the provided username and username attribute exist. If successful, the window expands to show a selection list of all available attributes for each of the Jama Connect user attributes.
   - **Jama User Attributes** — First Name, Last Name, Full Name, Email, Location, Phone, Title.
   - **LDAP attribute** — The selection drop-down shows all available directory attributes that are connected to the provided username. Select the correct value in the selection list that matches the Jama Connect user attribute.
8. Select **Advanced setup** if you know all the details of the connection and user attribute values. If you choose this option, you must add the **Full Name Attribute** or errors will result.



9. After saving the connection, select **Synchronize Now** to manually sync all existing users in Jama Connect to LDAP. This updates user information with attributes from LDAP.

Any Jama Connect users who are not registered in LDAP are deactivated. Users in LDAP that do not already exist in Jama Connect aren't synchronized. New users must be added manually [505] with existing LDAP credentials.

Troubleshooting LDAP errors

If any errors occurred during installation, use this table to troubleshoot the issues.

Error message	Reason
Unable to communicate with LDAP server; nested exception is javax.naming.CommunicationException: localhost:389 [Root exception is java.net.ConnectException: Connection refused: connect]	Can't connect to the server. Check the URL and make sure port 389 is open.
Operation failed; nested exception is javax.naming.AuthenticationException: [LDAP: error code 49 - Invalid Credentials]	The BindDn or password is incorrect.
Can't find user	Indicates that the Base Dn, Bind Dn, and Bind Password can be connected to accurately (a good connection to LDAP). Either the Login Name Attribute was not filled in correctly or the Sample User does not exist in the Base Dn indicated.
Can't authenticate user	The sample user password is incorrect. However, this message indicates a successful connection to LDAP and that the sample user was found in the Base Dn.
Operation failed; nested exception is javax.naming.PartialResultException: Unprocessed Continuation Reference(s); remaining name	The cause is usually the base URL is incomplete (too broad).
Operation failed; nested exception is javax.naming.ServiceUnavailableException: adunit:636; socket closed. Port 636 is for SSL.	Either SSL isn't supported by Spring LDAP or the certificate is incorrect. Solution: Try using ldap protocol. For example: ldaps://myserver.example.com:636.

Make sure you entered the correct information for the type of LDAP you are configuring:

- **Active Directory**
  URL: 'ldap://localhost:389'
  Base Dn: 'ou=Users,dc=<domainname>,dc=com'
  Bind Dn: 'cn=Admin,ou=Admin Users,dc=<domainname>,dc=com'
  Bind Password: 'password'
  Login Name Attribute: 'sAmAccountName'
  Email Attribute: 'email'
  User Name Attribute: 'displayName'
  Sample User: 'admin'
  Sample User Password: 'password'
- **LDAP**
  URL: 'ldap://localhost:389'
  Base Dn: 'ou=Users,dc=<domainname>,dc=com'
  Bind Dn: 'cn=Admin,ou=Admin Users,dc=<domainname>,dc=com'
  Bind Password: 'password'
  Login Name Attribute: 'uid'
  Email Attribute: 'mail'
  User Name Attribute: 'cn'
  Sample User: 'admin'
  Sample User Password: 'password'

IMPORTANT
If you are using SSL, you must use the ldaps protocol. For example, ldaps://myserver.example.com:636

The Base Dn and Bind Dn values won't accept a domain-only value. At least one additional level is required, such as the 'ou=Users' shown in the example above.

Take note of the "Can't find/authenticate user" errors. Errors often indicate a successful connection, but the Sample User/Password are incorrect.

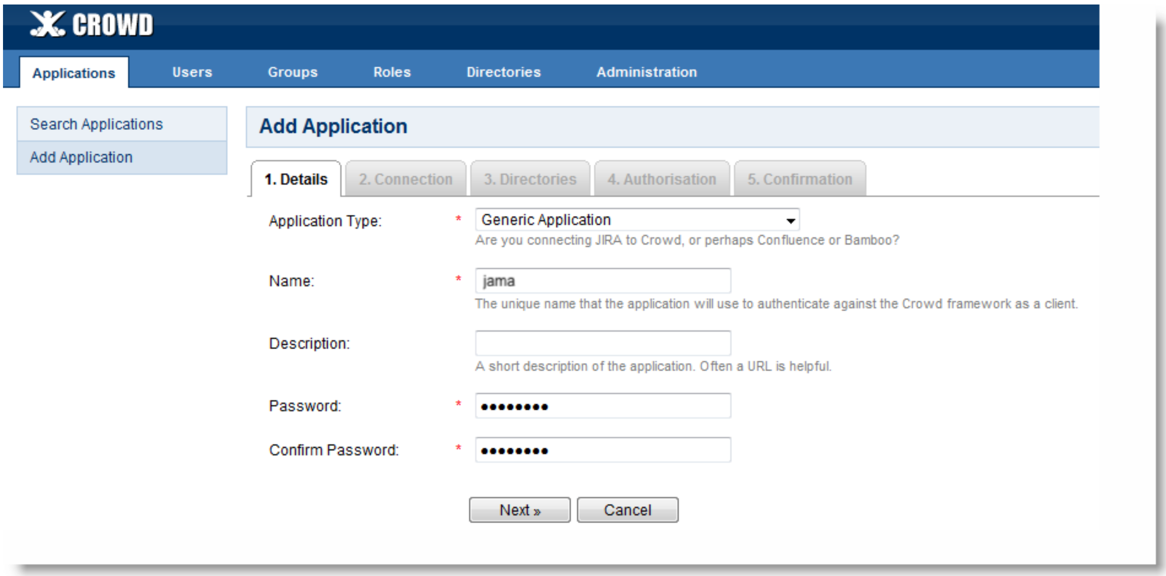
IMPORTANT
The Sample User and Password fields are deleted every time the configuration window is closed.

Configure Crowd authentication

Use Crowd to manage users and groups within a single system. Jama Connect can accept user details from Crowd and sync them with authentication data in Jama Connect.

To configure Crowd authentication:

1. Log in to Crowd as an administrator.
2. Select **Applications > Add Application**, fill in the fields for a new application and select **Next**.

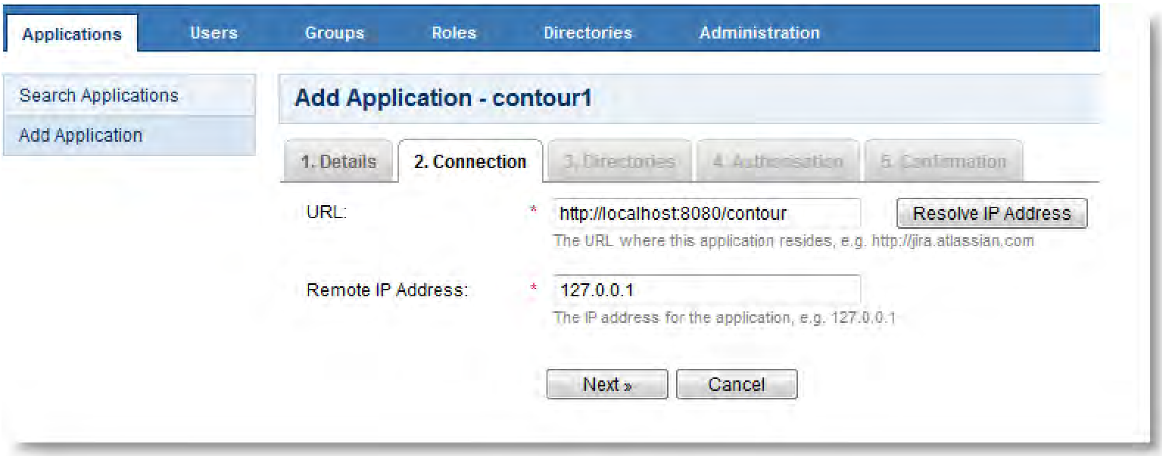


- **Application type** — Generic Application.
- **Name** — "jama" or any other unique name that identifies Jama Connect as the application.

NOTE
The name must match. For example, lower case "jama" in the above example.

- **Description** — (Optional) Provide a short description of the application.
- **Password** — Create a new password that Jama Connect uses to access Crowd.

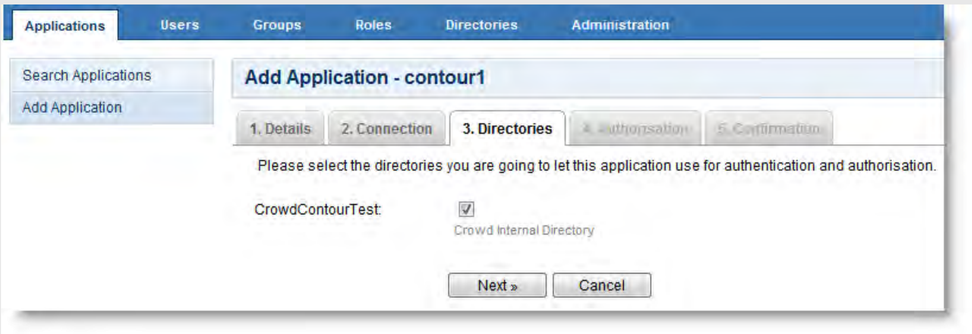
3. Enter the URL and IP address for Jama Connect, then select **Next**.



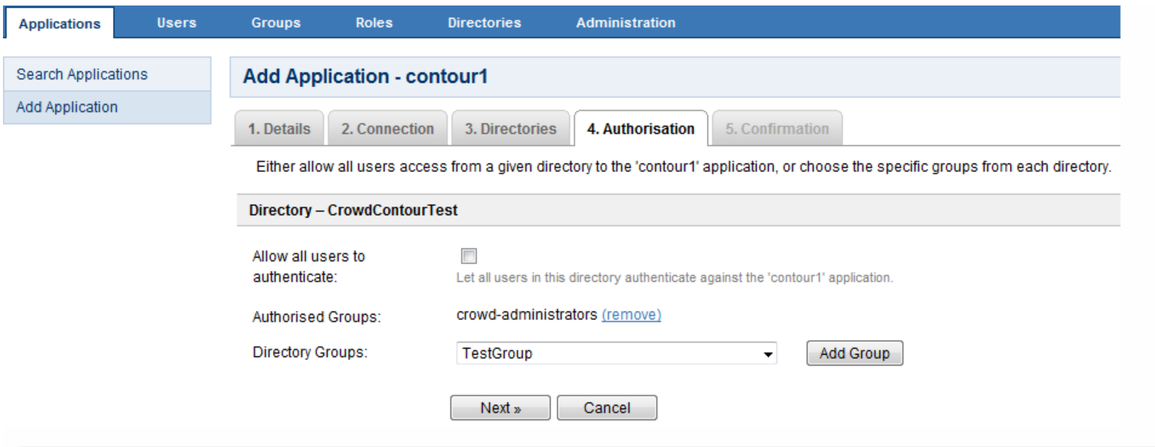
4. Select the directories that control access to Jama Connect, then select **Next**.

NOTE

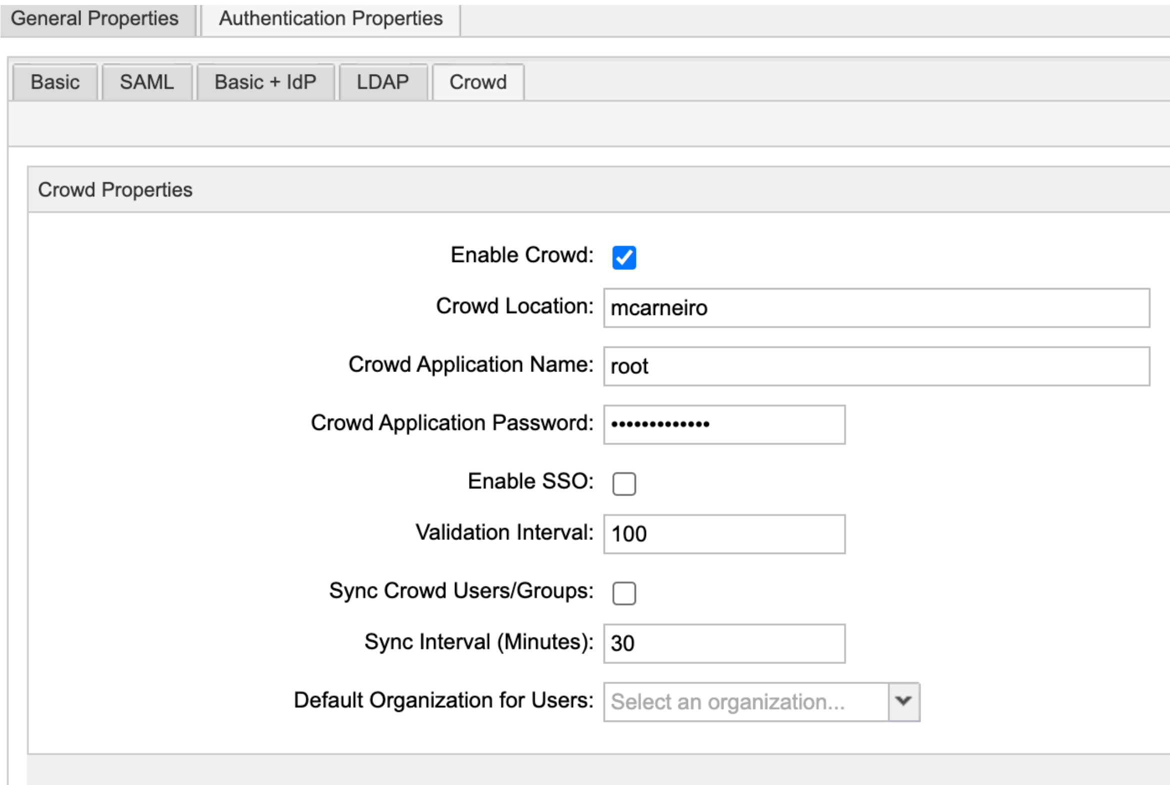
These directories must exist prior to inclusion.



5. Select the particular groups in the Crowd Directory you want to have access to Jama Connect, or choose "all users in the directory" if you want all users to have access, then select **Next**.



6. Review your configuration, then select **Save**.
7. Log in to Jama Connect as the root user [503].
8. Select **System Properties > Authentication Properties** and complete the following fields.



- **Enable Crowd** — Select to enable or disable Crowd Connector. When disabled, the Jama Connect database is used for users and passwords.
- **Crowd location** — Enter the URL for the Crowd server.
- **Crowd application name** — Name of the application created in step 2 above.
- **Crowd application password** — Enter the password for Jama Connect that was created in Crowd.
- **Validation interval** — The amount of times a user can access the application prior to re-authenticating. The larger the number, the less communication with Crowd.
- **Sync Crowd users and groups** — Select this option to push Crowd Groups and Users into Jama Connect at regular intervals. Make sure you understand how users and groups in Crowd interact with Jama Connect [526] before you do this.
  When syncing with Crowd, Jama Connect assigns licenses as follows:
  - If there are available named creator licenses, users are assigned a named creator license.
  - If there are no available creator licenses, users are assigned a float license.
  - If there are no available creator or float licenses, the user is skipped and it appears in the log.

  When Crowd is synced, Jama Connect runs through its list of users, adds new users, and modifies existing users in the Jama Connect userbase. When that's complete, Jama Connect runs through the list again to see if there are any existing users in the Jama Connect userbase that need to be deactivated.

  Since Jama Connect makes two passes at adding and deactivating users, you might need to sync twice consecutively for it to work. For example, if you reach your license threshold, don't use float licenses, try adding a new user and deactivating an existing user, or must sync twice consecutively before the new user is given a named license.

> **IMPORTANT**
>
> You can also select **Manual Sync** at the bottom of the window to manually synchronize all users and groups. Manual sync removes all Jama Connect configured Users and Groups and insert Crowd users and groups.

- **Sync interval** — Enter the timing interval you would like for Crowd to synchronize groups and users with Jama Connect. This defaults to 30 minutes.
- **Default Organization for User** — Only required when multiple organizations are setup with Jama Connect.

9. Select **Save**.
10. Select **Test Connection** to test if the configuration values are valid.

Users who are registered in Jama Connect, but not in Crowd, can't access Jama Connect. Other users won't be able to add disabled users to reviews or notifications.

How users and groups work in Crowd

How users and groups function is impacted when you synchronize users and groups in Crowd connector [523].

The following actions change:

- All groups and users in Crowd that aren't in Jama Connect are added to Jama Connect. New users are assigned the most licenses available. When no licenses are available, users are created and **Inactive**.
- All groups in Jama Connect that aren't in Crowd are removed.
- All users that are in Jama Connect, but not in Crowd, are deactivated.
- Going forward, all user and organizational group management activities are performed in Crowd.
- Organization administrators no longer create or edit users and organizational groups in Jama Connect because they are automatically created from Crowd.

The following actions stay the same:

- Organization administrators retain the ability to assign a license type [583] to users.
- Users can continue to upload avatar icons [39].
- Organization administrators and project administrators continue to manage project groups [662] within individual projects.

IMPORTANT

Project level project groups are only managed in Jama Connect and aren't visible in Crowd.

- An organization or project administrator continues to manage user and group permissions [591] in Jama Connect.

Action in Crowd	Result in Jama Connect
Group(s) added to “Jama” Application in Crowd	Group created. The name of the group is reused if it already exists.
Users added to the "Jama" group in Crowd	Users added. Attributes in Jama Connect are overwritten by values from Crowd if a user already exists.
Group attributes modified	Group attributes are modified.
User attributes modified	User attributes are modified.
User added to group	User is added to group.
User removed from group	User is removed from group.
Group deleted	Group is deleted.
User is deactivated	User is deactivated.

Action in Crowd	Result in Jama Connect
User activated	User is activated. If the user doesn't exist, a new user is created. The new user is assigned the highest available license. If a license isn't available, the user is inactive.

Backing up and restoring your data

Backing up your data is an essential part of maintaining and securing your self-hosted environment. With regular backups, you can easily restore settings and content when you update your application server hardware or if you lose data.

NOTE
This information applies to self-hosted environments only.

You can back up and restore your data using several methods:

- **Replicated snapshot** — A function of Replicated software that creates a backup of the Admin Console environment. It includes all Admin Console settings, the Replicated database, Docker images, and Docker container volumes.
- **.jama or XML file** — A method with built-in automation, recommended for migrations and refreshes. A .jama file includes the database and /data directory. An XML file includes only the database.
- **Native database backup** — The proprietary backup/restore system for MySQL and SQL Server databases. Recommended only if your database is extremely large.
- **Backup of user data directories [546]** — Where all physical artifacts [546] are stored.

IMPORTANT
Create a backup regularly: daily, weekly, or monthly. Include in your regular backup a Replicated snapshot (Admin Console environment) and a .jama or XML file backup (database and /data directory).

Create a Replicated snapshot

A Replicated snapshot is a backup of the Admin Console environment. It includes the Replicated database, registry images, and container volumes (when specified).

A Replicated snapshot can be taken while Jama Connect is running without interruption.

IMPORTANT
Replicated snapshots don't include the contents of the Jama Connect database, the contents of the /data directory, or the log files. To back up those items, see Back up to .jama or XML file [532].

When to create a snapshot

- When migrating Jama Connect to new hardware [548]. When you replace one server with another (create a clone), you can perform a fresh installation of Docker and Replicated, then restore from the snapshot.
- During disaster recovery.
- Before upgrading your software (Jama Connect or Replicated).

Snapshot location

By default, Replicated snapshots are stored in this location:

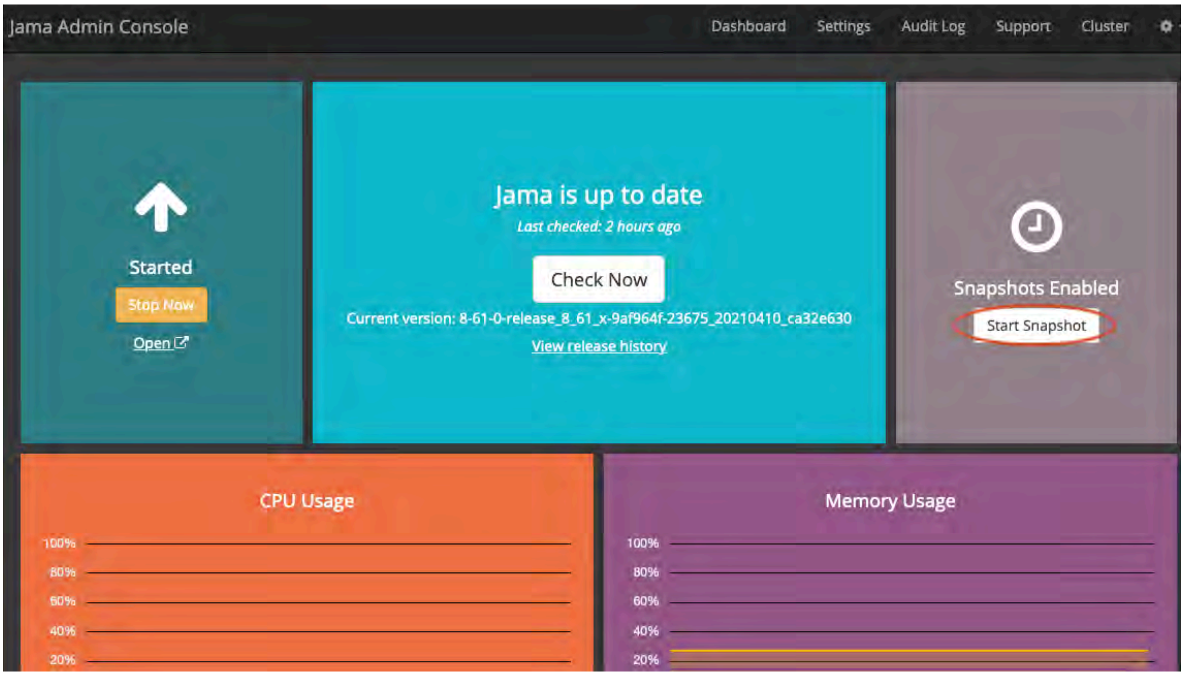
```
/var/lib/replicated/snapshots
```

To include the Replicated snapshots in your regular backups of Jama Connect, you can change the location for the snapshots, like this:

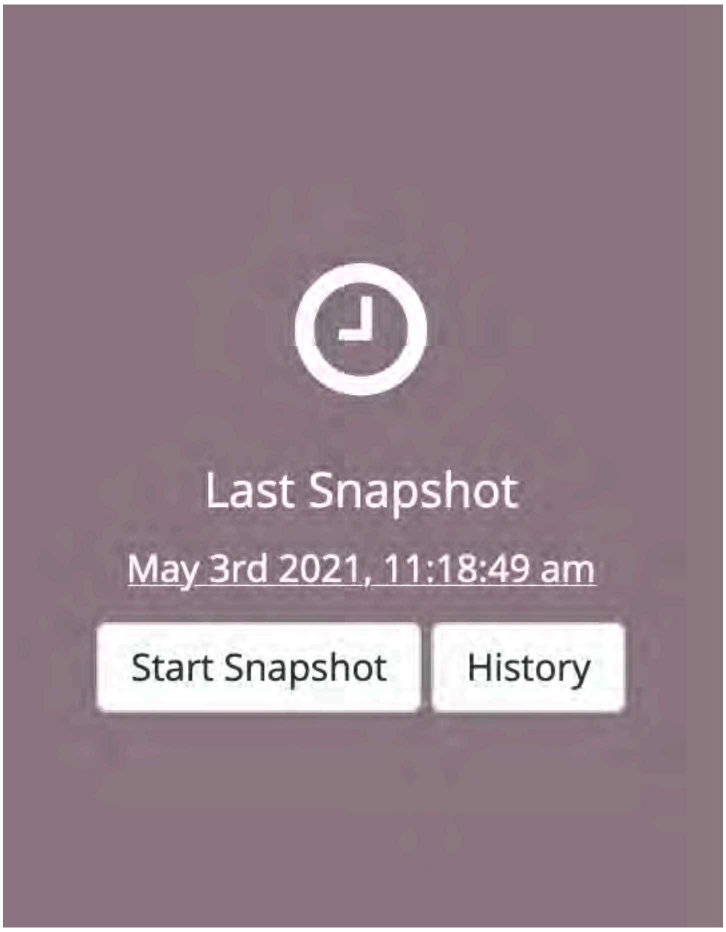
```
/data/replicated/snapshots
```

To create a Replicated snapshot:

1. (Optional) Identify and configure a custom directory for your snapshots: Select **Admin Console > Settings** (gear icon) **> Console Settings > Snapshots**.
2. Create a snapshot: Open the Admin Console and select **Start Snapshot**.



Snapshots Enabled changes to **Snapshotting** and a progress spinner appears while it backs up the registry data and container volumes. When the snapshot is ready, you see a timestamp for the last snapshot.



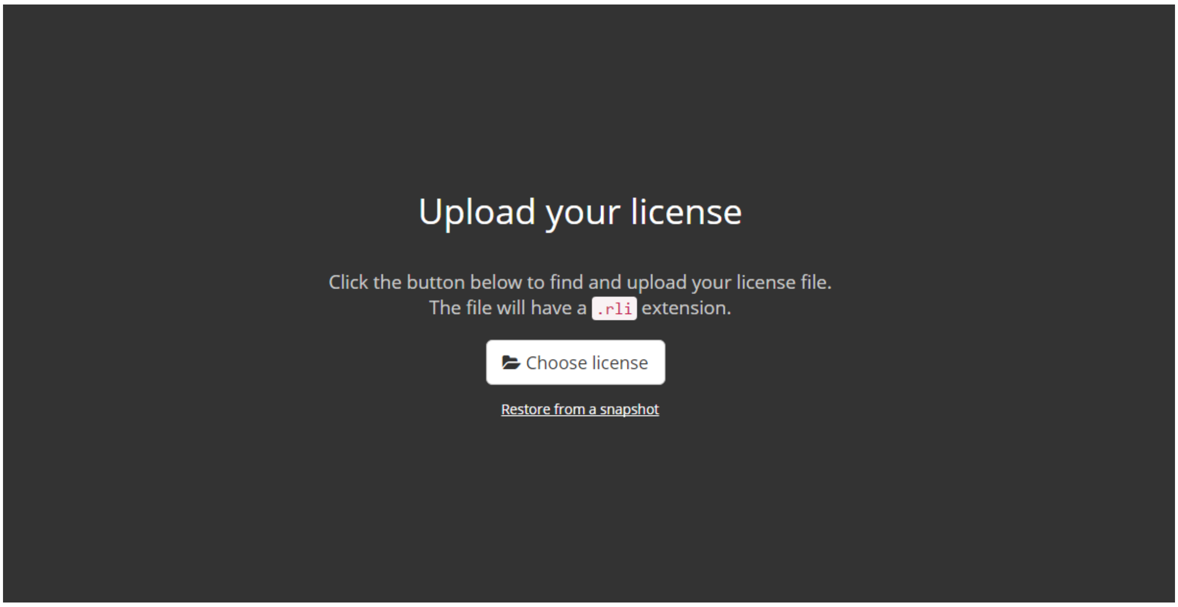
If the Replicated snapshot fails, the dashboard displays an error message with technical detail of the failure, including the file or folder involved. This error message is generated from the underlying file system (for example, readdirent: errno 523), which means the problem is likely with the underlying file system and not the Jama Connect installation.

Restore all settings from a Replicated snapshot

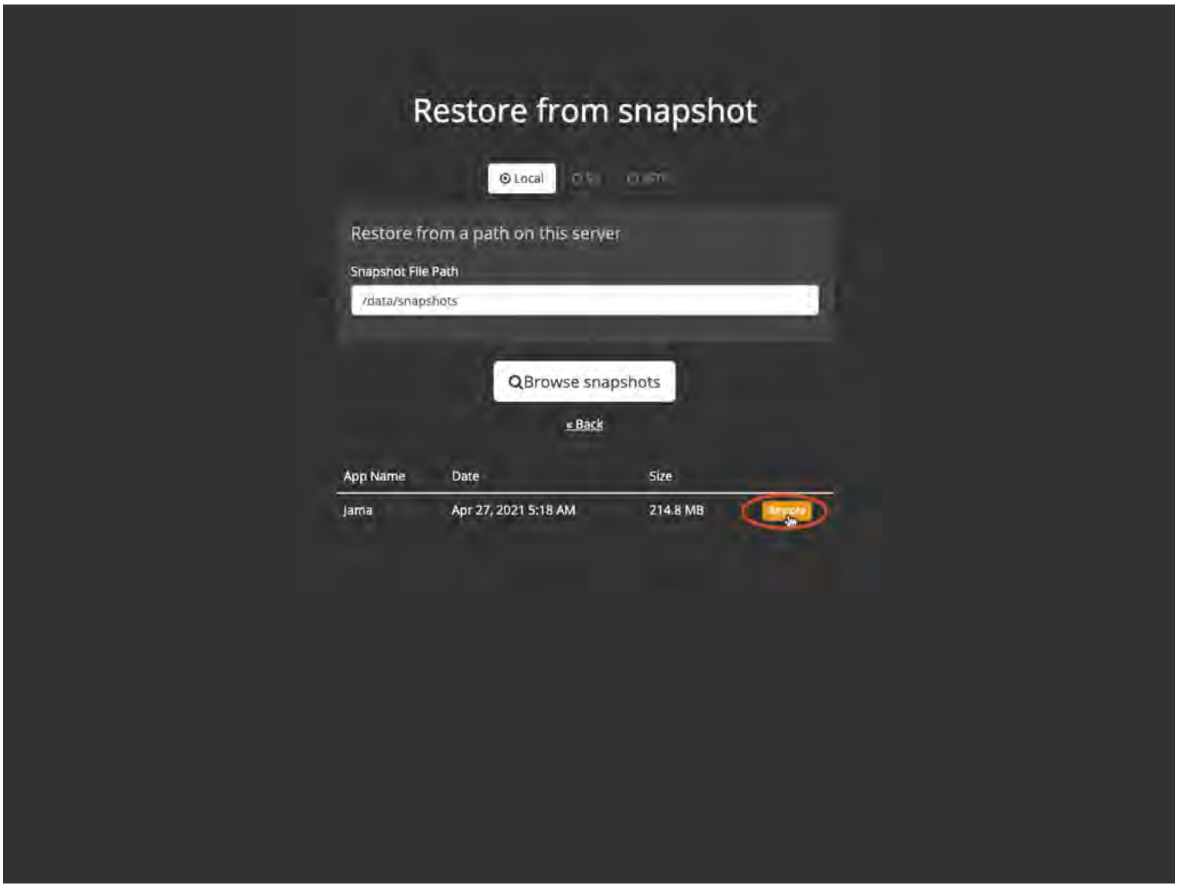
When you set up a new application server for Jama Connect, you can restore the Admin Console settings that you saved in a Replicated snapshot.

Snapshots include the Replicated database, registry images, and container volumes (when specified).

1. Install Jama Connect on the new server.
2. When the page Upload your license is displayed, select **Restore from a snapshot**.



3. When the Restore from snapshot page is displayed, enter the path to your snapshot and click **Restore**.
   Use the same path on the new server as you did on the old server. For example, **/var/lib/replicated/snapshots** or **/data/snapshots**.



4. On the Restore Cluster page, click **Restore**.

The system displays a progress page as it restores your data from the snapshot.

Back up to .jama or XML

We recommend backing up to a .jama or XML file for migrations and refreshes because this method has built-in automation. You can avoid manual changes which can impact the integrity of the data.

A .jama file backup includes the database and /data directory. An XML file backup includes only the database.

Important considerations

- If SAML is enabled, disable it before backing up your data. After you restore your instance of Jama Connect, you must re-enable SAML.
- Backups must be done manually; they can't be scheduled automatically.
- Make sure you have enough available disk space [536].
- Make sure Jama Connect is in maintenance mode [509] before you create a backup.
- If you are using a version of Jama Connect prior to version 8, generate backups during a maintenance window and inform users, including API users, not to use the application.
- Regardless of what version you are using, all integrations must be disabled.

To back up to a .jama or XML file:

1. Log in to Jama Connect as the root user [503].
2. Select the **Backup** tab to see the backup options.

3. Choose a backup method (listed here in recommended order).

Method	Scenario	Select...
Save .jama file to the application server.	Migrating between versions later than 8.0.	**Save .jama File to server**
Save XML file to the application server.	• Migrating between different types of databases [549] • Migrating version earlier than 8.0	**Save XML File to Server**
Download XML database backup to your workstation.	• If you can't access the application server • For smaller databases	**Download XML**
Download document type definition (DTD) to your workstation.	If all other methods fail	**Download DTD**

The backup process is complete.

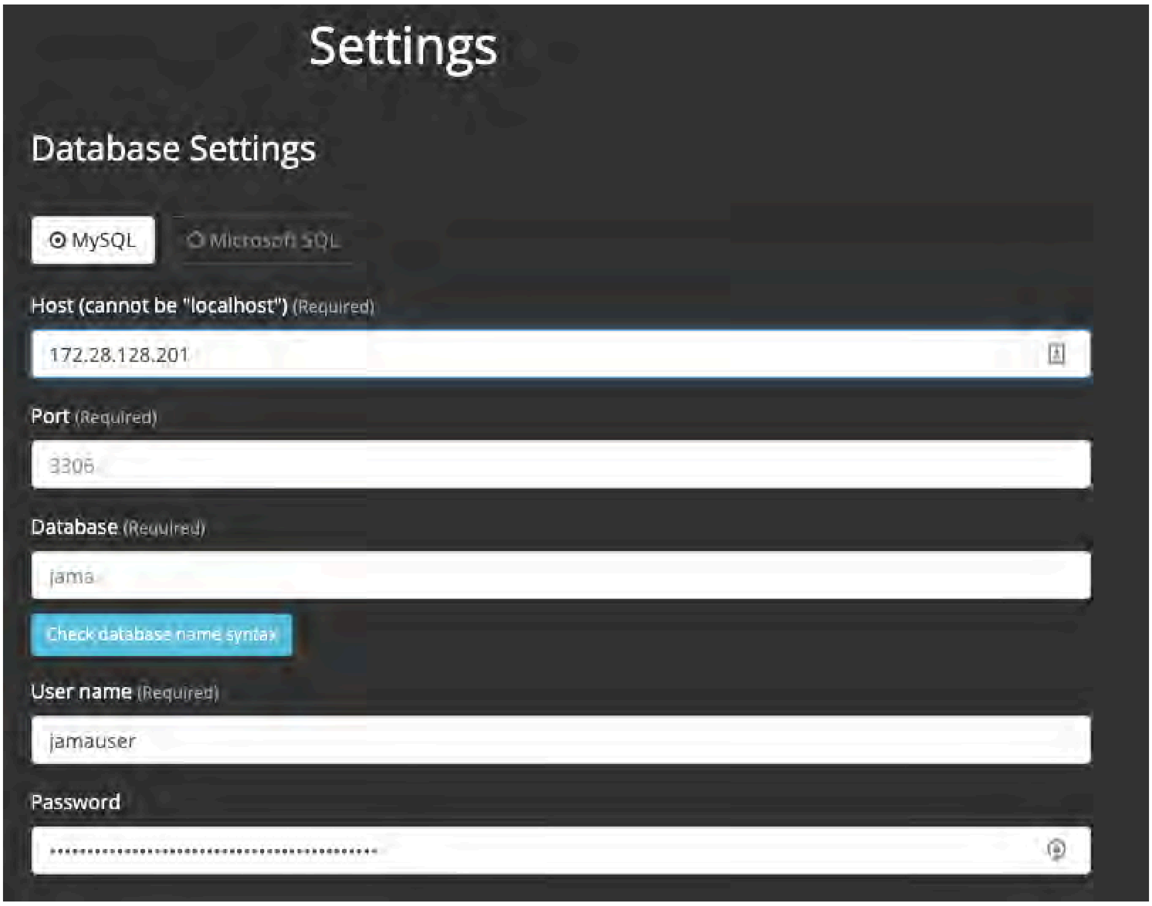
Restore to a new server from .jama or XML

When you set up a new server, you can install Jama Connect and restore data using the .jama or XML file backup you created. See Back up to .jama or XML file [532].

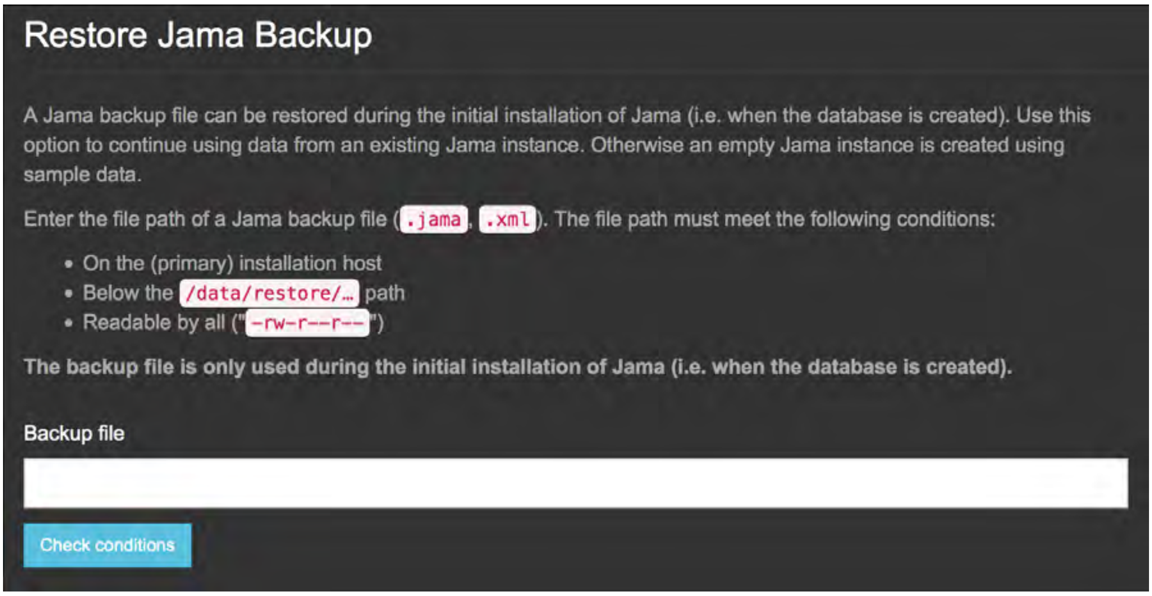
IMPORTANT

If you use SAML in your environment, it was disabled before you created the .jama or XML backup. When you install Jama Connect on a new server, it will be running Basic authentication. You must re-enable SAML to use that authentication method.

1. Log in to Jama Connect as the root user [503] on the new server.
2. Install Jama Connect [419]:
   - On the Settings page under **Database settings**, select the database you are using: **MySQL** or **SQL Server**.



   - Under **Restore Jama Backup**, enter the file path for the backup you created, (for example, /data/restore/your_backup.xml). Select Check conditions to make sure the path to your backup file meets the conditions listed onscreen.



IMPORTANT

You must have an empty database for the restore process to complete.

3. For non-.jama file backups: Move existing data folders to the new application server.
4. Save and restart Jama Connect [535].
5. Log in to Jama Connect as the root user [503].
6. If your new application server has a different URL than the old one, update the base URL to reflect the change.
7. To sync your indexes with the database, index all items.

Backing up MySQL or SQL Server database

If your MySQL or SQL Server database is extremely large, use the native backup method that comes with your database. Doing so avoids possible data corruption.

Follow instructions for whichever system you are using, MySQL or SQL Server.

IMPORTANT

If you are migrating from one type of SQL server to another, for example SQL Server to MySQL, use the .jama or XML file backup [532].

Maintaining your Jama Connect environment

A system administrator is responsible for keeping the system up and running and at peak performance.

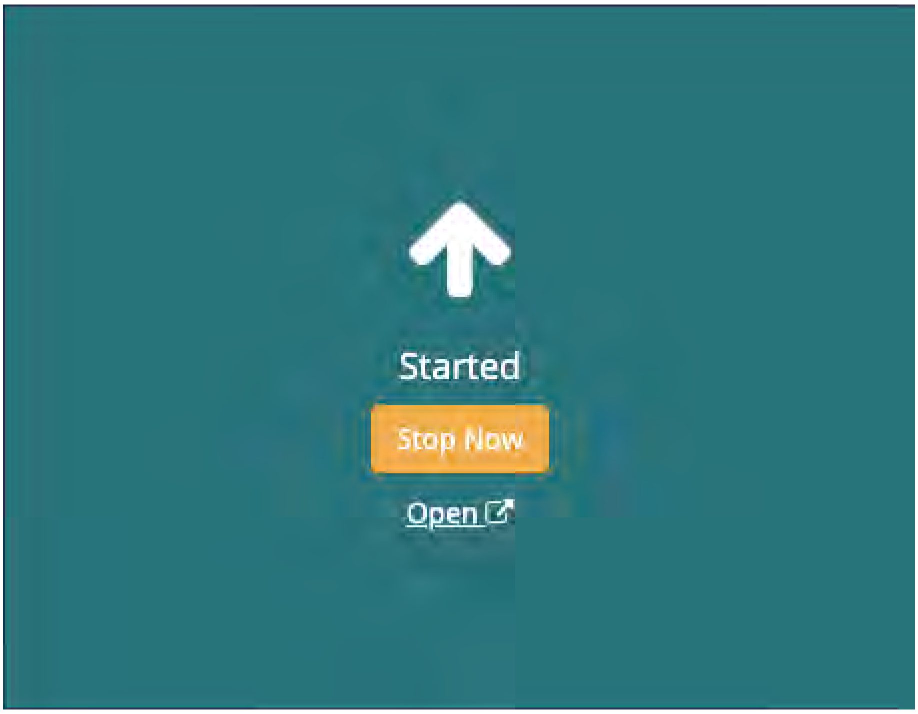
Maintaining your environment consists of ongoing tasks that are done regularly and important tasks that are done infrequently.

Ongoing/regular tasks	Infrequent but important tasks
• Monitor memory usage [536] • Back up your data [527] • View scheduled jobs [545] • Clear cache [545] • Remove old Docker images [544] • View applied patches [545] • Stop and restart Jama Connect services [535] • Reset Admin Console password [537] • Deactivate and reactivate users [537]	• Update the license (internet [538], airgap [539], or KOTS [540]) • Update the certificate [540] • Update the application's IP address [541] • Change [542] or fix URL [542] • Delete an organization [543] • Reindex all items [545] • Upgrade the Admin Console [474] • Upgrade Jama Connect [469]

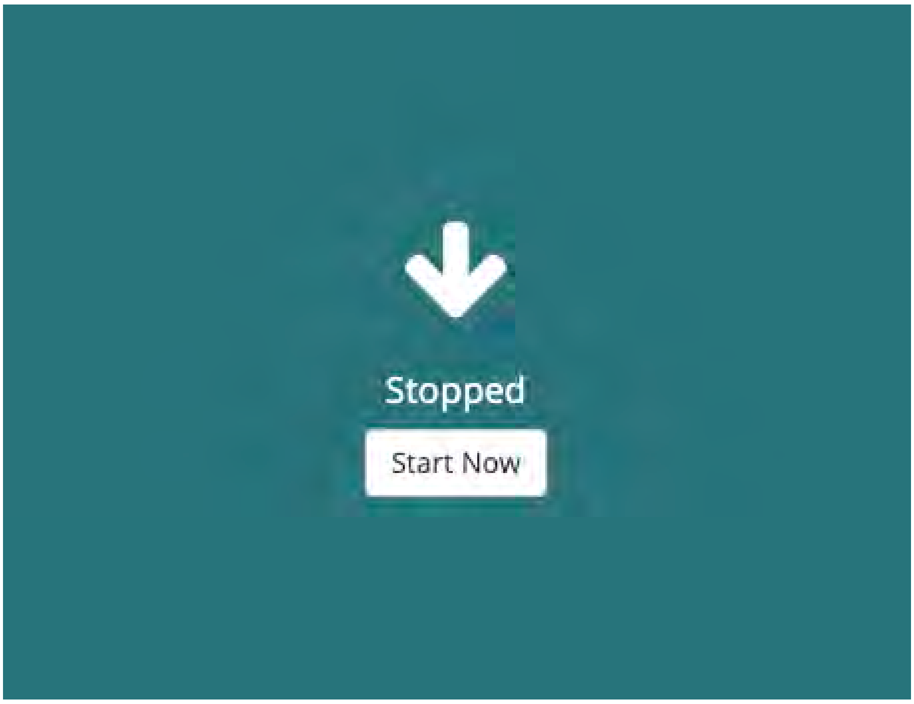
Stop and restart Jama Connect services

Some tasks require that you stop and restart the Jama Connect services. For example, when you make changes to the application, they don’t take effect until you restart Jama Connect.

1. In the Admin Console, select **Stop Now**.



2. Wait until the screen shows "Stopped", then complete your tasks.



3. Select **Start Now** to restart Jama Connect services.
4. Wait for the components that make up Jama Connect to be started and initialized.

The dashboard displays the status in this order: **Starting**, **Queued**, then **Started**.

Monitoring memory usage

Make sure you have allocated an appropriate amount of memory for your organization's usage. Check and adjust usage regularly to keep your environment running for best performance.

Several factors affect the amount of memory that Jama Connect requires, including:

- Size of your dataset
- Number of concurrent users
- Users' common workflows

If any of the containers' memory consumption is close to the maximum available memory, you can adjust those values. These containers in order require the most memory:

- jamacore
- elasticsearch
- searchservice

Make sure that you don't over-allocate the total memory of the application server. Also, leave approximately 5 GB of available memory (headroom) for system processes. For help in estimating your application server size, use the tables in Resource sizing for your application server [405].

Use one of these methods to monitor usage, then adjust your memory settings [496] as needed.

- Log in to Jama Connect as the root user.
- Select the **License management** tab to view usage by license type.
- Use the Admin Console monitoring graphs.
- Use any Java application monitoring tool that supports JMS.
- Use JavaMelody, which comes preconfigured with the Jama Connect application. To access JavaMelody, log in to Jama Connect as the root user [503] and navigate to **[your.jama.url]/javamelody**.

Deactivate and reactivate users

Users can't be deleted from Jama Connect, but you can deactivate users if they are no longer active members of the team. When you deactivate a user, their account becomes inactive and their named license is freed up for another user. You can also reactivate the user as needed.

> **IMPORTANT**
>
> You must have organization or system administrator permissions to deactivate and reactivate a user.

1. Log in to Jama Connect as the root user [503].
2. Select the **Users** tab.
3. To deactivate a user, select **Deactivate** in the Action column next to the user you want to deactivate.

   Deactivated users disappear from the list.
4. To reactivate a deactivated user:
   1. Select **View inactive users** to view all users, then select **Activate** in the Action column next to the user you want to reactivate.

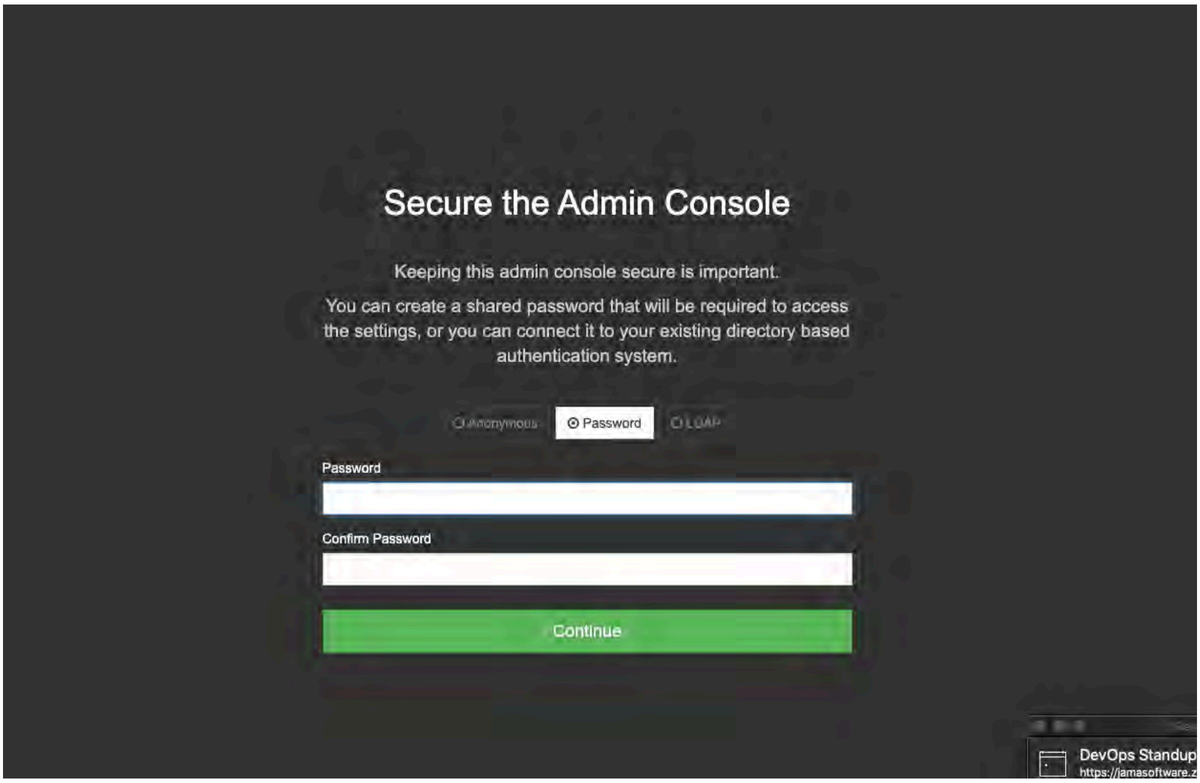
   2. In the User license type window, select a license type and select **Save**.

Reset Admin Console password

You can reset the password for the Admin Console if, for example, the administrator forgot it.

1. To remove the current password, run this command on the application server:

   ```
   replicated auth reset
   ```
2. To create a new password, enter this URL in a browser:
   https://[your.admin.console.ip]:8800/create-password



3. Select **Password**, then type a new, secure password for access to the Admin Console.

The new password takes effect immediately.

Update the license (internet)

When you renew your license or change the number of available seats, you must update your license. You receive a single key for your organization, called a *license key*, which specifies the type and number of licenses you have.

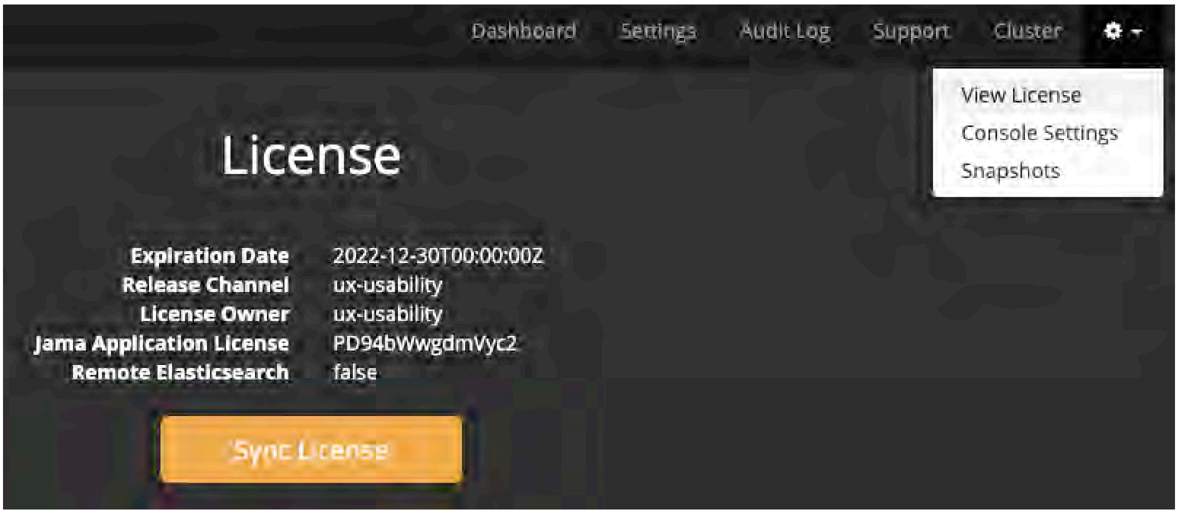
Your application server must be able to access the internet (except for airgap [539]customers).

TIP

Schedule a license update during a maintenance window because the process involves an interruption to the Jama Connect application.

To sync your license:

1. In the header of the Admin Console, select the **gear icon > View License**.
2. Select **Sync License**.



3. Stop and restart Jama Connect [535] for changes to take effect.

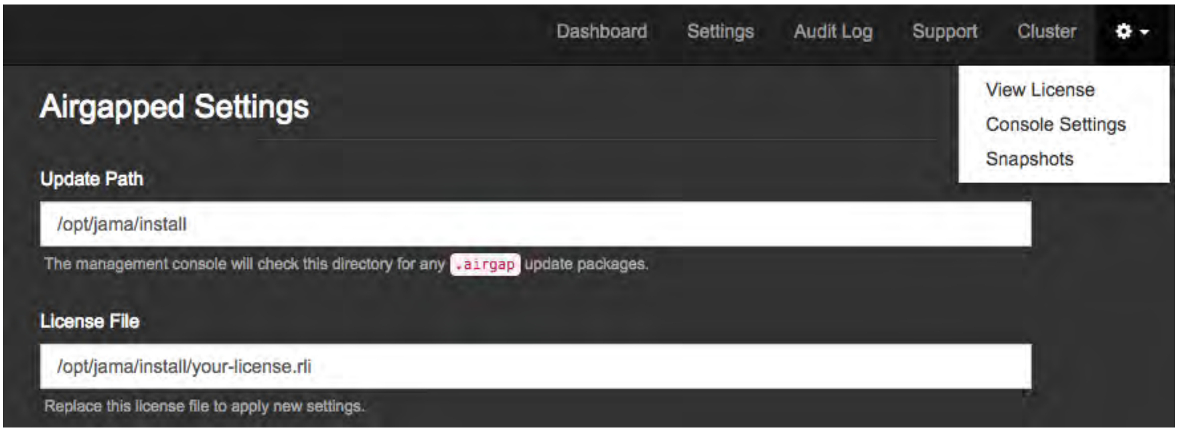
Update the license (airgap)

When you renew your license or change the number of available seats, you must update your license. You can ask your account manager for a new .rli license file, which Jama Software sends you via email.

> **TIP**
> Schedule a license update during a maintenance window because the process involves an interruption to the Jama Connect application.

To sync your license:

1. Open the email from Jama Software with the new .rli license file.
2. In the header of the Admin Console, select the **gear icon > Console Settings** and verify the location of the current license (for example, /data/install). Place your new license in that same location.



3. If the name of the new .rli file differs from the original, update the name in the **License File** field. Don't use spaces in the filename.
4. In the header of the Admin Console, select the **gear icon > View License**, then select **Sync License** at the bottom of the page.
5. Scroll to the bottom of the page and select **Save**.
6. Stop and restart Jama Connect [535] for changes to take effect.

TIP

You can also sync a new license with this command:

```
curl -o jama_8-#-#.airgap -O
```

Update the license (KOTS)

When you renew your license or change the number of available seats, you must update your license. You receive a single key for your organization, called a license key, which specifies the type and number of licenses you have.

TIP

Schedule a license update during a maintenance window because the process involves an interruption to the Jama Connect application.

To sync your license:

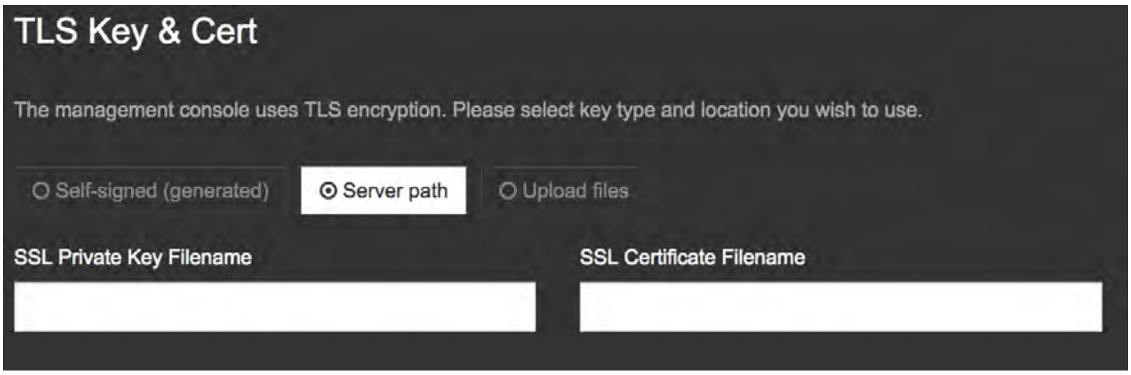
1. Open the KOTS Admin Console: https://<your hostname>:8800.
2. In the KOTS Admin Console, select the **Applications** tab, click **License**, then make the following changes:
   - **Internet installation** — Click **Sync license**.
   - **Airgap installation** — Click **Upload license**, then select the latest license.

   The KOTS Admin Console checks for updates to your license and creates a new version.
3. Select **Version history** and deploy the new version with your license changes.
4. Log in to Jama Connect, then select **License Management** to verify that the license updates were successful.

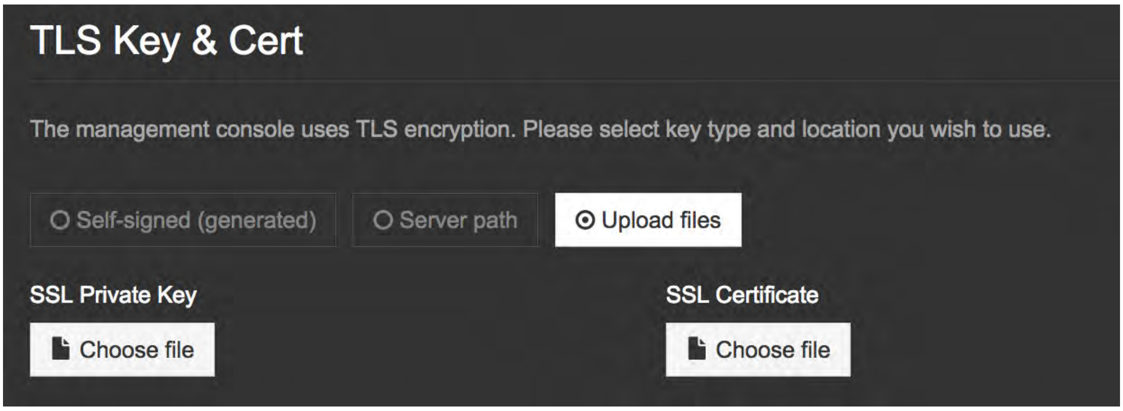
Update the certificate

If a certificate expires, it becomes invalid and must be replaced.

1. In the header of the Admin Console, select the **gear icon > Console Settings**.
2. Under **TLS Key & Cert**, select the location of the SSL private key and certificate.
   - If the SSL key and certificate are on the application server, select **Server path**, then enter the file locations.

   - If the SSL key and certificate are on the computer you use to access the Admin Console, select **Upload files** to upload the key and certificate files, then select **Choose file** for SSL Private Key and SSL Certificate.



3. Scroll to the bottom of the page and select **Save**. A message confirms that your settings were saved.
4. To apply settings, you must restart the application:
   - **Immediately** — Select **Restart now**.
   - **Later** — Select **Cancel** and **Restart later**.

Update the IP address for the application server

If you need to update the IP address or hostname of your application server, you must also edit the Replicated configuration files to reflect this change.

If you previously used an IP address, continue using an IP address. If you previously used a hostname, continue using a hostname.

> **NOTE**
> If you are using DNS and the hostname for this server isn't changing (just the underlying IP), you don't need to edit any files.

1. Make the IP/hostname changes in your network and on the server.
2. Stop the Jama Connect services [535].
3. Stop Replicated (Admin Console):
   - **CentOS, RHEL 7+, and Fedora**

     ```
     sudo systemctl stop replicated replicated-ui replicated-operator
     ```
   - **Debian, Ubuntu, and thers**

     ```
     sudo service replicated stop
     sudo service replicated-ui stop
     sudo service replicated-operator stop
     ```
4. Edit the Replicated configuration files to replace all occurrences of the old IP address or hostname with the new IP address or hostname.
   - **Fedora/CentOS/RHEL**
     /etc/sysconfig/replicated and **/etc/sysconfig/replicated-operator**
   - **Debian/Ubuntu**
     /etc/default/replicated and **/etc/default/replicated-operator**
   - **Others**
     Contact support at support@jamasoftware.com if you can't locate the Replicated configuration files.

5. If you have a firewall in place or use a proxy and configured no_proxy settings in Docker, update these settings with the new IP address [465].
6. Restart Docker.
   - **Fedora/CentOS/RHEL 7+**

     ```
     sudo systemctl restart docker
     ```
   - **Debian/Ubuntu and Others**

     ```
     sudo service docker restart
     ```
7. Start the Replicated service (Admin Console).
   - **Fedora/CentOS/RHEL 7+**

     ```
     sudo systemctl start replicated replicated-ui replicated-operator
     ```
   - **Debian/Ubuntu and Others**

     ```
     sudo service replicated start
     sudo service replicated-ui start
     sudo service replicated-operator start
     ```
8. Once the Replicated containers are up, navigate to https://{new_ip_address}:8800, then enter the new IP address or hostname under **Settings > Hostname**.
9. Log in to Jama Connect as the root user [503].
10. Change the URL [542] to reflect the new IP address.
11. Run Fix URL references [542] to change any existing references in the text of items that were already created.

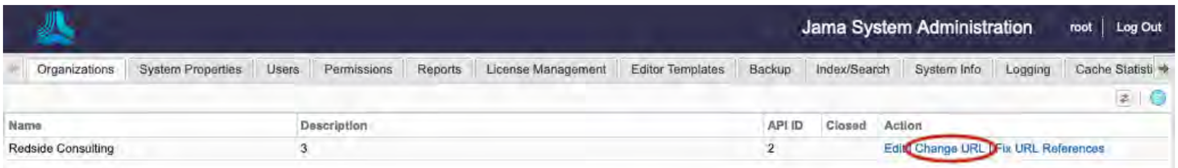
Change URL

The Base URL is the first part of all web addresses that Jama Connect installations use, beginning with http and ending with a slash (/).

You might want to change your Base URL if a company changes its name or if you need to create a test instance.

To change your Base URL:

1. Log in to Jama Connect as the root user [503].
2. Select the **Organizations** tab.
3. Select **Change URL** from the Action column.



4. Enter the new URL in the **New Base URL** text box.
5. Select **Change URL**.
6. Update all URL references [542] in the application to the new value.
   If this step isn't completed, the application still contains old URL references, which can result in unpredictable behavior such as images not being displayed in exports.
7. If you're using SAML authentication, disable and re-enable SAML settings to update the base URL in our SAML services.

The new URL is updated and active.

Update URL references after changing URL

The option **Fix URL References** updates all URL references in the application to reflect a new URL. After you change a URL [542], always run this function.

IMPORTANT

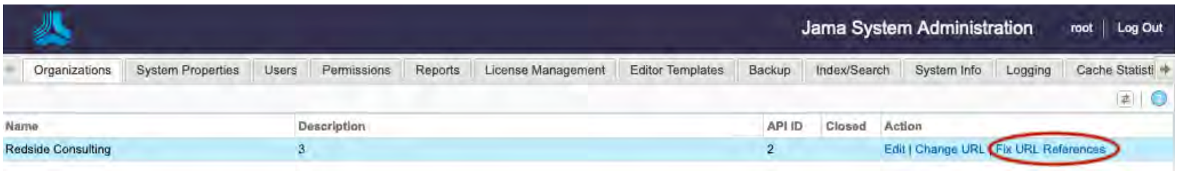
The **Fix URL References** option doesn't modify items in archived projects. It also doesn't change the URL used to connect the application server to your database server; that URL is stored in your database.properties file. The Base URL (baseurl field) is only updated in the database organization table by the Change URL [542] option.

Use the **Fix URL References** option if:

- You notice images are not being displayed in exports.
- A login prompt appears after URL redirection.
- An error message is displayed when you run exports.

To update all URL references in the application:

1. Log in to Jama Connect as the root user [503].
2. Select **Organizations > Fix URL References**.
3. Select **Fix URL References** from the Action column.



4. Enter the new URL in the text box, **To this URL**.
5. Select **Fix URL References**.
6. When prompted, select **Yes** to finish.

Delete an organization

Deleting an organization is an activity that is done only when more than one organization exists.

NOTE

Before version 4.3, users had the option to add multiple organizations. However, this option was removed in the spring of 2014. As of release 8.10, if you have multiple organizations, delete all but your production organization.

Overall system performance might be affected during the delete process depending on the size of the organization to be deleted. Schedule the deletion during off-peak hours.

Deleting an organization completely removes all data about the organization including projects, settings, and users. Deleted organizations can't be recovered. If you need to preserve the non-production organizations, contact your account representative.

1. Back up your data [532].
2. Log in to Jama Connect as the root user [503].
3. Enable maintenance mode [509] under the **System properties** tab. If maintenance mode isn't enabled, the option to delete organizations isn't available.
4. Under the **Organizations** tab, select the **Delete** action in the row of the organization to be deleted.

5. When prompted, select **Yes** to confirm you are deleting the organization.

Remove old Docker images

Old Docker images from previous versions of Jama Connect use up storage space and might cause indexing to fail. To avoid this, periodically remove old Docker images from your system to keep it running smoothly.

You also want to remove *dangling volumes*, which are volumes associated with a container that no longer exists. Jama Connect creates new containers and volumes when you restart the application. These volumes can fill up your disk space.

IMPORTANT

Make sure Jama Connect is running so that only images not in use are deleted. These commands clean only images and volumes loaded with the Docker storage driver in use. Files that were written with other storage drivers remain on the volume until separate commands are run for that storage driver.

Use these commands to clean up your volumes:

1. Identify how much space is being used on your server:

   ```
   sudo docker system df
   ```
2. List out all Docker images on your server:

   ```
   sudo docker images
   ```

   Images are displayed on the screen, listed by their ID in the IMAGE ID column.

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
quay.io/replicated/replicated-operator	latest	c5ea60b58967	5 weeks ago	33.12 MB
quay.io/replicated/replicated	latest	b590f45795f8	5 weeks ago	114.8 MB
172.28.128.3:9874/tenantmanager	e41194c	de4e2e0b47c0	5 weeks ago	442 MB
3. Remove an image by its ID:

   ```
   sudo docker rmi IMAGE_ID
   ```
4. Remove any dangling volumes from the Docker data root directory:

   ```
   docker volume rm $(docker volume ls -qf dangling=true)
   ```
5. Identify the volumes being removed:

   ```
   docker volume ls -qf dangling=true
   ```

NOTE

When you run the commands above to remove an image that is currently in use, you will get an error. For self-hosted customers with internet access, any missing images download again when you restart Jama Connect. For airgap customers, you'll need to manually load the images.

View scheduled jobs

Some jobs can impact performance. When you view scheduled jobs, you can identify which jobs are currently running, when jobs are scheduled to run, and how much memory they require. Knowing this information helps you prepare for any performance hit.

1. Log in to Jama Connect as the root user [503].
2. In the Jama System Administration panel, select **Scheduled jobs** to view jobs, their group, class, and firing time.

View applied patches

You might need to check which patches have been installed on your application server. For example, you can see if any patches were missed, or you might need to let support know about your current environment.

1. Log in to Jama Connect as the root user [503].
2. In the Jama System Administration panel, select **Applied Patches** to view the unique ID, run date, and status.

Clear cache

If you notice latency or slow performance of Jama Connect, you can free up disk space and memory by clearing the cache.

1. Log in to Jama Connect as the root user [503].
2. In the Jama System Administration panel, select **Cache statistics**.
3. Clear items from the cache:
   - **All items** — Select **Clear all cache** to clear all cache items from the cache.
   - **Specific item** — Select **Clear Cache** on a specific cache item to clear it from the cache.

Reindex all search items

Search indexes get out of sync with the database due to large batch updates, API updates, or database updates. During a full index, all search indexes are rewritten to the current values in the database.

> **NOTE**
> You must have system administrator permissions to complete this task while logged in as root. While organization admins and project admins can index project items [661], they can't index all search items.

Important considerations

- Files over 25 MB aren't indexed, so their content isn't searchable.
- Filetypes that can be indexed: PDF, DOC, DOCX, PPT, PPTX, TXT, RTF.
- Filetypes that can't be indexed: XLSX, XLS, XML, HTML, HTM.
- During the index process, the application automatically enters maintenance mode [509]. Users can’t log in during this time and users who are already logged in receive a message about the maintenance.

To sync your search indexes:

1. Notify users before initiating an index.
2. Disable all integrations including legacy connectors and the Jama/Tasktop Integration Hub. DWR, SOAP, and REST API calls are automatically blocked during the reindex.

> **NOTE**
> The system administrator doesn't have access to disable integrations. Work with an organization admin or integrations admin [642] to disable those services.

3. Log in to Jama Connect as the root user [503].
4. Select the **Index/Search** tab and select **Index items**.
   The system displays a count of items in the application and the estimated time to complete the index.
5. Select **Yes** to continue.

You see an alert when indexing is complete and maintenance mode is automatically disabled.

Folder locations

You can use an exported filesystem, such as NFS, for mounting the following directories, provided the path remains the same. Mounting these directories in the cloud is not supported.

The following two directories are on the application server:

- **/data**
  Stores physical artifacts, like attachments, reports, avatars, diagrams, and metrics. Exported file systems, like NFS, are supported for use with the /data directory.
- **/logs**
  Contains all log files of the Jama Connect components such as the following:
  - **/logs/tomcat**
    Apache Tomcat log files, logs all activities [230] in the application
  - **/logs/tomcat/contour**
    Core Jama Connect log files
  - **/logs/elasticsearch**
    Elasticsearch log files
  - **/logs/search**
    Search service log files
  - **/logs/nginx**
    Nginx log files (note that currently only error logging is provided for Nginx)

> **NOTE**
> You cannot change the location where log files are written to, however, you can change the appenders and logging levels for different components of the Jama Connect application. The core Jama Connect application log configuration can be updated in:
>
> `/data/log4jconfig/log4j.properties`
>
> The log configuration for Elasticsearch and search service can also be found in
>
> `/data/config`
>
> Changes to these configuration files persist when you restart Jama Connect and are applied in a few seconds.

IMPORTANT

Replicated snapshots are stored in the following location by default:

```
/var/lib/replicated/snapshots
```

However, if you change the path to include /data it will be easier to include these snapshots in your regular backups of Jama Connect data at /data/directory, as such:

```
/var/lib/replicated/data/snapshots
```

Note that /snapshots should have three times the space allocated as the rest of /data.

Migrating your data

To use Jama Connect 8.x, your application server must be running on a Linux platform; Windows server is no longer supported. Also, because Oracle database is no longer supported, you must migrate to either Microsoft SQL Server or MySQL before upgrading to version 8.x.

You must also migrate your existing data when you upgrade the platform (physical or virtual) for your database server or application server.

NOTE

This information applies to self-hosted environments only.

Migrate Jama Connect data when you:

- Upgrade Jama Connect from pre-8.0 version [477]
- Upgrade from Oracle database on pre-8.0 Jama Connect
- Migrate the application to a new server [548]
- Migrate the database to a new server [549]
- Set up or update a test server [550]

Migrating...	Details
From Oracle database	Jama Connect 8.x no longer supports Oracle database. You must migrate to a supported database before upgrading to 8.x.
From Windows server	Jama Connect 8.x no longer supports Windows platform. You must migrate to a supported Linux operating system, then migrate your application and data.

IMPORTANT

If you restore data from an XML or .jama file, your image file automatically references the new server's name or location. But if you use any other method to restore data (such as proprietary tools for MySQL or Microsoft SQL Server), you must run the **Fix URL** option to update references manually [542].

Migration overview

The basic process for migrating your application and data involves creating a backup of your /data directory, then creating a snapshot of your Replicated Admin Console settings. Once that is done, you install Jama Connect on a new server and migrate the /data directory backup to the new server. When the new server is online and functioning, you then remove Jama Connect from the original system.

Depending on your current environment, you might also need to:

- Upgrade to Jama Connect 8.x if you're running a pre-8.x version.
- Migrate to a supported Linux system if you're running on a Windows server.
- Migrate to a supported database (MySQL or SQL Server) if you're running an Oracle database.

Migration process

1. Make a backup of your current Jama Connect installation using one of these methods:
   - Jama Connect backup (.jama file or XML file)
   - Proprietary database backup for SQL Server or MySQL
2. Make sure you are running:
   - Jama Connect 8.x or later on a supported Linux system
   - A supported database, SQL Server or MySQL
3. Migrate existing data, using .jama file, XML file, or proprietary SQL database file.
4. Remove previous installation of Jama Connect.

Migrate existing directories

If you created your backup with a Jama Connect XML file or with SQL proprietary database software, you must manually migrate certain directories (folders).

A .jama backup file includes the database plus all necessary directories. However, an XML backup file or a proprietary database backup includes only the database.

1. In the **/data** directory, delete these directories:
   - **tenant**
   - **ActiveMQData**
   - **elasticsearch**

   These directories are restored when you restart Jama Connect on the new server.
2. Migrate these directories accordingly:

Directories	Details
/attachments/**	Move to the new application server at /data/contour/attachments/**
/avatars/**	Move to the new application server at /data/contour/avatars/**
/diagrams/**	Move to the new application server at /data/contour/diagrams/**
/metrics/**	Move to the new application server at /data/contour/metrics/**
/reports/**	Move to the new application server at /data/contour/reports/**

   ** All directories and files below the given folder
3. On the new application server, set permissions and ownership for all directories with these commands:

   ```
   chown -R 91:91 /data/contour
   chmod -R u+rwX /data/contour
   ```

Migrate the application to a new server

If you have a new server (physical or virtual) for your existing Jama Connect 8.x installation, you must first create a backup and snapshot on the original server, then migrate data and restore the snapshot on the new server.

IMPORTANT

The snapshot contains the license from the original server. Only use a production server snapshot on a new production server, and a test server snapshot on a new test server.

1. Log in to Jama Connect as the root user [503].
2. Enable maintenance mode [509]:
    1. Select the **System properties** tab in the Jama System Administration panel, then select **Edit** in the top right corner.
    2. Scroll to the bottom of the page and select **Yes** for maintenance mode.
3. On the original server:
    1. Create a Replicated snapshot [485] from the Admin Console.
    2. Create a backup (.jama file, XML file, or proprietary SQL backup) and download it from the root menu. Move to the new server under /data/restore.
4. On the new server:
    1. Migrate the existing data [548], including the /data directory and its contents from the old server to the new server, preserving the structure and permissions of the contents.
    2. Move the snapshot from the original server to the same directory on the new server.
    3. Restore the snapshot [487]. When prompted for the license, select **Restore from a snapshot**.
    4. If the IP address of the two servers are different, update the IP address of your application server [541].

Migrate existing database to a new server

If you have a new server (physical or virtual) for your existing database, you must create a backup of the original database, then migrate and restore it on the new database server.

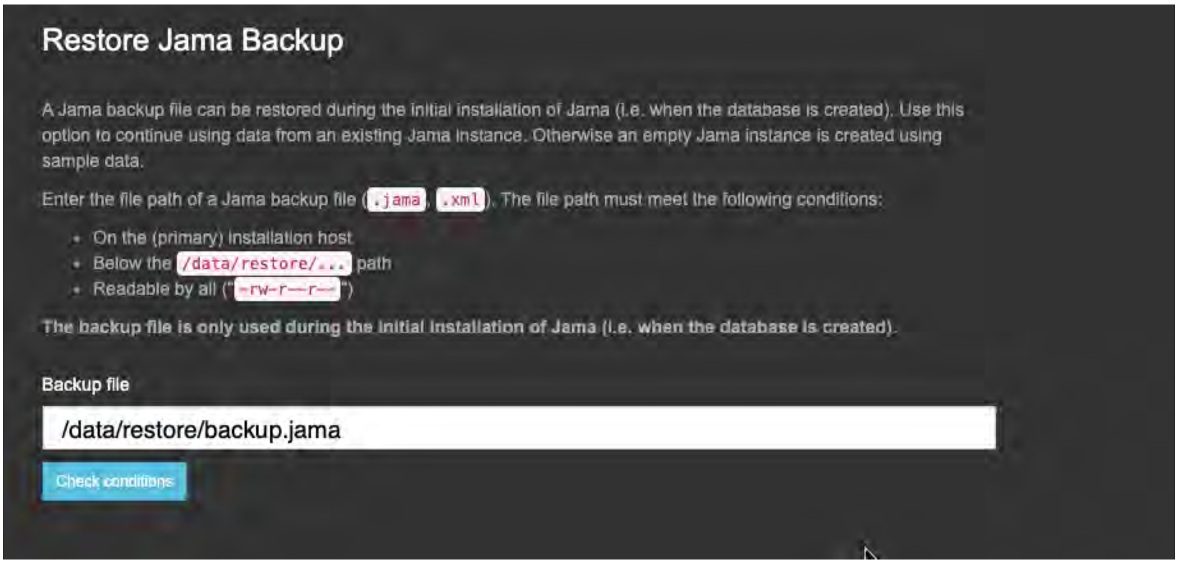
Important considerations

- If migrating from the same database type, such as MySQL to MySQL, perform a proprietary backup and restore [534], to avoid converting the data.
- If migrating between different database types, such as MySQL to SQL Server, generate a back-up [532] of your database using your current installation of Jama Connect.
- If migrating from a pre-8.0 version of Jama Connect, generate a backup [532] of your database using your current installation of Jama Connect. You must use an XML file for the backup.
- If migrating from an 8.x version of Jama Connect, use a .jama file for the backup.

To migrate your database to a new server:

1. Generate a backup on your application server, using a .jama file (recommended), XML file, or a proprietary database backup.
2. If using a .jama file or XML file:
    a. Wait for the backup file to be written to the /data/contour/backup directory on the application server.
    b. Move the backup file to the /data/restore directory on the destination application server.
3. Create a new database following the instructions appropriate for MySQL or SQL Server.
4. Delete filesystem assets on the destination server:

    ```
    rm -rf /data/{activeMQData,| config, contour, elasticsearch, tenant}
    ```
5. On the respective destination servers, configure the Admin Console, and when prompted, select **Restore from backup file**.



6. Save the settings and restart Jama Connect.

Setting up a test server

If configuring a test server, you must disable the following features before you create the backup on the original server. Disabling these features prevents duplicate information from being sent out from both your test and production environments.

Make sure to disable these features:

- Legacy connectors such as the JIRA, TFS, and Rally connectors
- SMTP or IMAP

Troubleshooting

> **NOTE**
> This information applies to self-hosted environments only.

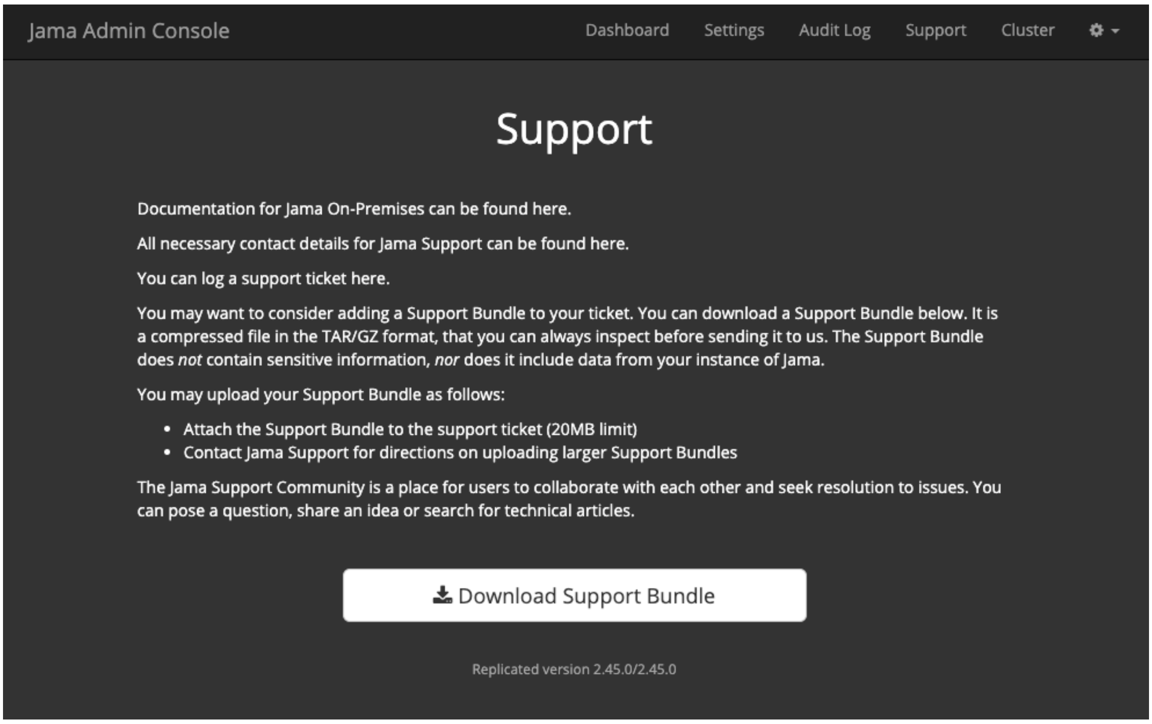
You can avoid troubleshooting by following regular maintenance practices [534], but if you run into problems here are some resources that might help:

- For issues with installation, log in to the Jama Connect as root user [503] and select the **System Info** tab to see a quick overview of your installation.
- View log and profile [552]
- Clear cache [545]
- View scheduled jobs [545]
- Index all items [545]
- Remove old Docker images [544]
- Reconnect to the Wiris server [554]
- Generate a support bundle [550] and contact support@jamasoftware.com

Generate a support bundle

A Support Bundle contains information about the application server and the Jama Connect installation. The bundle, which includes support troubleshoot issues in your environment, includes thread dumps [551], log files from the Admin Console, and the components that make up Jama Connect.

1. Generate a Support Bundle from the UI or command line of the application server.
   - **From the UI** — In the header of the Admin Console, select **Support**, then select **Download Support Bundle**.



   - **From the command line:**

```
replicated apps
replicated support-bundle <app_id>
```

     <app id> is the ID of your application taken from the output of the first command.
2. Upload the Support Bundle to Jama Support: support@jamasoftware.com

For more information, see the community article: Jama Support Bundle: How do I get it, what's in it, and which logs should I care about?

Thread dump

A thread dump is a snapshot of the state of your Jama Connect processes at a point in time.

Jama Support might request a thread dump for troubleshooting performance issues.

Any time you generate a Support Bundle [550], the bundle includes three thread dumps taken at 5-second intervals.

> **TIP**
> Take multiple thread dumps over an interval of time. A single thread dump on its own doesn't provide complete information about an issue.

You can create a thread dump from the command line or the from the Logging Configuration window.

Manually (command line)	Logging configuration window [552]
`jamacli jamacore-thread-dump`	Select **Logging > Configuration**

NOTE

You can create thread dumps only for containers that are the core Jama Connect application.

View and configure logging

Log files record information from the application and can help with troubleshooting. Information is captured in the contour.log file.

Entries in the log file are noted by the [jama.AccessLog] package and include this information:

- Date of request
- Server processing time to handle the request
- The user who submitted the request
- The organization ID of the user who submitted the request
- The user session ID of the user who made the request
- The server address that the request was made to

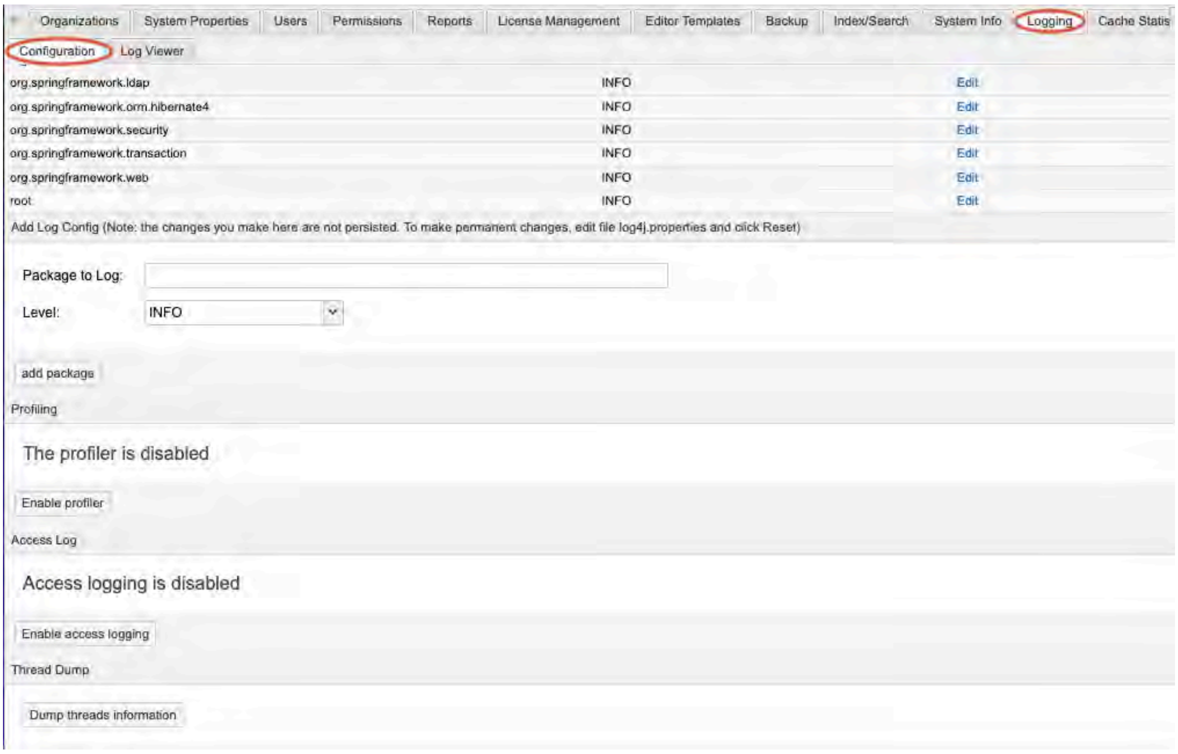
Enabling the profiler logging enhances logging in Jama Connect. However, profiler logging might require additional resources to generate this content. For best performance, use the profiler for troubleshooting purposes.

The profiler prints out the following information:

- The user who submitted the call
- The organization the user belongs to
- The java thread ID of the call
- A stack trace of the call that includes processing time and memory usage of each trace

To view the log and configure logging:

1. Log in to Jama Connect as the root user.
2. Select **Logging > Log Viewer** to view the log. As needed, select **Refresh** at the top right to refresh the log.
3. Select **Logging > Configuration**.



TIP

By default all logging levels are set to info and will reset to that default when the application is restarted [535].

To permanently change the logging level and appenders, edit the file:

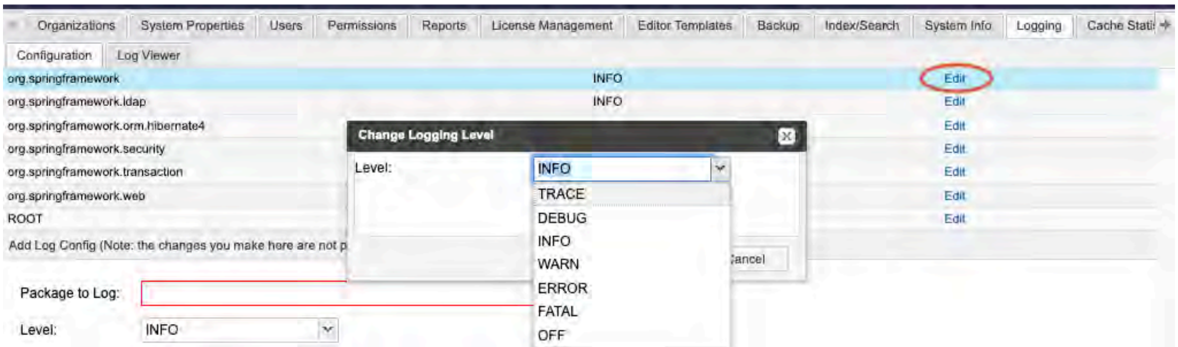
`/data/config/log4j.properties`

The log configuration for Elasticsearch and search service can also be found in:

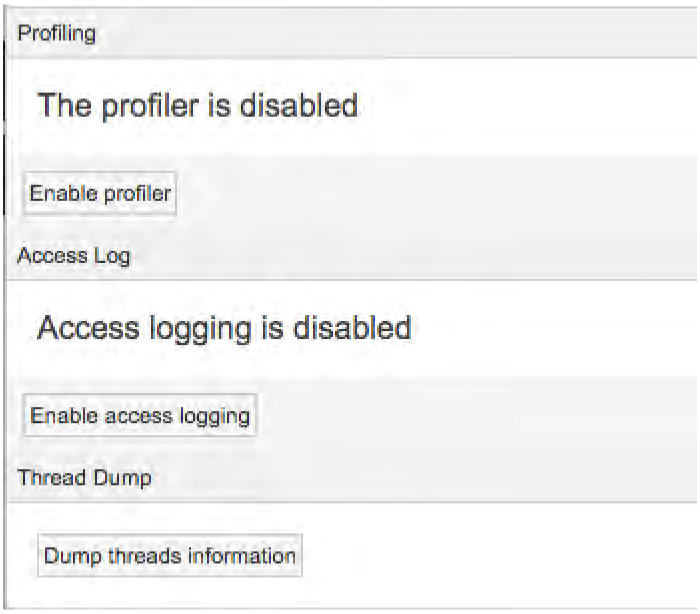
`/data/config`

You cannot change the location to where log files are written. Changes to these configuration files are applied within a few seconds and are persisted across restarts the application.

4. To change the logging level from the default setting of Info, select **Edit**.



5. To log additional content for every log entry in the contour.log file, scroll to the bottom of the page and select **Enable profiler** under Profiling.



Profiling is indicated in the log file as the [jama.Profiler] package.
Here is a sample log entry:

```
2011-04-28 09:37:19,865 INFO [org.directwebremoting.impl.DefaultRemoter]
- Exec: projectSvc.getExtTreeNodeForProject()
2011-04-28 09:37:19,869 INFO [jama.Profiler] - user:admin org:2
thread:96 start:2011-04-28 09:37:19,866
[3ms] [+88K/-88K 837755K/254041K]-
com.jamasoftware.Jama.dwr.impl.DwrProjectServiceImpl.getExtTreeNodeForPro
ject
[3ms] [+88K/-88K 837755K/254041K]-
com.jamasoftware.contour.service.impl.ProjectServiceImpl.getExtTreeNodeFo
rProject
[2ms] [+88K/-88K 837755K/254041K]-
com.jamasoftware.contour.service.impl.DocumentTypeServiceImpl.getAvailabl
eDocumentTypesForProject
```

6. To capture information for all user requests and all locked-out users in Jama Connect, select **Access log**, then select **Enable access logging**.
   Information is captured in the contour.log file. Here is a sample log entry:

   ```
   2014-08-29 16:24:59,370 INFO http-bio-8080-exec-17 [jama.AccessLog]
   - [3 ms] PRBDIJN9 1 - 083BBE5B1E8C481033DA7AFBBEF023A5 160 http://
   localhost:8080/contour/
   ```
7. To capture a one-time dump of the current running java threads being executed, select **Dump threads information** under Thread dump.
   Information is captured in contour-threaddump.log.
   This information is useful for identifying long running processes. If Jama Connect seems to hang, run a thread dump and send the log file to support@jamasoftware.com.

Reconnect to the Wiris server (self-hosted only)

If your connection to the Wiris server is interrupted, you can fix the issue by modifying the Wiris settings, restarting your system, then returning the settings to their original values.

1. Modify the Wiris settings:
   a. In the Admin Console, select **Settings > WIRIS Connection Settings**.
   b. Select **Use custom Wiris connection**.
   c. Make the following changes:

        - **Wiris Host** — Add “xx” to the end of the string
        - **Wiris Path** — Add “xx” to the end of the string
        - **Wiris Port** – Change to 44311
    d. Select **Save** and restart your system.
2. **Test the connection**. Use Jama Connect in a field that calls the Wiris MathType Editor:
    a. In Jama Connect, select **Projects**, and select the item you want to modify.
    b. From the Add drop-down menu, select **New item > Text**.
    c. In the Add item window, select the Math Editor icon.
    d. Add an equation using the equation editor. As expected, this action fails.
3. In the Admin Console, reset the modified Wiris setting to the original values.
4. Select **Save** and restart your system.
5. **Test the connection**. Use Jama Connect in a field that calls the Wiris MathType Editor:
    a. In Jama Connect, select the item you want to modify.
    b. From the Add drop-down menu, select **New item > Text**.
    c. In the Add item window, select the Math Editor icon.
    d. Add an equation using the equation editor. This action now succeeds

Organization administrator

An organization administrator controls all aspects around the configuration of Jama Connect and the user and groups. This is a role that can be assigned to an individual or a group.

An organization administrator can manage users [575], content [557], collaborations [629], and integrations [642].

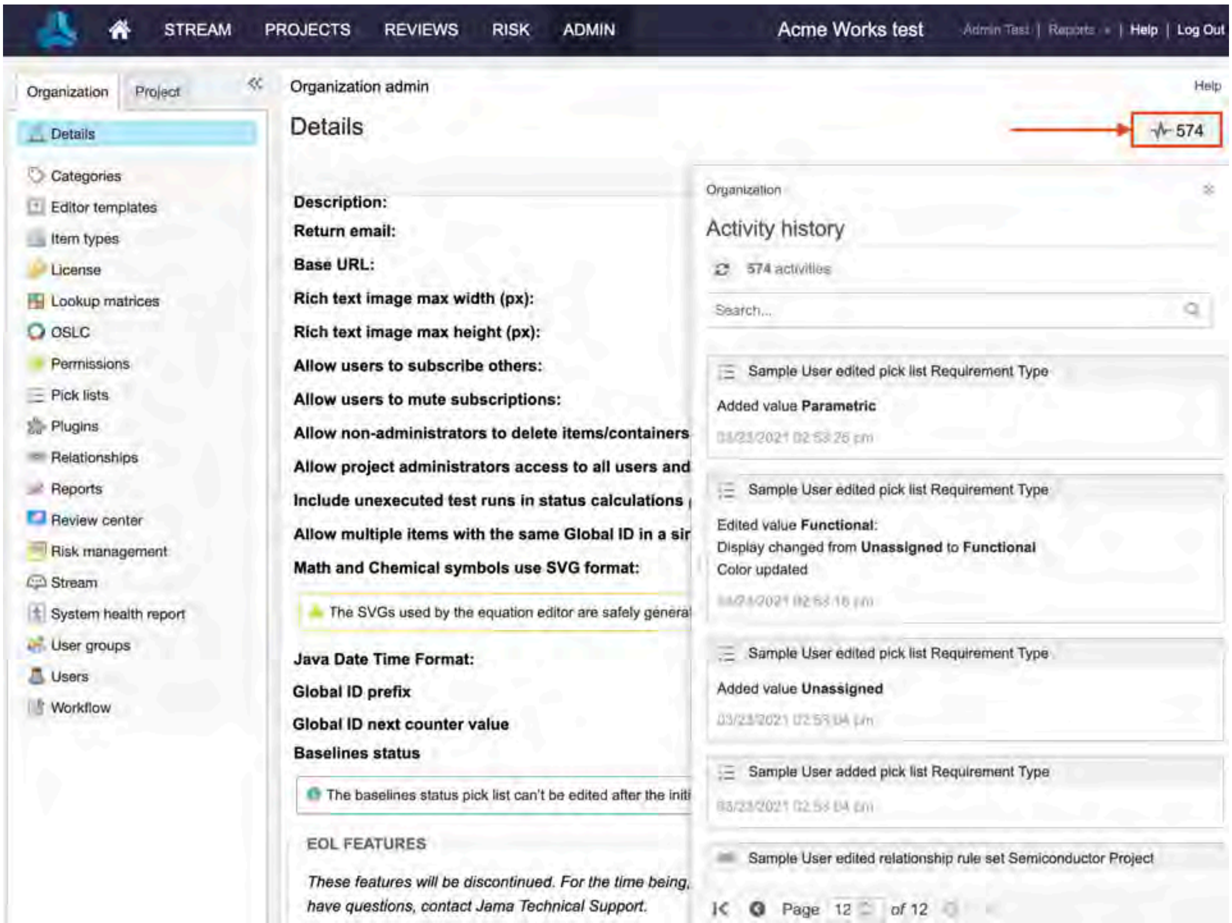
Most of the organization administrator tasks can be found under **Admin** in the top-level navigation. If you don't see this, you don't have organization administrator permissions.

Many changes made in the organization administration pages require signing out before they take effect. By default, Jama Connect creates a group called Organization Admin and assigns it Administrator and Manage project rights to the organization.

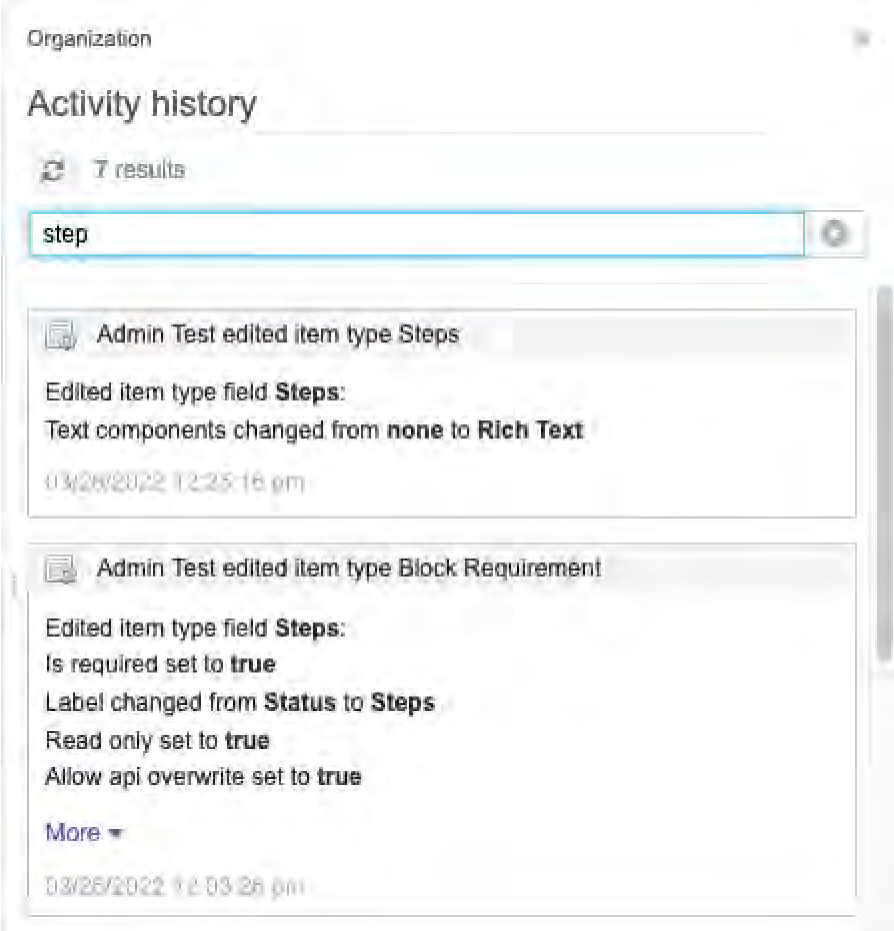
Monitoring changes with the Admin Activity stream

The Admin Activity stream provides an audit trail of updates made by organization and project administrators.

To open the Activity stream panel, select **Admin**, then select the **Activity stream** button on the right side of the panel.



Need to find something quickly? Search for activities by entering the search term, like the name of a pick list or the user who performed the action.



Manage content

There are many areas of the application that require organization administrator permissions to set up and maintain content for the broader group of users.

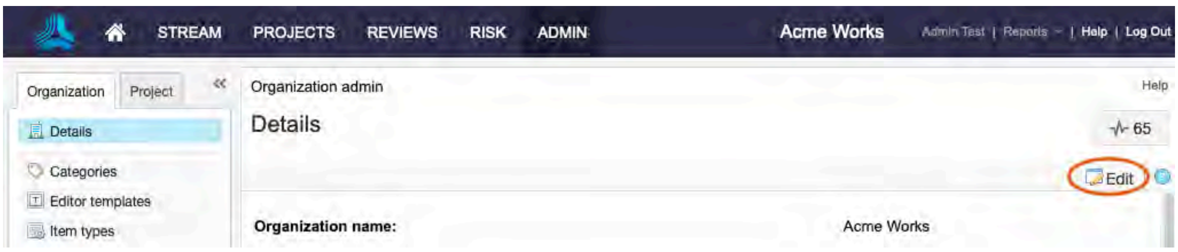
Change Global ID

Global IDs are unique identifiers of items that are connected through synchronization. While every item has its own unique ID [648], two items that are synchronized can share a global ID.

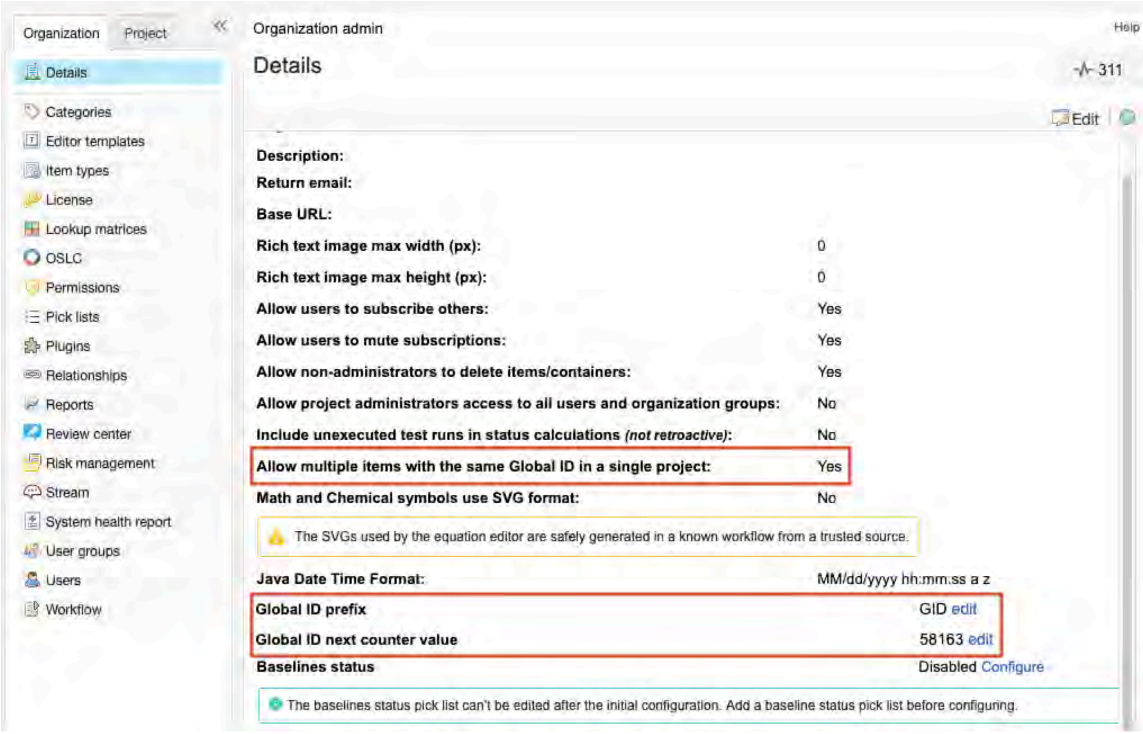
> **NOTE**
> You must have organization administrator permissions to complete this task.

You can change or add a prefix, as well as an optional item type key, in front of the Global ID assigned to items.

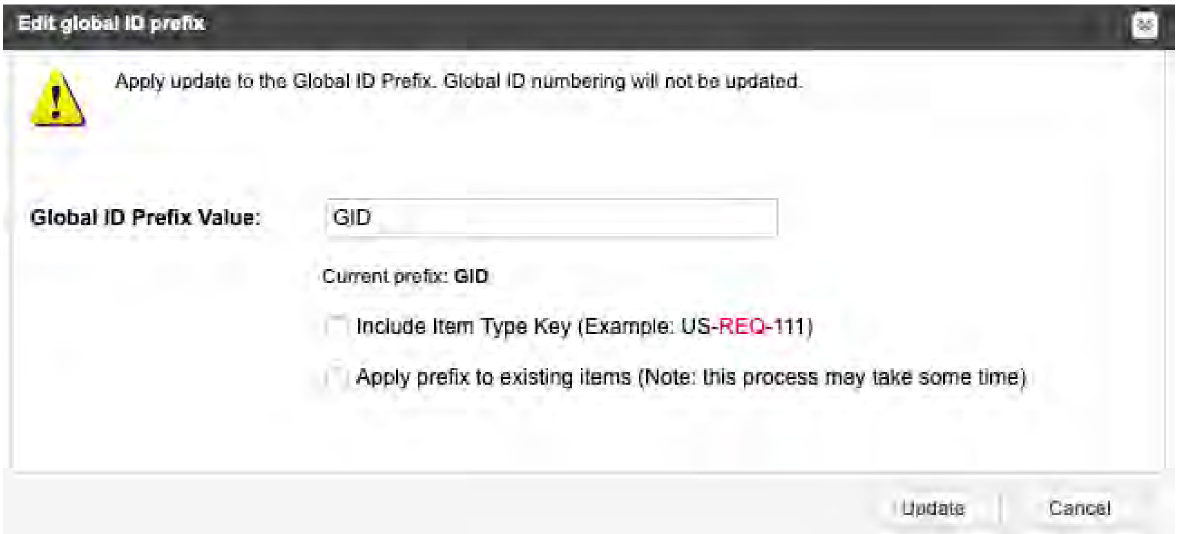
1. Select **Admin > Details**, then select **Edit**.



2. Confirm if you want to **allow multiple items with the same Global ID in a single project**.
   - **Yes** — One item can be synchronized with one or more items in the same project.
   - **No** — Items can only be synchronized to items in other projects. The default setting is **No**.



3. To change the **Global ID Prefix Value** and **Item Type Key**, select **Edit**.



- **Change only future prefixes**: Change the Global ID Prefix and select **Update**. No current IDs are affected. Future IDs include the new prefix.
- **Change ALL prefixes (past and future)**: Select **Apply prefix to existing items**. All existing prefixes are changed if they match the old prefix, and new IDs will contain the new prefix. If the past Global IDs didn't have a prefix, the new one is appended to those IDs.

Old Prefix	Old ID	New Prefix	New ID
US	US-REQ-1023	NZ	NZ-REQ-1023
US	EU-REQ-1023	NZ	EU-REQ-1023
No prefix	REQ-1023	NZ	NZ-REQ-1023
No prefix	US-1023	NZ	NZ-US-1023
US	US-REQ-1023	No prefix	REQ-1023
US	US-1023	No prefix	1023
US	1023	No prefix	1023

- **Include item type in the global ID**: Select **Include Item Type Key**. To change the item type key, you must configure the item type [596].

4. To change the **Global ID next counter value**, select **Edit**.
5. Set the counter that assigns Global IDs, then select **Update**. If you set the counter to a value that's being used, the counter uses the next available ID as its starting point when the next item is assigned.

Your changes appear in the Organization Details page.

Configure the baselines status for pick lists

Once you create a baseline-specific pick list, you can enable the baseline status to be able to select the pick list. The baselines status pick list can't be edited after you configure it.

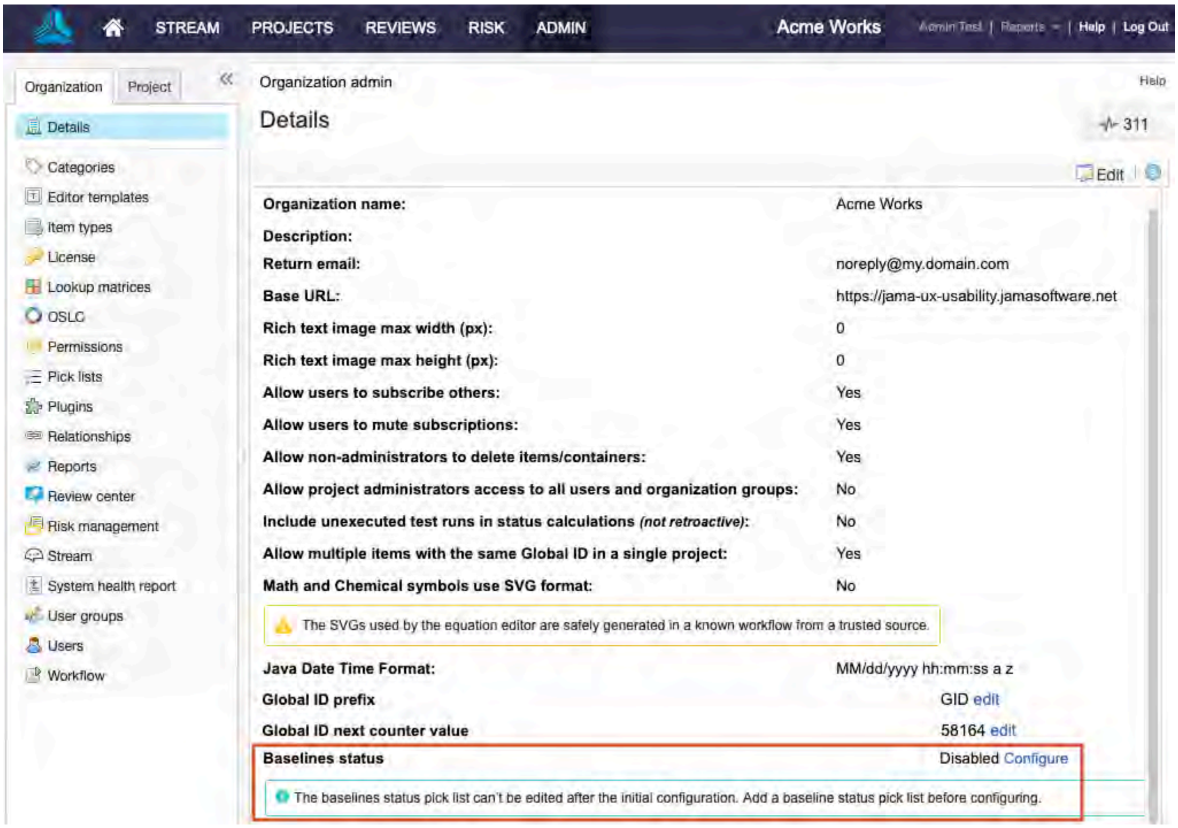
IMPORTANT

From **Admin > Pick lists**, you can edit the pick list that's in use but you can't delete it. You can, however, disable the pick list when you no longer need it.

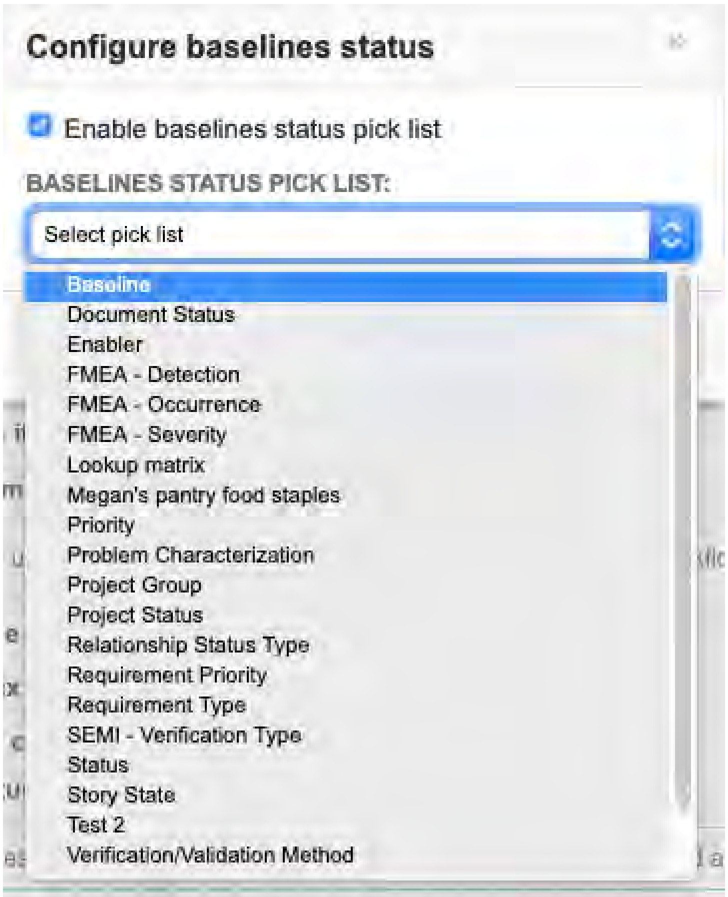
You must have organization admin permissions to complete this task.

To enable and configure the baselines status:

1. Create a dedicated pick list that is used only for baselines.
2. Select **Admin > Details**, then next to the Baselines status option, click **Configure**.



3. In the Configure baselines status window, select **Enable baselines status pick list**, then choose the baseline pick list you created.



4. Click **Save**.

Once the pick list is enabled, users can apply this option when editing a baseline. The pick list values appear in the Baselines List View and View details headers.

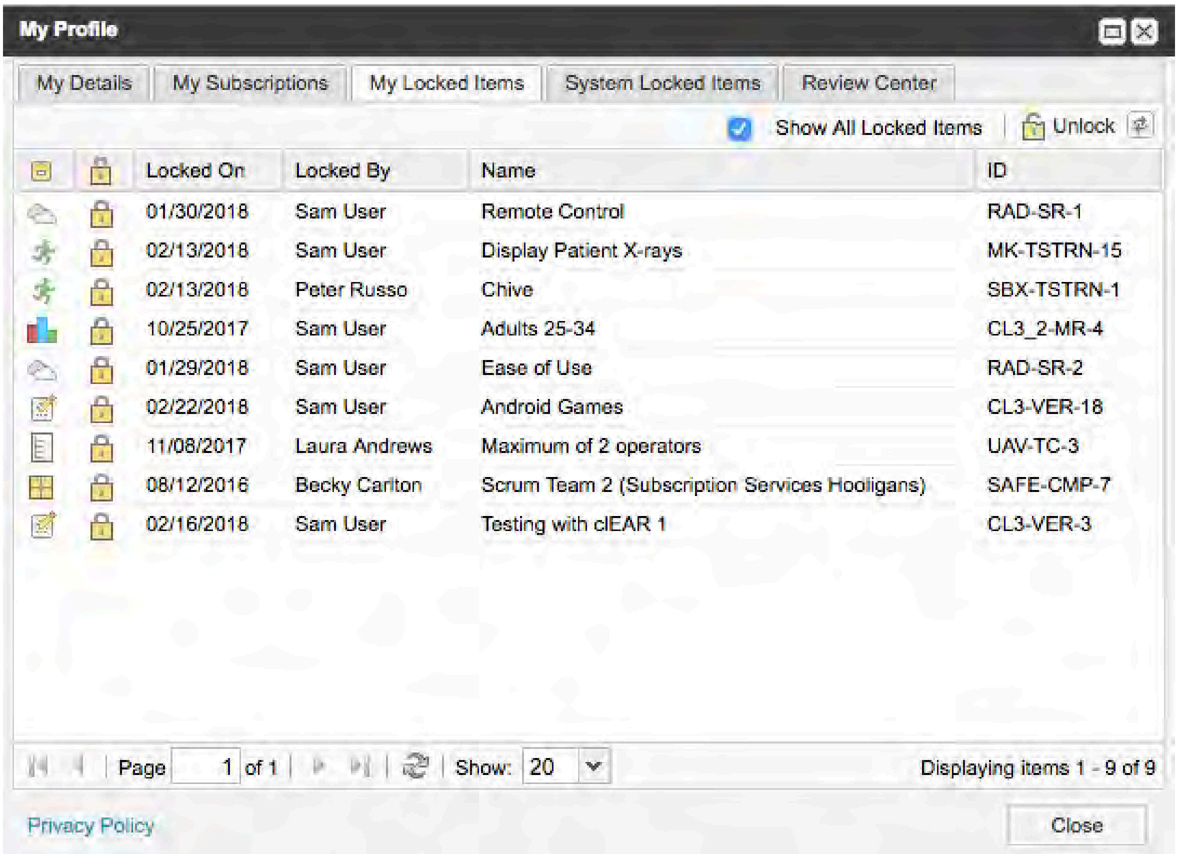
Unlock items locked by another user

You must have organization and project administrator permissions to unlock items that are locked by another user.

> **NOTE**
> Project admins can only batch unlock items from List View and Single Item View.

To unlock items that others have locked as an organization admin:

1. Select the link with your name in the header to open the **My profile** window. This button is disabled if you have the **Admin** button selected in the header.
2. Select the **My locked items** tab and check the box next to **Show all locked items**.

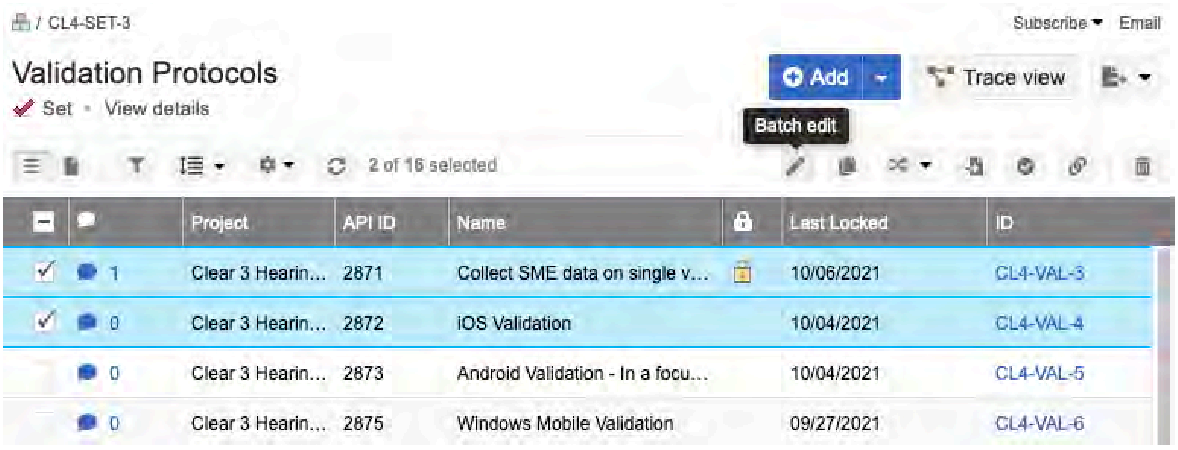


3. Locate the item in the list you want to unlock and select it. Select the **Unlock** button.

To unlock items that others have locked as a project or organization admin:

From List View

1. Select the item you want to unlock, then click **Batch edit**.



2. In the Batch update window, select **Locked Status > Unlock all items**, then click **Next**.
3. (Optional) Add a comment and notify users.
4. Click **Commit**.

From Single Item View

- Select the item you want to unlock, then select **Unlock item**.

TIP

If you are an organization or project administrator, you can also access the system-locked items tab to unlock system locked items [562].

Unlock system-locked items

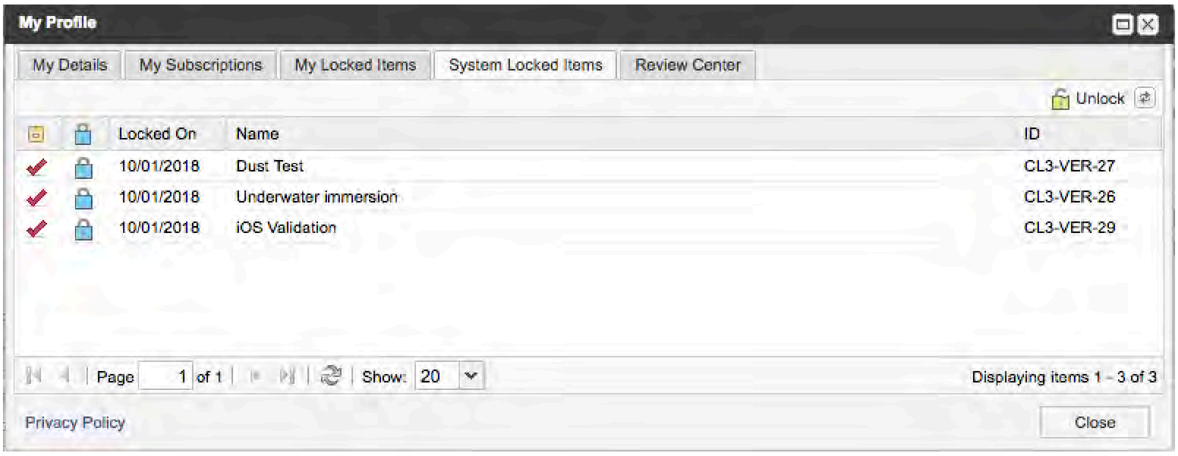
Anyone can view the list of system-locked items regardless of permissions.

IMPORTANT

Organization admins can unlock system-locked items.

System-locked items can be unlocked by a project admin with admin permissions for those items.

1. Select your name in the header to open the **My Profile** window.
2. Select **System Locked Items** to see all items that were automatically locked [222] (blue lock).



3. Select the items you want to unlock, then select the **Unlock** button in the top right corner of the window.

Configure reuse and synchronization

You must have write permissions [591] to modify items through synchronization. Items with a user lock [561] or system lock [562] can't be modified through synchronization.

> **NOTE**
> You must have organization administrator [555] permissions to complete this task.

As an organization administrator you can:

- Grant permissions to a reuse administrator [591]
- Configure global ID [557]
- Sync or remove Compare Views [313]
- Enable synchronization of widgets [599]
- Prevent users from synchronizing items

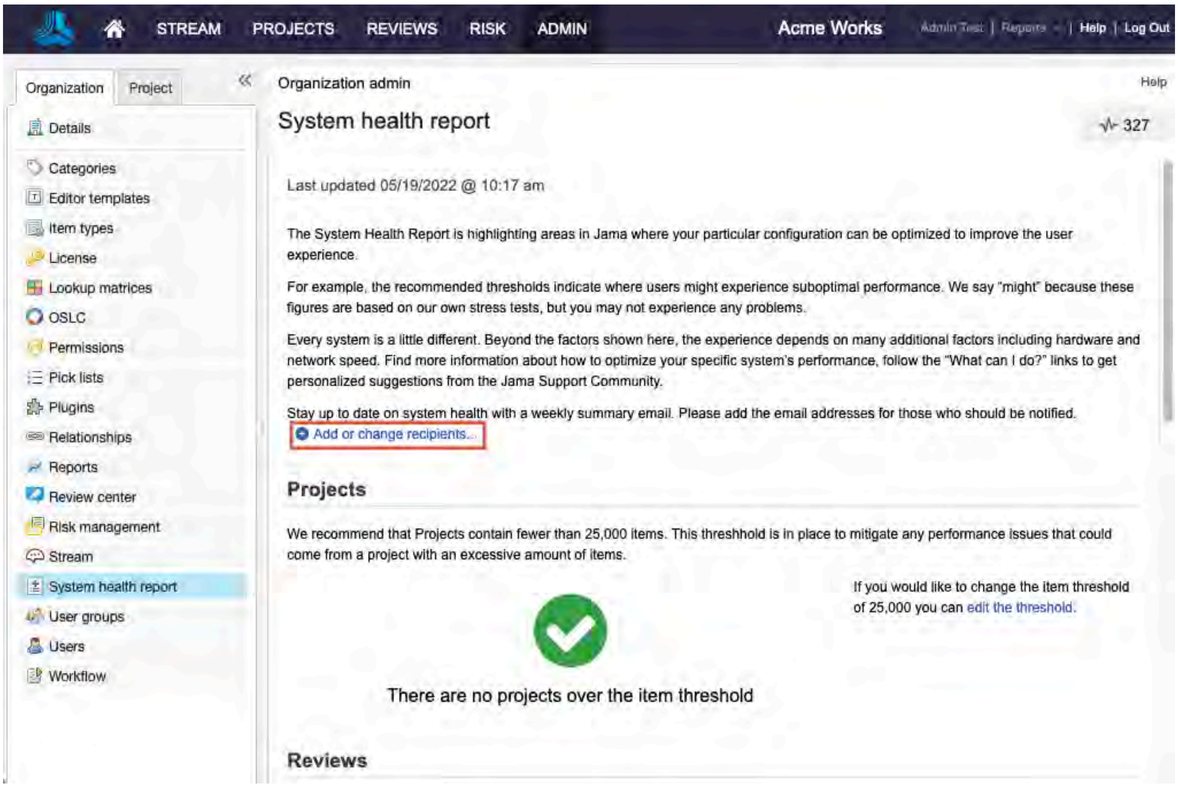
System health report

The system health report is an optional feature that notifies you of areas in the application that can affect performance and user experience.

Projects that are too large, reports that contain too many items, and syncing too many items at a time are just a few of the things that can slow Jama Connect down and cause problems. This report can be emailed to designated users weekly.

> **NOTE**
> You must have organization administrator permissions to view the system health report.

1. To view the report, select **Admin > Organization**, then select **System health report**.
2. Select **Add or change recipients** to add or modify who receives the report.



3. You can set a threshold for each of the areas (Projects, Reviews, Reports, and Test Plans) by selecting **Edit the threshold**.

Plugins

> **IMPORTANT**
> You must be an organization administrator to complete this task.

There are two plugins you can install:

1. User import plugin [569]
2. Import relationship plugin [564]

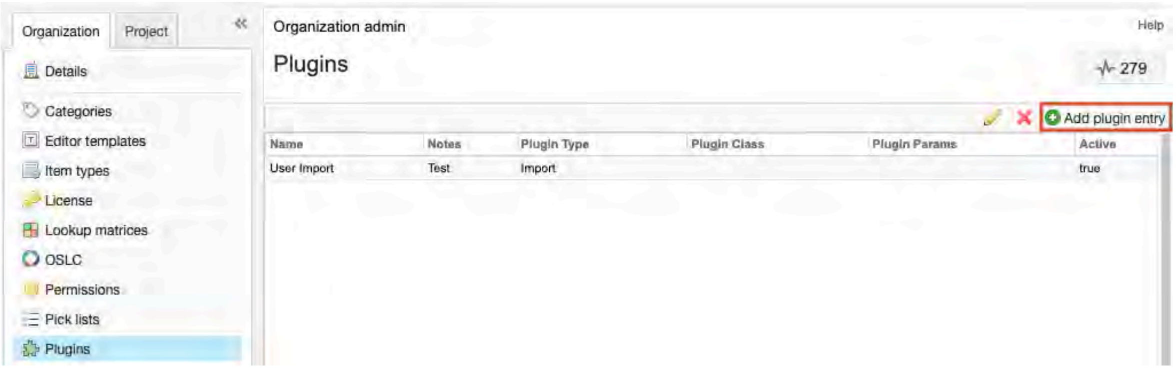
Configure Import Relationships Plugin

The Import Relationships Plugin helps you batch create relationships between existing items in the application.

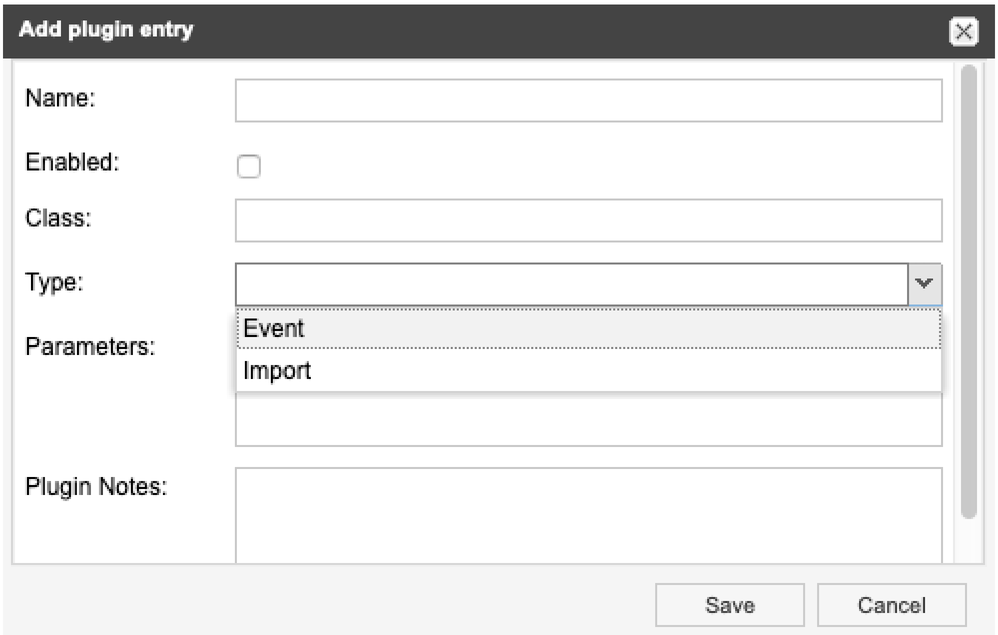
> **NOTE**
> You must have organization administrator permissions to complete this task.

> **IMPORTANT**
>
> Before you use the Import Relationships Plugin in Jama Connect, you must first create a direct relationship between the items you plan to link. Otherwise, the linking might fail. For example, when you link *use case item types* to *test case item types*, you must first define a relationship rule for that project. For more information, see Set up relationship rules [625].

1. Select **Admin > Organization**, then select **Plugins > Add plugin entry**.



2. In the **Add plugin entry** window, enter the following information and select **Save**.



- **Name:** Import Relationships (or whatever name you want visible to users)
- **Enabled:** Check this box to make the plugin available to users.
- **Class (case sensitive):** Enter the name of the object defined in the source code. For a single project enter:

  ```
  com.jamasoftware.contour.plugin.jama.ImportRelationships
  ```

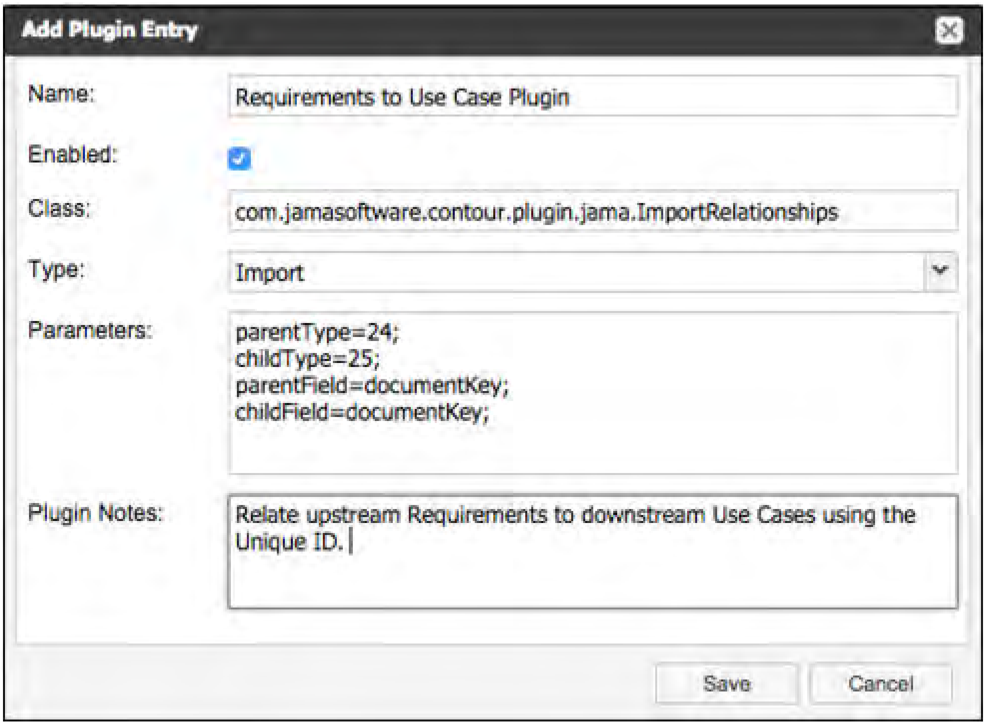
  For cross-project imports enter:

  ```
  com.jamasoftware.contour.plugin.jama.ImportRelationshipsCrossProject
  ```
- **Type:** Import
- **Parameters:** Set relationship parameters [566]

- **Plugin notes:** Add any notes you have here. This will not be visible to end users.

3. When the information is correct, select **Save**.

> **TIP**
>
> For a sample entry of a cross-project import, see Set relationship parameters [566].

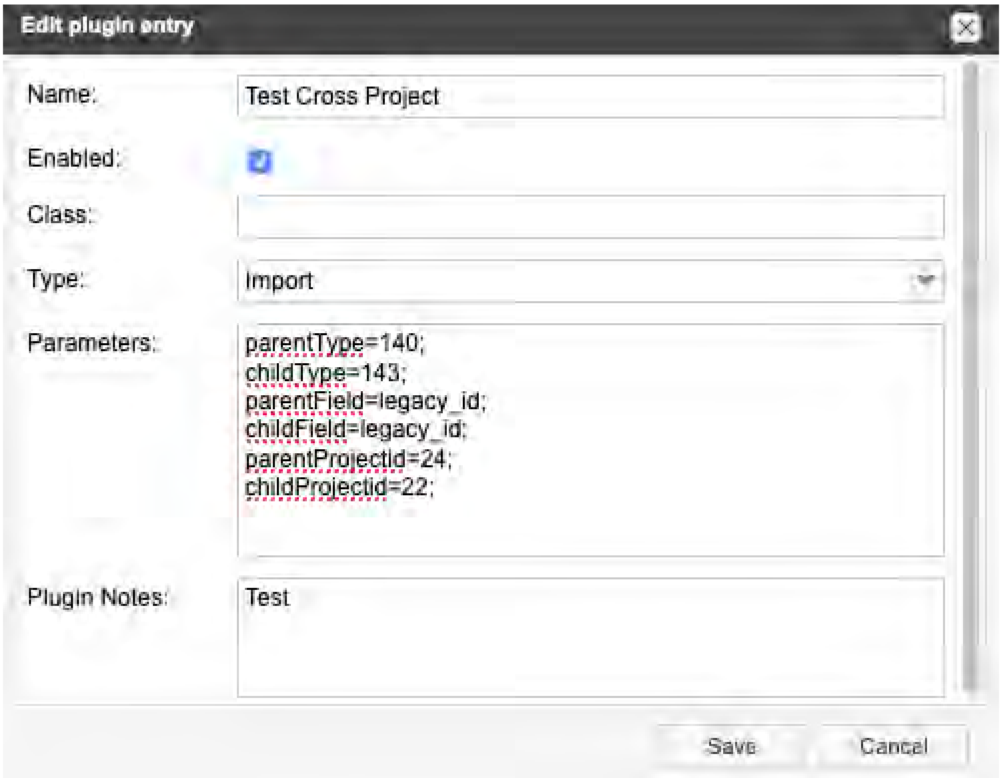


Set relationship parameters

Depending on whether you want to import relationships in a single project or multiple projects, there will be four or six parameters to complete.

> **NOTE**
>
> You must have organization administrator permissions to complete this task.

Cross-project import sample entry



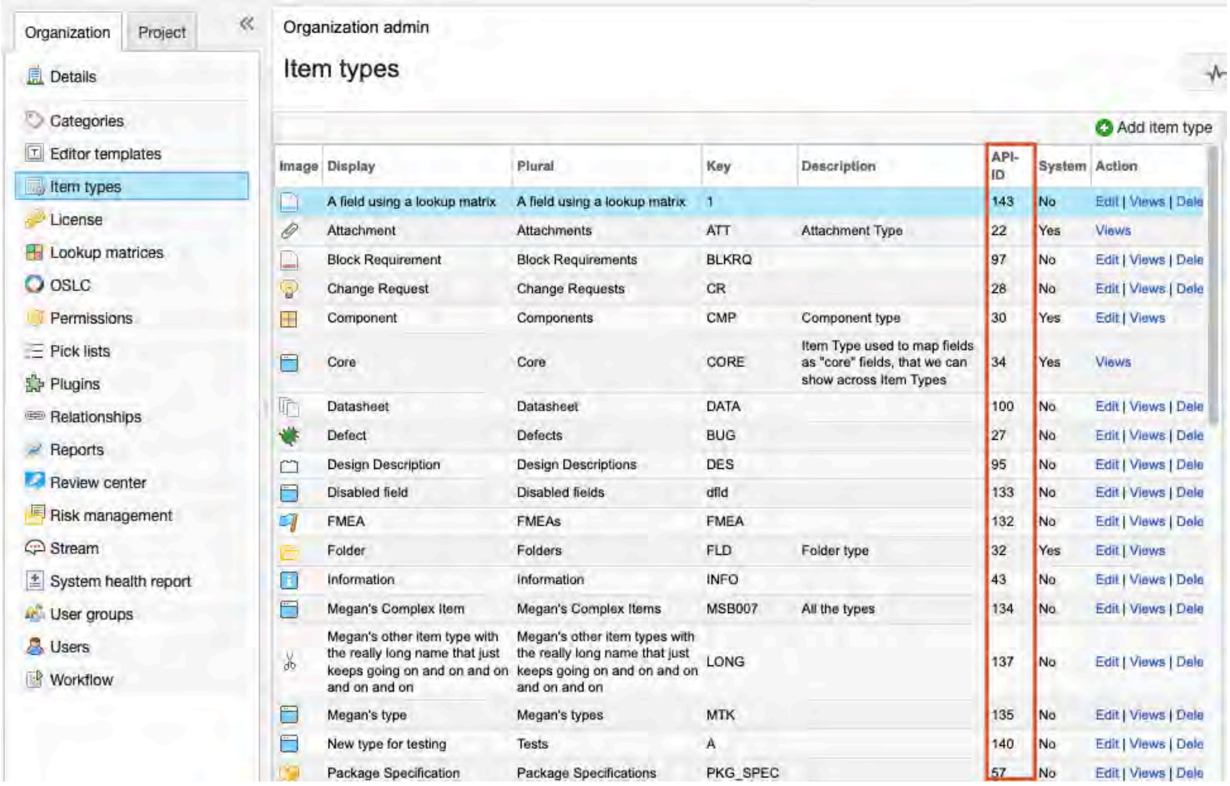
These parameters are used when configuring the Import Relationships Plugin [564]:

- **parentType**: Defines which item type to use for the parent (upstream) relationship.
- **childType**: Defines which item type to use for the child (downstream) relationship.
- **parentField**: Defines which field to use to find the the parent (upstream) item.
- **childField**: Defines which field to use to find the child (downstream) item.
- **parentProjectId**: Defines the project that contains the parent (upstream) item. **Only for the cross project plugin**.
- **childProjectId**: Defines the project that contains the child (downstream) item. **Only for the cross project plugin**.

Parameters can be written in any order, as long as they follow correct formatting. Each parameter is case sensitive and requires a semicolon at the end.

Gathering parentType and childType values

To specify the item Types, you need the API IDs of the item Types to be related. You can find the API ID under **Admin > Item Types**.



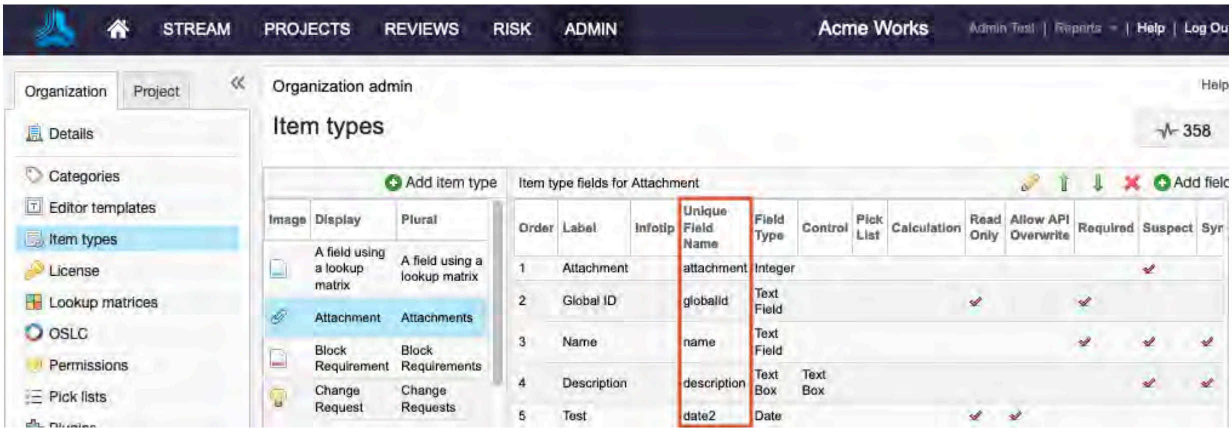
For example, if you wanted to create relationships for upstream Requirements to downstream Use Cases, you join the item Type with the corresponding API-ID:

parentType=24;

childType=25;

Gathering parentField and childField values

The CSV file used for import needs to contain an identifying field for each item, such as the Name or Global ID. To specify which field in the parent and child item will be used for this identification, use the system Field value. You can see which fields are available to use under **Admin > Item Types > [Highlight the item type to be used] > Edit**.



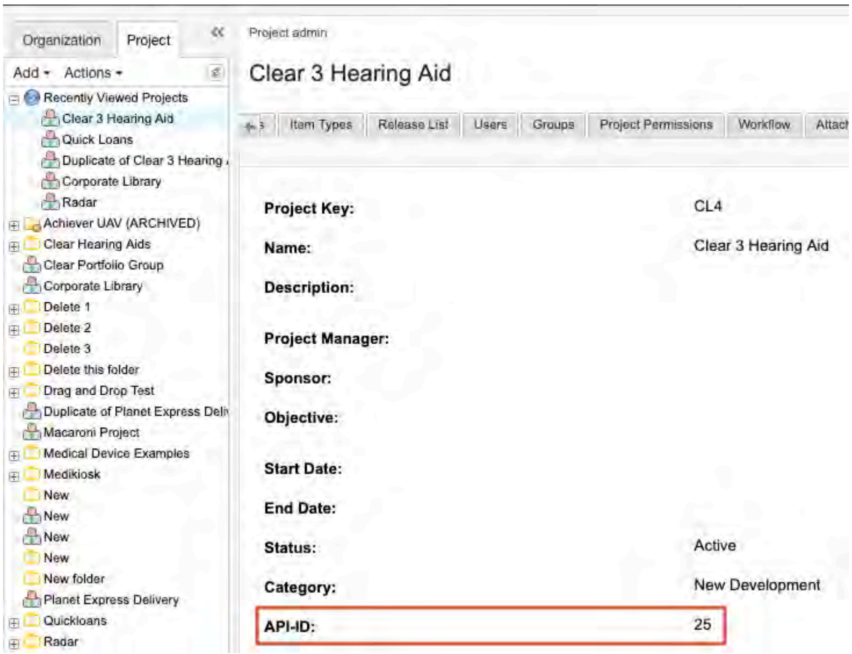
For example, if you wanted to use the ID (also known as the Unique ID) for your parentField and childField, your parameters need to join the field type with the field value:

parentField=documentKey;

childField=documentKey;

Gathering parentProjectId and childProjectId values

To specify which projects the parent and child items are associated with, you need the API-IDs of both projects. You can get the project API-ID under **Admin > Project > [select the project to be used] > API-ID**.



For example, if you wanted to import relationships between a parent project with API-ID 20258 and a child project with API-ID 31548, your parameters need to join the item with the corresponding project API-ID:

parentProjectId=20258;

childProjectId=31548;

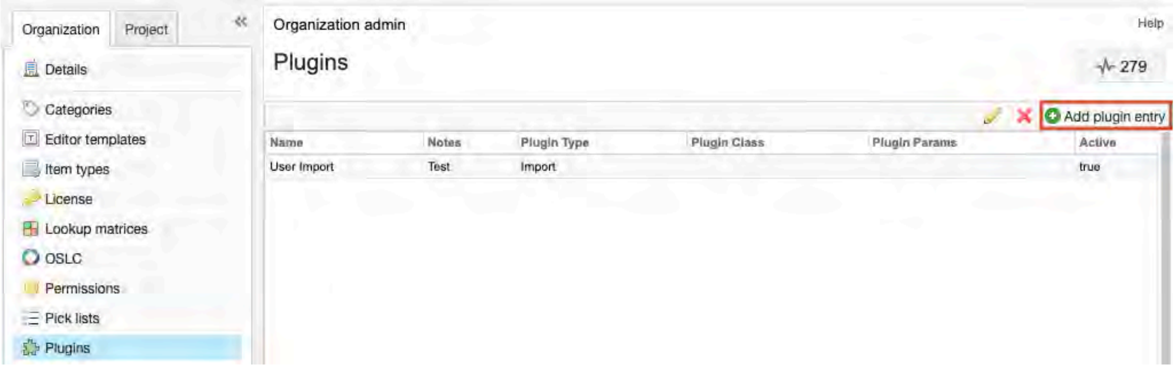
Configure User Import Plugin

With the User Import Plugin, organization administrators can add multiple users at once by importing a spreadsheet. Imports don't delete users from Jama Connect.

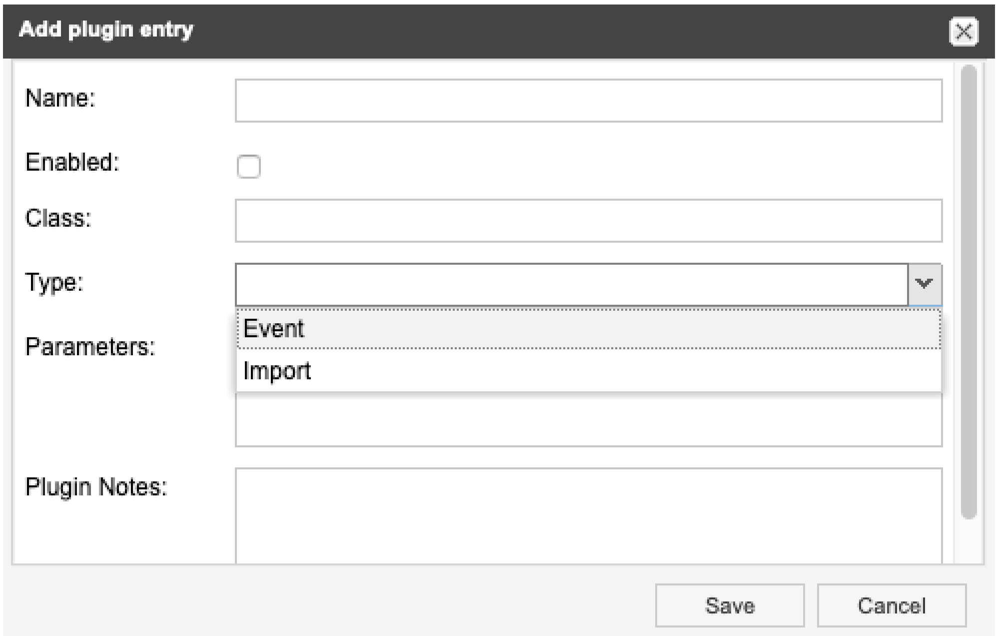
> **NOTE**
> You must have organization administrator permissions to complete this task.

With the User Import Plugin, organization administrators can add multiple users at once by importing a spreadsheet.

1. Select **Admin > Organization**, then select **Plugins > Add plugin entry**.



2. In the **Add plugin entry** window, enter the following information and select **Save**.



- **Name:** User Import
- **Enabled:** Make the plugin available to users
- **Class (case sensitive):** Enter the name of the object defined in the source code:

  `com.jamasoftware.contour.plugin.jama.UserImportPlugin`
- **Type:** Event or Import
- **Parameters:** Leave this field blank
- **Plugin Notes:** Add any notes you have here. This isn't visible to the end user.

3. Create a CSV document with no header row that contains the following values in columns A through K:
   - **Username**
     If LDAP or CROWD is enabled, the username must match what is listed in the directory.
   - **First name**
   - **Last name**
   - **Email**
   - **Password**
   - **Title**
   - **Location**
   - **Phone number**
   - **License type**
     Values must be one of the following:

Value	Meaning
N	Named creator
C	Float creator
FC	Float collaborator
S	Stakeholder
R	Reserved collaborator
V	Float reviewer
RV	Reserved reviewer
NV	Named reviewer
TR	Test runner

- **Add/Update**
  Values must be one of the following:

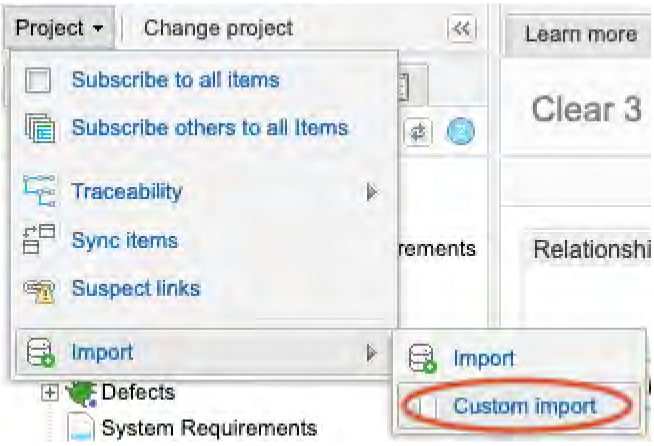
Value	Meaning
Add	Add as a new user
Update	Update an existing user

- **Company**
- **Groups**
  If a user belongs to multiple groups you can add them in columns L and up.

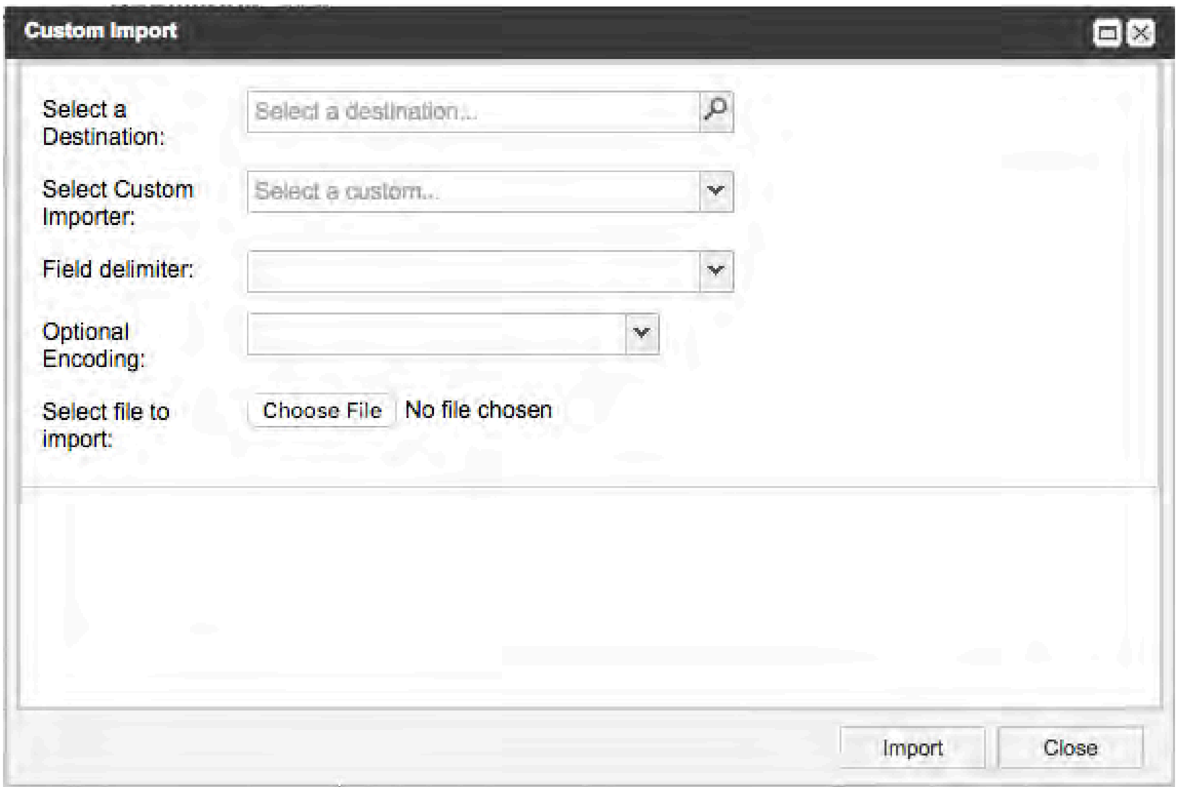
For example:

A	B	C	D	E	F	G	H	I	J	K	L	M
kmaxwell@redside.com	Katie	Maxwell	kmaxwell@redside.com	Alphal@#	Dr.	Central	555-123-1234	C	Add	Company		
suser@redside.com	Sam	User	suser@redside.com	Betal@#	Mr.	West	555-123-1235	C	Update	Company	Organization Admin	Engineering
bflogeets@redside.com	Baxter	Flogeets	bflogeets@redside.com	Gammal@#	Sir	East	555-123-1236	NV	Add	Company	Development	

4. Select **Project > Import > Custom import** to open the **Custom Import** window.



5. Enter the following information in the **Custom import** window:



- **Select a destination:** This is a required field. Your selection doesn't affect the outcome.
- **Select Custom Importer:** User Import
- **Field Delimiter:** Comma
- **Optional Encoding:** UTF8
- **Select file to import:** Choose the CSV file you created in step 3, that contains the list of users to be imported.

6. Select **Import**. Each user that's added with the user import plugin receives a welcome email with the Jama Connect URL.

IMPORTANT

If the import fails it might be because:

- A user that already exists was set to add (rather than update).
- A user that does not exist was set to update (rather than add).
- One or more of the records is incorrect.
- A required field was missing.

Upload custom reports or exports

You can upload reports [382] or exports [321] so that other users can access them.

NOTE

Self-hosted customers with system, organization, or report admin permissions can complete this task.

Cloud customers must contact support for help uploading custom BIRT or Velocity reports. For more information, see Self-Service Reports Development on your Cloud Environment.

- If you're uploading a Velocity or Office Template export that uses pre-selected data in the main panel, the exports appear under **Exports > View all export options**.
- If you're uploading BIRT or Velocity reports that pull data at a project or cross-project level, the exports appear under **Reports** in the Jama Connect header.
  For more information, read about Jama Connect and Velocity here.

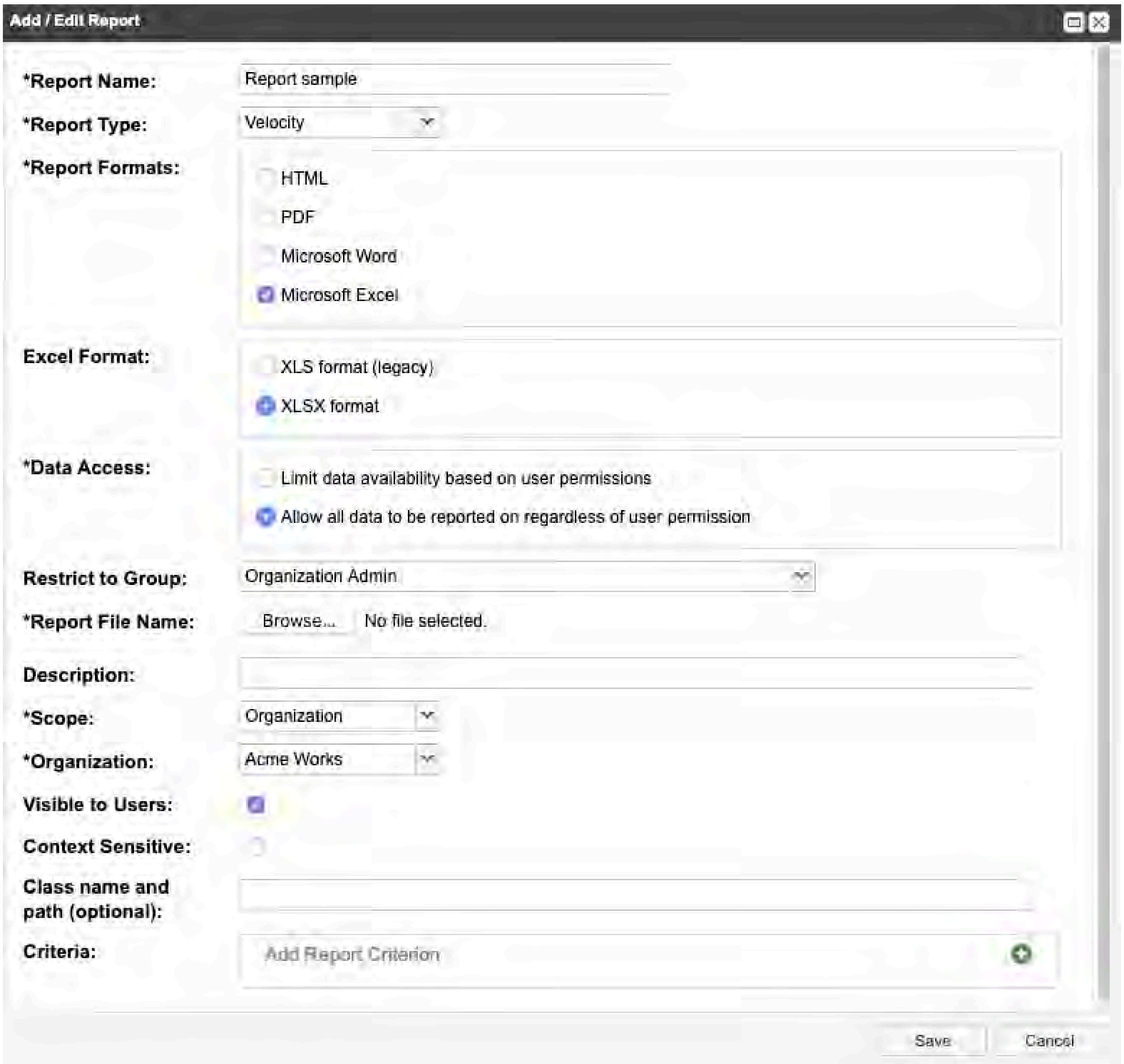
TIP

Report criteria is unique to each one. Before uploading a report or export, check with the person who created it about the best settings to use.

To upload custom reports or exports:

1. Log in as root user [503] and select **Reports**.
   If you're an organization administrator for a self-hosted instance, select **Admin > Reports**.
   This shows a list of all currently available reports or export templates.

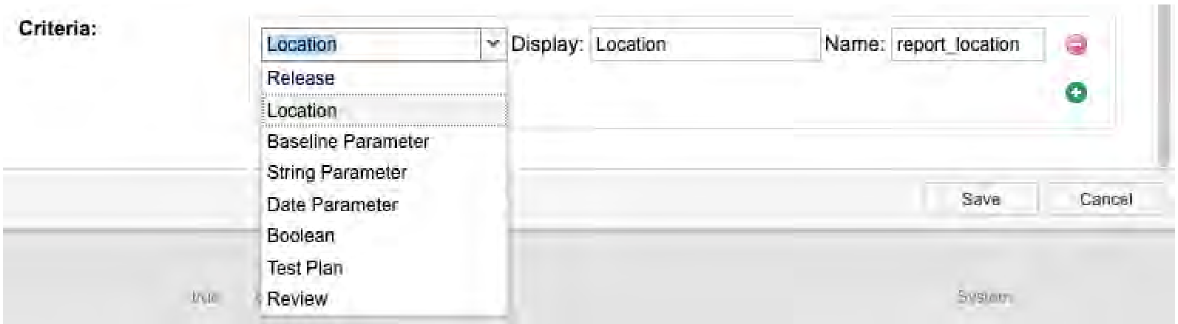
2. Select **Add report** in the top right corner to open the **Add/Edit Report** window.
3. Define the report:



- **Report Name** — Enter a name so that other users can identify the custom report or export template.
- **Report Type** — Select a type (BIRT, Velocity, or Microsoft Office Template).
  For templates with Microsoft Word or HTML formats, you can also export to PDF. For Office Templates, any user with a creator license can add a custom export [330] , which makes it visible under **Export > View all templates**.
- **Report Formats** — Select a format (PDF, Microsoft Word, or Microsoft Excel).
- **Data Access** — Select a type to define availability for reporting.
- **Restrict to Group** — Select whether and how to limit access (by user permissions or user group) to run custom reports.
  To reduce exposure to potentially sensitive data, reports admins do not have access to this setting.
- **Report File Name** — Select **Choose File** and select the report or export template to upload. BIRT reports have file extension .rptdesign and Velocity reports have file extension .vm.
- **Description** — Enter a description that helps users understand the output.
- **Scope** — Define whether the report or export template is available to all users (**Organization)** or to only users in a particular project (**Project**). Default for Jama Connect reports is **System**.
  Report admins can only apply the scope setting to projects where they have project admin rights.
- **Visible to Users** — Select for this option to appear in the application.

- If uploading a Velocity export that applies only to data referenced on the user's main panel, select **Context Sensitive**. This export appears in the window that opens when users select **Exports > View all templates**.
- (Optional) Select **Class name and path** only for custom plug-ins for BIRT or Velocity reports; otherwise, leave blank.
- For Office Templates, set the parameters you want to use.

4. In the **Criteria** section, select the plus sign to add criteria.



a. From the drop-down menu, select the type of data you want to include.
   - **Release** — Shows all project releases in a pick list. The user can select release parameters as needed.
   - **Location** — Shows the project hierarchy in a pick list. The user can select a location for each location parameter.
   - **Baseline Parameter** — Shows all project baselines in a pick list. The user can select one baseline for each baseline parameter.
   - **String Parameter** — Presents a text field to enter a string.
   - **Date Parameter** — Presents a text field to enter a date.
   - **Boolean** — Presents a checkbox whose value ("true" or "false") is sent to the reporting engine.
   - **Test Plan** — Presents a pick list of test plans in the selected project. Jama Connect passes the database ID to the report.
   - **Review** — Presents a pick list of reviews in the selected project. Jama Connect passes the ID to the report.

b. For **Display**, enter the label you want users to see when publishing the report and exporting from Jama Connect.

c. For **Name**, enter a case-sensitive name that is passed to the report or export template. Each parameter name must be unique.
   When users publish a report or export Jama Connect content, these parameters are displayed in alphabetical order by the name field, not in the order shown in the report setup screen.

> **TIP**
> If you change the Name criteria, you must also change the reference to the criteria in your report or export template. Otherwise, the report or export template breaks.

5. Select **Save** to upload the report or export template and save your changes.

Manage users

As an organization or user admin, you can set up user access for your organization.

- Add user groups [576]
- Add users [578] and assign them to one or more groups
- Open projects and assign users and groups access rights [664]
  You can also assign this task to a project administrator.

User groups

User groups are an efficient way to manage notifications, permissions, access, and actions for multiple users at a time.

You can create groups based on the users' roles, permissions or position so you can efficiently:

- Grant access permissions [591]
- Grant role permissions [594]
- Initiate a review [159]
- Subscribe users to items [217]
- Notify users of changes [216]
- Send workflow notifications [654]
- Grant access to projects workflow [618]
- Add signer roles to reviews [247]

TIP

Users can be assigned to multiple groups.

Jama Connect includes two types of groups:

- **Organization group** — These groups have no project context and are available to all projects in the organization when adding permissions.
- **Project group** — These groups are created in the context of a project and are available to that specific project when adding permissions.

Name groups in a way that works well for your organization. You might use your internal structure (such as job title or work group), or name groups by access permission (read only, read/write), or roles (reuse admin, review admin, project admin). If you're using signer roles [247] for electronic signatures [245], the group name is used as the signer role.

By default, Jama Connect comes with a number of pre-defined organization and project user groups. For example, the group **Organization Admin** is a default group that has organization and project rights.

Add, edit, or delete user group

Organization administrators can delete a group or make changes to an existing group's members, details, or subscriptions.

NOTE

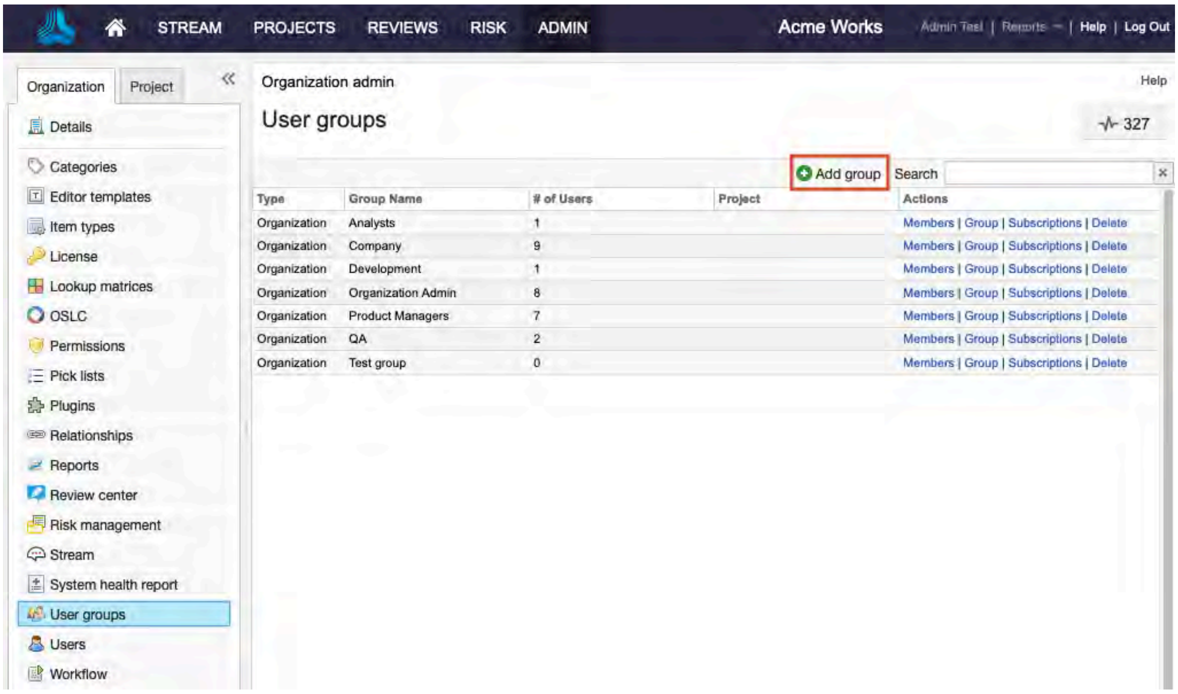
You must have organization administrator permissions to add or delete user groups available to all projects.

A system administrator can also add groups by following the steps below.

A project administrator can also add groups at a project level [662].

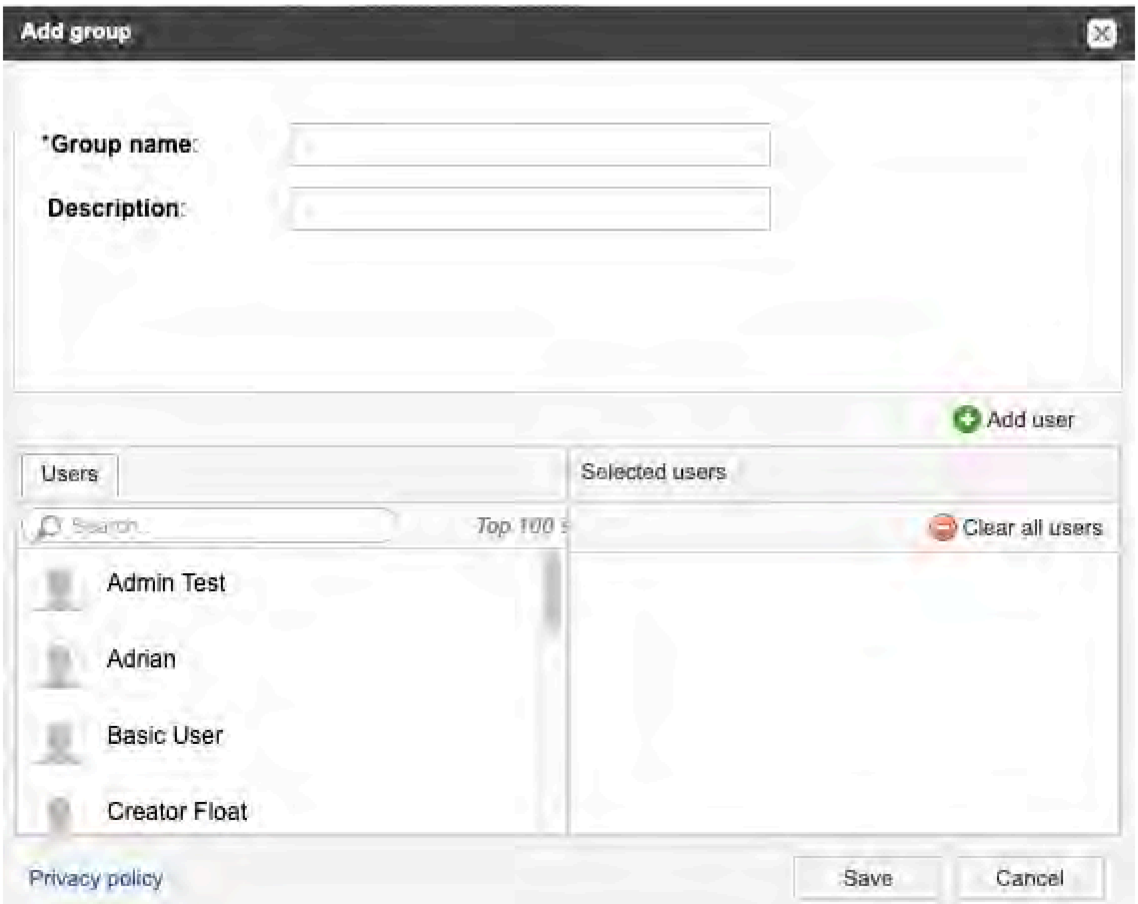
User administrators can only manage members of a group where they are also a member. This restriction ensures they don't unintentionally provide or remove access to unknown or existing projects.

1. Select **Admin > Organization > User groups**, then select **Add group**.



Note: Project groups that a member of the project is in determine which groups are available for the signer roles.

2. In the **Add group** window, enter a name and description for the group, and select members by their username. Large lists are searchable.



3. Select **Save**.
   The new group appears in the table.

The review moderator now has the ability to edit a review and give a user a signer role [247].

Add new user

If this is a new installation, it's better to add user groups [576] before you add individual users, so you can manage users, permissions, and security more efficiently.

> **NOTE**
> You must have organization administrator permissions to complete this task. A system administrator can also add new users [505].

To add multiple new users, configure the user import plugin [569].

To add users individually:

1. Select **Admin > Organization**, then select **Users** to display a list of active users.
   If you don't see the user you're looking for, select **View inactive users**.
2. If LDAP is enabled [518], you can select **Add user from LDAP** and search for an existing LDAP user in the search box. Jama Connect searches LDAP against the configured "Login Name Attribute" and the "User Name Attribute." You can add wildcards to a search, but if you add them at the beginning of a search term, they can result in slow performance. For large directories, expect several minutes.
3. From the toolbar, select **Add user**.
4. In the Add user window, fill in the required fields, then select **Save**.
   - **Username**
     The username must be unique so using an email address is recommended.
   - **License type**
     Keep in mind the number of licenses purchased [585] and the expected usage [587] by the user when assigning license types.
   - **User groups**
     Consider how you use groups to manage users, permissions, and security [576], then select the appropriate groups for this user.
   - **Send email to new user**
     Send an email to the user with their username, password, and URL to log into the system.

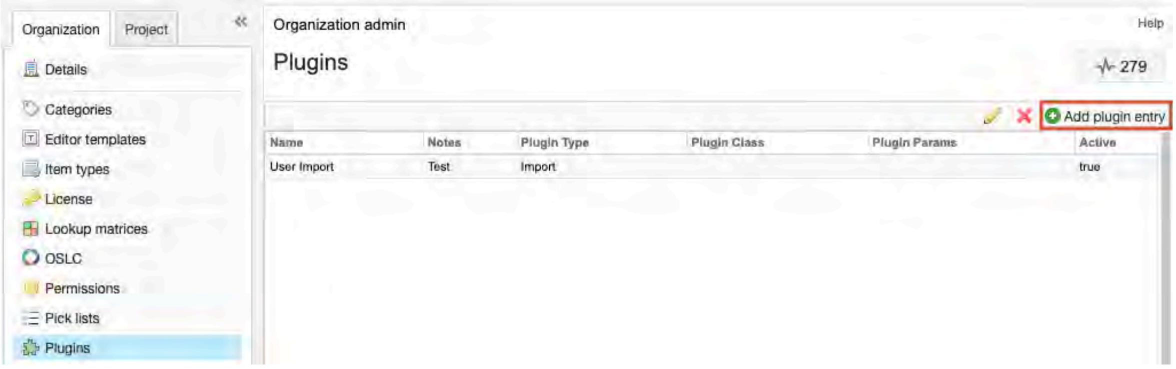
Configure User Import Plugin

With the User Import Plugin, organization administrators can add multiple users at once by importing a spreadsheet. Imports don't delete users from Jama Connect.

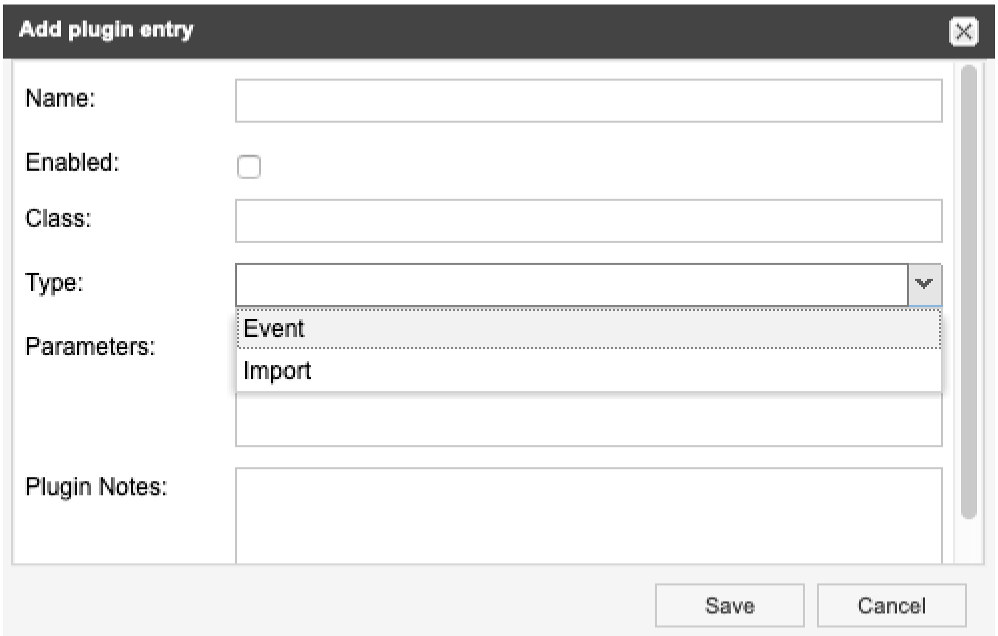
> **NOTE**
> You must have organization administrator permissions to complete this task.

With the User Import Plugin, organization administrators can add multiple users at once by importing a spreadsheet.

1. Select **Admin > Organization**, then select **Plugins > Add plugin entry**.



2. In the **Add plugin entry** window, enter the following information and select **Save**.



- **Name:** User Import
- **Enabled:** Make the plugin available to users
- **Class (case sensitive):** Enter the name of the object defined in the source code:

  `com.jamasoftware.contour.plugin.jama.UserImportPlugin`
- **Type:** Event or Import
- **Parameters:** Leave this field blank
- **Plugin Notes:** Add any notes you have here. This isn't visible to the end user.

3. Create a CSV document with no header row that contains the following values in columns A through K:
   - **Username**
     If LDAP or CROWD is enabled, the username must match what is listed in the directory.
   - **First name**
   - **Last name**
   - **Email**
   - **Password**
   - **Title**
   - **Location**
   - **Phone number**
   - **License type**
     Values must be one of the following:

Value	Meaning
N	Named creator
C	Float creator
FC	Float collaborator
S	Stakeholder
R	Reserved collaborator
V	Float reviewer
RV	Reserved reviewer
NV	Named reviewer
TR	Test runner

- **Add/Update**
  Values must be one of the following:

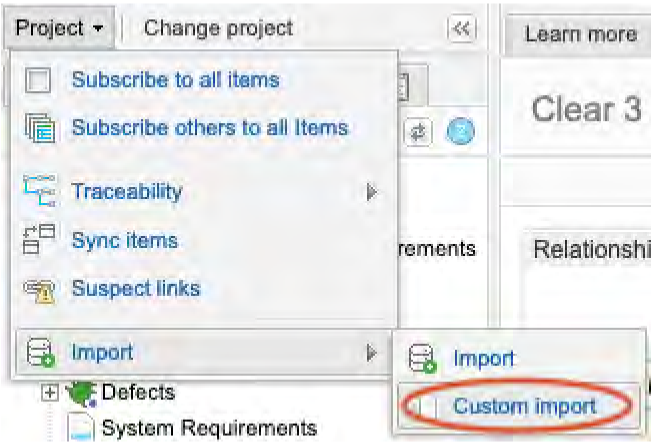
Value	Meaning
Add	Add as a new user
Update	Update an existing user

- **Company**
- **Groups**
  If a user belongs to multiple groups you can add them in columns L and up.

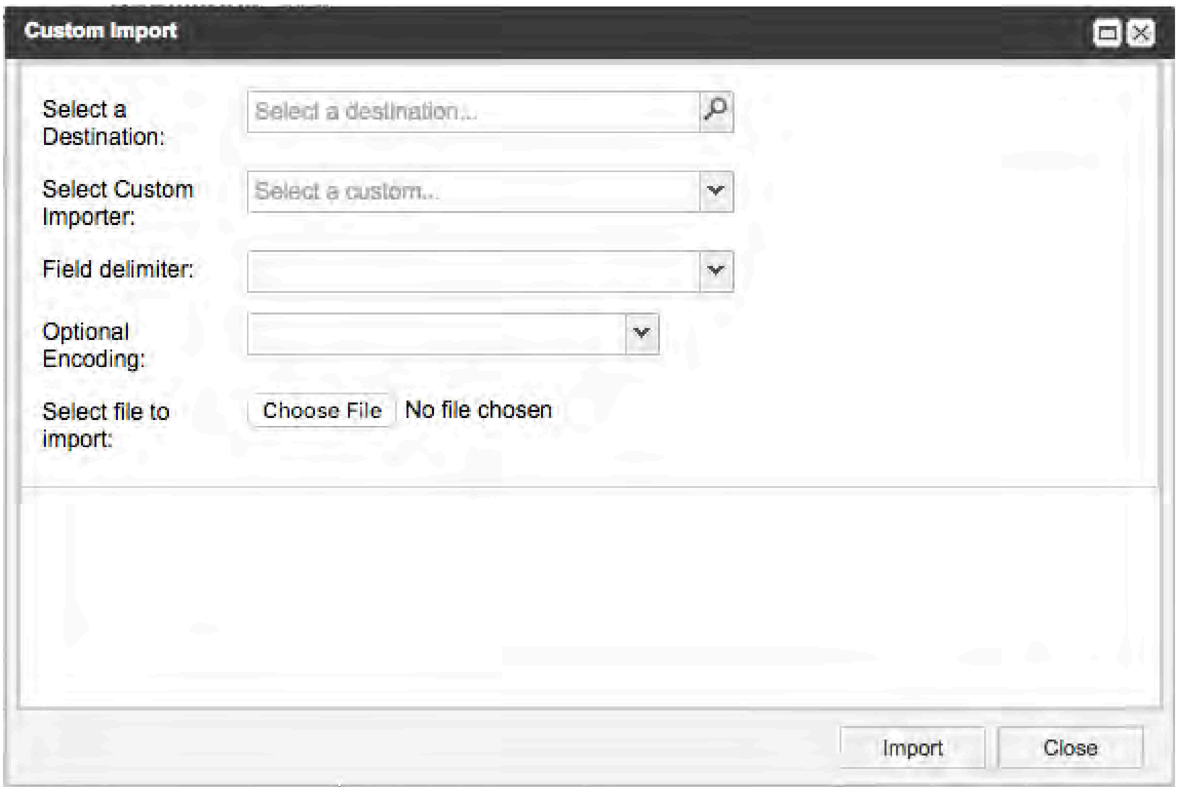
For example:

A	B	C	D	E	F	G	H	I	J	K	L	M
kmaxwell@redside.com	Katie	Maxwell	kmaxwell@redside.com	Alpha!@#	Dr.	Central	555-123-1234	C	Add	Company		
suser@redside.com	Sam	User	suser@redside.com	Beta!@#	Mr.	West	555-123-1235	C	Update	Company	Organization Admin	Engineering
bflogeets@redside.com	Baxter	Flogeets	bflogeets@redside.com	Gamma!@#	Sir	East	555-123-1236	NV	Add	Company	Development	

4. Select **Project > Import > Custom import** to open the **Custom Import** window.



5. Enter the following information in the **Custom import** window:



- **Select a destination:** This is a required field. Your selection doesn't affect the outcome.
- **Select Custom Importer:** User Import
- **Field Delimiter:** Comma
- **Optional Encoding:** UTF8
- **Select file to import:** Choose the CSV file you created in step 3, that contains the list of users to be imported.

6. Select **Import**. Each user that's added with the user import plugin receives a welcome email with the Jama Connect URL.

IMPORTANT

If the import fails it might be because:

- A user that already exists was set to add (rather than update).
- A user that does not exist was set to update (rather than add).
- One or more of the records is incorrect.
- A required field was missing.

Add users to multi-mode authentication

Multi-mode authentication allows you to add a new Basic user, so you can differentiate between IdP and Basic users.

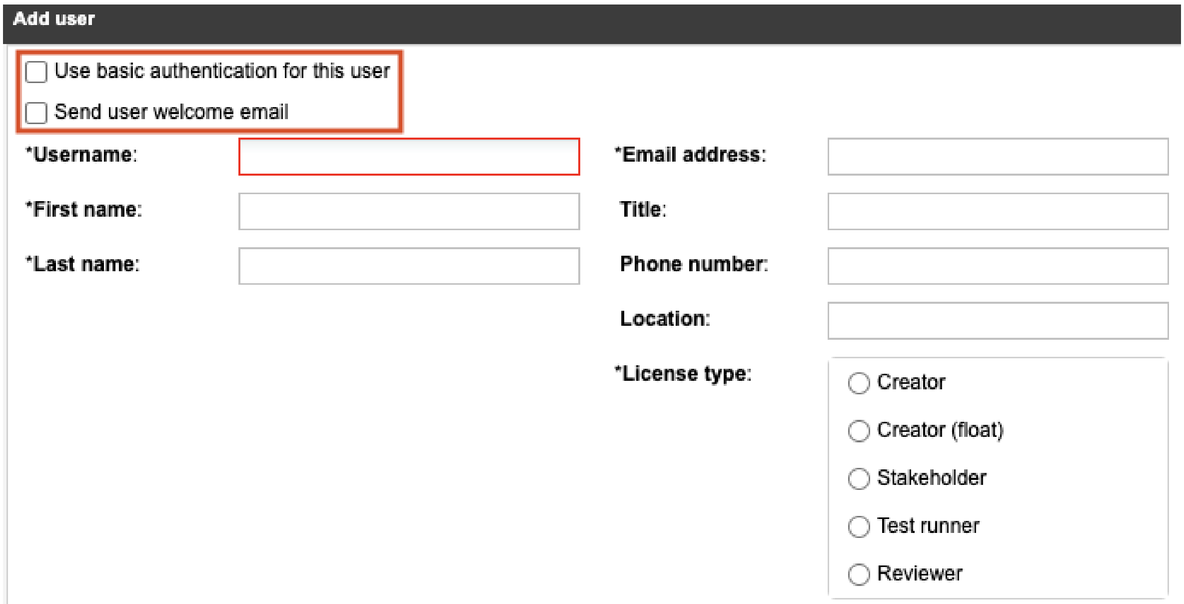
Important considerations

- Authentication methods must match to use electronic signatures in baselines and reviews. An organization admin can change authentication methods.
- Users can't use the same email between the two different authentication types.

> **NOTE**
> You must have organization admin permissions to complete this task.

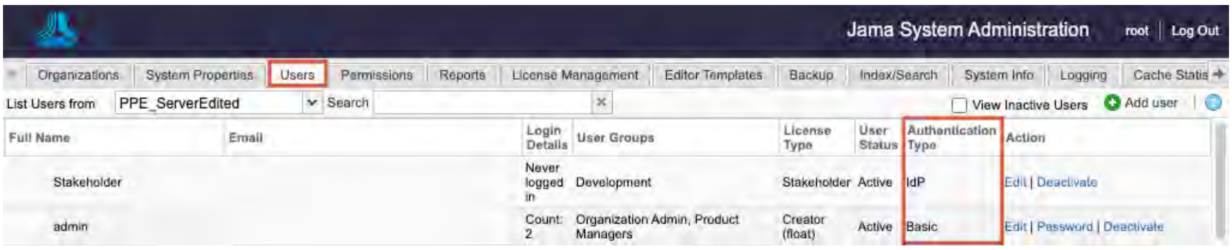
1. Select **Admin > Organization**, then select **Users** to display a list of active users.
2. Select **Add user**.

3. In the Add user window, select the authentication type you want for this user:
   - **Basic authentication** — Select **Use basic authentication for this user**.
   - **IdP authentication** — Deselect **Use basic authentication for this user**.

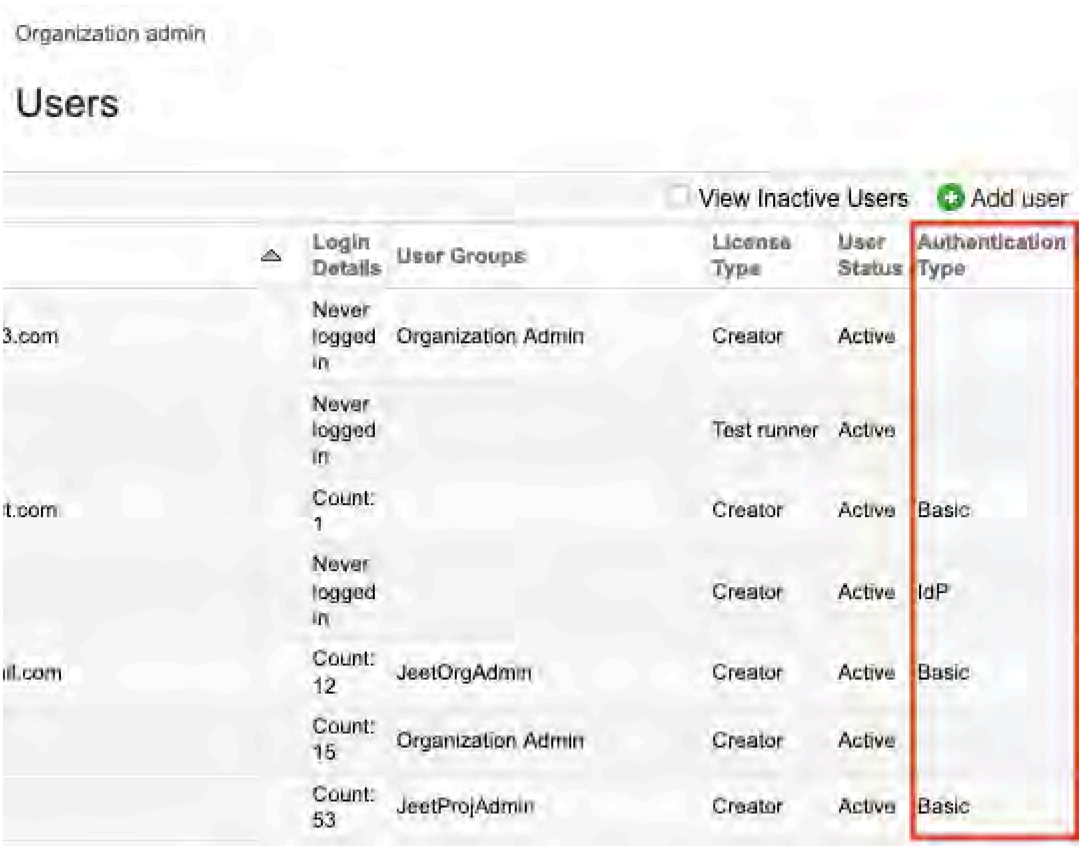


4. Click **Save**.

Jama Connect runs a check to see which authentication method was used. Initially, the Authentication Type for the user you added is blank. When they log in for the first time, the column is populated with Basic or IdP.



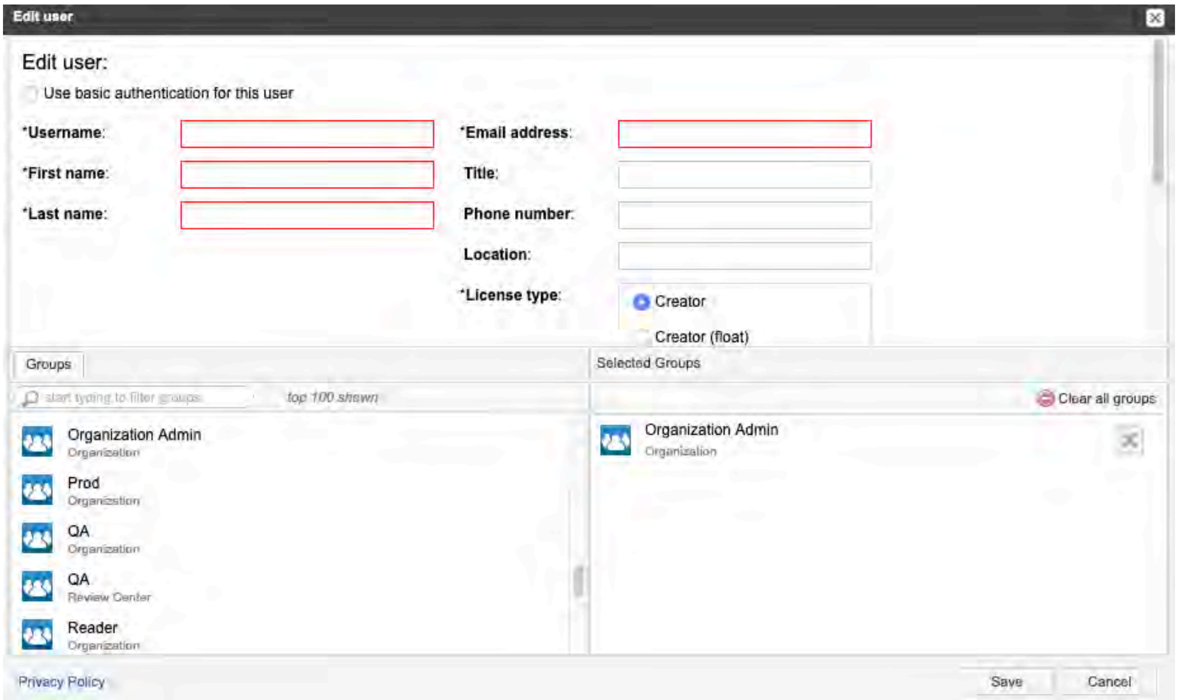
You can also verify the Authentication Type from **Admin > Organization > Users**.



Edit user details

> **NOTE**
> You must have organization or user administrator permissions to complete this task.

1. Select **Admin > Organization**, then select **Users** to display a list of active users. If you can't find them, select **View Inactive Users**.
2. Select **Edit** in the Action column of the user you want to edit. This opens the **Edit User** window.



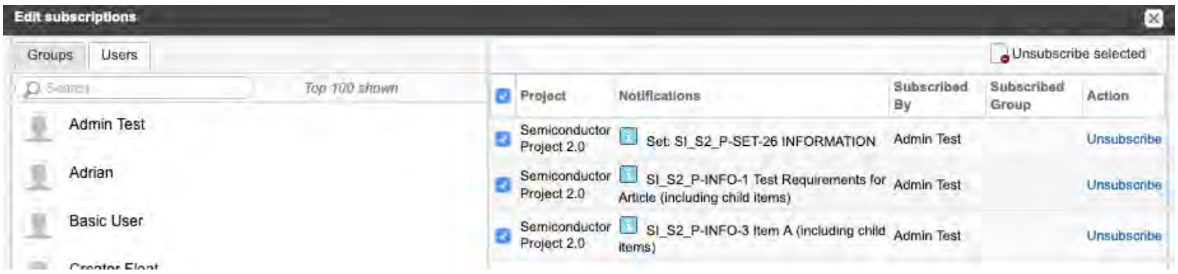
3. Select **Save**.

Edit user or group subscriptions

Users can subscribe to email notifications. Administrators don't have control over a user's own subscriptions, only to subscriptions added by others. Only the user can control their subscriptions.

> **NOTE**
> You must have organization or project administrator permissions to complete this task.

1. Select **Admin > Organization**, then select **Users**.
2. Select **Subscriptions** in a user row to open the **Edit subscriptions** window.



3. Select the user you want to edit from the left column. On the right you see a list of their current subscriptions.
4. If you're an organization administrator, select **Unsubscribe** in the **Action** column or to remove multiple subscriptions, select the subscriptions you want to remove, then select **Unsubscribe selected**. If you're a project administrator, select the items you want to mute and select **Mute subscriptions**.

TIP

Organization administrators can also edit group subscriptions by selecting **Admin > Organization > User groups > Subscriptions**.

Reset user password

NOTE

You must have system, organization, or user administrator permissions to complete this task.

1. Select **Admin > Organization**, then select **Users** to view a list of users.
2. Select **Password** in the **Action** column for the user whose password you want to change.
3. In the **Edit password** window, enter and confirm a password that meets the default authentication requirements.

License types and permissions

The type of license limits the possible permissions and roles that can be granted to a user. License types include creator, stakeholder, test runner, and reviewer.

Regardless of assigned license type, each user has a unique login consisting of username and password. Organization admins and user admins can view the current license [589] assigned to users, as well as assign users license types [583].

Creator and reviewer licenses can be named licenses or float licenses; test runner licenses and stakeholder licenses are named only.

Types of licenses

License type	Definition	Named license	Float license
Creator	Gives full read and edit rights and full access to reviews to active users who daily manage items and projects.	X	X
Test runner	Gives basic permissions to read and review, as well as the ability to create test plans and defects, to execute test runs, and to add attachments to test runs during execution.	X	
Stakeholder	Gives read-only privileges to those who need visibility into a project, but don't need editing rights. Stakeholders can view items, provide comments, and act as reviewers.	X	
Reviewer	Grants permission to participate in reviews, act as approver, moderator, or review administrator, and to respond to comments in the stream. Reviewers can't initiate reviews or access items in the core project.	X	X
Temporary	A 30-day full creator license automatically granted to a non-licensed individual, invited by email to a review or to comment in the stream. The only default permissions are for the discussion thread or review to which they were invited.	X	X
Collaborator	A legacy license; gives read-only privileges to users needing visibility into a project, but not editing rights. They can view items, provide comments, participate in (but not create) reviews, execute test runs, and log defects.	X	X

Permissions by license type

The type of license assigned to you defines your permissions, which in turn determine your ability to create and edit items and to access items as read-only.

With a creator license and read-only permissions to a project, you can:

- Execute test runs
- Log defects from the test run execution window

PERMISSIONS	LICENSE TYPE				
	Creator	Stakeholder	Collaborator	Test runner	Reviewer
Read/Write					
Create test plans	X			X	
Execute test runs	X		X	X	
Log defects (from test run window)	X		X	X	
Manage attachments	X			X*	
Manage relationships	X			X*	
Add baselines	X				
Edit, delete, restore user-created baselines	X				
Add and edit items	X				
Read-only					
Share filters	X				
Share custom report templates	X				
View baselines	X	X	X	X	
Create filters	X	X	X	X	
Export reports	X	X	X	X	
Read and initiate stream threads	X	X	X	X	
Comment on items	X	X	X	X	
View items in projects	X	X	X	X	
View dashboards	X	X	X	X	
Review					
Initiate	X				
Moderate	X			X	
Participate	X	X	X	X	X
Approve	X	X	X	X	X
Electronically sign	X	X	X	X	X
Reply to stream comments	X	X	X	X	X
Risk					
Initiate	X				
Moderate	X				
Participate	X				
View (if invited)	X	X	X	X	

* Permissions that are included with each license type.

Configure Jama Connect for test runner license

Users with a test runner license can only manage attachments and relationships, and edit certain items for tests. For example, test plans, cycles, groups, runs, as well as item types used as defects [338]. They don't have permissions to manage attachments and relationships, or to edit items in the rest of the project.

> **IMPORTANT**
>
> You must have organization or user administrator permissions to configure Jama Connect for the test runner license type.

If your organization has purchased a test runner license type, you must make the following changes in Jama Connect:

- Configure item types to be used as a defect [601]
- Assign access permissions [591]

Batch update license types

Occasionally, you might want to update many users at once. For example, several users might be assigned a temporary license that's about to expire and you need to assign creator licenses.

If you select more users than the number available of your selected license type, that license type isn't available when batch updating.

NOTE

You must have organization or user administrator permissions to complete this task.

1. Select **Admin > Organization**, then select **Users**.
2. Sort the users by license type by selecting the field name header at the top of the user grid.
3. Highlight the users to be updated. Use **Shift** or **Cmd-click** to select multiple.
4. **Right-click** or **Ctrl-click** and select **Batch Update User(s)**.

5. In the window that opens, select the license type, then select **Commit**.

Monitor license usage

NOTE

You must have system, organization, or user administrator permissions to complete this task.

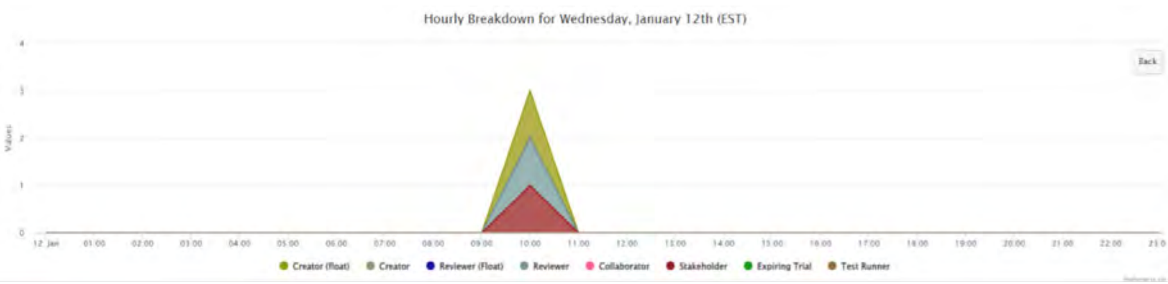
1. Select **Admin > Organization**, then select **License**.
2. In the center panel you can see a display of daily usage by license type for a particular time period, as well as detail of current usage.
   You can view stats from the last 7, 30, or 90 days, including the number of licenses being used on a daily basis, the number of days where you reached your maximum threshold, and if any users were downgraded in license type or denied access due to a lack of license availability. Use the menus in the header to select the type of license and the time period you want displayed.
   By clicking on one of the chart lines, you can see an hourly breakdown of license usage throughout that day. From the hourly view, select a specific hour of the day to see a minute-by-minute break-down.

NOTE

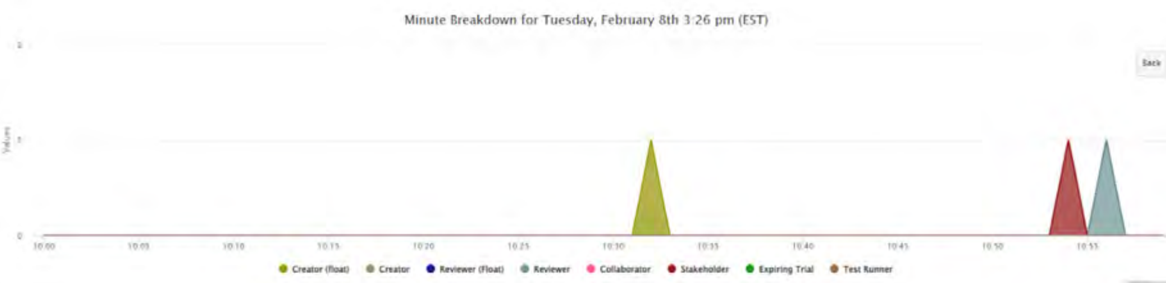
This chart shows a live look at license usage at the time the page is loaded or refreshed. The data is stored in UTC time, however the chart display converts the data to match the user's time zone by applying the appropriate offset.

Daily

Hourly



Minute-by-minute



Scroll down to see all of your license information such as license type, expiration date, how many licenses are owned, as well as any integrations the organization has purchased. For more information, see View license [589].

3. To adjust the threshold, select **Threshold (gear icon)**, make your changes, then click **Save**.
   (Optional) Select **Notify me when this threshold is met** and enter an email address to send notifications when usage surpasses a specified threshold.

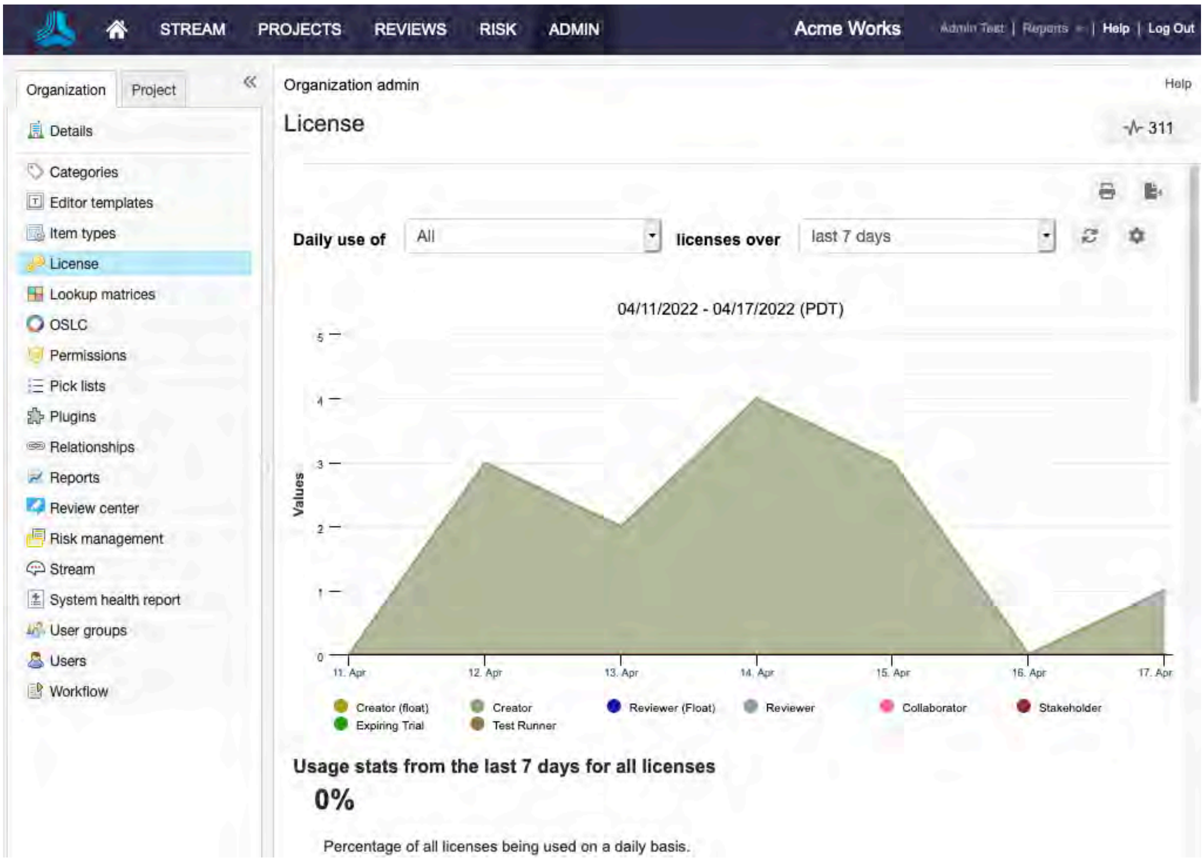
4. To analyze your license data usage in Excel:
   a. Update the license types and timeframe settings as needed, then click **Export**.
   b. Select the destination of the file, then click **OK**.

View license

View details about your license, such as the type and expiration date.

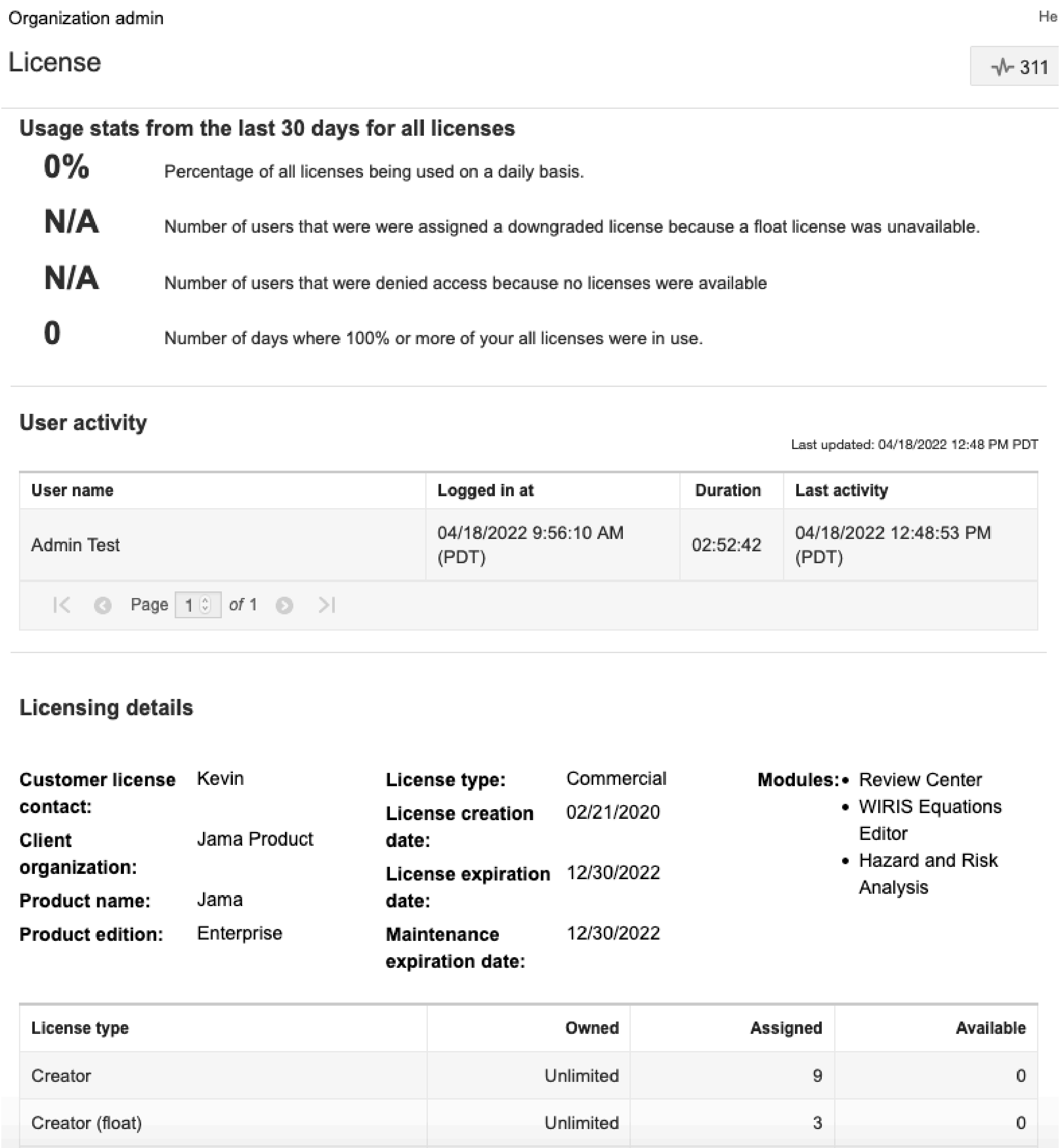
> **NOTE**
> You must have system, organization, or user administrator permissions to view the licenses.

- To view your current license information, select **Admin > Organization**, then select **License**.
  A CSV export is available for analyzing license usage trends within Excel. The exported data represents a UTC time zone.



For organizations with floating licenses, information about float license usage is available above the table (more information is available here [587]).

The table provides details about the license, such as the type and expiration date. Counts are also provided by specific user license type, as shown in this example:

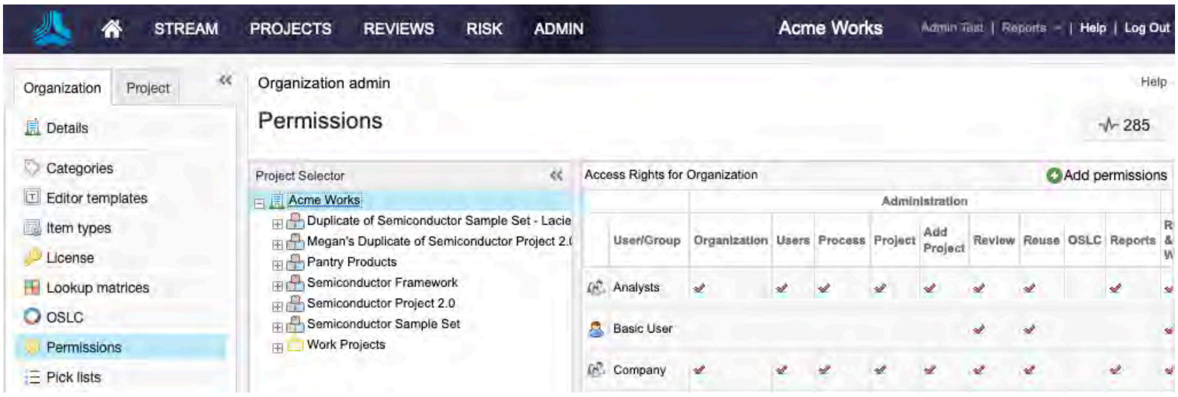


Grant permissions

Permissions allow users to do things such as access, modify, and delete items or perform other specific tasks. Permissions control how users experience Jama Connect by restricting actions they can perform or content they can see.

> **NOTE**
>
> To grant most permissions, you must be an organization or user administrator. A system administrator [506] grants limited permissions and a project administrator [664] grants only project-level permissions. Project administrators can access users outside of their project to give access when the Organization detail configuration **Allow project administrators access to all users and organization groups** is enabled.

1. Select **Admin > Organization**, then select **Permissions**.



2. In Project Selector on the left, select the organization, an individual project, or container, depending on the level you want to grant permissions.

   TIP

   Permissions set at the organizational level are passed on to lower levels, but might be overridden for individual projects, components or sets. For simplicity, we recommend setting permissions at the highest acceptable level.

   Organization administrators can also grant project permissions in the configure project window [664].

3. The main panel displays current permissions that were granted. Select **Modify** or **Override** to edit current user or group permissions. To add a new user or group, select **Add permissions** in the top right.

   NOTE

   Permissions are inherited from higher levels in the organization structure. For example, if you assign a group access at the organization level, all projects, components, and sets within the organization inherit the permissions.

   When a group or user's **Inherited** column contains the value "true" and is highlighted in green, that user or group has received its permissions from a higher level. Select **Override** to change their permissions.

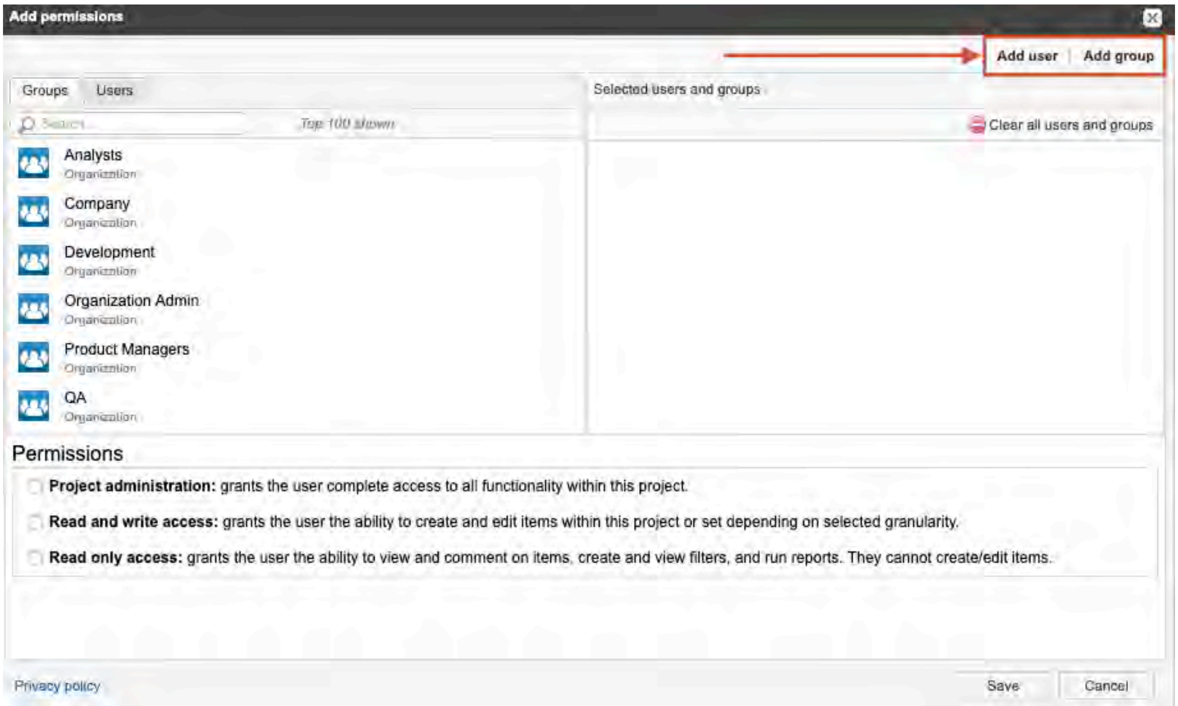
   Also, certain permissions are allowed with each license type [585]. You might need to assign the correct license type [583] to change permissions. Also, be aware of how permissions work with related items [285].

4. If you select **Add permissions**, the **Assign permissions** window opens, and you can select the groups or users you want to add.

   TIP

   Before assigning permissions, consider setting up groups [576] to make this task more efficient.

   You can also add a new group or user by selecting **Add user** or **Add group** in the top right corner of the window. Then select the role or access permissions [666] you want to add at the bottom of the window and select **Save**.



NOTE

Roles [594] and access permissions can be granted at an organizational level. Project administrator permissions can be granted at a project level. Access permissions can be granted at a container level and greater.

5. Alternatively, select **Remove** at the level that access was granted to remove access to a project, component, or set completely by unselecting all permissions.

IMPORTANT

Remove functions differently at lower levels in the hierarchy. If the user or group's permissions were previously overridden at that level, the **Inherited column** shows "false," and selecting **Remove** reverts the permissions back to the original inherited permissions. If the user or group's permissions haven't been previously overridden, the **Inherited column** shows "false," and selecting **Remove** completely removes the group or user from a project or set. If the group or user's permissions are inherited, the **Inherited column** reads "true" and permissions can only be removed at the higher level where they were assigned.

NOTE

If a user is part of multiple user groups with conflicting permissions, the user's given the highest permissions that are set.

IMPORTANT

While items within sets fall under the permission rules of the set, *attachments to those items don't*. Attachments can still be accessed by outside users who have access permission to the project while adding attachments [84] or inserting rich text links [89].

Roles

A *role* is a set of permissions that allows a user to perform specific functions. Each permission type defines the functions it allows.

An admin grants permissions by role [669] to an individual or to a group.

NOTE

Permission roles are different from other types of roles such as review roles [155] and Signer roles [247].

Types of roles

Role	Definition
System admin [482] (self-hosted only)	Handles installation, setup, and configuration of Jama Connect, and has no access to projects. System admin is a special user that isn't a role for other users. It doesn't require a license and logs in to the system with the username "root."
Organization admin [555]	Controls all aspects of configuring Jama Connect, its users, and its groups.
User admin [575]	Manages licenses, users, and groups; can see all users and organization groups in the system.
Process admin [595]	Configures content and connections within Jama Connect; controls item types, pick lists, relationship rules, Review Center, and workflow; delegates these responsibilities to appropriate users and groups.
Project admin [644]	Focuses on permissions, project groups, and workflow customization.
Add Project	Allows a user to create a new project or duplicate an existing project where that user is project admin.
Review admin [183]	Manages the advanced reuse rules accessible via the reuse dialog within a project. Reuse rules are focused on item types and are available to all users in all projects where they have a creator license.
Reuse admin [300]	Manages reuse. Requires read access to the synchronized items they are working with, and write permissions to edit, synchronize, reuse, or duplicate those items.
Report admin [572]	Allows the report developer to upload and manage BIRT, Velocity, and Word templates. Reports are assigned to specific projects where the report admin has project management rights.

User admin limitations

- Can set permissions only for groups/users on projects where they are project admin.
- Can manage organization group membership only for groups where they are a member.
- Can't make changes or additions to users or groups that have been assigned to organization or process admins except for activation/deactivation and license management.
- Can manage only members of a group where they are also a member. This restriction ensures they don't unintentionally provide or remove access to unknown or existing projects.

> **IMPORTANT**
>
> Users must have the license type [585] that allows for the permissions granted with each role.

Deactivate and reactivate users

When you deactivate a user, the user becomes inactive and frees up named assigned licenses associated with that user.

> **IMPORTANT**
>
> You must have organization or user administrator permissions to deactivate a user.
>
> Users can't be deleted from Jama Connect.

1. Select **Admin > Organization**, then select **Users**.
2. In the Action column for the user you want to deactivate, select **Deactivate**.

3. Deactivated users disappear from the list until you select **View inactive users** to view all users.
4. Alternatively, to reactivate a deactivated user, select **Activate**.
5. In the **User license type** window, select a license type and select **Save**.

Manage process

Best practices are a great starting place, but every organization has unique needs and Jama Connect can be configured to align your processes and artifacts. To address these needs, Jama Connect provides the ability to control fields, picklists, relationships, templates, and workflow.

These settings tend to evolve over time as teams mature and new groups are brought into Jama Connect. An admin role is available to delegate these responsibilities to the appropriate users and groups.

- Item types [595]
- Fields [604]
- Set up editor templates [619]
- Configure views [620]
- Manage relationships [621]
- Manage tests [629]

Item types

Item types are the templates for sets used within each project.

While sets are unique to each project, item types can be used in projects [646] across the entire organization. Item types cannot be customized for individual projects.

Each item type can be configured [596] to best fit your organization and methodology. The fewer item types that your organization creates the easier it will be to manage items.

Additionally, every item type is automatically assigned an API ID for reporting purposes. That API ID cannot be specified or changed.

Add and edit item types

Changes to item types affect all projects in your instance of Jama Connect. You can define an item type once, and all projects have access to that type. Item types can't be customized for individual projects.

> **NOTE**
> You must have organization administrator permissions to add and edit item types.

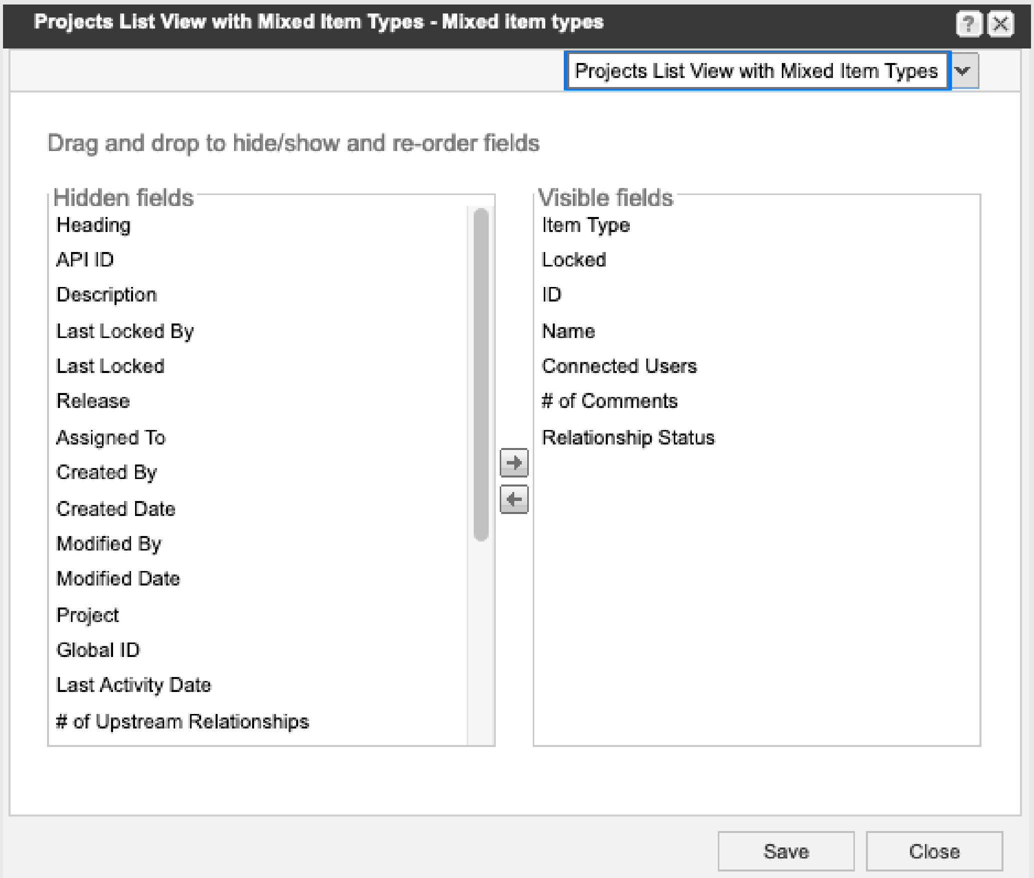
You can create a new item type, add or delete fields [605] in an existing item type, or change the item type details.

TIP

The fewer item types that your organization creates, the easier it is to manage items and report on the sets based on those item types.

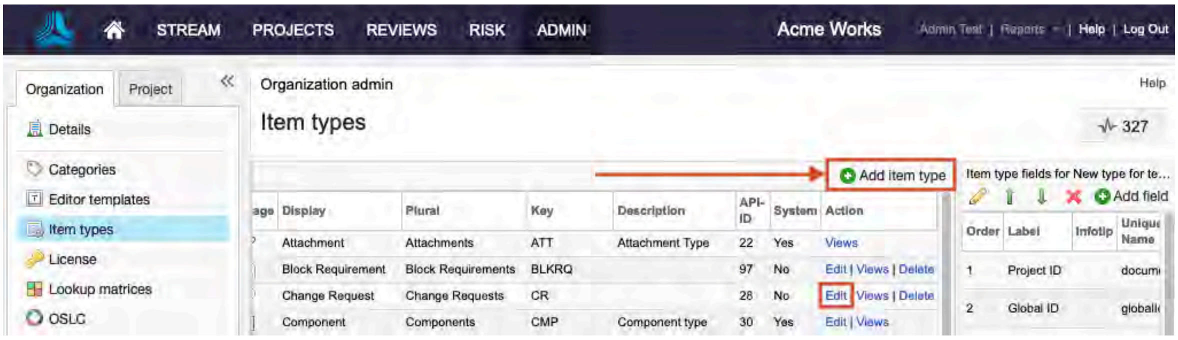
Jama Connect comes with a set of core item types that cannot be deleted. You can tell which item types these are by selecting **Admin > Organization > Item types** and viewing which item types don't have a delete option.

You can see a list of core item type fields in **Admin > Organization > Item Types > Core > Views > Projects List View -Mixed Item Types**. Custom fields can't be selected for visibility in mixed item type views.

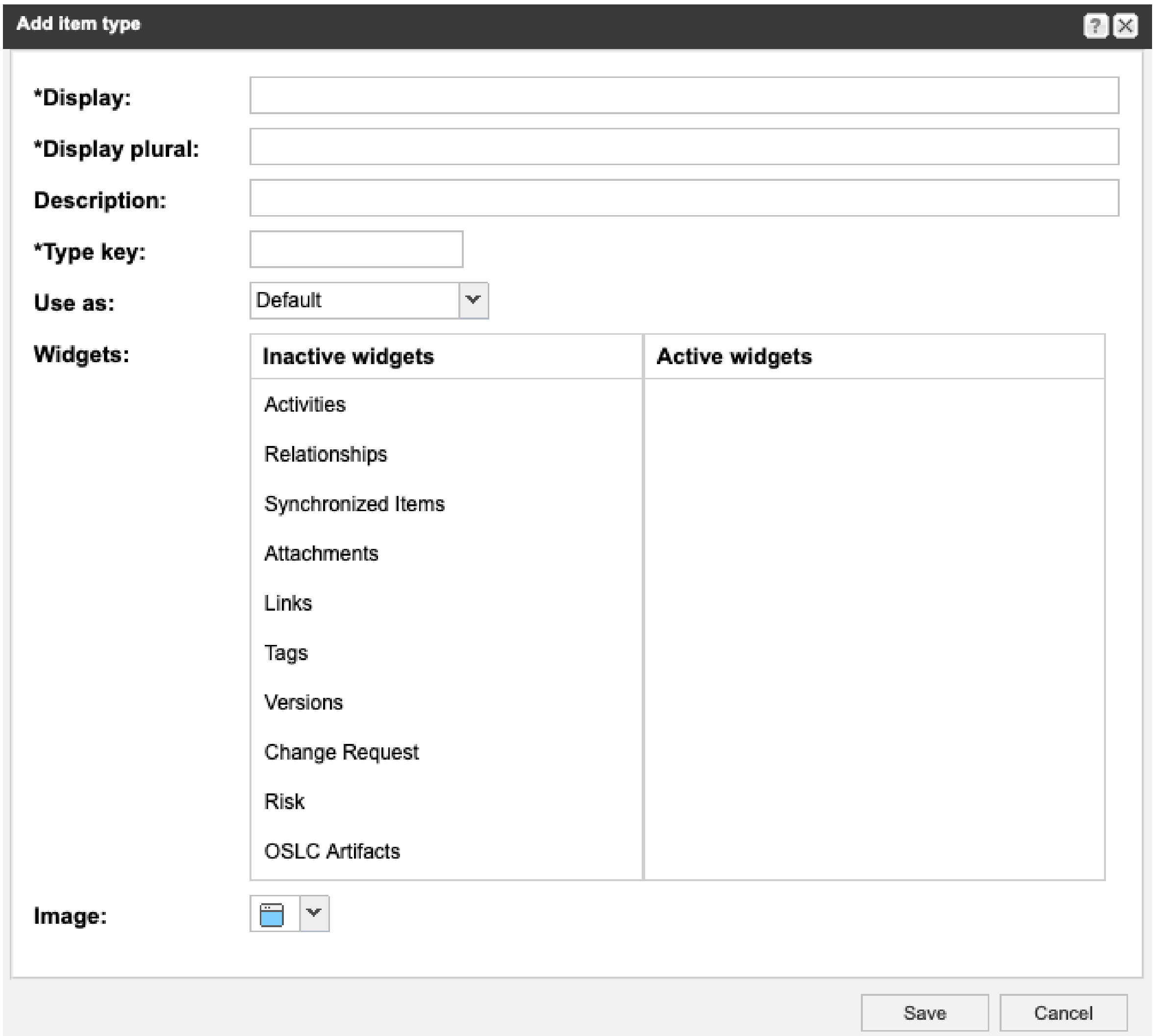


1. Select **Admin > Organization**, then select **Item types**.

2. To add a new item type, select **Add item type**, or to edit an existing item type select **Edit** for the item type you want to modify.



3. This opens the **Add item type** window where you can select or modify the following options:



- **Display**
  Display name for a single item of this item type (Required).
- **Display plural**
  Display name for multiple items of this item type (Required).
- **Description**
  For others who may at a later point want to know internally how this item type is used or how it is distinguished from other item types.
- **Type key**

This is the default ID Prefix that will be shown when creating a set using the item type. It can be overwritten. (Required).

- **Use as**
  Select an option only if you are using this item type for special use for test [338]. (If you are using the REST API to create an item type, it refers to this as a Category)
- **Widgets**
  Read more about item type widgets [599] or how to enable or disable them [599].
- **Image**
  Display icon to use for this item type (this is required). Icons are used as the set icon, the list view icon and the icon at the upper-left of the item view.
- **API ID** A new item type will automatically be assigned a reference ID for API reporting purposes. You can see this ID by selecting **Admin > Item types**, but it cannot be specified or changed.

4. Select **Save**.

NOTE
In order to use item types in a particular project, a project or organization administrator must add the item type to the project [646].

IMPORTANT
You can delete an item type, however you will be asked to delete any existing items of that type prior to deletion. To delete, select the item type you want to delete and select **Delete**.

Item type widgets

Widgets are small embedded applications that add functionality to item types. Available widgets include:

- Activities [230]
- Attachments [84]
- Change request [256]
- Relationships [284]
- Synchronized items [307]
- Tags [83]
- Versions [251]

Enable or disable item widgets

NOTE
You must have organization administrator permissions to complete this task.

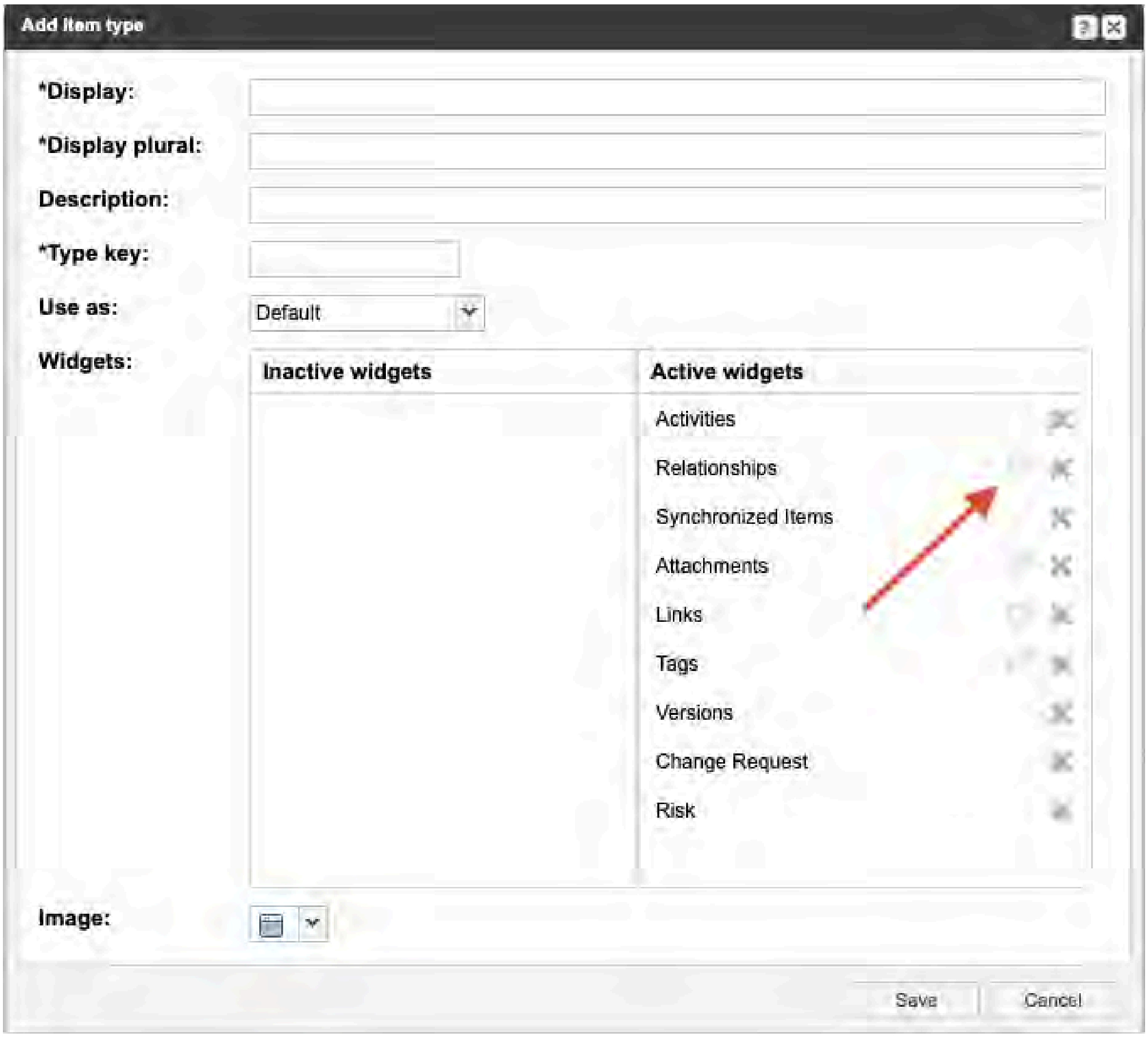
To enable or disable widgets:

1. Follow instructions to edit an item type [596].
2. Enable widgets by selecting the widget's name [599] in the **Inactive widgets** column. It will move over to the **Active widgets** column.

> **NOTE**
> The change request item type should only be used for change requests [256].

> **NOTE**
> Adding the relationship widget will automatically add the the Relationship Status Indicator [285] as well. They can not be used separately.

3. In the **Active widgets** column, the links, tags, attachments and relationships widgets have a gray **synchronize toggle** button next to their name. To indicate whether or not each widget can be synchronized, use the **synchronize toggle** button for each item. When the button is darker, it indicates that the widget can be synchronized.



NOTE

If you disable synchronization for a specific widget, when an item of that type is synchronized, that widget will not be included in synchronization, nor will that widget be taken into account when sync status is calculated.

4. To disable a widget select the **X** next to the widget's name in the **Active widgets** column.

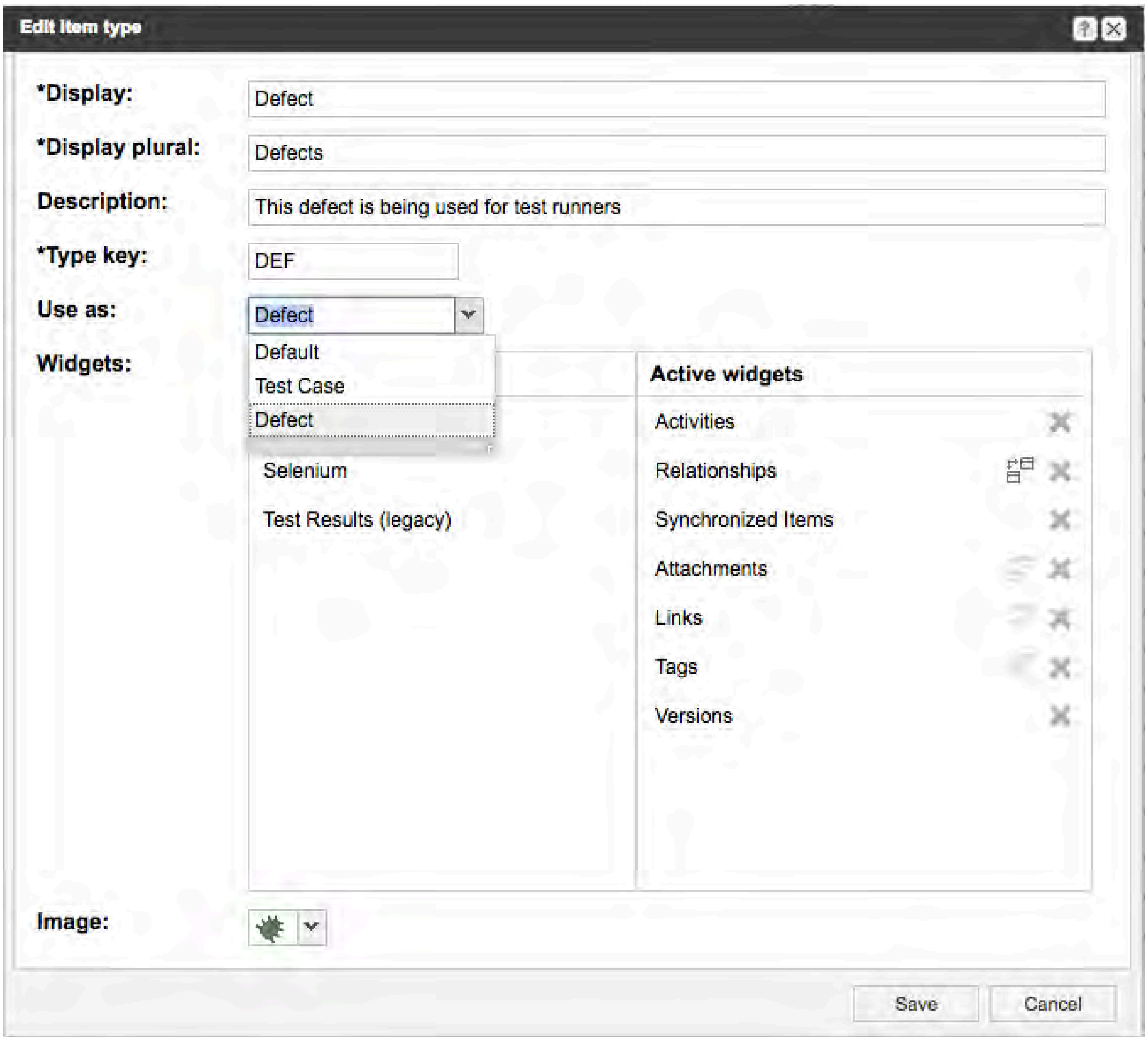
Use a different item type as a test case or defect

You can use any item type as a defect or a test case. By selecting test case, this adds test steps and test case status to that item type.

NOTE

You must have organization administrator permissions to complete this task.

1. Select **Admin > Organization > Item types**.
2. In the same row as the item type you want to change to a test case, select **Edit**.
3. In the **Add/Edit item type** window that pops up, select the pull-down menu next to the **Use as** field and select one of the options. Select **Test case** or **Defect**.

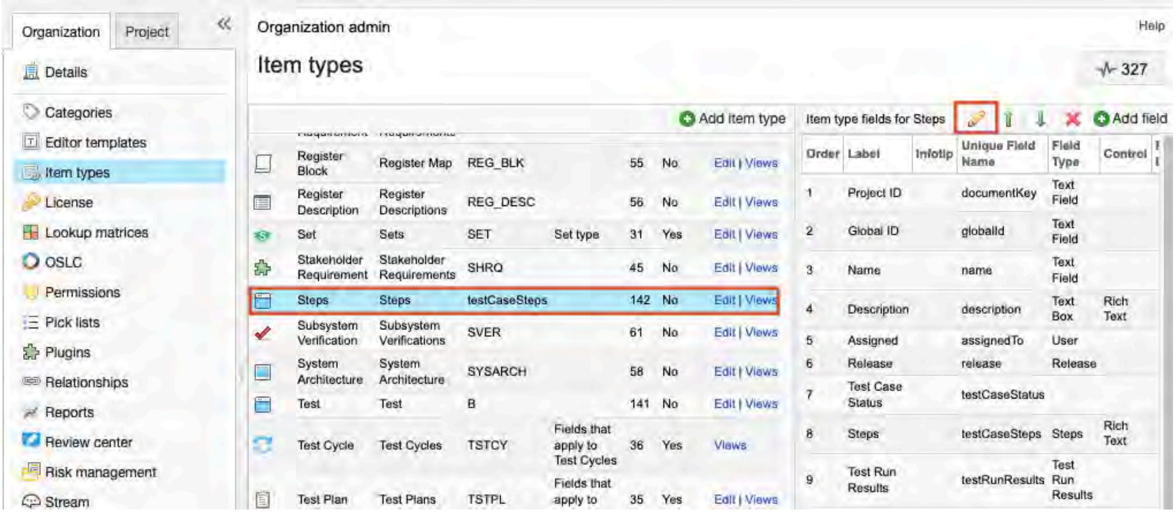


4. Select **Save**.

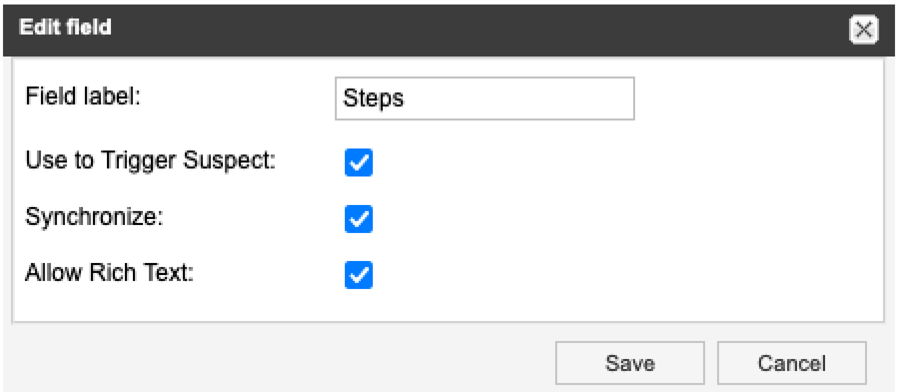
Enable rich text in test steps

> **NOTE**
> You must have organization administrator permissions to complete this task.

1. Select **Admin > Organization > Item types**.
2. Find the item type you want to use. You can use any item type that is a Test Case type (this might be an item that's used as a Test Case [338]).
3. In the right panel, select the **Steps** field, then select the **Edit** pencil icon.



4. In the **Edit field** window, select **Allow Rich Text** and click **Save**.



IMPORTANT

To disable rich text in test steps, follow the same steps, unchecking the Allow rich text box.

If you do so, no data will be lost, but images and rich text will be replaced with HTML tags.

Users will not see any existing steps break and the content will still render. It is up to the users to decided what formatting tags to remove. The application does not automatically strip tags, and renders correct HTML tags in steps with or without the rich text mode enabled.

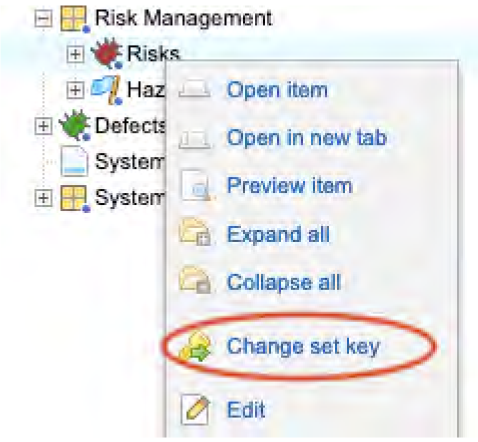
Change a set key

You can edit a set ID or renumber items in a set at any time.

NOTE

You must have organization or project administrator permissions to complete this task.

1. Select **Projects**, right-click on the set you want to modify, then select **Change set key**.



2. In the **Confirm Set Key Change** window that opens, enter the new set key, which must be 1–16 characters long, consisting of only letters, numbers, or underscores.
3. Select **Regenerate Item IDs** to reset the counter and apply new numbering to all existing items. Item counters start over at 1.

> **CAUTION**
> Don't select **Regenerate Item IDs** if you want to restart numbering on newly created items. Leave existing items as they are.

Fields

A field holds a basic unit of data in an item type.

Fields contain values. In List View, each column represents a different field. Individual users can configure which fields they see. For more information, see Configure Compare View for synchronized items [317] and Configure fields [48].

An organization administrator can add new fields to an item type [605] and configure the behavior for those fields.

There are three types of fields in Jama Connect:

- **Predefined fields**
  An organization administrator can add predefined fields [609]. They are indexed and can be searched without using the database field name.
- **Custom fields**
  An organization administrator can add custom fields [609]. They can be similar to predefined fields, or can be multi-select fields, URL fields, calculated, rollup, and item of type fields.
- **System fields**
  System fields (like, name, test steps [339], test case status [341] and review status [148]) are automatically created to provide system functionality and cannot be disabled or deleted.

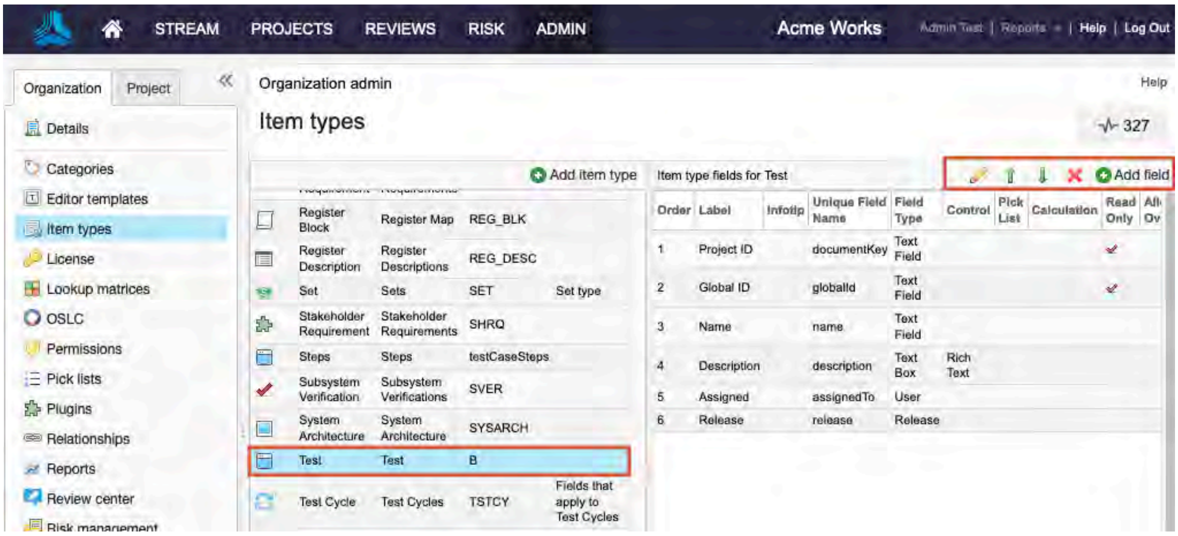
> **TIP**
> Predefined fields can be very similar to custom fields. If you plan on doing a lot of reporting with your data, predefined fields will simplify the document type's underlying schema and make it simpler to use those fields in reporting.

Add, edit, and delete fields

When editing an item type [596], you can add, edit, and delete fields.

> **NOTE**
>
> You must have organization administrator permissions to complete this task.
>
> When you toggle a field between rich text and text, the text doesn't retroactively change data that was previously entered in that field. Each type is saved in a different format (HTML vs plain text). A large scale data translation isn't supported — data might have accumulated over years and with potentially millions of records, so the update might break compliance rules, version history, integrations, or review comments.

1. Select **Admin > Organization > Item types**.
   You see a list of existing fields with information about each one.
2. Select a row to highlight it in blue, then select one of the icons in the top toolbar.



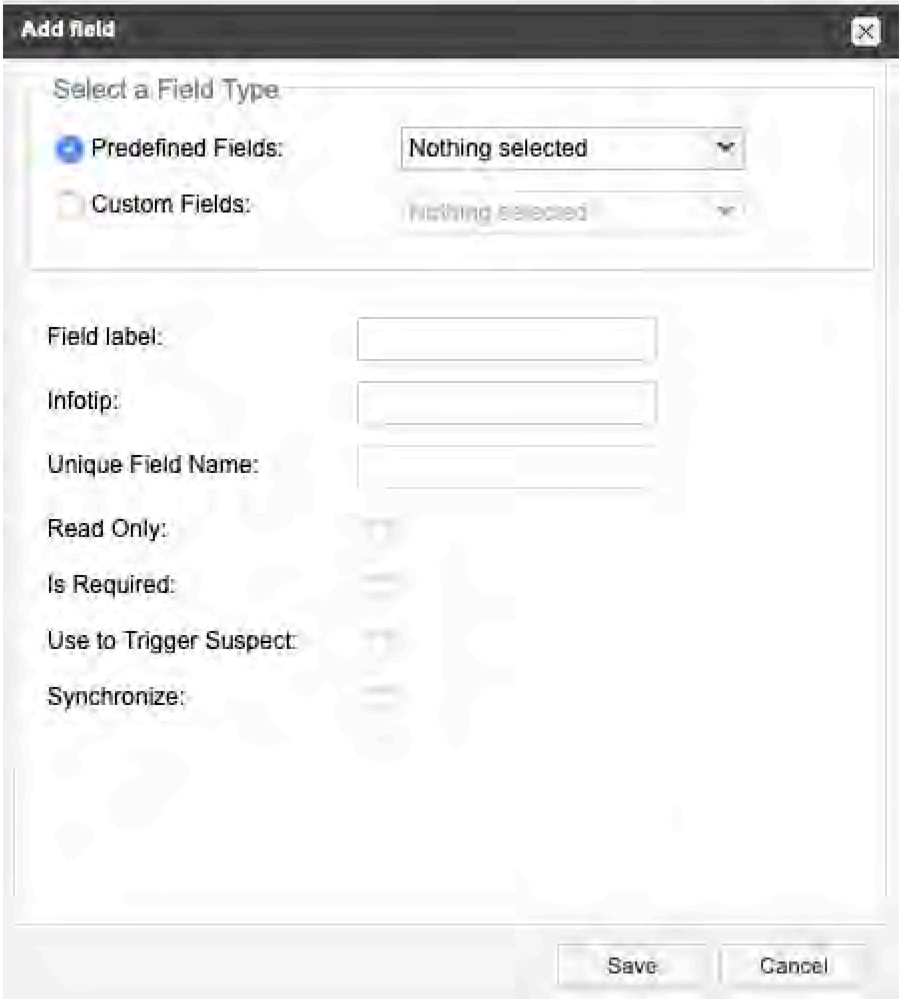
- **Edit a field**
  Select the **pencil** icon to open the **Edit field** window.
- **Re-order fields**
  Use the green **up and down arrow** buttons.
- **Delete a field**

> **CAUTION**
> **Review the following before you delete a field:**
>
> - Once a field is deleted, all values related to that field will be deleted from the database and cannot be recovered.
> - If the field was used to relate synced items (JIRA KEY, proxy, etc.), a duplicate item will be created if you try to create the sync again.
> - If the field is mapped in an integration, that field will no longer update and could cause errors in your integration tool.
> - If filters used the field, filter results will become inaccurate. The filter should be updated before removing the field.
> - If the deleted field raised suspect links, relationships will be affected. Because the field no longer exists, users will not be able to see the changes that created the suspect link.
> - If you attempt to restore a previous version of an item that still contains the deleted field, the field's contents will not be restored. Even if you recreate the field prior to the version rollback, data will not be restored.
> - If you still want to delete a custom field, consider exporting a copy of those field values via a report or the API.

To delete a field select the field then select the **red x** icon.

- **Add a field**
  Select the green **Add field** icon to open the **Add field** window.

3. If you selected **Add** or **Edit**, a window will open where you can select the following options:



- **Select a field type**
  If you are adding a new field, you must first indicate what type of field. Select either a predefined field or custom field. Both field types can be used in the same item type. (This section does not appear when editing fields).

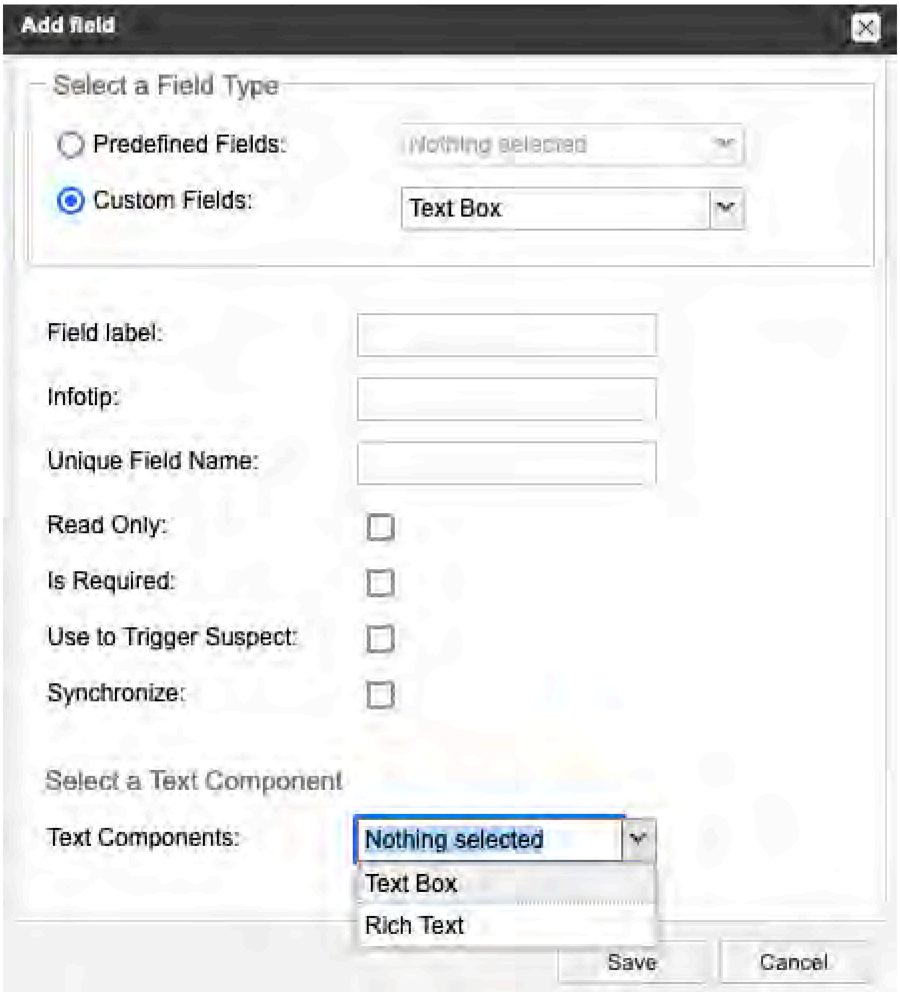
  IMPORTANT
  You can only use the system predefined **Release** field to show items in the **Releases** tab. If you use a custom **Release** field to designate an item to a release, that item will not appear in the **Releases** tab.

- **Field label**
  This is the field name that users will see.

  CAUTION
  When creating a new field, the application automatically uses the **field label** that you enter to name the **unique field name** in the database. Once it has been saved, even though you can change the **field label**, you can't change the **unique field name** in the database.

  Avoid leading with an underscore when naming fields. There are some unique field names that may conflict with Elasticsearch fields (like "_source" and "_ID") and prevent proper functioning.

- **Infotip**
  (Optional) Text entered here will be visible to users when they hover over this field label.
- **Unique field name**
  This is the name of the field in the database.
- **Read only**
  Select this box to prevent users from editing the field.
- **Allow API overwrite**
  Fields that are configured to be read-only have the option to be editable via the REST API. System fields like modifiedDate or rollup do not allow the option to overwrite.
- **Is required**
  Required fields are string, text or date fields that are configured so that the user must enter data into the field before saving an item.
- **Use to trigger suspect**
  Suspect links [293] is triggered when specific fields update in an item. This option lets you determine which field changes will flag an item as suspect.
- **Synchronize**
  When items are synchronized to other items, a change in a field with this checkbox will flag this item as out of sync in the synced items window and in Single Item View [147].
- **Text components**
  If you chose to add a text box field, you will need to choose if you want it to have rich-text capabilities.



- **Pick list, Multi-select, Calculated fields**
  If you want to add a field that requires lookup or pick list for input, you must first add the pick list or lookup matrix.

4. Select **Save**. By default, new fields are added to the bottom of the item type fields list, but you can reorder using the green arrows.

Predefined fields

An organization administrator can add predefined fields [604]. They are indexed and can be searched without using the database field name.

When you are adding fields [605], you must select the database location where the lookup value is stored from predefined fields; this selection won't affect users. However, custom report writers must know the mapping of the fields to the database.

There are several predefined fields you can choose from including:

- **Text**
  Optionally, you can enable rich text in these fields.
- **Dates**
  Each field (date1 through date5) will limit the user entry to a valid date and will provide a pop-up calendar picker.
- **Integer**
  The fields originalEstimate, remainingEstimate and timeSpent all only allow the entry of whole number positive integers.
- **Flag**
  Flag fields will be displayed as check boxes to the users working with the item type. By default all flags are marked as No (False).
- **String**
  Includes the Predefined Fields: Short Name, ID, string1 through string15.
- **Pick list**
  Fields such as status, priority and lookup 1-10 will prompt you for a pick list in the **Add field** window. If that option is not available, then you have selected a non-pick list type from the predefined fields drop-down. Once a predefined field has been used for a pick list it will no longer be available in the list. If additional fields are needed, use custom fields.
- **Release**
  Each pick list is populated by the list of releases created within each individual project. Some item types are configured with a release field [261] by default. If the release field is removed from the item type, it will become available in the predefined field list.
- **User**
  Item types that include a user field will present the user with a pop-up list of users to select from. The user will only be allowed to select one user from the list.

Custom fields

An organization administrator can add custom fields that are unique to their organization. Custom fields can be similar to predefined, multi-select, URL, rollup, and item of type fields.

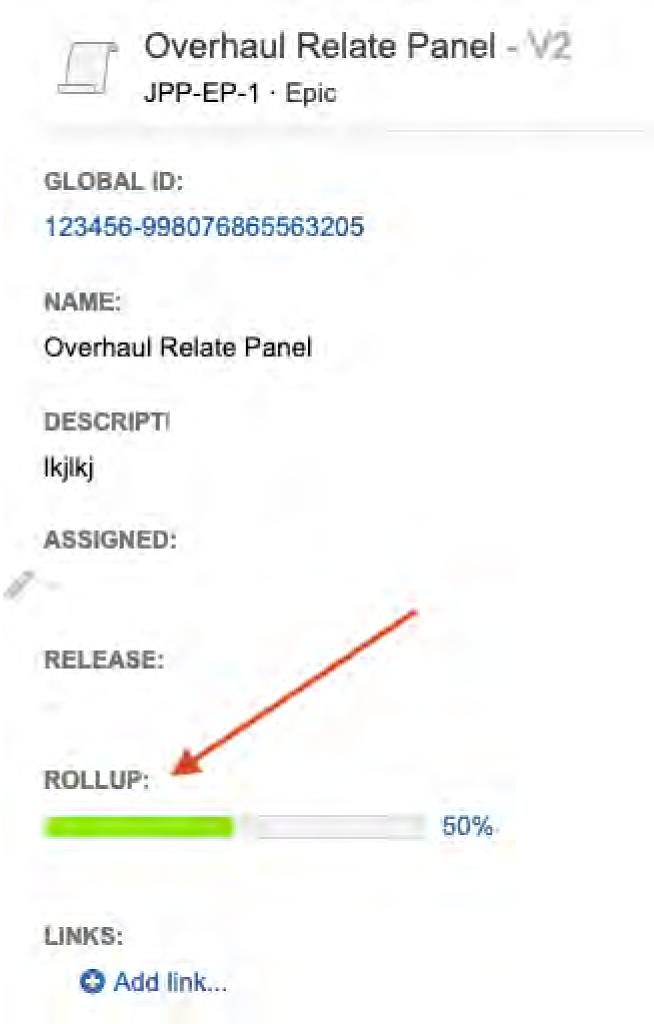
To find a field, search using the field name because they aren't indexed.

When adding a custom field [605], these are the types you can choose:

- **Item of Type**
  Use this to create a new pick list field that is populated by a list of existing items in the current project that are of the specified item type. Users can reference items of another type in this manner. Only one item can be selected in an item of type pick list.
- **Flag**
  Flag fields are displayed as checkboxes to those working with the item type. By default, all flags are labeled **No** (False).
- **Integer**

Allows only the entry of whole number positive integers.

- **Release**
  Each pick list is populated by the list of releases created within each individual project. Some item types are configured with a release field by default. If the release field is removed from the item type, it's available in the predefined field list.
- **Pick List**
  Pick lists are a set of specific values that can be entered in a field.
- **Float**
  Use float fields to accurately capture numeric values. The float field follows IEEE 754. These fields can be positive or negative.
- **Multi-select pick list**
  Use the multi-select pick list field to allow the user to select multiple values in a pick list.
- **URL**
  A URL field is similar to a regular text box. It performs some minor validation of text entered in the field to check that it is a URL and will display the text as a link when submitted.
- **Text Field**
  A text field is designed to hold plain text strings with no line breaks. If line breaks are required, use the text box field.
- **Text Box**
  A text box field is designed to hold more data than a typical text field. It can store plain text or rich text and can also have a template applied to it.
- **Rollup**
  A rollup field shows progress being made on downstream items without having to open each downstream item individually. You can select the progress bar to open a filter with any downstream items that are included in the rollup calculation.



Progress on the downstream item is tracked by a pick list (often a Status pick list). You will need to indicate the **downstream item type**, the **pick list field** on that downstream item type, and the **pick list value** that indicates progress is complete.

- **Calculated fields**
  A calculated field allows admins to configure automated calculations using addition, multiplication, average, Weighted Shortest Job First (Scaled Agile prioritization model), and simple logic (2D lookup matrix). You can add calculated field results to the List View and use them for sorting and filtering.
  You must select the following options:
  - **Calculation type**
    Average, Multiply, Sum, Weighted Shortest Job First, or Lookup matrix
  - **Calculation source**
    This item or Related item(s)
  - **Related item type**
  - **Relationship direction**
    Upstream or Downstream
  - **Fields upon which to base the calculation**
    This will display pick list, multi-select, integer, other calculated fields from the same item, number of upstream or downstream relationships, and the number of comments fields.
    - If a pick list field is chosen, the value field is used in the calculation.
    - If a multi-select field is chosen, the value used is the sum of the value of each selected item.
    - If a calculated field is chosen, the result of the calculated field is used in the calculation. Once a calculated field is chosen as an input for a calculated field, it can't be used as an input in additional calculated fields.

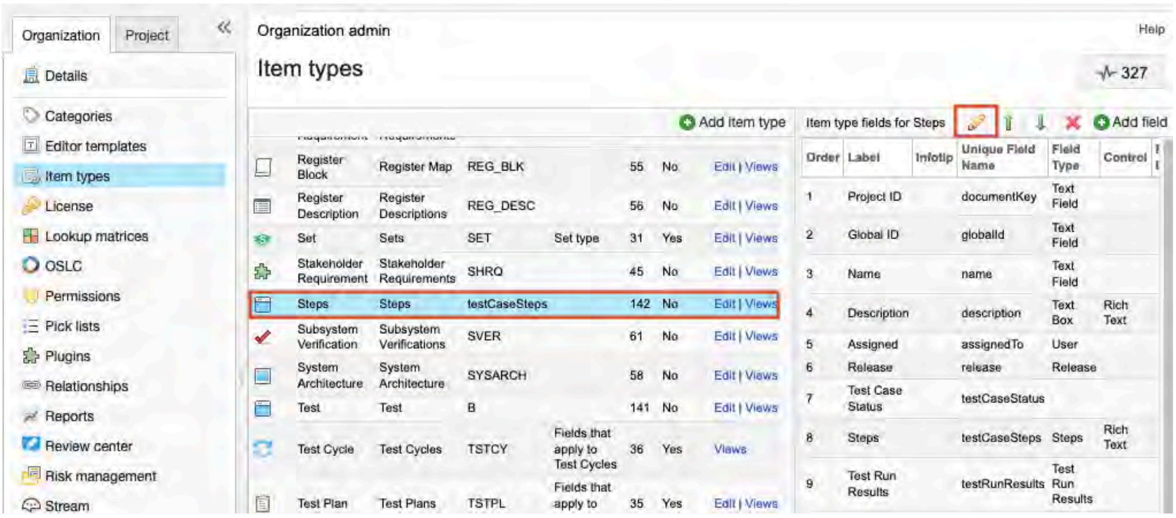
- **Number of decimals to display** (up to 4)
- **Whether to require all values to be present before the calculation is performed**
  If you do not select this option, the calculation will be performed each time a value is entered into one of the selected fields.

> **NOTE**
> American or British-style decimals must be used in the fields from which the calculations are derived. Errors will occur if non-American or British style decimals are entered.
>
> If a calculation is based on a related item, the calculated field will not update until the item containing the calculated field is edited.

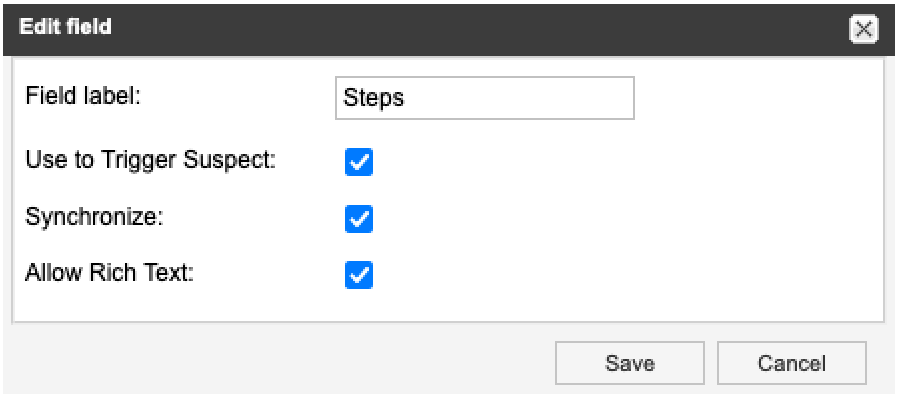
Enable rich text in test steps

> **NOTE**
> You must have organization administrator permissions to complete this task.

1. Select **Admin > Organization > Item types**.
2. Find the item type you want to use. You can use any item type that is a Test Case type (this might be an item that's used as a Test Case [338]).
3. In the right panel, select the **Steps** field, then select the **Edit** pencil icon.



4. In the **Edit field** window, select **Allow Rich Text** and click **Save**.



IMPORTANT

To disable rich text in test steps, follow the same steps, unchecking the Allow rich text box.

If you do so, no data will be lost, but images and rich text will be replaced with HTML tags.

Users will not see any existing steps break and the content will still render. It is up to the users to decided what formatting tags to remove. The application does not automatically strip tags, and renders correct HTML tags in steps with or without the rich text mode enabled.

Pick lists

Pick lists are a set of specific values that can be entered into a field.

This feature is particularly useful when you want to ensure that field content is entered correctly between users, or when you create lookup matrices and calculated fields.

Each pick list must be assigned a name and a description. A description is optional and can be useful to define how the pick list will be used.

Each option in a pick list can be assigned the following:

- **Order**
  Designates what order the option will appear in a field pull down.
- **Display**
  Determines what words users see when selecting pick list options.
- **Infotip**
  (Optional) Custom text that provides additional context for that value and is visible to users when they hover over this field label.
- **Description**
  Useful to define what each option means internally or to other admins. For example a display of " High" could have a description of "over 5000 items", "625-750 degrees" or "at least 72 miles".
- **Pick list type**
  Standard type pick lists can be used for pick list, multi-select, calculated, or status fields. Only Lookup matrix type pick lists can be used to configure lookup matrices.
- **Value**
  This option can put a numerical value or weight on each option and is useful in creating calculated fields.

- **Color**
  Color can be used to visually distinguish pick list options at a glance and can be seen in different views across the application. For example the test case status [341] field is set to have a passing color of green, a failing status of red and a blocked status of orange.
- **Default status**
  Determines which value appears by default. A pick list can only have one default status.

Manage pick list values

A pick list can have multiple values that can be organized, color coded, and set as a default.

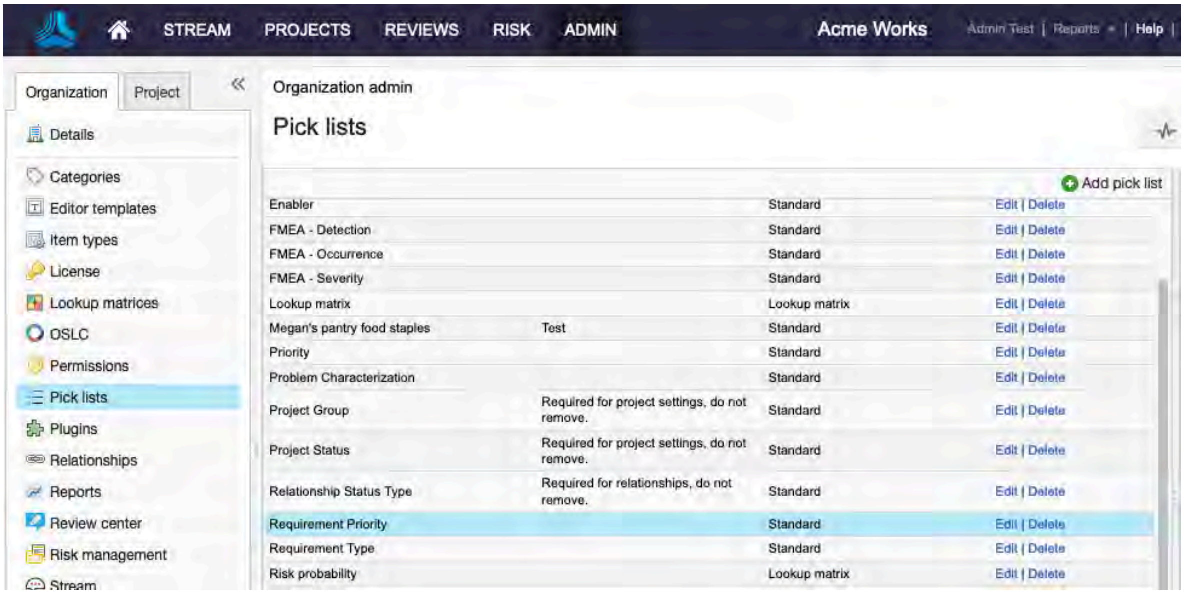
(Optional) Values can include *infotips* — custom text that provides additional context for that value.

Important considerations

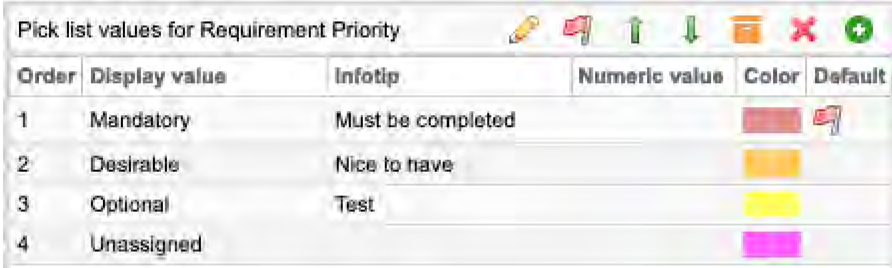
- **Change a pick list value** — Other fields might be affected if the value is included in a calculated field.
- **Archive a pick list value** — Removes the option from a selectable option, but preserves the historical selection of the value. Archived pick lists can't be unarchived.
- **Delete a pick list value** — Removes the selected value from all items in the system. Each item is versioned and updated with the replacement value. Previous versions retain the deleted value. The deleted value isn't available for filtering. Each pick list must retain at least one value and that value can't be deleted. Deleting a value from a lookup matrix type pick list might require updating any dependent lookup matrices.
- **Selecting a pick list type** — Use the default or standard pick list types, unless the pick list is intended for configuring a lookup matrix.

> **NOTE**
> You must have organization administrator permissions to change pick list values.

1. Select **Admin > Organization > Pick lists**, then select the pick list row you want to modify.



2. In the table, select the item row you want to modify, then select one of the following options.



- **Add item** (plus icon) — Enter the name and optional characteristics like infotip, description, value, and color.
- **Edit item** (pencil icon) — Make your changes.
- **Archive item** (box icon) — If you archive an item, the value's row is removed from view. This action can't be undone and will only be visible on versions of items before it was archived.
- **Remove item** (X icon) — Select a replacement value, then click **Delete**.
  The value is saved to items in the system where the deleted value is selected.

3. Click **Save**.

The table is updated to reflect your changes.

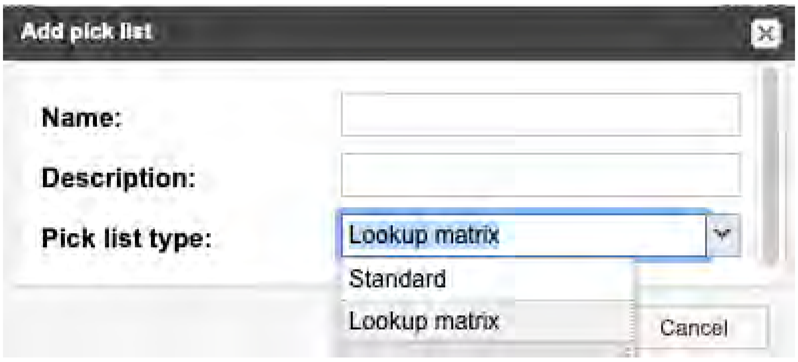
Add a lookup matrix

Lookup matrices serve as a source for logic-based calculations in lookup matrix type calculated fields.

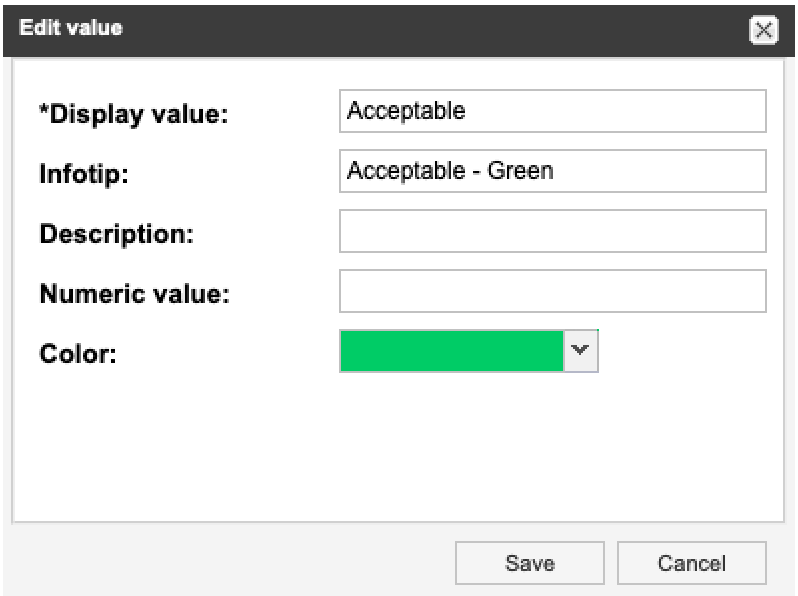
To add a logic-based calculation to an item (a lookup matrix type calculated field), you must first add the lookup matrix and give it a name. Adding a description is optional and can help define how the lookup matrix will be used in calculated fields.

To configure a lookup matrix, you must select a pick list for the matrix columns, rows, and results.

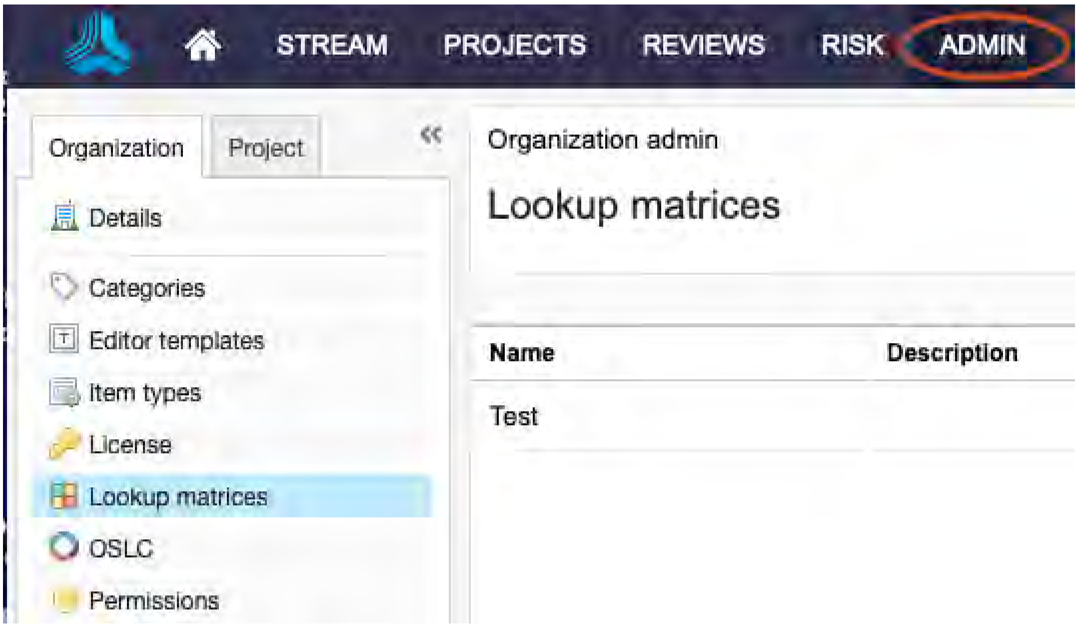
1. Create pick lists [613] for the for the calculation inputs (matrix rows and matrix columns) and the calculation results (matrix values).
   a. Select **Lookup matrix** as the pick list type.

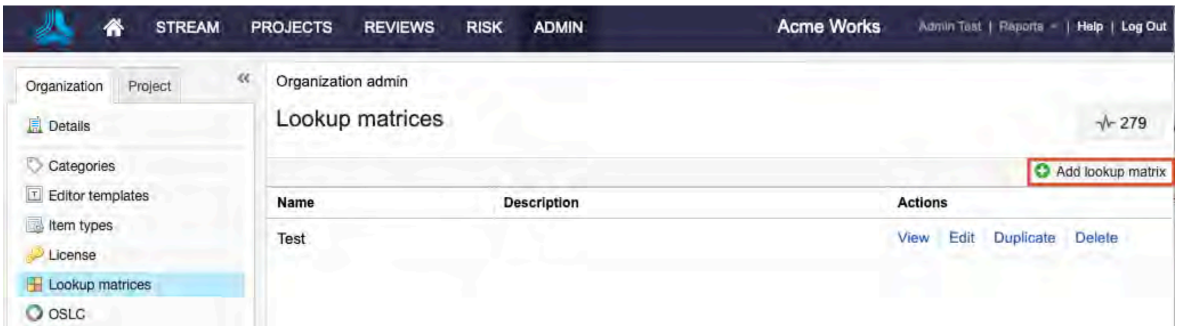
   b. (Optional) If you want to change the table color from default gray, select a row in the Pick list values table, click **Edit values**, and select a color.



2. Select **Admin > Organization > Lookup matrices**.

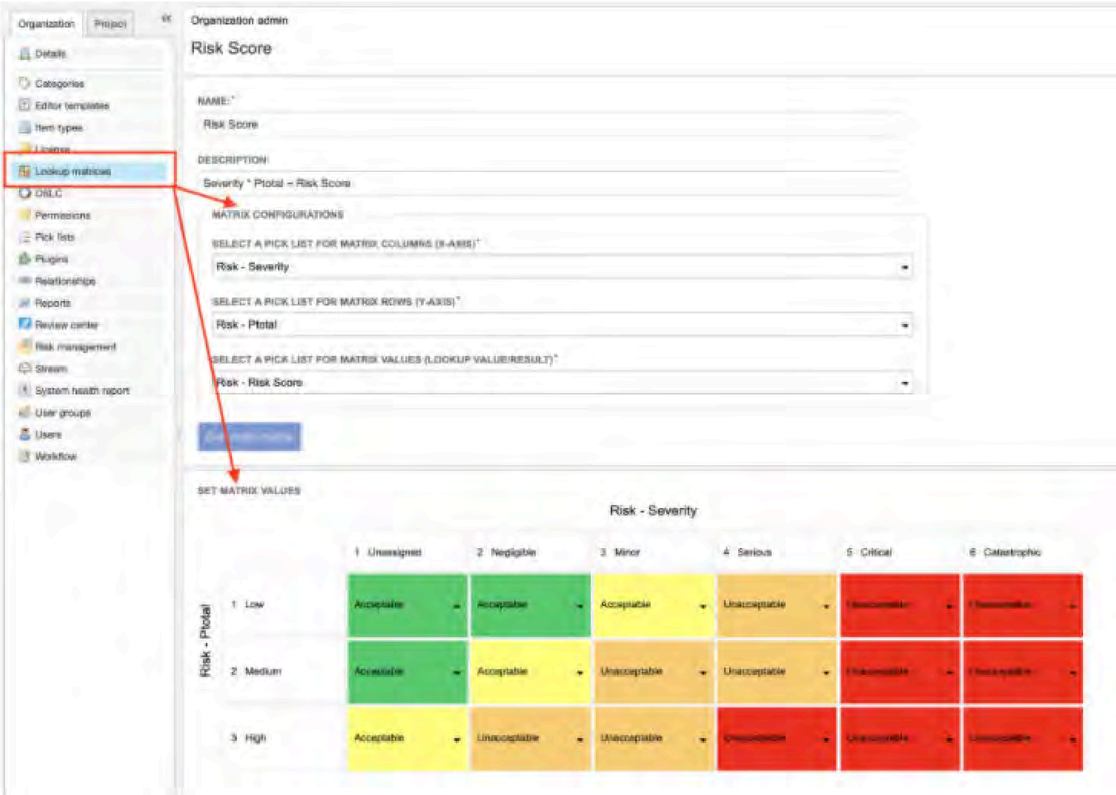


3. Click **Add lookup matrix**.

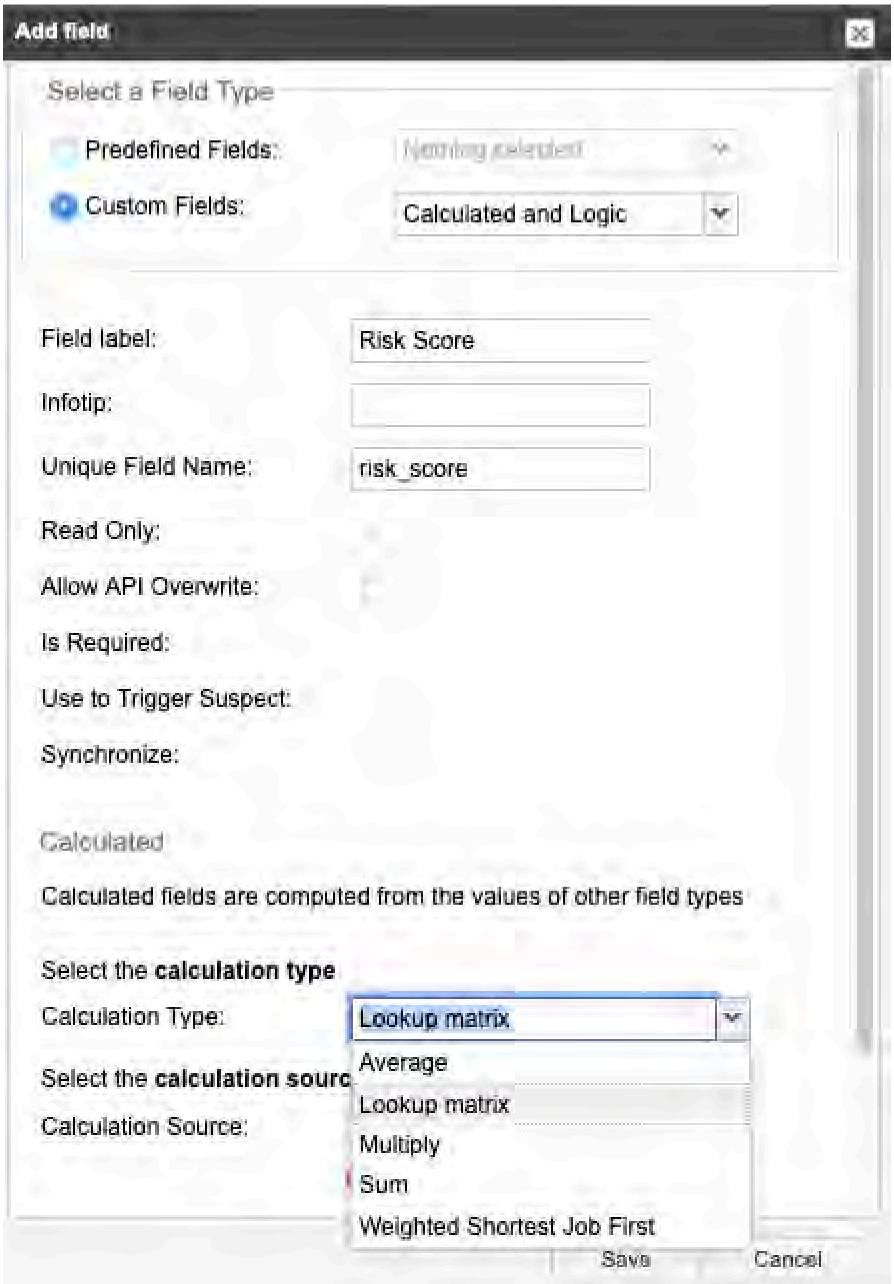


4. Enter a name and optional description for the lookup matrix.
5. Configure the lookup matrix settings:
   a. Under Matrix Configurations, use the drop-down selectors to configure the matrix columns, rows, and values/result.
   b. Click **Generate matrix**, then select matrix values for each matrix cell according to desired logic-based calculation outcomes.

Example: When you select **Low** for the P-total field and **Minor** for the Severity field, the calculated field for Risk Score returns the result **Acceptable** in yellow.



6. Click **Save & done**.
7. Select from an existing item type or add a new item type, then click **Add field**.
   Make sure calculation input fields were already added to the item, using the pick lists that match the configuration pick lists used for the desired calculation lookup matrix source.
8. In the Add field window, select **Lookup matrix** as the calculation type.
   Select from an existing lookup matrix as the calculation source and from available fields as calculation inputs.



9. Click **Save**.

Configure workflow

Workflows are not project-specific. When the organization administrator configures a workflow it applies to the item type across projects.

NOTE

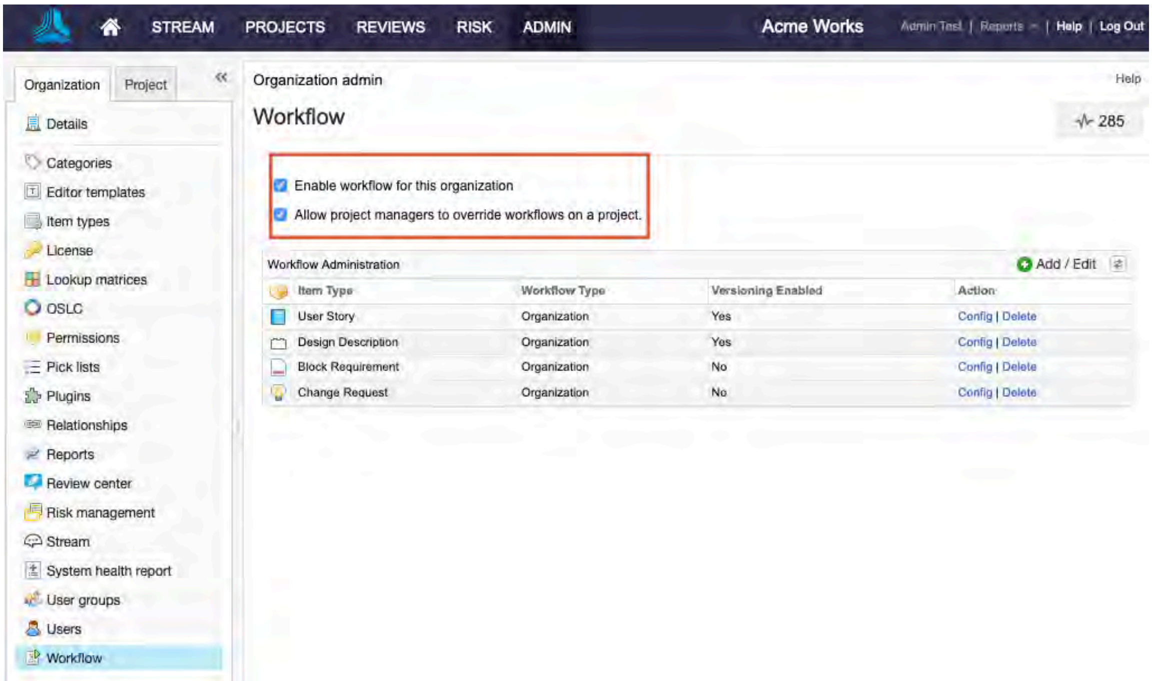
You must have organization or process administrator permissions to complete this task.

Important considerations

- If the organization administrator selects **Allow project managers to override workflows on a project**, the project administrator for each project can set up the workflows.
- If you disable a workflow, Jama Connect stores your settings for later use.
- An organization administrator can disable a workflow from the Workflow Administration section.

1. Select **Admin > Organization**, then select **Workflow**. If you disable a workflow, Jama Connect stores your settings for later use.
   - Select **Enable workflow for this organization**.
   - (Optional) Select **Allow project managers to override workflows on a project**.

   IMPORTANT
   If you select or deselect either option, it could trigger a long transaction that might impact system performance.

   This enables workflow for all projects using this item type. It can't be disabled at a project level.
2. In the Workflow Administration section, select **Add/Edit** to start a new workflow, or select an existing workflow and then **Config** in the **Action** column to edit it.

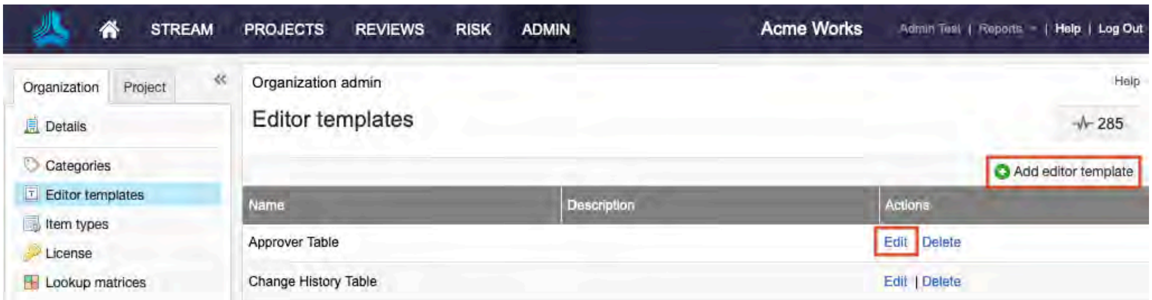
3. A project or organization administrator can continue setting up the workflow [654] from here.

Set up editor templates

Editor templates can be applied to any rich text field and must be configured before use.

NOTE
You must have system or organization administrator permissions to complete this task.

1. Select **Admin > Organization**, then select **Editor templates**.
   - To open the new template with a rich text editor, select **Add editor template**.
   - To edit templates, select an existing template, then select **Edit**.



2. Give the template a name and description.
3. Create the template as you want it to appear in other items.
4. Select **Save**.

The template is now available for other users [92].

Configure views

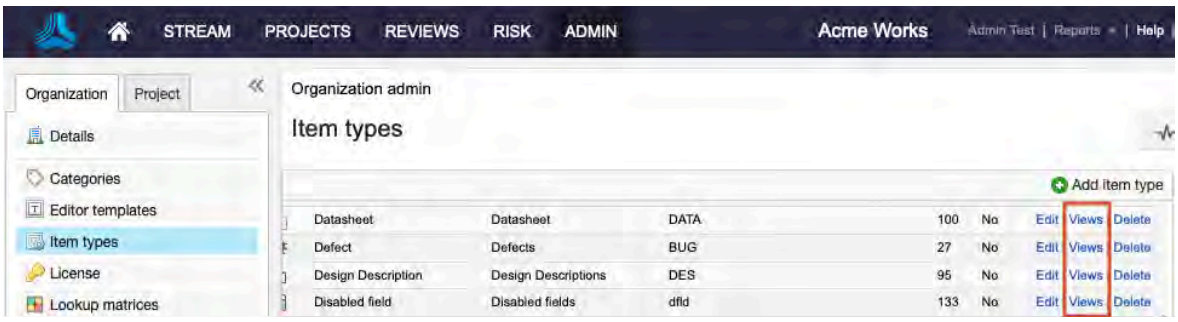
You can configure the default fields in Projects List View, Projects Reading View, Reviews Single Item View, and Reviews Reading View.

You can also configure views in Projects that contain mixed item types, such as views created from a tag, filter, or component, by selecting **Projects List View with mixed item types**.

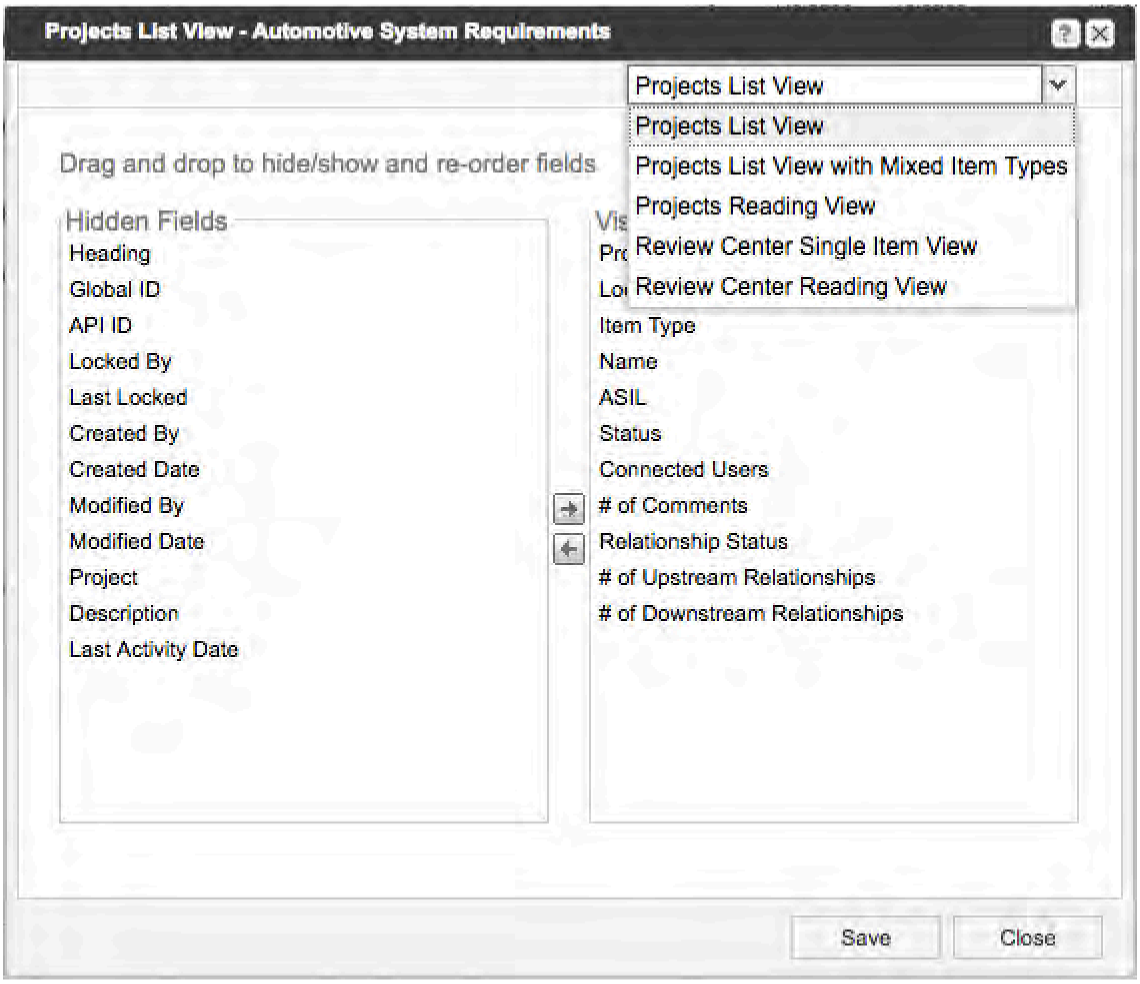
> **NOTE**
> You must have organization administrator permissions in order to configure default views.

Configuring fields for a view [48] overrides the default and becomes the standard order of visible fields for that user, in all similar views, for that item type.

1. Select **Admin > Organization**, then select **Item types > Views**.



2. In the **Project List View** window, select the view you want to configure.



3. Double-click a field name or use the arrows to move fields between the **Hidden** and **Visible** columns. Select and drag field names up or down to reorder them.
4. Click **Save**.

NOTE
You can only select core item type fields when you configure List View for mixed item types. For a list of core item type fields see **Admin > Item types > Core > Views**.

Manage relationships

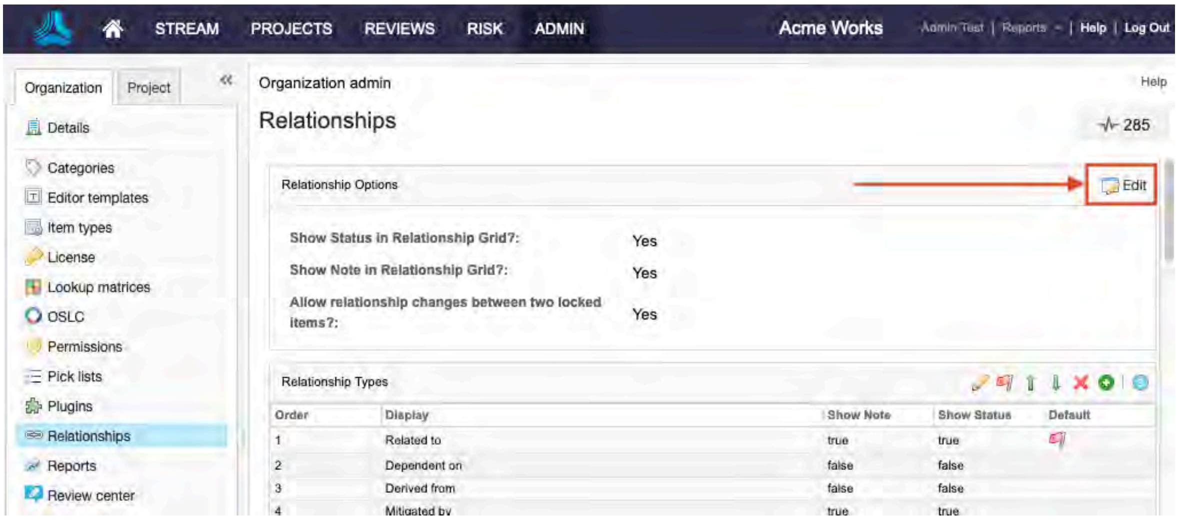
As an organization administrator you can do the following to manage relationships:

- Edit relationship widget [599] in an item type
- Set the relationship types [622]
- Configure the Import Relationships Plugin [564]
- Set up relationship rules [625] at an organizational level

Configure relationships

NOTE
You must have organization administrator permissions to complete this task.

1. Select **Admin > Organization**, then select **Relationships > Edit**.



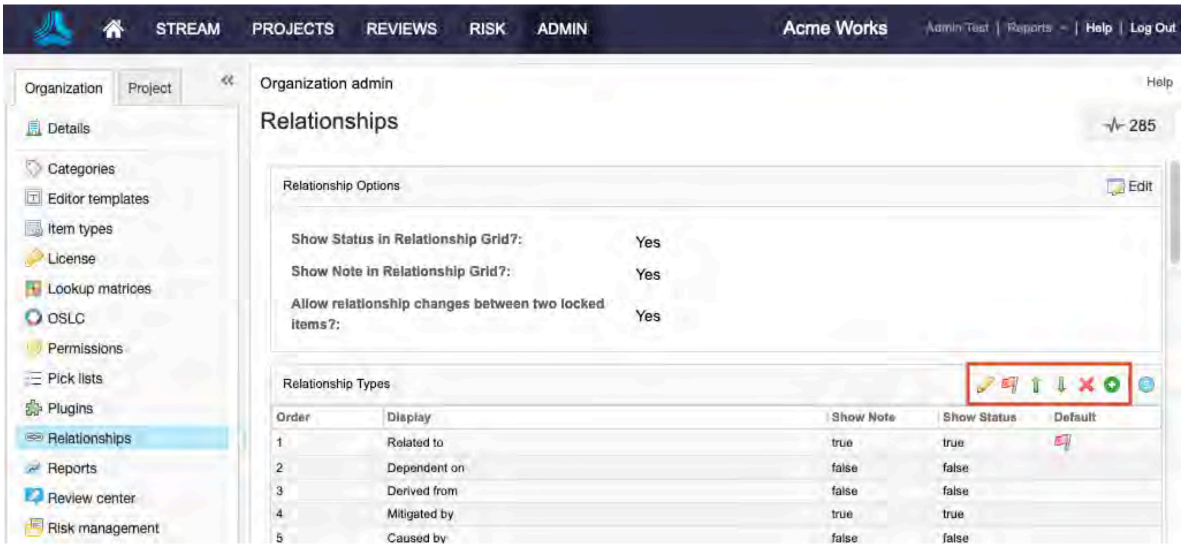
2. To change the relationship options from **No** to **Yes**, select the checkbox next to each option:
   - **Show Status in Relationship Grid?**
   - **Show Note in Relationship Grid?**
   - **Allow relationship changes between two locked items?**

   Note and **Status** columns are added to the table in the bottom panel.
3. Configure **Relationship types**:
   The **Note** and **Status** fields are only editable when the Relationship type is set to **Show Note** and **Show Status**. In the Relationships widget of an item, double-click on a relationship to edit its type, direction, status, and note.
   - Use the toolbar at the top of this panel to edit, add, or delete types.
   - Include a description to specify how and when this type is to be used.
4. Set up relationship rules [625].

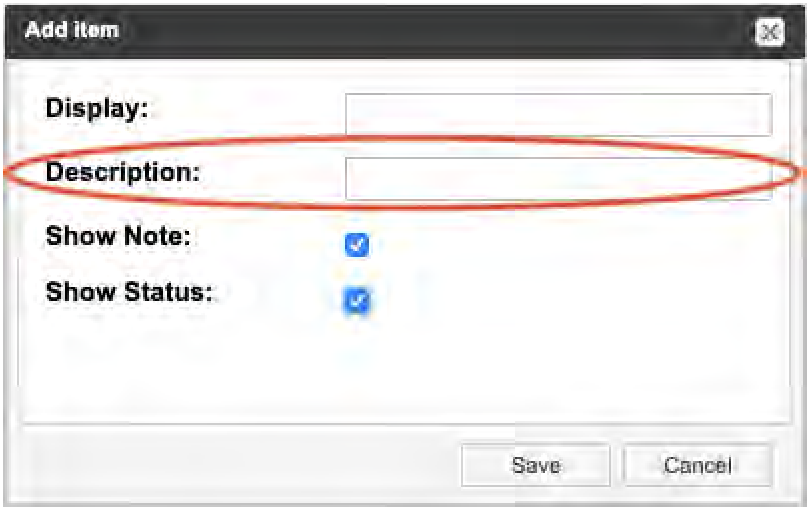
Set relationship types

NOTE
You must have organization administrator permissions to set relationship types.

1. Select **Admin > Organization**, then select **Relationships**.
2. Under **Relationship Types** use the buttons to add, edit, delete or reorder relationship types.



3. When adding a new relationship type you can enter a display name and description. The description is only visible in this edit window.



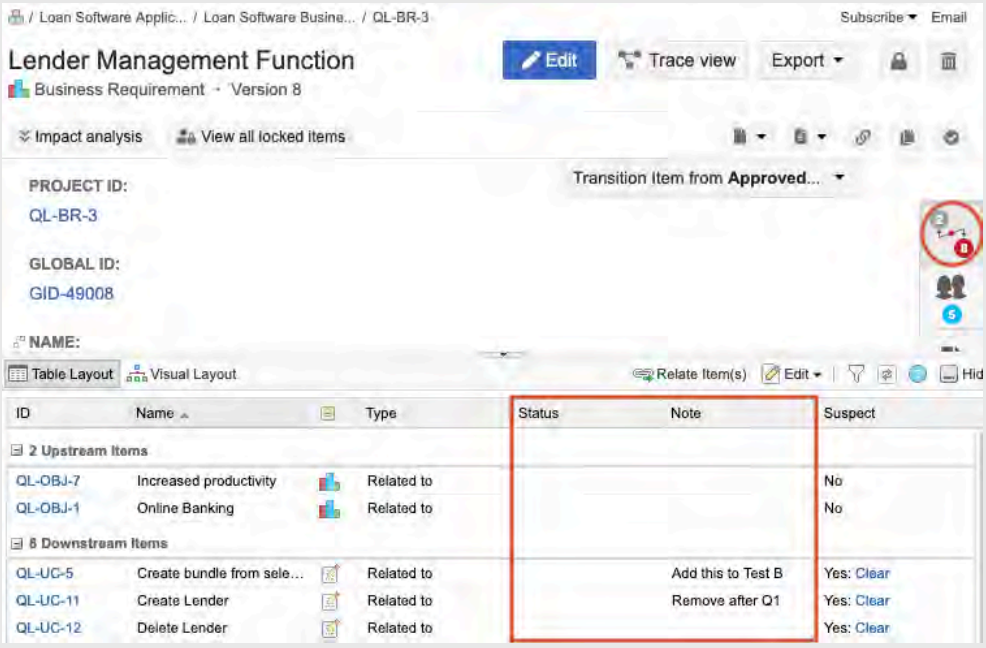
If you select **Show note** and **Show status** users who create a new relationship using this relationship type will be given the option to enter a note and a status for that relationship.

TIP

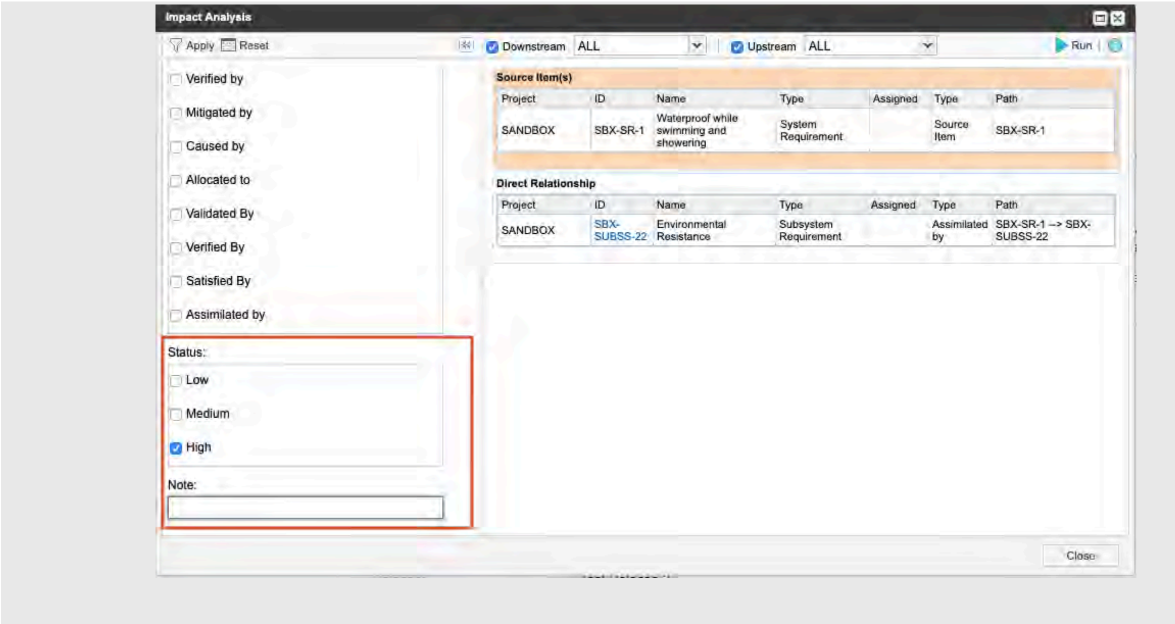
Status and notes are visible any time you reopen the **Add/edit relationship** window.

Also, when notes and status are enabled under **Relationship options** in **Admin > Relationships**...

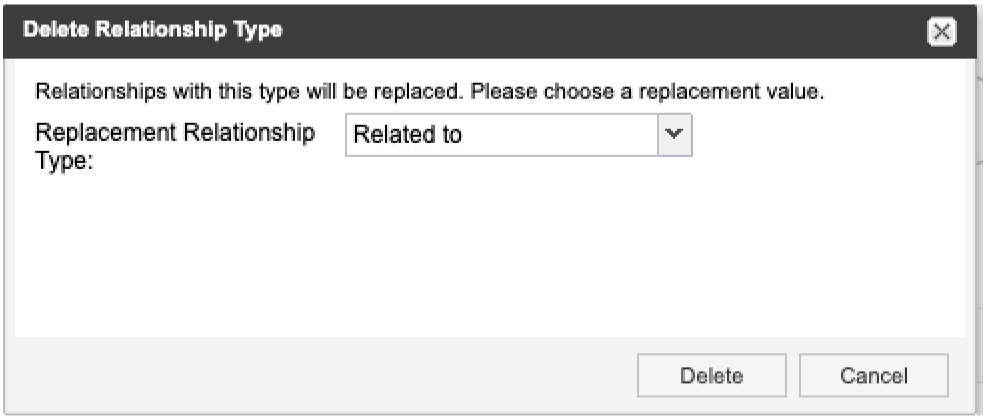
... you will see them in the bottom panel of Single Item View when **Relationships** is selected.



You can also filter by status or note in an impact analysis [295].



4. If you delete a relationship type, you will be asked to choose a replacement type for affected relationships.



Set up relationship rules

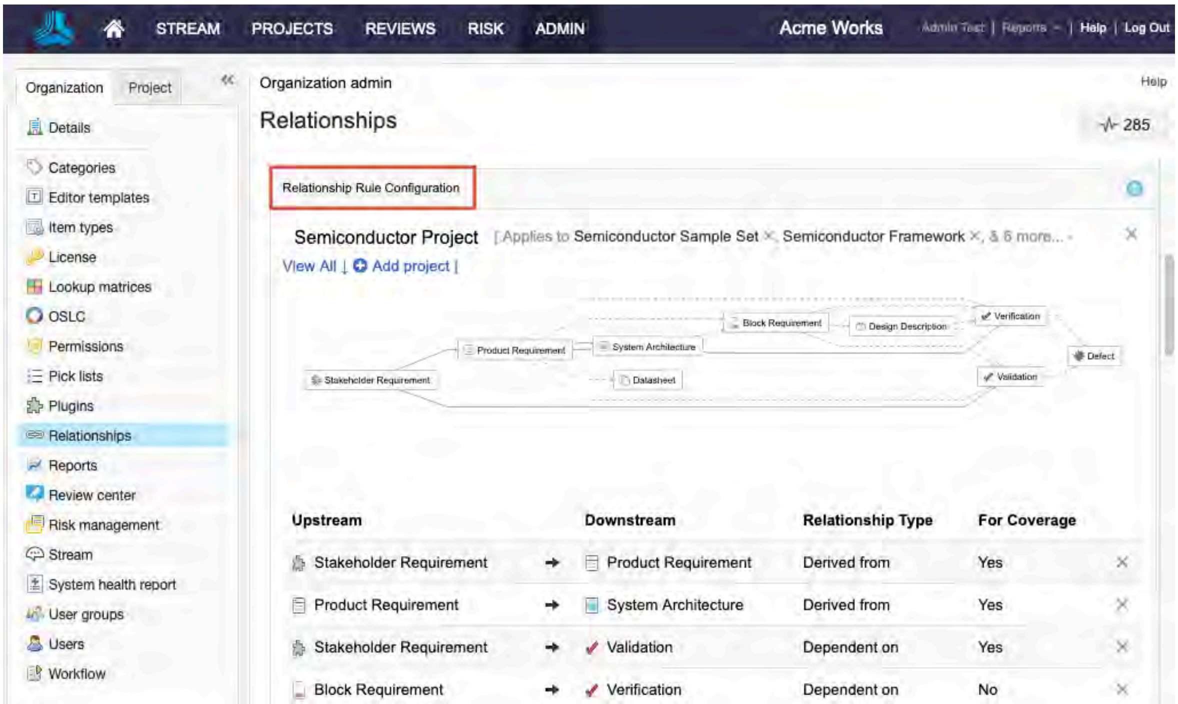
> **NOTE**
> You must have organization administrator permissions to complete this task.

Relationship rules help maintain the project structure by preventing problems with relationships [284]. The rules help users know when relationships are required and in which directions.

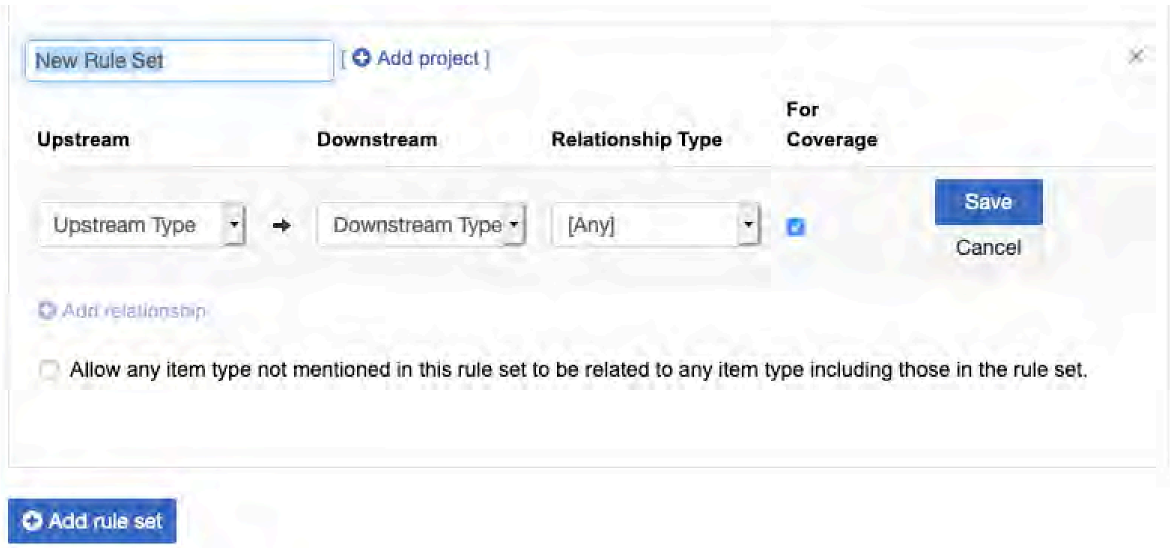
When these rules are set up, the Relationship Status Indicator [285] alerts users to easily see when their relationships do not match the relationship rules.

Rule sets are created at the organization level, and can then be applied to one or more projects.

1. Decide with your team what relationships will be included, the relationship types, as well as whether the rules should be exclusive and included in coverage calculations for the project.
2. Select **Admin > Organization > Relationships** and scroll down to the section labeled **Relationship rule configuration** to see any previously created rule sets.



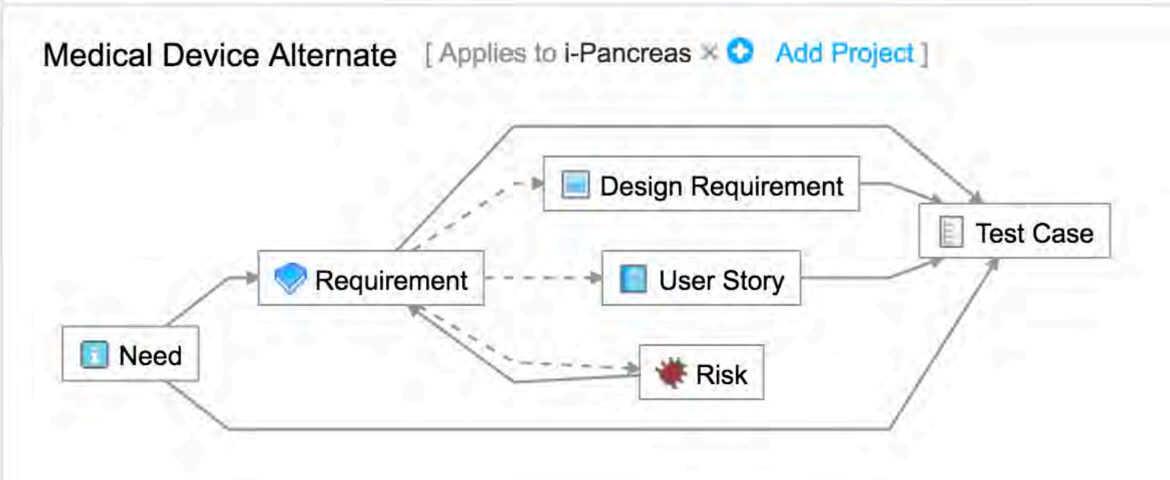
3. Scroll to the bottom and select **Add rule set**.
4. Select **New Rule Set** and edit the name to describe your set.



5. Add a rule by selecting the **Upstream item type**, **Downstream item type**, **Relationship type** from the drop-down menus. Select the box under **For coverage** if this relationship should be included for coverage.

> **NOTE**
>
> Configure the same rule set across projects that share relationships. If you relate items across projects with different rule sets, the source project's rule set is applied.

6. Select **Save** to save the rule. As the rule is saved, it is added to the diagram to show the relationship visually. Select **Add another relationship** if you want another for this rule set.
7. As rules are created, the diagram is updated to show the relationships. Solid lines between items indicate a coverage (required) relationship. Dashed lines indicate relationships that are not for coverage.



TIP

Once you have set relationship rules for a project, you can also view the relationship rules diagram in Single Item View or on the dashboard [150].

8. To delete a rule, select the **X** at the end of the rule's row. To delete an entire rule set, select the **X** at the top right of the rule set. After editing or deleting a rule, the rule set diagram will update with any changes made.
9. Select **Add project** to apply the rule set to one or more projects. If a rule set is applied to a project with existing items, nothing will change in that project, even if the existing relationships break the new rules. Only future relationships will be required to conform with the rule set.

IMPORTANT

A project can only have one rule set. If a rule set has already been applied to a project and you attempt to apply a second rule set, the application will remove the first rule set from the project and apply the second one instead.

10. If you select the box next to **Allow any item type not mentioned in this rule set to be related to any item type including those in the rule set**, users can create relationships outside of the rule set you applied to the project.

    Rules are between item types. If you do not define a rule for a particular item type, that item type can have a relationship with anything, or nothing if the user chooses, even if the rule set is exclusive.

Configure Import Relationships Plugin

The Import Relationships Plugin helps you batch create relationships between existing items in the application.

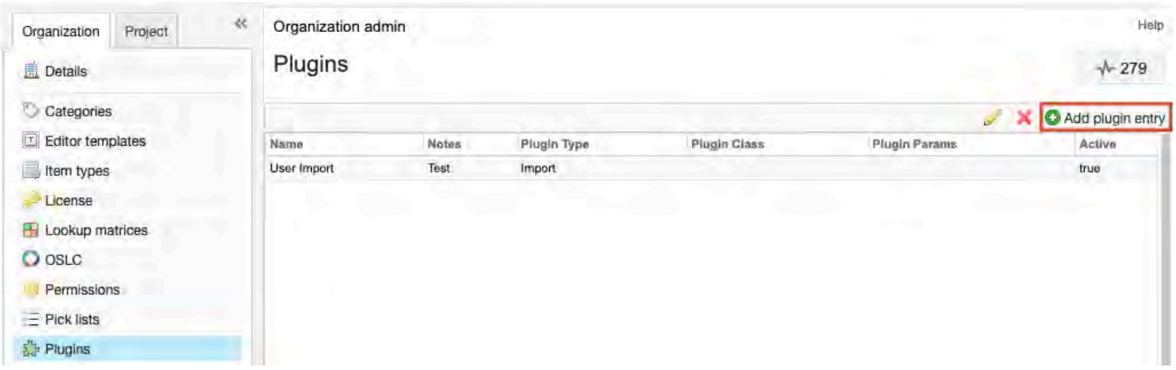
NOTE

You must have organization administrator permissions to complete this task.

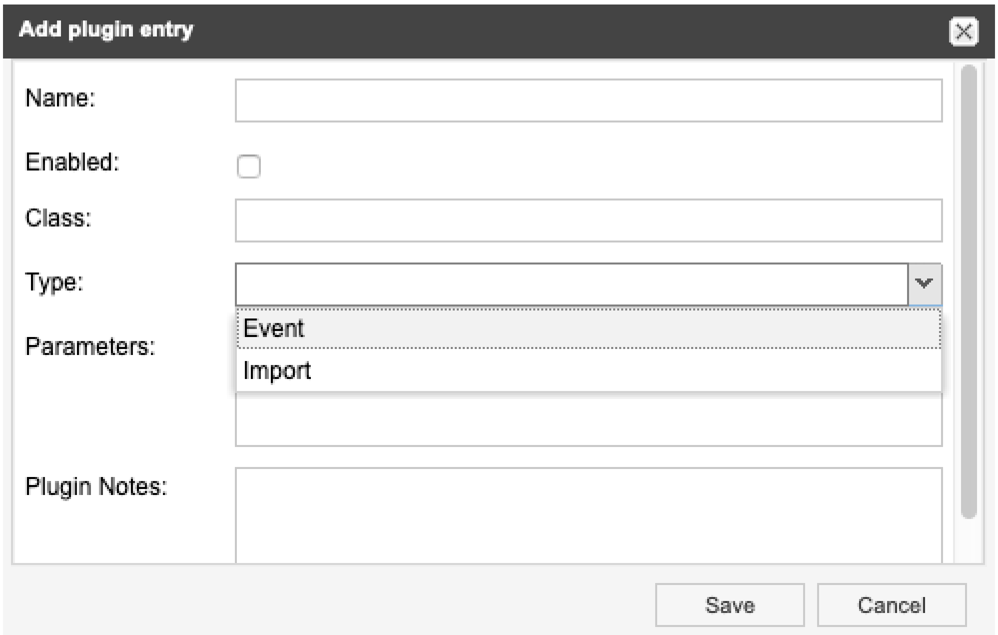
IMPORTANT

Before you use the Import Relationships Plugin in Jama Connect, you must first create a direct relationship between the items you plan to link. Otherwise, the linking might fail. For example, when you link *use case item types* to *test case item types*, you must first define a relationship rule for that project. For more information, see Set up relationship rules [625].

1. Select **Admin > Organization**, then select **Plugins > Add plugin entry**.



2. In the **Add plugin entry** window, enter the following information and select **Save**.



- **Name:** Import Relationships (or whatever name you want visible to users)
- **Enabled:** Check this box to make the plugin available to users.
- **Class (case sensitive):** Enter the name of the object defined in the source code. For a single project enter:

  ```
  com.jamasoftware.contour.plugin.jama.ImportRelationships
  ```

  For cross-project imports enter:

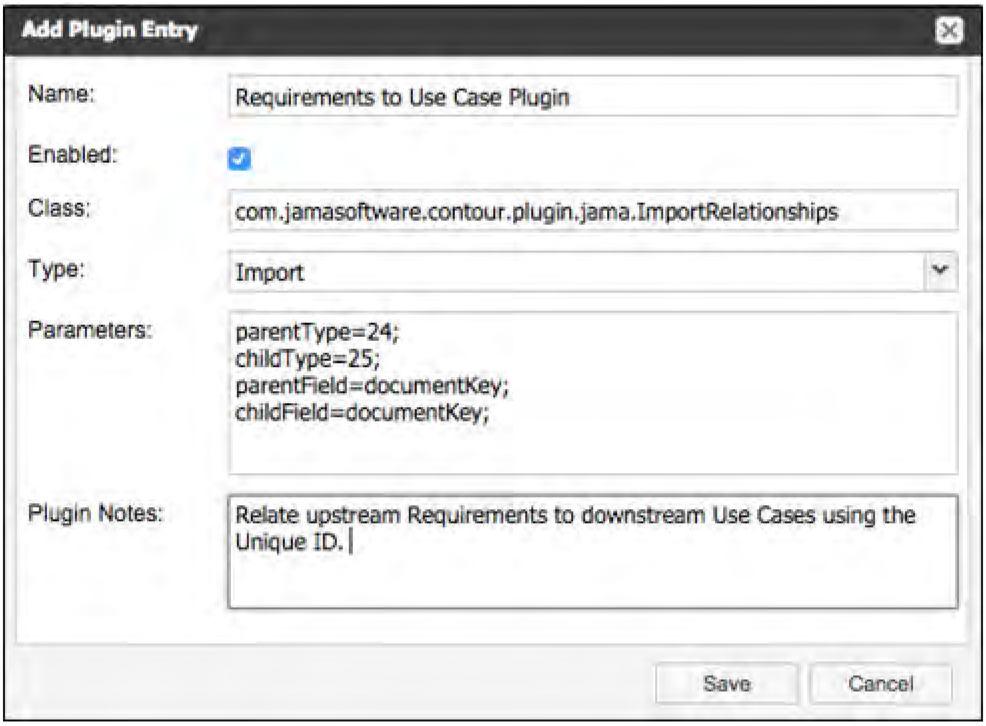
  ```
  com.jamasoftware.contour.plugin.jama.ImportRelationshipsCrossProject
  ```
- **Type:** Import
- **Parameters:** Set relationship parameters [566]

- **Plugin notes:** Add any notes you have here. This will not be visible to end users.

3. When the information is correct, select **Save**.

TIP

For a sample entry of a cross-project import, see Set relationship parameters [566].



Manage tests

As an organization administrator you can do the following to manage tests:

- Include unexecuted test runs in status calculations [629]
- Enable rich text in test steps [602]
- Use an item type as a test case or defect [601]

Manage collaboration

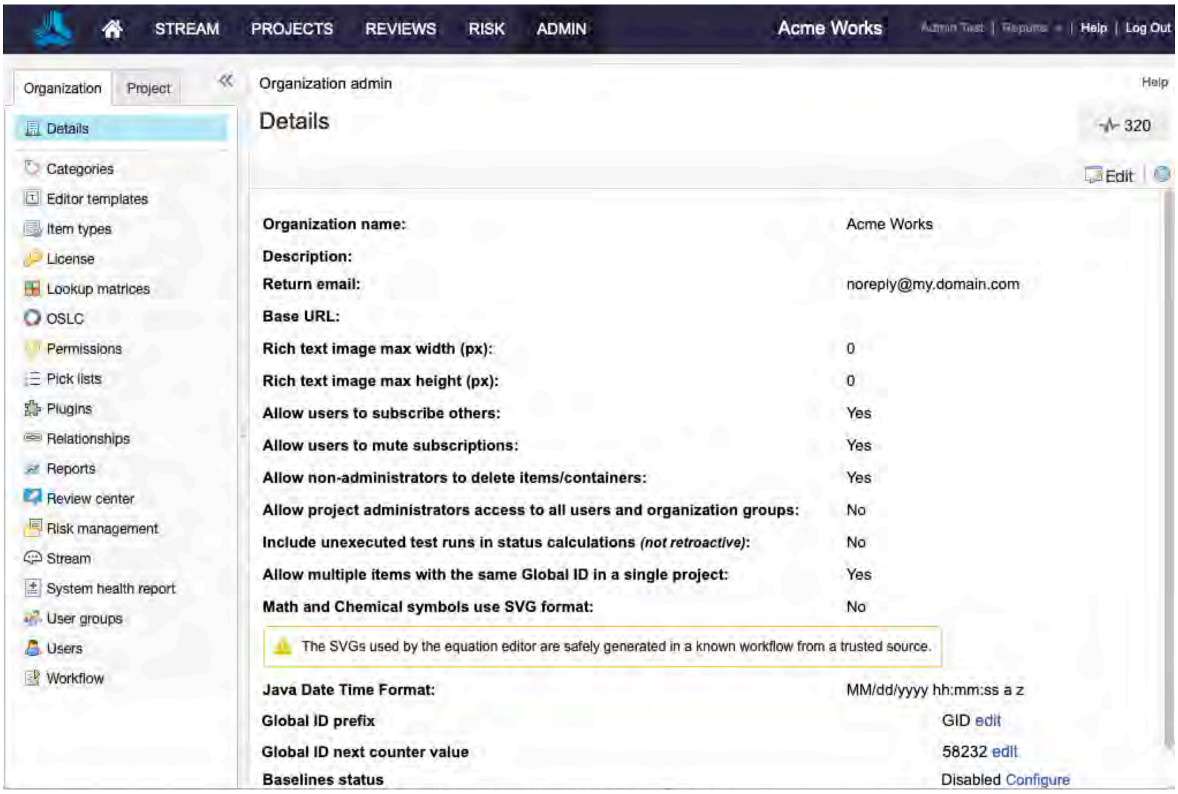
Collaboration includes emails [216], electronic signatures [245], the stream [224], reviews [155], and workflows [218].

Configure organization detail

NOTE

You must have organization administrator permissions to complete this task.

1. Select **Admin > Organization**, then select **Details**.



2. Make selections for the following details:
   - **Organization name**
     The name of your company or team. Each instance of Jama Connect can have only one organization. Organization name is also used for reports.
   - **Description**
     Additional information about your company.
   - **Return email**
     Used as a return address for email notifications. Typically the organization administrator's email address is used or a noreply@example.com.
   - **Base URL**
     Email notifications usually include links to items. The base URL is used to create the URL's sent in the email notifications. Enter the base URL for your Jama Connect installation. Example - http://localhost:8080/contour. Note that attachments (images etc) are dependent on this setting being accurate.
   - **Rich text image max width (px)**
     Maximum pixel width setting that will shrink all images embedded into rich text fields. Default of 0 means no max width will be applied.
   - **Rich text image max height (px)**
     Maximum pixel height setting that will shrink all images embedded into rich text fields. Default of 0 means no max height will be applied.

     IMPORTANT
     Images will retain their ratio when adjusted to fit the maximum setting for height or width. The adjustment only happens during an upload or document import. Images that already exist on the server aren't adjusted. Compression occurs based on the width and height settings.
   - **Allow users to subscribe others**
     Allows users to subscribe other users to items.

- **Allow users to mute subscriptions**
  This feature allows users to mute (turn off) a subscription that has been subscribed to them by another user.
- **Allow non-administrators to delete items/containers**
  When enabled, this setting grants users with create/edit permissions the ability to delete items. When disabled, only organization administrators can delete items.
- **Allow project administrators access to all users and organization groups**
  When disabled, project admins can see only their project groups and users.
- **Include unexecuted test runs in status calculations (not retroactive)**
  Jama Connect uses all associated test runs to automatically calculate test case status.
  Select this box to include unexecuted test runs in the calculation of test case status (default).
  If you don't include unexecuted test runs, and there are no executed test runs, the system defers to including unexecuted test runs.

  > **NOTE**
  > For test cases associated with a single plan, test case status will reflect the status of the test run with the *most recent activity*, which would include unexecuted tests if this is enabled.
  >
  > When the case is associated with multiple plans, the *most urgent status* is chosen, in this priority order: unexecuted, failed, blocked, scheduled, passed.
  >
  > Uncheck this box to remove unexecuted test runs from that priority order.

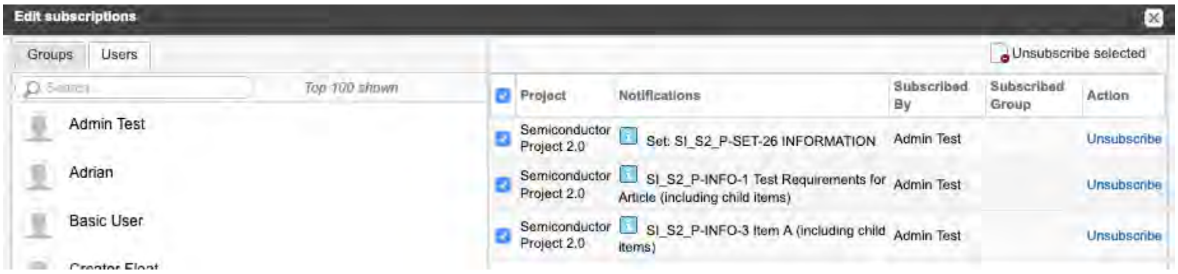
- **Allow multiple items with the same global ID in a single project**
- **Math and Chemical symbols use SVG format**
- **Java Date Time Format**
  The default setting is month/day/year, but can be changed to year/month/day or day/month/year.
- **Change global ID [557]**
- **Configure the baselines status for pick lists**
  Once you create a baseline-specific pick list, you can enable the baseline status to be able to select the pick list. The baselines status pick list can't be edited after you configure it. For more information, see Configure the baselines status for pick lists [559].

Edit user or group subscriptions

Users can subscribe to email notifications. Administrators don't have control over a user's own subscriptions, only to subscriptions added by others. Only the user can control their subscriptions.

> **NOTE**
> You must have organization or project administrator permissions to complete this task.

1. Select **Admin > Organization**, then select **Users**.
2. Select **Subscriptions** in a user row to open the **Edit subscriptions** window.



3. Select the user you want to edit from the left column. On the right you see a list of their current subscriptions.
4. If you're an organization administrator, select **Unsubscribe** in the **Action** column or to remove multiple subscriptions, select the subscriptions you want to remove, then select **Unsubscribe selected**. If you're a project administrator, select the items you want to mute and select **Mute subscriptions**.

TIP

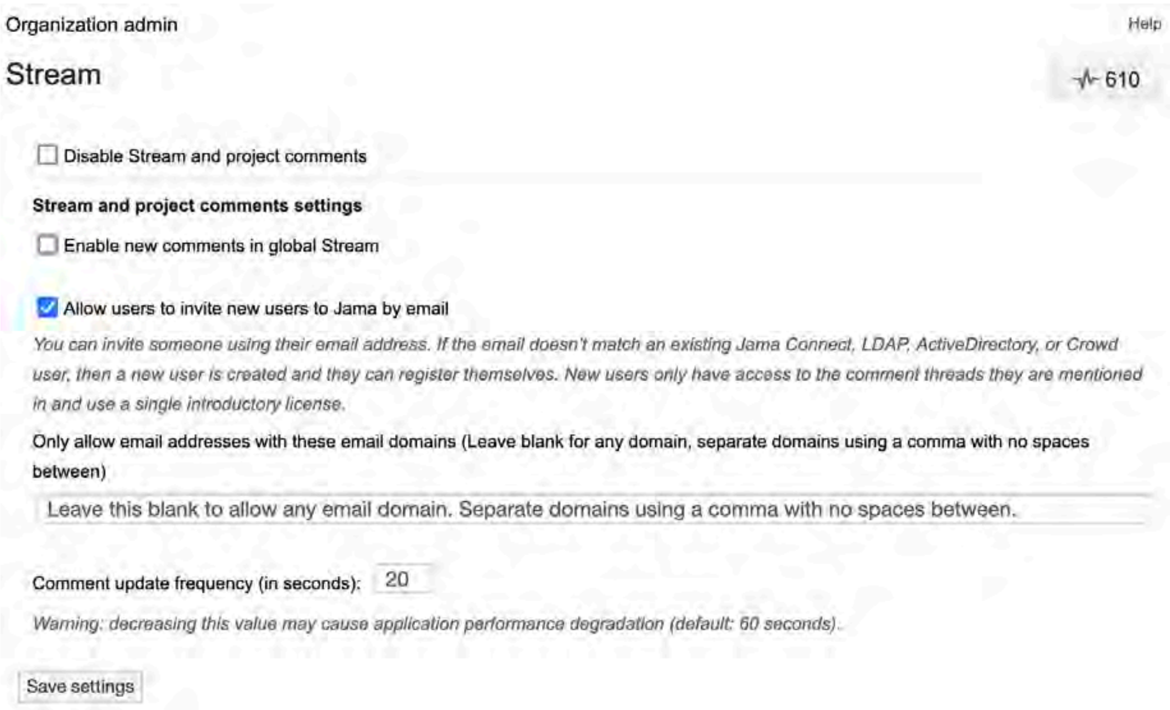
Organization administrators can also edit group subscriptions by selecting **Admin > Organization > User groups > Subscriptions**.

Manage stream comments

NOTE

You must have organization administrator permissions to complete this task.

1. Select **Admin > Organization**, then select **Stream**.



> **NOTE**
> You must separate domains with a comma and avoid adding a space between the comma and next domain.

2. Configure settings as needed:
   - Select **Disable Stream and project comments** to turn off the stream.
   - Select **Enable new comments in global Stream** for new comments from the global Stream page to appear when you access the stream from the header.
   - Select **Allow users to invite new users to Jama Connect by email** if you want users to be able to @mention and invite others who are not registered Jama Software users to their discussion.
     Those who accept invitations automatically receive a temporary license [585] but only have rights to view the discussion threads to which they have been invited. Organization administrators can give them more rights, but will need to change the license type to a permanent one before their 30 day license expires. An organization has unlimited temporary licenses, which have full creator permissions.
   - Enter a domain in the field below this to restrict invitations to email addresses within a specific domain. Enter the domain(s) separated by commas (for example, jamasoftware.com, yourcompany.com).
   - Enter a number of seconds in the **Comment update frequency** to control how often the stream is updated with new comments.
3. Select **Save settings**.

Manage reviews

As an organization administrator, you can do the following to manage reviews:

- Grant permissions to a review administrator [591] to view any review and perform certain administrative tasks whether or not they were invited to the review.
- Assign reviewer licenses [583]

> **IMPORTANT**
> Users with reviewer, test runner, collaborator and stakeholder licenses can participate in reviews, but cannot create reviews. If a user is invited to participate in a review they automatically get a reviewer license. Reviewer licenses do not automatically grant read or write access to project data.

- Configure access to reviews [633]
- Configure item workflow for Approval Reviews [635]
- Determine which default fields are visible in reviews [620]
- Manage permissions by license type [585]

Configure review access

You must be an organization administrators to configure review settings.

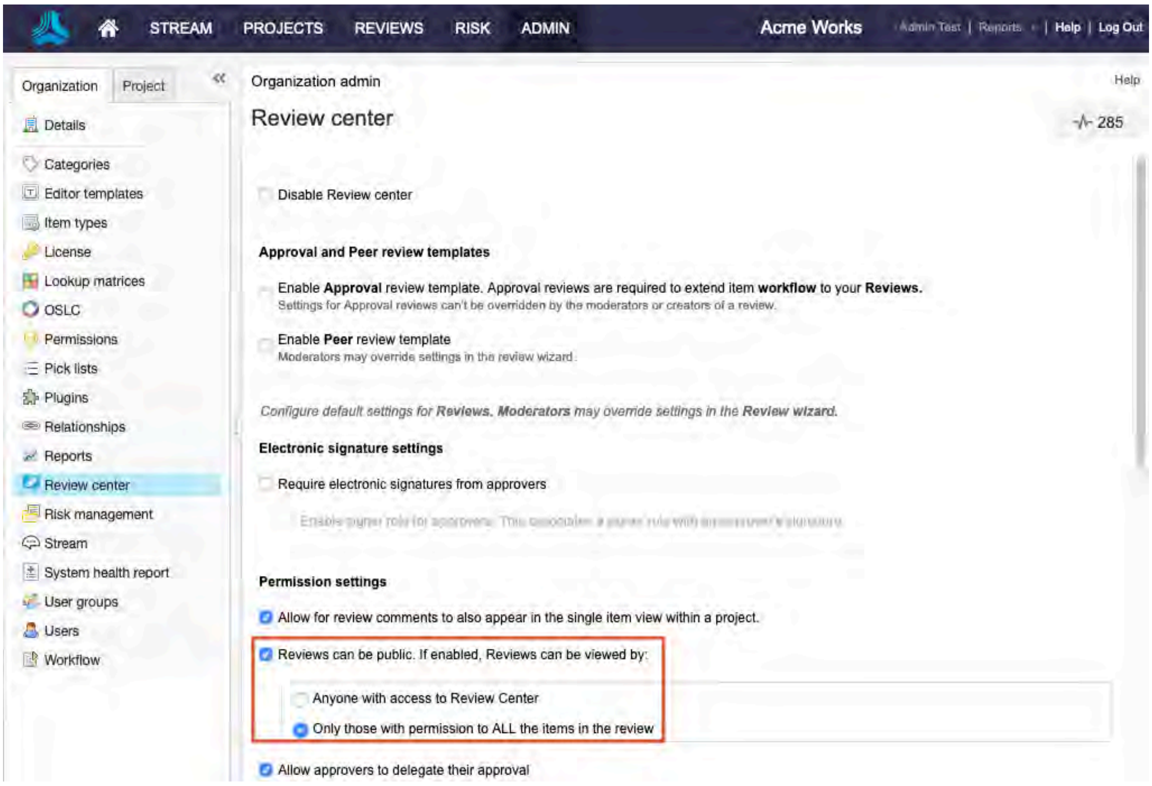
For information about license types and reviewer roles, see Permission by license types [585].

1. Select **Admin > Organization**, then select **Review center**.
2. Select the options you want and select **Save settings**.
   - **Disable reviews**
     Check this box to disable access to reviews.
   - **Reviews can be public**

IMPORTANT

- Reviews created before Jama Connect 8.61.x with the setting **Reviews can be public** disabled and later enabled, *those reviews become public*.
- Reviews created after Jama Connect 8.61.x with the setting **Reviews can be public** disabled and later enabled, *those reviews will remain private*.

To change the visibility of one review, see Settings [162].



Check this box to allow users with review access to have read-only access to any review marked public. This is the default. If enabled, you must select who can see public reviews.

- **Anyone with access to reviews**

  Anyone, regardless of project permissions, can see all items in the review.
- **Only those with permission to ALL items in the review**

  This option only lets users see a public review if they have access to all items in the review.

- **Enable review moderators to invite users outside their project**

  Review moderators can give users who don't have permission to particular items in a project access, so they can review of those items.
- **Allow approvers to add other reviewers and approvers**

  Check this box so that moderators can allow approvers to add more approvers or reviewers. This is the default option.
- **Allow approvers to delegate their approval**

  Check this box so that moderators can allow approvers to delegate their approval role to another reviewer. This is the default option.
- **Allow review moderators to invite new users to Jama by email**

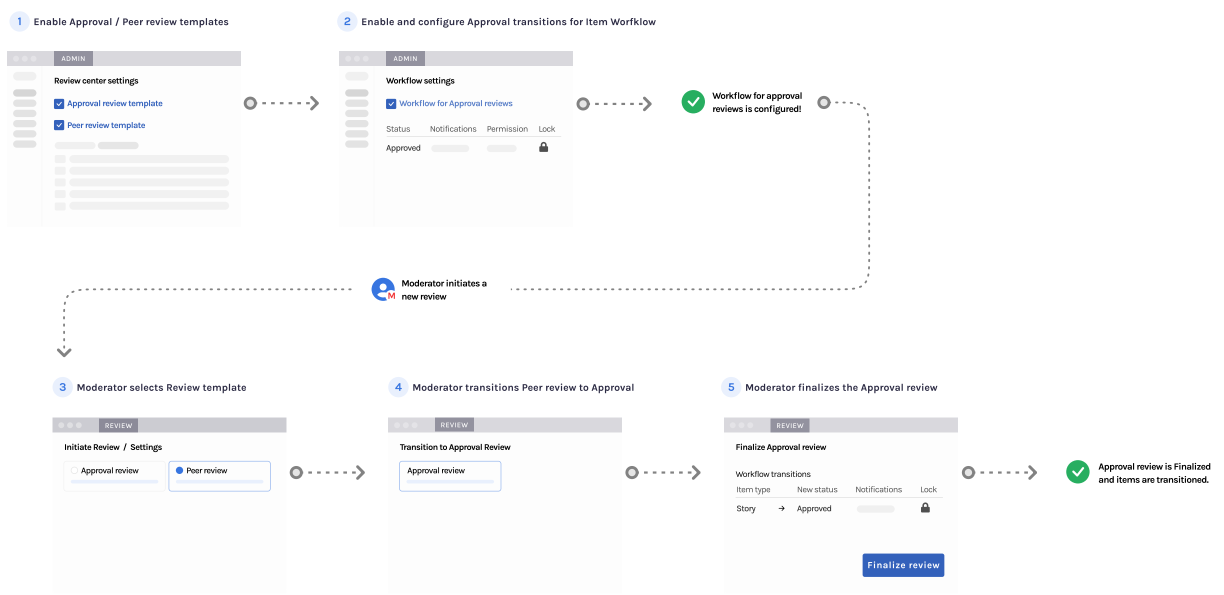
  Check this box so that moderators can invite people without Jama Connect accounts to participate in reviews. If they accept, they are automatically granted a reviewer license.
  - **Only allow email addresses with these email domains**

    This limits who can be invited to those with email addresses you enter here. Leave it blank to allow any domain to be emailed.

Item workflow for Approval Reviews

Integrating Approval Reviews with your item workflow provides a streamlined approach, ensuring reviews are consistent and up to date. When enabled by an organization admin, moderators can use templates for Approval and Peer reviews.

How does the process for using item workflow with review templates work? Review this high-level overview to learn more.



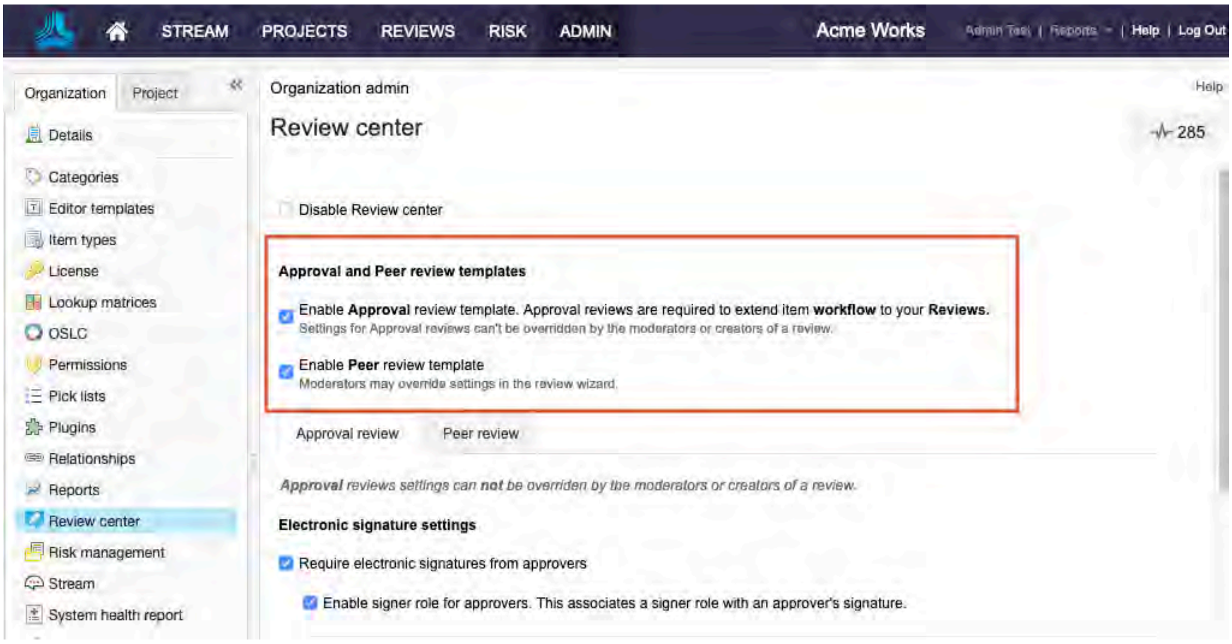
Note: You must be an organization administrator to configure the item workflow for Approval Reviews.

1. From **Admin > Organization > Review center**:
   a. Select **Enable Approval review template**. Approval reviews are required to integrate the workflow for your review process
   b. (Optional) Select **Enable Peer review template**. Peer reviews can be transition to Approval reviews.
   c. Click **Save settings**.
2. From **Admin > Organization > Workflow**:
   a. Select **Enable a workflow transition to be enabled by a finalized Approval review**.
   b. Configure the workflow transition status, notifications, lock state, and permissions that apply to the new approval review transition.
3. Moderator creates a review, then selects the Peer review template in the review wizard.
4. Moderator views a Peer review and transitions it to an Approval review.
5. When the Approval review is done, the moderator selects **Finalize Approval review**.
6. After viewing the review overview and workflow transitions, the moderator selects **Finalize review** to confirm the transition.

Review template types

The review templates are optional. You can use none, one, or both types. You don't need a Peer review template to finalize an Approval review.

> **NOTE**
> By default, the review templates are disabled. You must enable the Approval and Peer review templates to use them.



- **Approval review template** — Use when you want to collect signatures and need a review signed off. If workflow is enabled, you can batch update items [72] to an approved state.
- **Peer review template** — Use when you have a review with ongoing iterations and when changes to items are always in the "ready for approval" state.

Organize projects

A project is a way of organizing your data in Jama Connect and is made up of items, filters, baselines, releases, reports and tests.

As an organization administrator you can grant project administrator permissions to someone [644] who will manage a particular project and its users. Alternatively, an organization administrator can also complete the project-level tasks of a project administrator.

However, there are some tasks related to projects, that must be done by an organization administrator, such as:

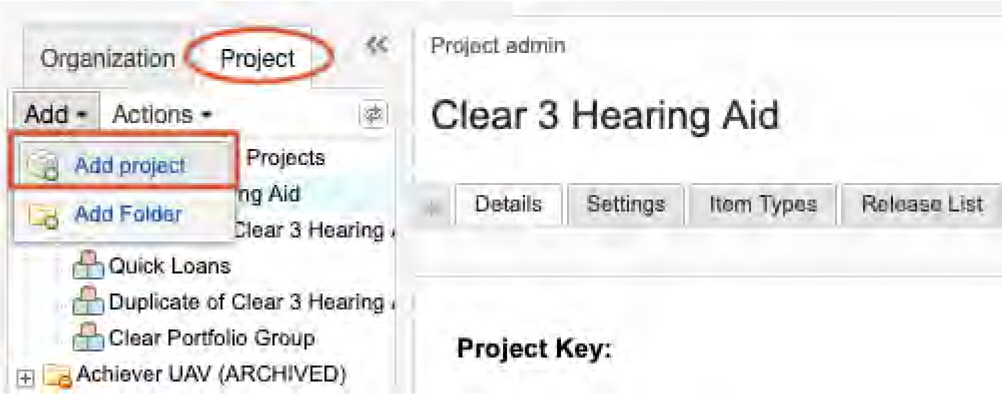
- Add a project [636] (available for project admins with Add Project role)
- Duplicate a project [638] (available for project admins with Add Project role)
- Archive a project [640]
- Grant project permissions [664] (if disabled for project administrators)
- Add or delete groups [576] (if disabled for project administrators)
- Set up projects workflow [654]
- Set up relationship rules [625]

Add a project

If your organization has a lot of projects or products, create a folder called "Product Line" with projects for major releases. You can also create a project to hold a library of common requirements or documents that you can reuse [300].

> **NOTE**
>
> You must be an organization or project admin with the Add Project role to complete this task.

1. Select **Admin > Project**, then select **Add project**.

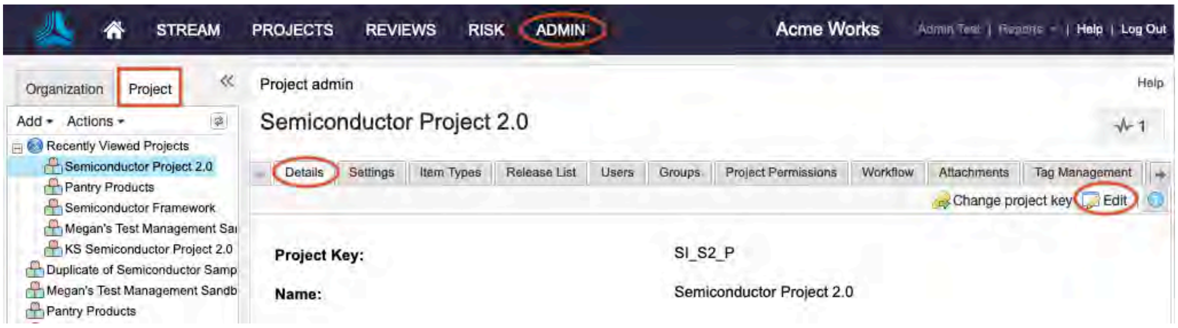


2. (Optional) Add a folder to organize your projects.
3. Set up relationship rules for the project [625]. Only one rule set can be applied to each project.
4. Set up project's workflow [654] as needed.

Edit project details

NOTE
You must have project or organization administrator permissions to edit project details.

1. Select **Admin > Project**, then select **Details > Edit**.



2. Make your changes, then click **Save**.

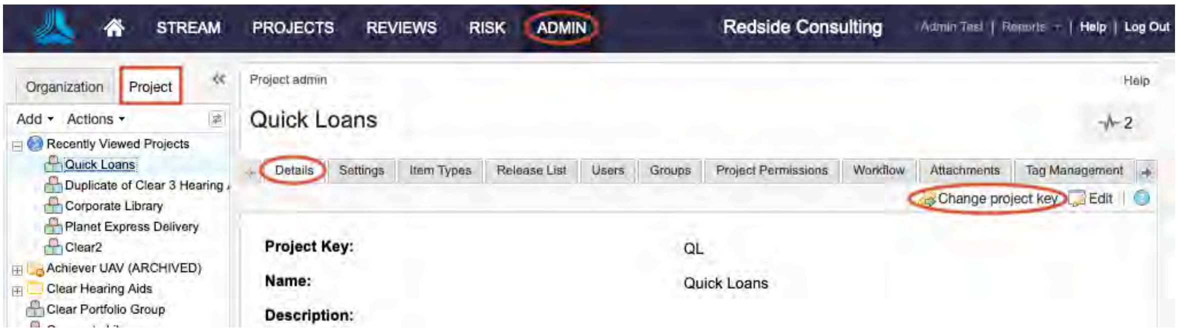
NOTE
The Project Summary widget on the project dashboard uses the **End date** in the **Project Details** window to calculate the number of days until the project is complete.

Change a project key

Updating a project key regenerates the ID for all items in the project.

> **NOTE**
> You must have project or organization administrator permissions to change a project key.

1. Select **Admin > Project**, navigate to the project with key you want to change, then select **Details > Change project key**.



2. Enter the new project key. Keys must be 1–16 characters long, consisting of letters, numbers, and underscores.
3. Select **Submit**. Unique ID [648] of all items within that project are updated to contain the new key.

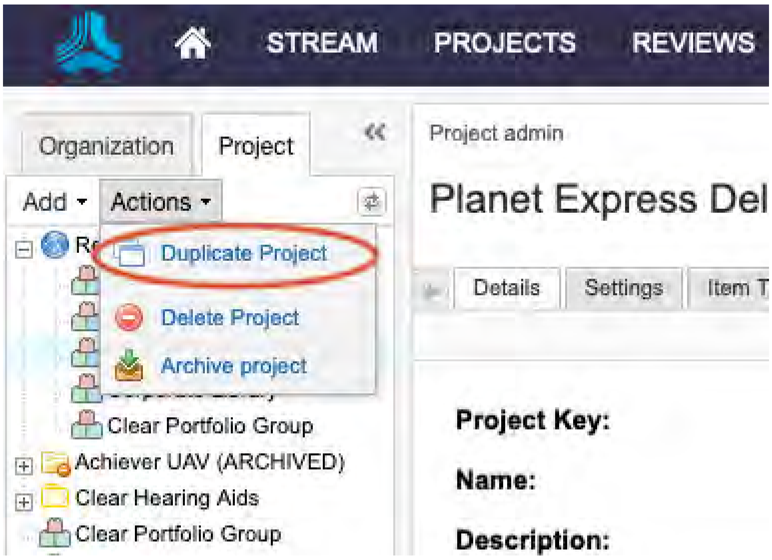
Once the project key is updated, the Unique ID [648] of all items within that project are updated to contain the new key.

Duplicate a project

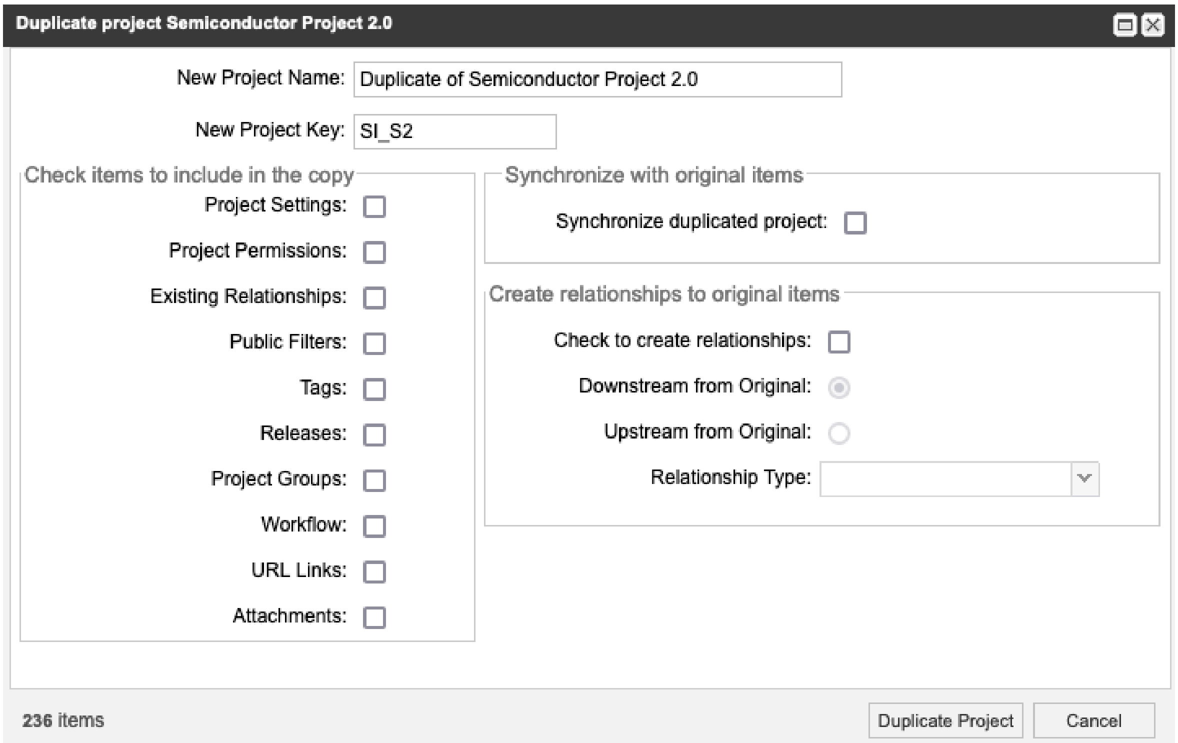
You can duplicate a project to reuse requirements, permission settings, tags and attachments, or start a new project from a template.

> **NOTE**
> You must be an organization or project admin with the Add Project role to duplicate projects.
>
> When you duplicate a project, test plans, test cycles, and test runs are not copied to the target project.

1. Select **Admin > Project**, then select the project you want to duplicate.
2. Select **Actions > Duplicate Project**.



3. Select the items you want to copy and choose to synchronize these items.



- **Project Settings** — Settings in the **Admin > Project** area. For example, visible item types, relationship rule, and Explorer Tree maximum count.
- **Project Permissions** — Project-level permissions that were applied are carried over to the copied project.
- **Existing Relationships** — Relationships between items in the project are copied to the new project.
- **Public Filters** — Public filters created by users or project admins are copied to the new project.
- **Tags** — Tags created by users are copied to the new project.
- **Releases** — Release values in the Releases tab are copied to the new project, which also maintains the release values in the standard “Release” field on items.
- **Project Groups** — Project-level groups are copied to the new project.
- **Workflow** — Workflow customizations (notifications, lock settings, transition permissions) are copied to the new project.

- **URL Links and Attachments** — Hyperlinks and attachments to items, using the links/attachments widget, are copied to the new project.
- **Synchronize Duplicated Project** — All copied items receive a new project ID but maintain the same Global ID as the original project. This allows teams to compare differences between the source project and copied project. Common use cases are for parallel development of variant products or branches of a products release.
- **Create Relationships** — All copied items include a trace relationship to the original item. You can set the direction and relationship type.

4. Click **Duplicate Project**.

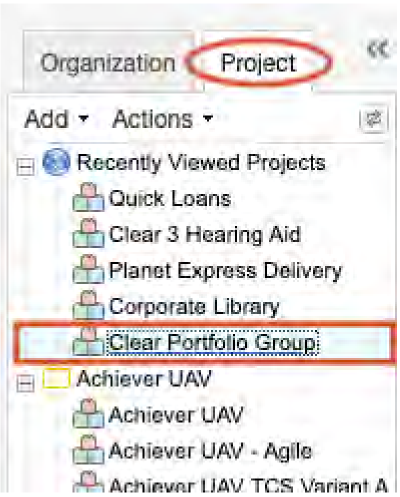
A message appears confirming the project was successfully duplicated.

Archive a project

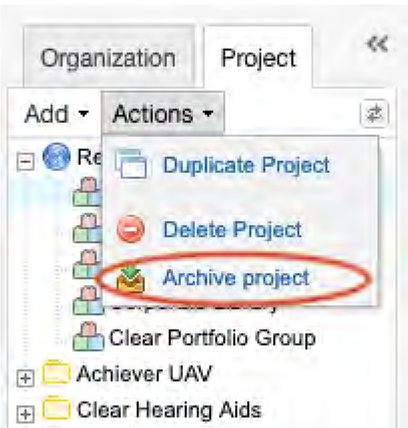
Archiving a project hides it from immediate view from most users, but organization administrators still see the archived project in the project tree with "(ARCHIVED)" in the title. Archiving a project doesn't remove it from the database.

> **NOTE**
> You must have organization administrator permissions to complete this task.

1. Select **Admin > Project**, then select the project you want to archive.



2. Select **Actions > Archive project**.



3. Select **Yes**.

Tips and more

- Archived projects and their content don't appear in filters or search results. When a project is archived, all releases associated with the project are archived.
- Project groups aren't deleted when a project is archived. If no longer needed, delete project before a project is archived.
- Select **Actions > Unarchive** to unarchive a project.

Delete a project

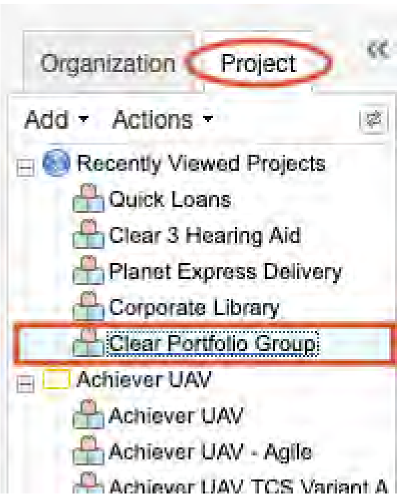
Once a project is deleted, there's no way to restore the project. When a project is deleted, all the data in that project is deleted. However, this doesn't automatically free up space in the database. A database administrator must manually compact the database.

> **NOTE**
> You must have organization administrator permissions to delete a project.

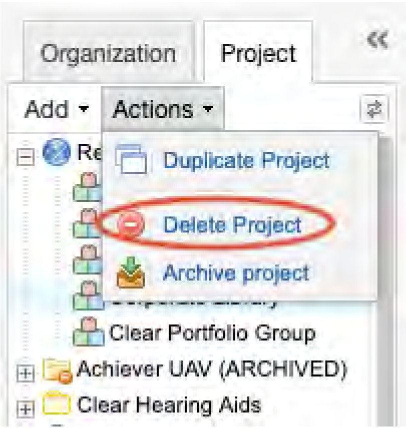
Quick tips

- Archive a project to clean up your workspace or remove a project from view.
- Delete a project to completely remove the project and all its data.
- Projects can be stored in empty folders.
- Project folders must be empty before they can be deleted.

1. Select **Admin > Project**, then select the project you want to delete.



2. Select **Actions > Delete Project**.



3. Review the list of items, confirm the deletion, then select **Delete Project**.

The project slowly deletes in the background, so you can continue working. You receive an email when the deletion is finished.

NOTE

The project isn't removed immediately. A daily task runs at midnight UTC to permanently remove data from the database. Once the project is permanently removed from the database, you can remove item types associated with that project.

Integrations

In an effort to best support product development teams, we offer a number of integration platforms for customers to connect to other application lifecycle management (ALM) software. Jama Software currently offers OpsHub Integration Manager (OIM) and Tasktop Integration Hub (TIH) which are able to provide the necessary platform to create configuration that will manage the integration. These integrations hubs will manage information between Jama Connect and the third-party applications of your choice in a bi-directional manner.

For more information on integrations visit the Community.

These solutions can be managed on-premises or, in the case of the OIM, hosted by OpsHub in their cloud. If you have questions or are interested in purchasing either of these solutions please contact `<sales@jamasoftware.com>`

Integrate OSLC Model Connector with Jama Connect

Open Services for Lifecycle Collaboration (OSLC) is an open-source set of specifications that enables and simplifies tool integration in software development.

The integration of OSLC provides traceability between Jama Connect and OSLC domains, applications, and organizations. The partnership between the Smartfacts Model-Based Systems Engineering (MBSE) platform and Jama Connect helps product development teams increase their level of collaboration and communication.

The result of this collaboration is the OSLC Model Connector, which provides:

- Complete traceability for requirements throughout the product development lifecycle
- Clear visibility into MBSE design artifacts in real-time
- Ability to link requirements to various modeling tools

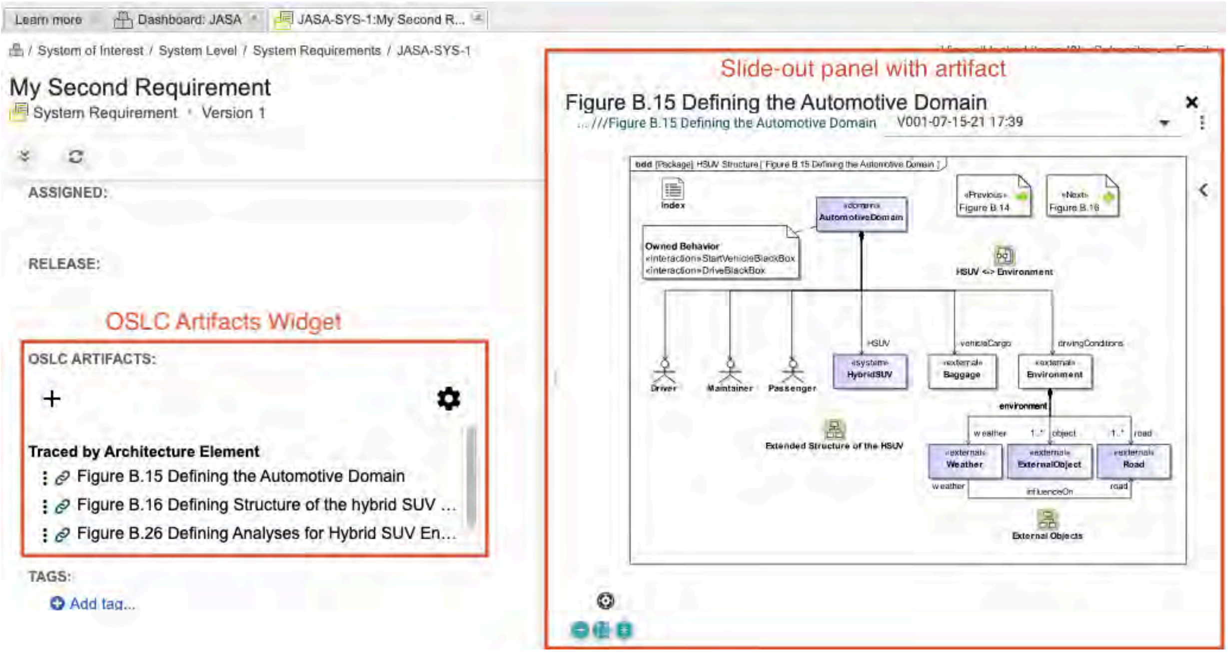
For more information, see Jama Connect OSLC Model Connector Datasheet.

> **IMPORTANT**
>
> You must contact your Jama Software account manager to set up access to the OSLC Model Connector and to MID Smartfacts.
>
> You must have organization admin permissions to enable the OSLC Model Connector and give access to users in your organization.

To set up and use the OSLC Model Connector:

To...	Do this...
Enable OSLC Model Connector	1. Log in to Jama Connect, then select **Admin > Organization > OSLC**. 2. Select **Enable OSLC > Save settings**. A pop-up message confirms that OSLC was successfully enabled.
Grant OSLC Model Connector permissions	1. Select **Admin > Organization > Permissions**. 2. In the row for the user or group you want to provide access, select **Modify**. 3. In the Edit permissions window, select **OSLC**, then click **Save**. A checkmark is displayed in the OSLC column for that user or group. The OSLC permission automatically inherits the permissions that are set for those users or groups.
Configure specific item types for OSLC Model Connector	1. Select **Admin > Organization > Item types**. 2. In the row for the item type you want to configure, select **Edit**. 3. In the Inactive widgets column of Widgets table, select **OSLC Artifacts**. OSLC Artifacts move to the Active widgets column. 4. Click **Save**. That item type now includes the OSLC Artifacts widget.
Use OSLC Model Connector with Jama Connect	1. After the organization admin configures your OSLC permissions, open your project and right-click on the item where you want to add a new item. 2. Click **Add > New item > <item type>**. 3. In the Add item window, enter a name for the item, then click **Save and Close**. The OSLC Artifacts widget appears in Single Item View. 4. In the OSLC Artifacts widget, select **+** to add links to OSLC Artifacts that you configured in Smartfacts. You now see links in the OSLC Artifacts widget. 5. Select a link. A panel slides out to display the artifact.

Example of the OSLC Artifacts Widget in Jama Connect



Project administrator

A project administrator is a role that can be provided for all projects or on a specific project with a focus on permissions, project groups, and workflow customization.

Select **Admin > Project** to configure your projects.

As administrator, all your projects are available from the **Project** tab. The last project you viewed is selected by default.

As a project administrator you can:

- Manage project releases [650]
- Configure project item types [646]
- Manage project users [662]
- Manage project groups [662]
- Manage project permissions [664]
- Manage project attachments [652]
- Manage project tags [652]

- Perform a project cleanup [660]
- Index project data [661]

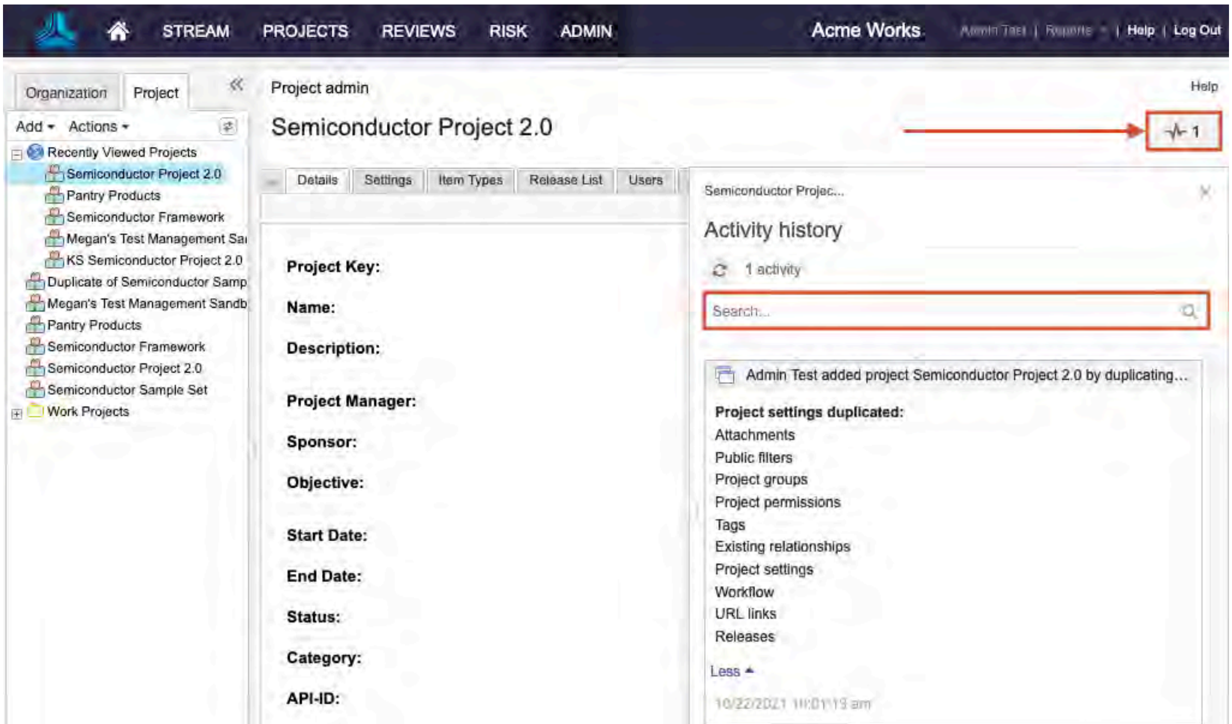
Monitoring changes with the Admin Activity stream (project admin)

The Admin Activity stream provides an audit trail of updates made by project administrators.

To open the Activity stream panel:

1. Select **Admin > Project**, then select the project you want to view.
2. Select the **Activity stream** button on the right side of the panel.

The Activity stream opens. You can search for activities by entering a search term.



The Project admin Activity stream includes the following actions:

Tab	Available information
Settings	Changes in version items; maximum number of items displayed in the Explorer Tree; where to save test run defects.
Item Types	Item types that transition from visible to hidden and from hidden to visible.
Release List	What was added, edited, deleted, archived, and unarchived in a project release.
Project Permissions	Modifications to inherited permissions; added and removed permissions at the project level.
Workflow	Overriden items and who overrode them; removed and configured workflows per item type in a project.
Attachments	Attachments added from the Attachments tab of the Project admin panel.
Tag Management	What was added, deleted, and edited to a tag in a project.
Index	When a project level index was initiated.
Clean up	When project cleanup and project baselines cleanup are initiated.

Manage projects

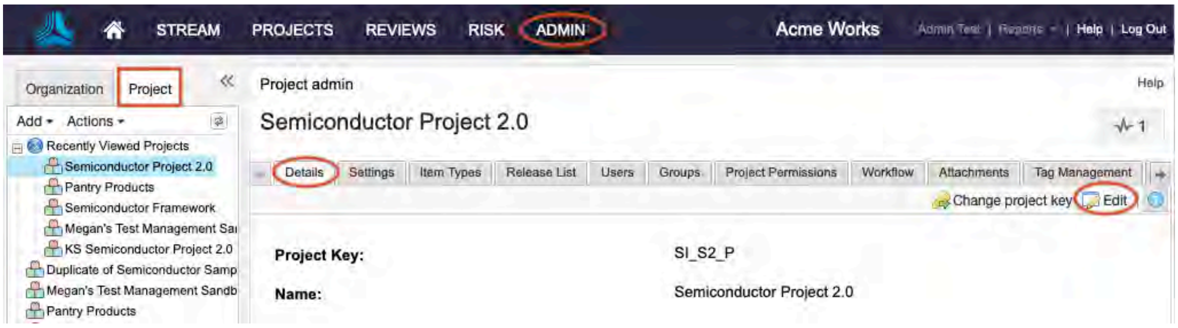
As project administrator you have permissions to modify, set up, and organize various aspects of the project and content. You can also manage users [662] that participate in the project.

You can also choose to manage the project dashboard [379], although that doesn't require project administrator permissions.

Edit project details

> **NOTE**
> You must have project or organization administrator permissions to edit project details.

1. Select **Admin > Project**, then select **Details > Edit**.



2. Make your changes, then click **Save**.

> **NOTE**
> The Project Summary widget on the project dashboard uses the **End date** in the **Project Details** window to calculate the number of days until the project is complete.

Configure project item types

A hidden item type prevents users from creating new items or sets of that type. Sets or items that are created under a visible item type, and are then hidden, are still functional in Jama Connect.

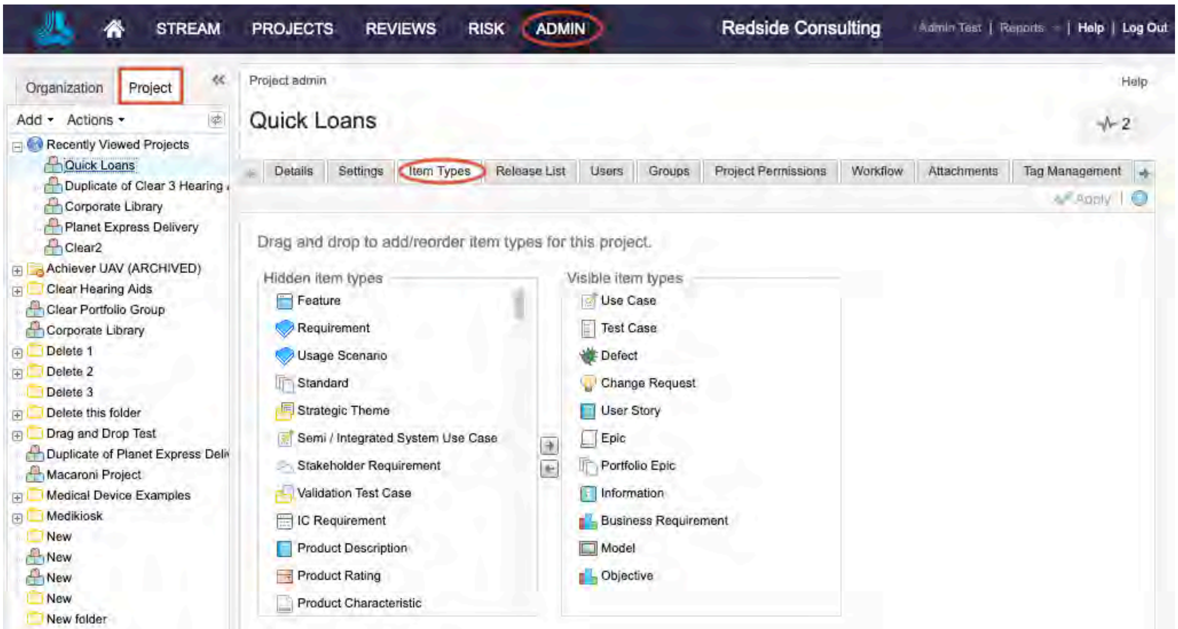
Quick tips

- By default, a moved item type places itself at the end of the list. Drag and drop item types to reorder them.
- An organization administrator can also configure views [620] for all projects, and an individual user can configure fields [48] for their personal settings.

> **IMPORTANT**
> You must have organization or project administrator permissions to configure project item types.

You can hide item types from a particular project with the following steps:

1. Select **Admin > Project**, then select **Item Types**.

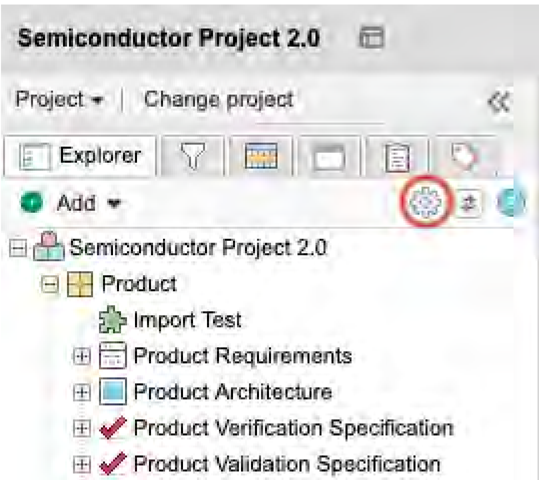


2. Double-click on any item type to move it between the **Hidden item types** and **Visible item types** columns.
3. Click **Apply** to save your changes.

Configure default Explorer Tree settings

> **IMPORTANT**
> You must have organization or project administrator permissions to configure default Explorer Tree settings.

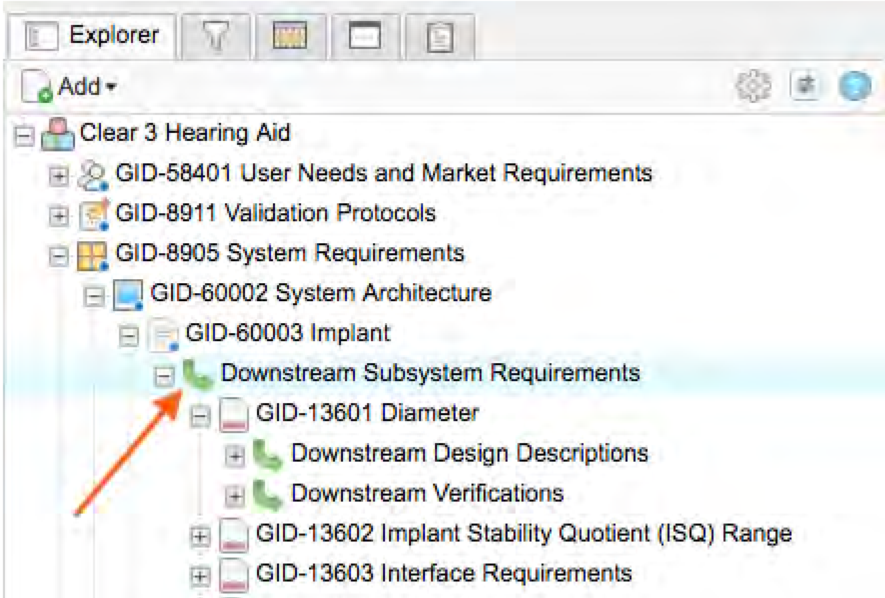
1. Select the **gear icon** at the top of the Explorer Tree.



2. Select the **Default settings** tab, then select the default settings.
   - **Show item IDs**
     This displays the unique ID [648] (as in PROJ-REQ-25) before each item.
   - **Display global ID**

This displays the global ID (as in GID-8845) before each item. This can be helpful if the item is copied and synchronized.

- **Show only folders / hide items**
  This hides items from view in the Explorer Tree. Components, sets, and folders are still displayed. This can improve performance when your project has a large number of items.
- **Show outline numbering**
  This displays a number scheme of order and depth in the Explorer Tree. Root level items have numbers like 1, 2, or 3. Child items contain the parent item number as well as its own number, like 1.1, 1.2, or 1.1.5.
- **Show relationships in Explorer Tree**
  This displays downstream relationships of items in the Explorer Tree. Select the green downstream arrow to open the related items in List View.



> **CAUTION**
> If you relate items back to themselves, you might create an infinite loop that causes the Explorer Tree to expand. To avoid this, don't relate items in a way that creates an infinite loop.

3. Select **Apply** and **Close** to give other users the option to select these default settings.

Project key

The project key is a unique identifier, automatically created with each project, that makes up the first part of each item's Unique ID.

Project or organization administrators can change a project key. [637]

Unique ID

Unique IDs, or item IDs, identify an item with a project key, set key and a set counter. Unique IDs remain the same even if item name or content is changed. They can't be edited or duplicated.

- **Project key**
  A project key identifies which project an item belongs to. Project keys must be unique to each project, and must be 1–16 characters long, consisting of letters, numbers, or underscores. A project or organization administrator can change the project key [637], but that doesn't reset the numbering of items.

- **Set key**
  A set key identifies item sets for each project. You can use the same set key across sets or projects. Project or organization administrators can change a set key [603] to better meet your organization's needs.
- **Set counter**
  The set counter is a number automatically added to the item. Unlike the Global ID counter, you can reset the set counter when you change the set key.

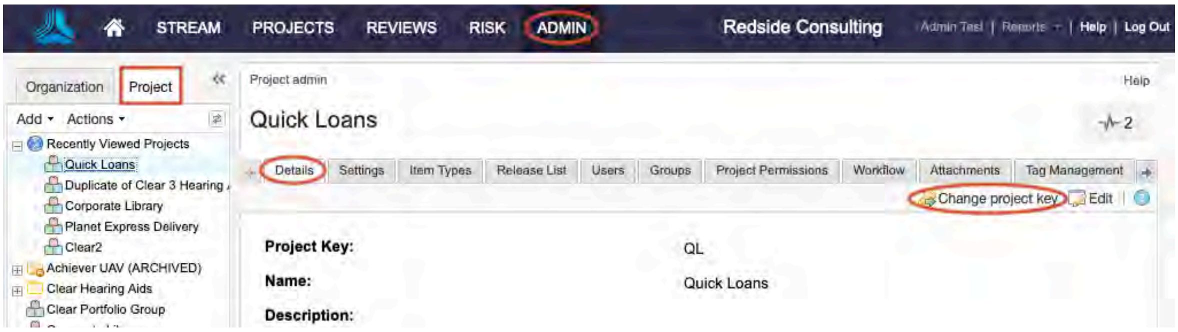
> **NOTE**
> It's possible to use the set key across multiple sets of the same item type. However, keep in mind that the set counter is shared across all items using the same set key.

Change a project key

Updating a project key regenerates the ID for all items in the project.

> **NOTE**
> You must have project or organization administrator permissions to change a project key.

1. Select **Admin > Project**, navigate to the project with key you want to change, then select **Details > Change project key**.



2. Enter the new project key. Keys must be 1–16 characters long, consisting of letters, numbers, and underscores.
3. Select **Submit**. Unique ID [648] of all items within that project are updated to contain the new key.

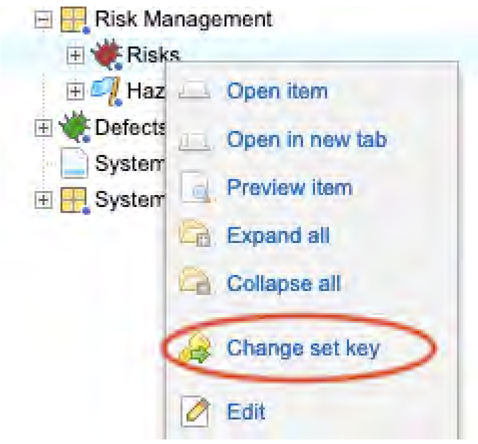
Once the project key is updated, the Unique ID [648] of all items within that project are updated to contain the new key.

Change a set key

You can edit a set ID or renumber items in a set at any time.

> **NOTE**
> You must have organization or project administrator permissions to complete this task.

1. Select **Projects**, right-click on the set you want to modify, then select **Change set key**.



2. In the **Confirm Set Key Change** window that opens, enter the new set key, which must be 1–16 characters long, consisting of only letters, numbers, or underscores.
3. Select **Regenerate Item IDs** to reset the counter and apply new numbering to all existing items. Item counters start over at 1.

> **CAUTION**
> Don't select **Regenerate Item IDs** if you want to restart numbering on newly created items. Leave existing items as they are.

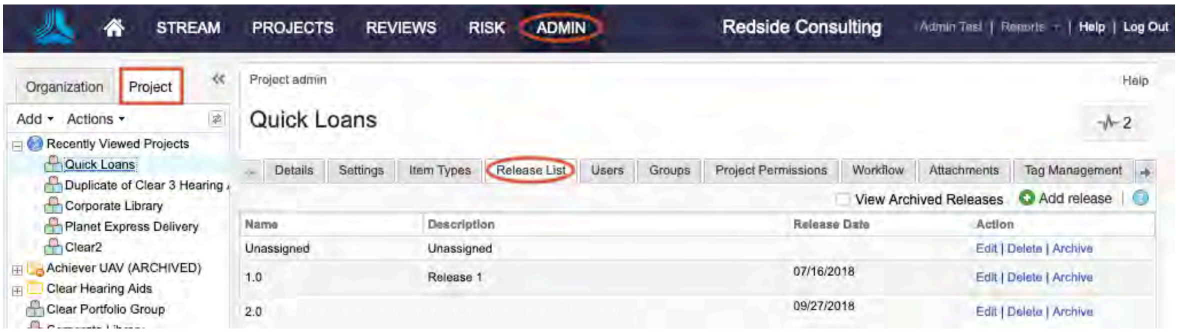
Manage releases

A release is a group of items that are developed together and mapped to a specific completion date. Users can view releases and use them to assign items to a release.

> **NOTE**
> You must have project or organization administrator permissions to manage releases.

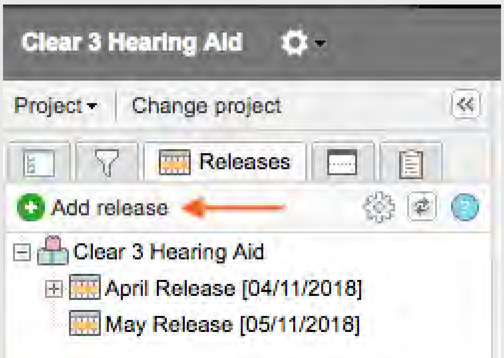
Project and organization administrators can set up and manage releases that others use. The releases in the release list are used to populate the pick list for the **Release** field on an item. Releases are automatically sorted by release date in the release list and in pick lists.

1. Select **Admin > Project**, then select **Release List**.



2. Select the option you need:
   - **Add a release**
     Select the green **Add release** button in the toolbar to open the **Add/edit release** window. Add the name, description, release date, then select **Save**.

     ### TIP
     You can also add a release from the **Releases** tab at the top of the left panel.

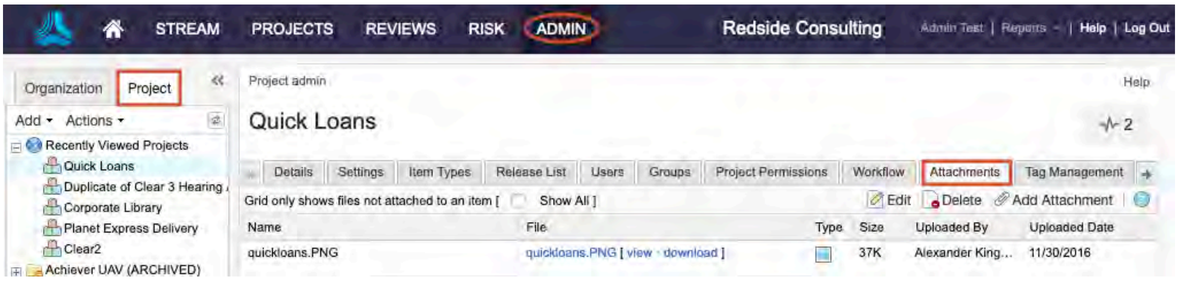
   - **Edit a release**
     Select **Edit** in the **Action** column for the release you want to edit. This opens the **Add/edit release** window where you can edit the name, description and release date and select **Save**.
   - **Delete a release**
     Select **Delete** in the **Action** column for the release you want to delete. Select **Yes** to confirm. Releases can't be deleted if any items are assigned to them. To remove all assigned items, select the **Releases** tab and move all assigned items from that release to another release.
   - **Archive a release**
     Select **Archive** in the **Action** column for the release you want to archive. Select **Yes** to confirm. You can view archived releases by selecting **View archived releases** in the toolbar where you can select **Unarchive**.
     Archived releases don't appear in filters or search results, but items assigned to any archived release do. The **Release** field for these items is populated and has "(Archived)" appended to the release's version field.

NOTE
Administrators can also configure default release settings [261] that show how releases are displayed.

Manage attachments

> **NOTE**
> You must have project or organization administrator permissions to manage attachments.

1. Select **Admin > Project**, then select **Attachments**.



2. From the toolbar, you can add, edit, or delete attachments.

3. In the **Add/Edit File Attachment** window, add or edit information about that attachment. Select the History bar at the bottom of the window to pull up a version history for that attachment to compare versions.
4. Select **Upload and Save**.

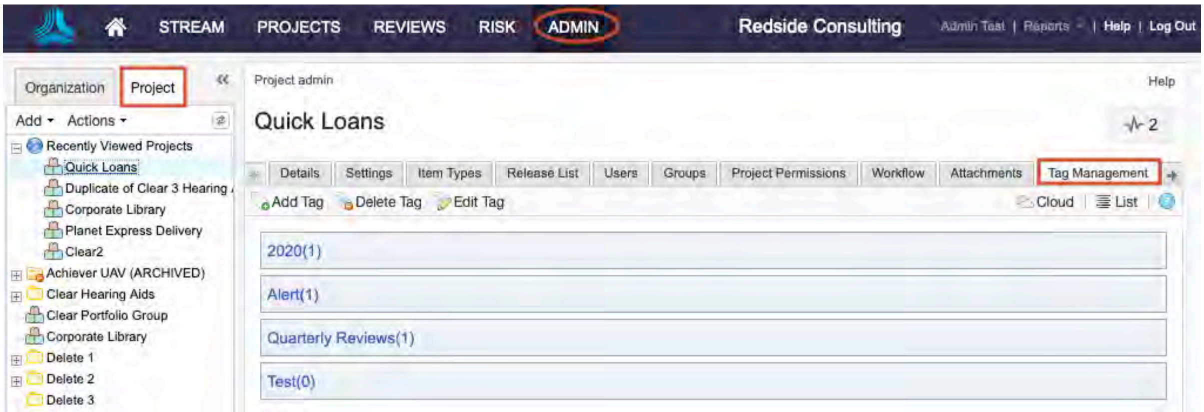
From Single Item View, any user can now add that attachment [84].

Manage tags

From the **Tag Management** tab, you can view, edit, and create tags.

> **NOTE**
> You must have project or organization administrator permissions to manage tags.

- Select **Admin > Project**, then select **Tag Management** to add, edit, or delete tags.



From Single Item View, any user can add that tag [83].

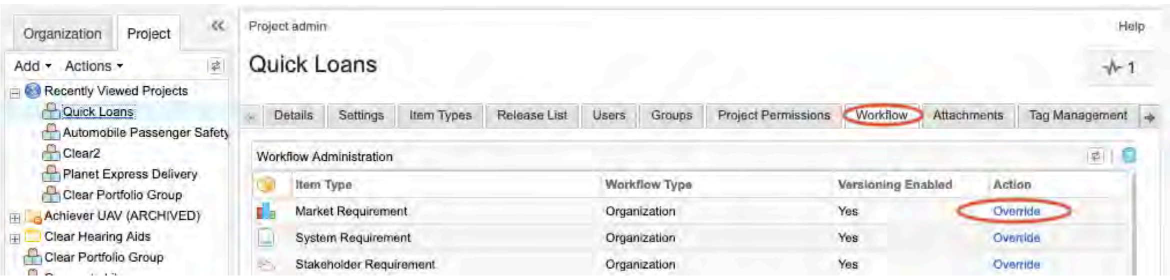
Manage workflows

NOTE

You must have project or organization administrator permissions to manage workflows.

1. To manage workflows as a project administrator, select **Admin > Project**.

2. Select the **Workflow** tab, then select **Override** for the workflow you want to edit.



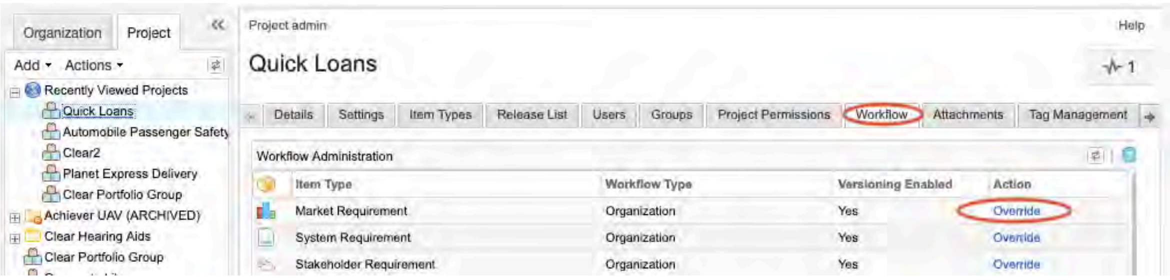
3. In the Workflow Configuration section, set up a project workflow [654], then click **Save**.

Set up projects workflow

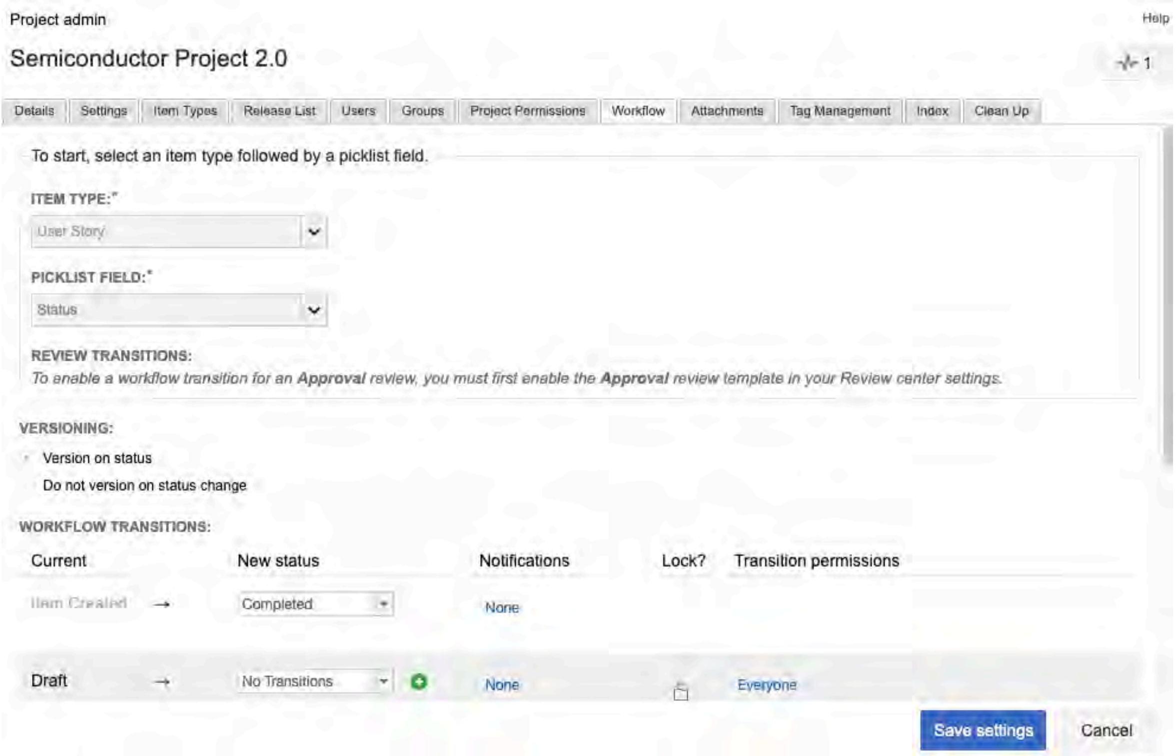
> **NOTE**
> You must have project or organization administrator permissions to set up projects workflow.

1. To manage workflows as a project administrator, select **Admin > Project**.

2. Select the **Workflow** tab, then select **Override** for the workflow you want to edit.
   If the organization administrator has configured it [618], select **Override** to make changes to any workflow.



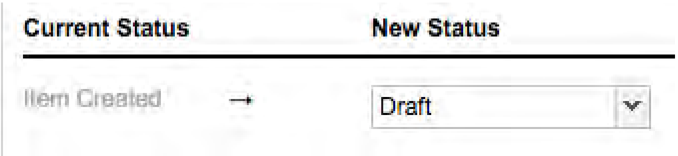
   You are prompted to confirm the changes.
3. In the Workflow Configuration section, select the following options for the workflow you're creating.
   - **Enable workflow for this organization**
   - **Allow project managers to override workflows on a project**
     Important: If you don't enable this option, performance might be impacted and it could trigger a long transaction if the organization has over 10 workflows.
   - **Workflow for Item Type**
   - **What picklist field should workflow apply to**
   - **Version items on workflow status change**



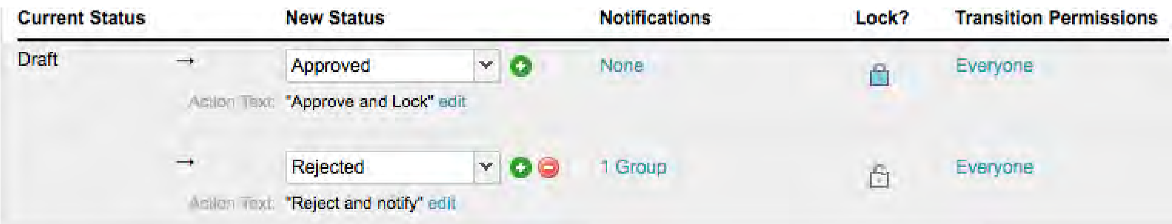
NOTE

You can only associate one pick list field per item type. The field you associate must be a pick list field; multi-select lists don't work.

4. In the first row of the Current Status table, specify an initial state for the item when it's created. This is the default status of the item, and it overwrites the default field status if one is set.



5. In the following rows, specify the workflow, who is allowed to make those transitions, and the actions that occur when an item changes status. For example, like locking the item or sending an email.



TIP

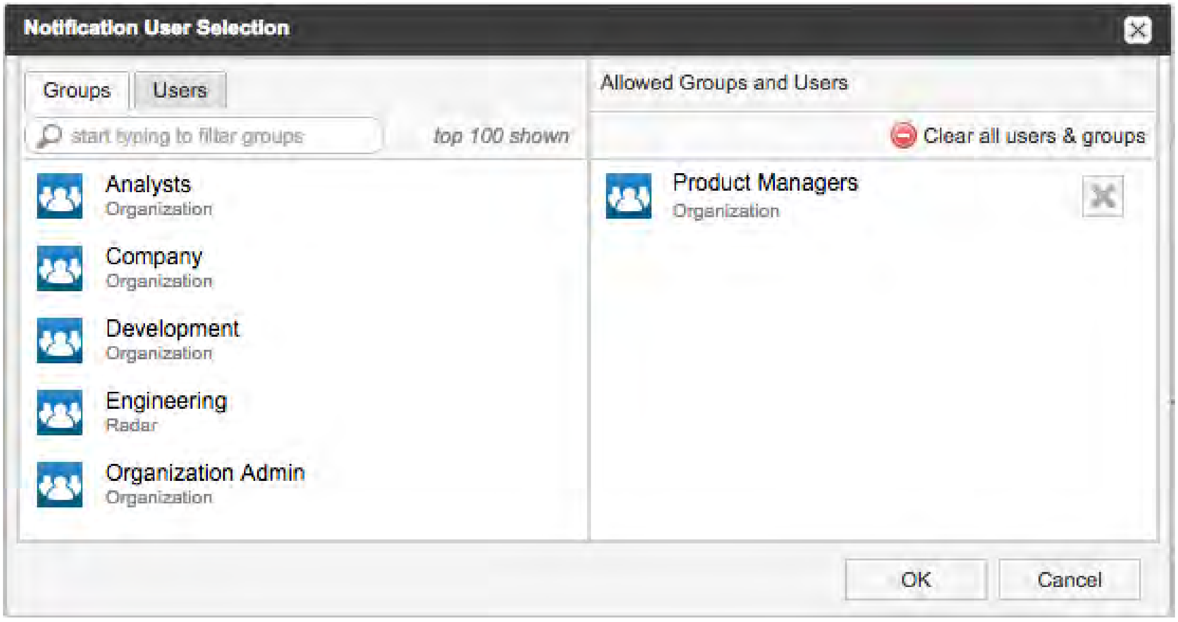
Use the pull-down to move the current status to a new status and trigger related actions or notifications.

6. Edit the **Action text** to make messaging more useful or clear.
7. Use the **green plus button** or the **red minus button** to add or remove transitions in your workflow.

8. Select the **lock icon** to lock or unlock the item when it reaches a certain status (like "draft," "approved" or "complete").

> **NOTE**
> This lock is a "system lock" that's slightly different from a user lock. A user lock can still be edited by the user who locked it and easily unlocked by the same user or an admin. If an item is in a system lock, no one can edit the item. Admins can still unlock the item, but we recommend using transitions to move an item to a state where it can edited again.

9. Select the **link in the Transition permissions column** to choose who can make these transitions.
10. Select the **link in the notifications column** to send an email notification when a user transitions the status of an item.



If you send a notification, a message appears where you can document the transition and reason for changing the status.

11. Click **Save**.

Configure workflow

Workflows are not project-specific. When the organization administrator configures a workflow it applies to the item type across projects.

> **NOTE**
> You must have organization or process administrator permissions to complete this task.

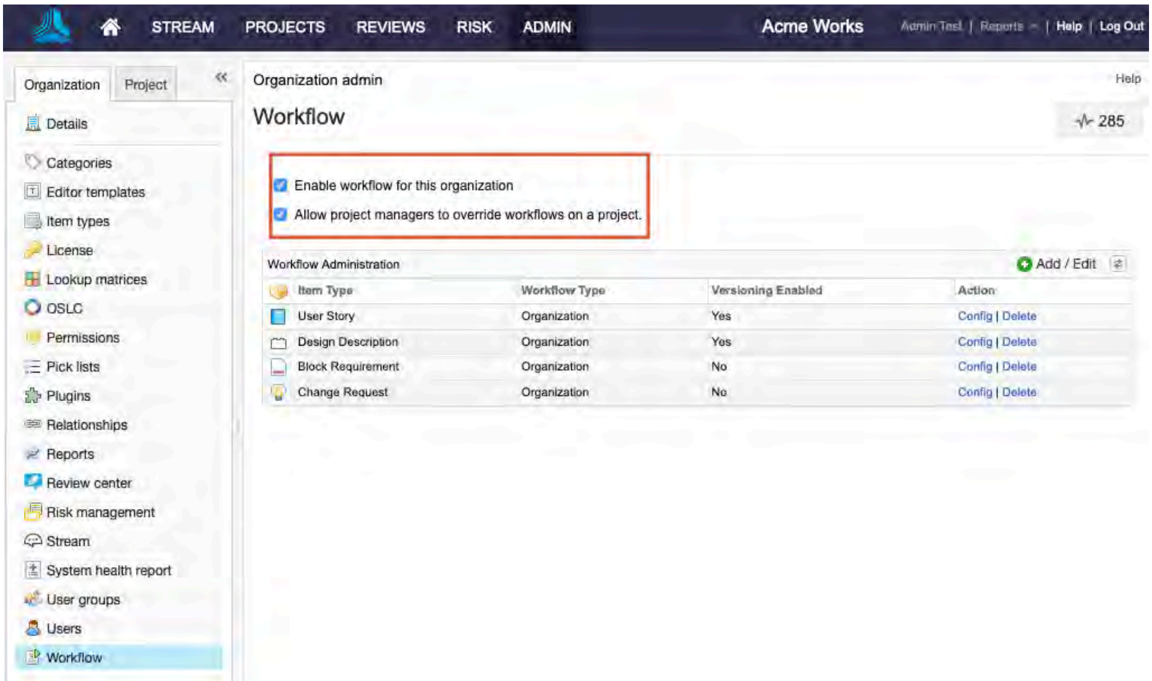
Important considerations

- If the organization administrator selects **Allow project managers to override workflows on a project**, the project administrator for each project can set up the workflows.
- If you disable a workflow, Jama Connect stores your settings for later use.

- An organization administrator can disable a workflow from the Workflow Administration section.

1. Select **Admin > Organization**, then select **Workflow**. If you disable a workflow, Jama Connect stores your settings for later use.
   - Select **Enable workflow for this organization**.
   - (Optional) Select **Allow project managers to override workflows on a project**.

   IMPORTANT
   If you select or deselect either option, it could trigger a long transaction that might impact system performance.

   This enables workflow for all projects using this item type. It can't be disabled at a project level.
2. In the Workflow Administration section, select **Add/Edit** to start a new workflow, or select an existing workflow and then **Config** in the **Action** column to edit it.

3. A project or organization administrator can continue setting up the workflow [654] from here.

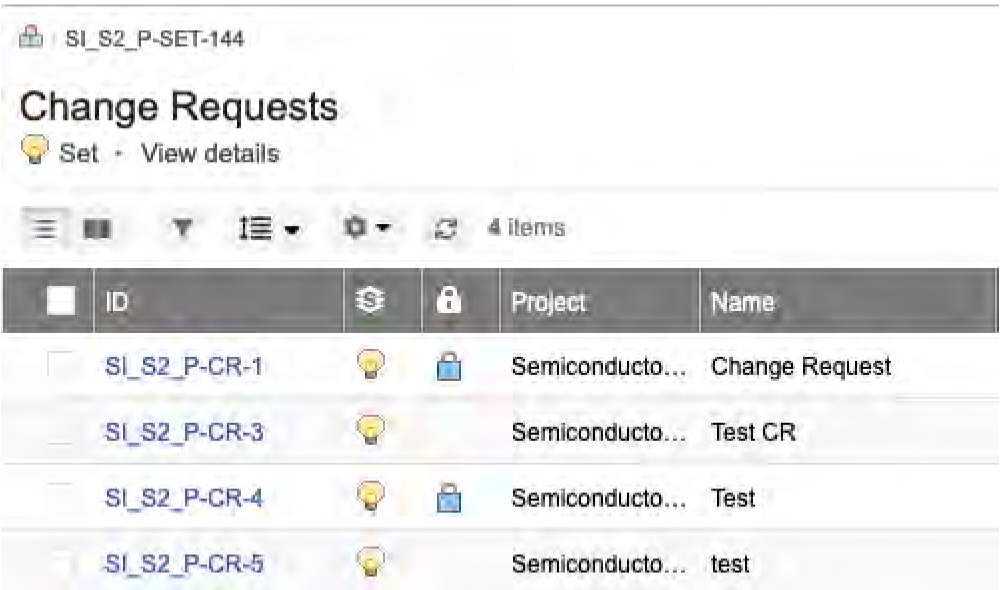
Lock items in a workflow

Locking items in a workflow can help avoid unwanted changes. For example, a project administrator might want to leave items unlocked while in "draft" status, but lock them when they reach "approved" status.

NOTE
You must have organization or project administrator permissions to configure workflow.

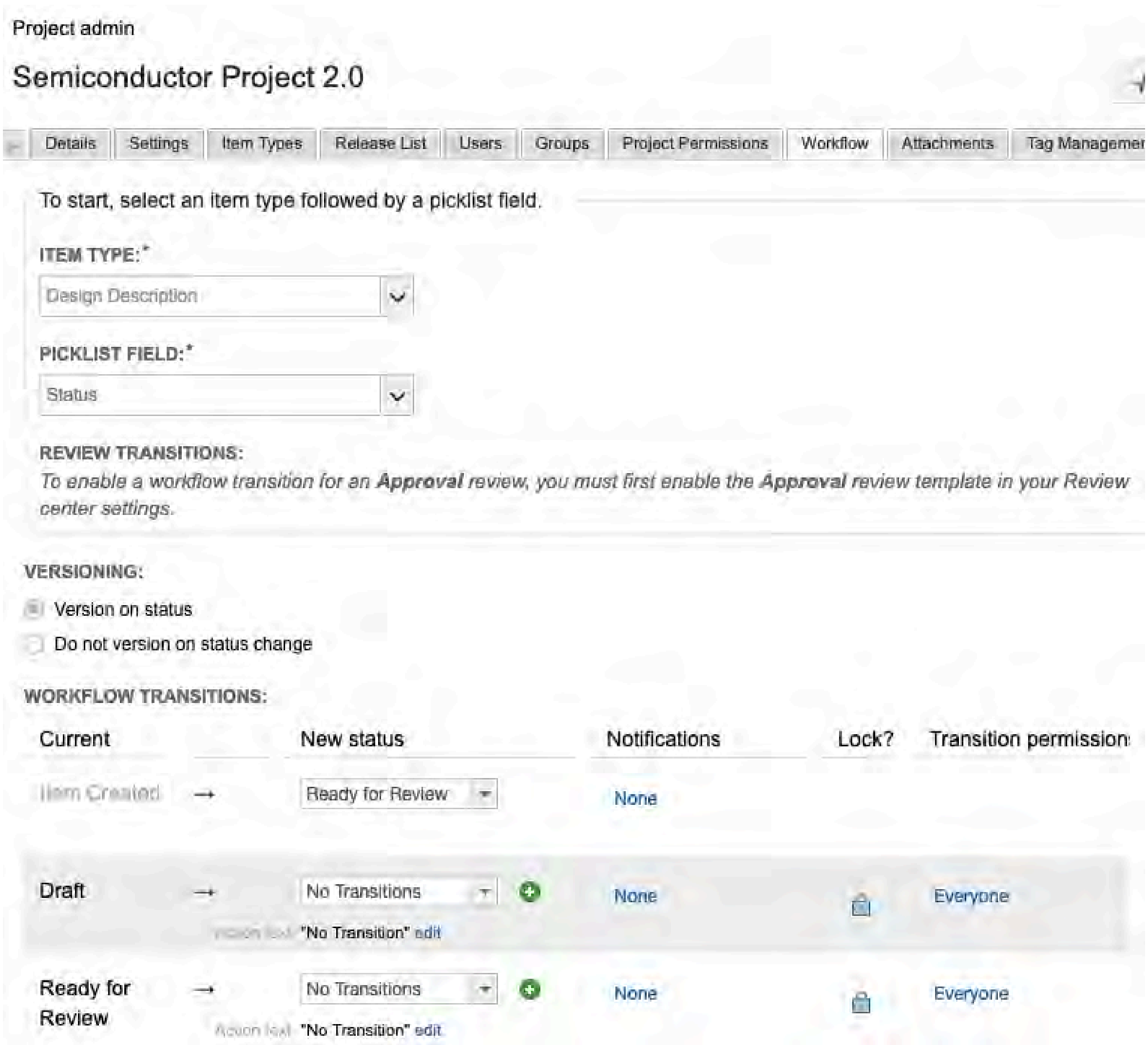
Items can also be automatically locked by the workflow [218]. These items show a gray lock after their name and a blue lock in List View.

System-locked items unlock when transitioned through the workflow or by an organization or project administrator.



To add an automatic lock to the workflow:

1. Select **Admin > Project > Workflow**.
2. For the item you want to lock, select **Override**.
3. In the **Lock?** column, select the lock icon to include (or remove) an automatic lock in the workflow.



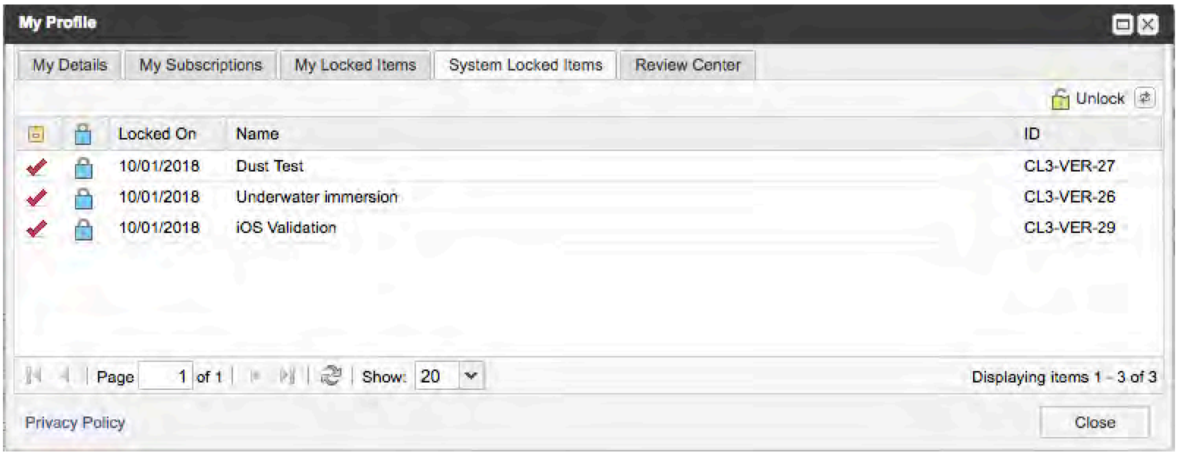
4. Click **Save settings**.

Unlock system-locked items

Anyone can view the list of system-locked items regardless of permissions.

> **IMPORTANT**
>
> Organization admins can unlock system-locked items.
>
> System-locked items can be unlocked by a project admin with admin permissions for those items.

1. Select your name in the header to open the **My Profile** window.
2. Select **System Locked Items** to see all items that were automatically locked [222] (blue lock).

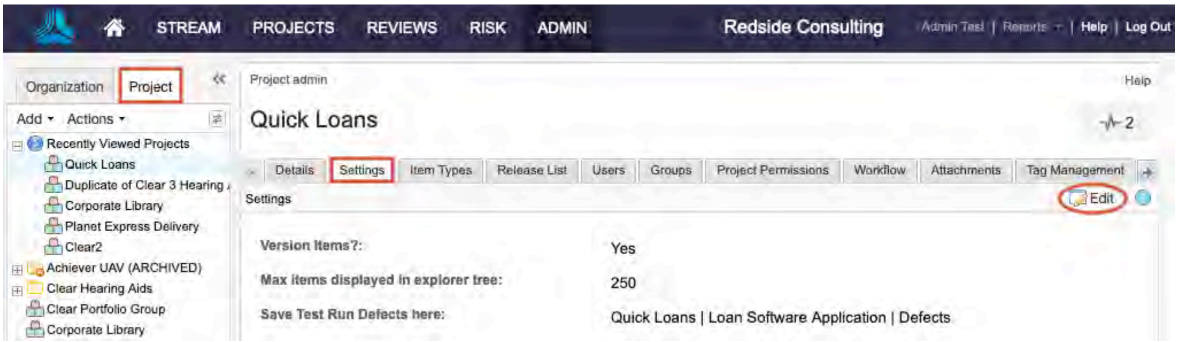


3. Select the items you want to unlock, then select the **Unlock** button in the top right corner of the window.

Configure project settings

> **IMPORTANT**
> You must be a project or organization administrator to complete this task.

1. Select **Admin > Project > Settings**, then select **Edit**.



2. On the Settings page, you can make the following changes:
   - **Version items**
     Turns automatic versioning on and off when using the **Save and close** option. You might want to turn versioning off while initially creating and organizing the project.
   - **Max items displayed in Explorer Tree**
     Sets the maximum number of items that are displayed per container (project, component, set, or folders) when using the Explorer Tree. After an import there might be thousands of items so this can be configured to improve performance when working with large data sets.
   - **Save test run defects here**
     Defects that are recorded in the **Test execution** window are automatically sent to this location in the project. The Defect item types must be a Visible item type for them to appear. For more information, see Configure project item types [646].

Project and baseline cleanup

Project cleanup can be used to remedy issues that occur from inconsistent references or inactive items.

For example, users might experience inconsistencies between the Explorer Tree, List View, filter results, or see these messages:

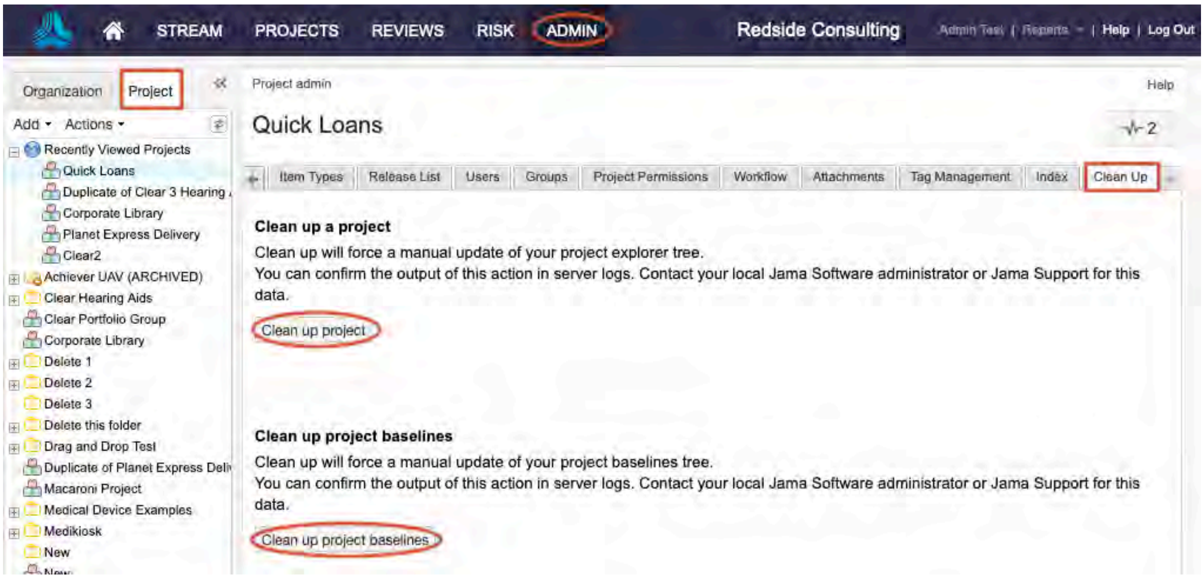
- "This item was deleted."
- "You don't have permission to perform this action."

Project cleanup recalculates sort orders and compares them with the database to solve these problems. It doesn't require re-indexing or downtime.

TIP

Perform a cleanup at a time of low usage.

- Select **Admin > Project > Clean Up**, then select **Clean up project** or **Clean up project baselines**.



A confirmation message appears when the process is finished.
Self-hosted customers can ask a system administrator to verify the results in the log.

Index project items

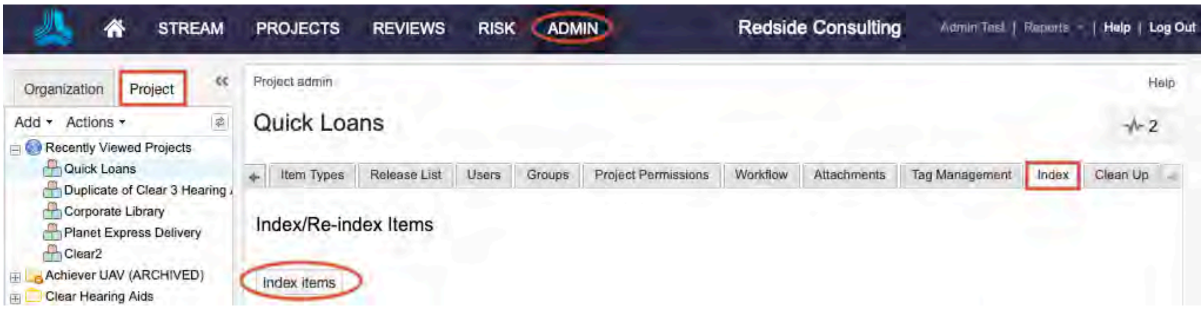
Sometimes project indexes get out of sync due to field configuration changes, large batch updates, API updates, and various other functions.

Index project data if you see data that's incorrect or doesn't exist. For example, failed batch updates, or an item that shows a value in a field, but a search for that field value doesn't return the item.

NOTE

You must have project or organization administration permissions to index project items.

- As a project administrator, select **Project** > **Index** and click **Index items**.



If this doesn't resolve the problem, the system administrator can try doing a full index of items [545].

TIP

Large files over 25 MB aren't indexed and therefore, their content isn't searchable. The following filetypes are indexable: PDF, DOC, DOCX, PPT, PPTX, TXT, RTF. The following filetypes aren't indexable: XLSX, XLS, XML, HTML, HTM.

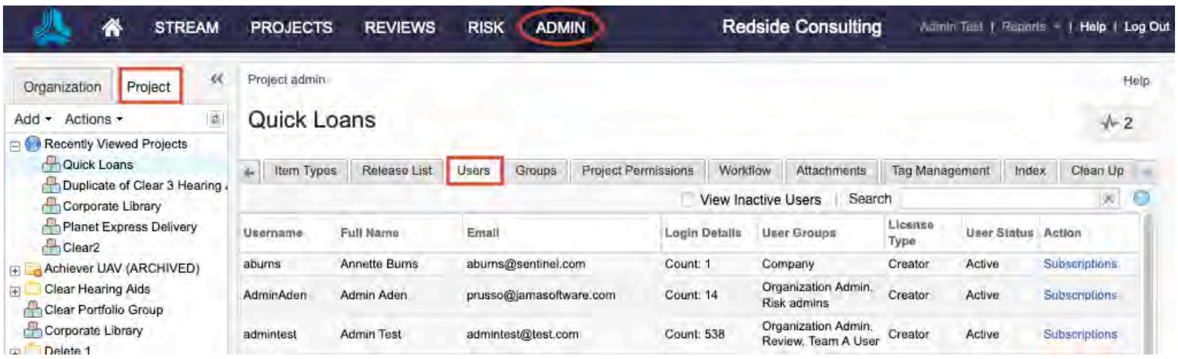
View project users

From the Users tab, you can view information about each user, such as email, license type, login information, and user status.

NOTE

You must have project or organization administrator permissions to do this.

1. Select **Admin > Project**, then select **Users**.



2. (Optional) select **Subscriptions** to unsubscribe notifications for individuals or groups.

   TIP

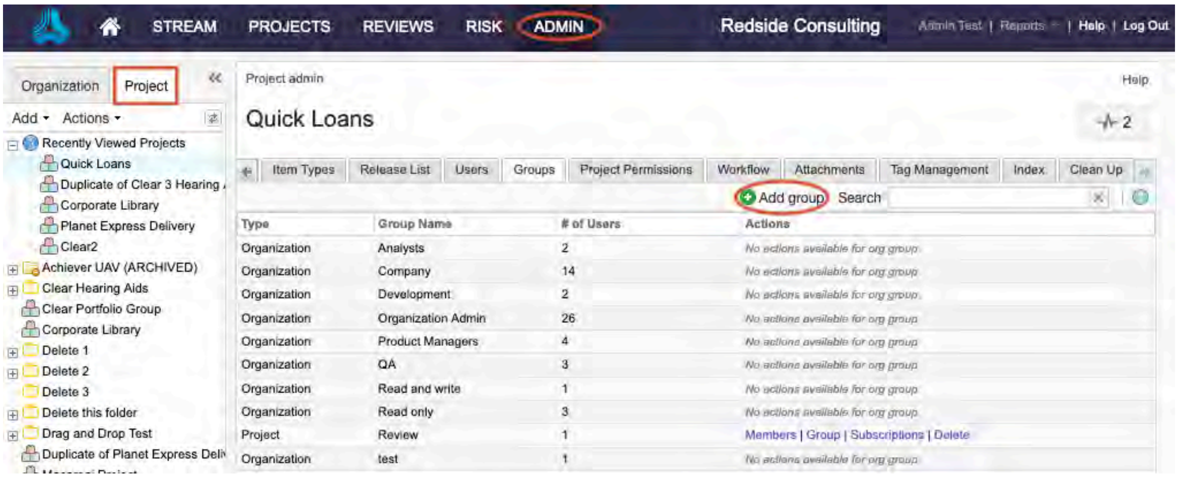
   Individual users can manage their own subscriptions in their profile [41].

Manage project groups

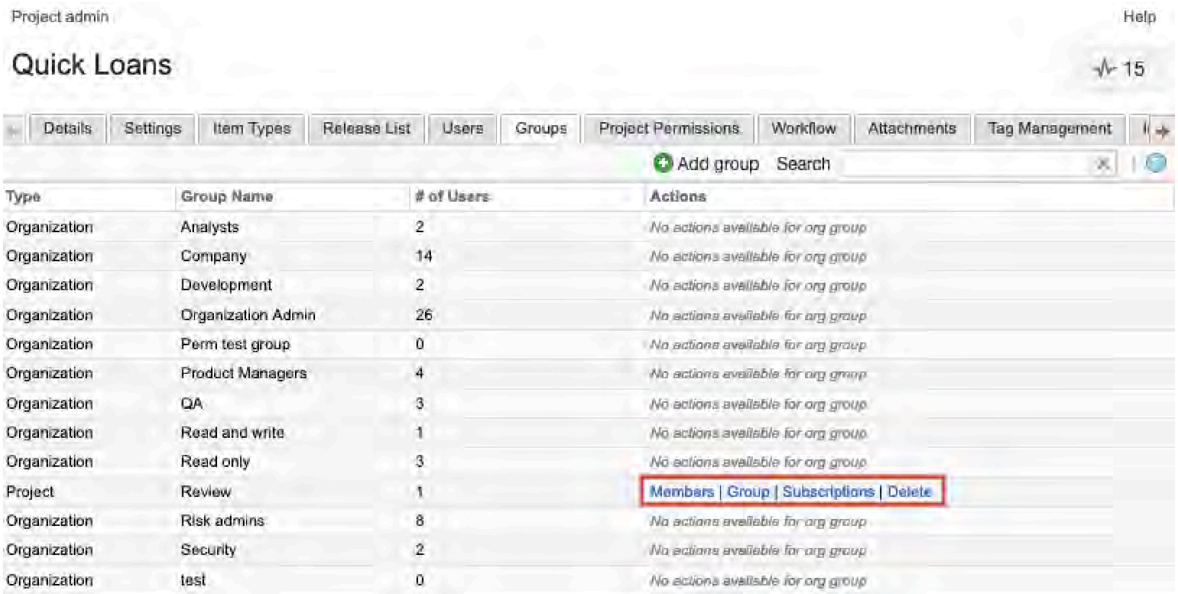
As a project administrator, you can manage groups of users that already have access to a project. These groups are valuable when fine tuning permissions or creating email lists.

> **NOTE**
>
> You must have project administrator permissions to manage groups at a project level. You must have organization administrator permissions to add, delete or edit groups [576] at an organizational level.

1. Select **Admin > Project**, then select **Groups**.



2. Select **Add Group** in the top right toolbar.
3. In the window that opens, give the group a name and description, then select users for the group and select **Save**.
4. For project level groups, you can edit the group name, description, or members, as well as editing a group's subscriptions. You can also delete the group. Use the buttons in the **Actions** column of the group you want to edit.



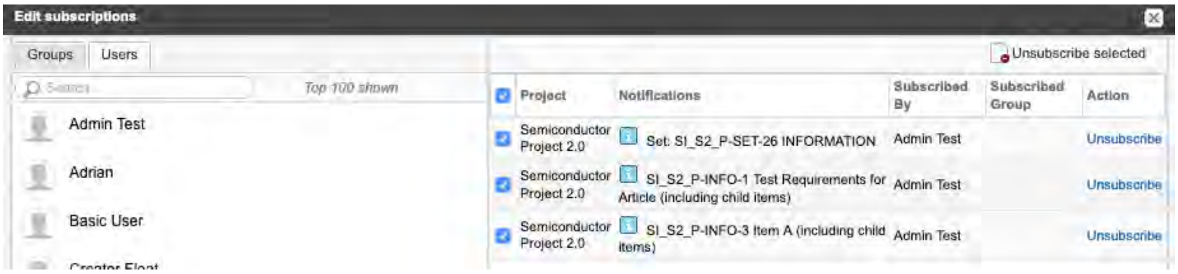
> **NOTE**
>
> A system administrator can disable or enable the project administrator's ability to add groups [509].

Edit user or group subscriptions

Users can subscribe to email notifications. Administrators don't have control over a user's own subscriptions, only to subscriptions added by others. Only the user can control their subscriptions.

> **NOTE**
> You must have organization or project administrator permissions to complete this task.

1. Select **Admin > Organization**, then select **Users**.
2. Select **Subscriptions** in a user row to open the **Edit subscriptions** window.



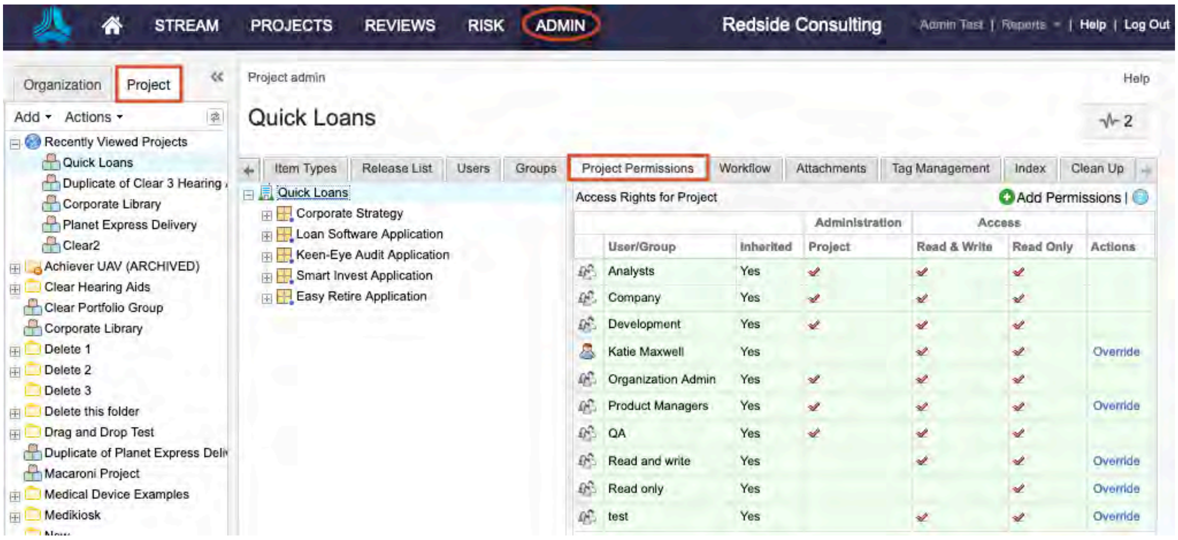
3. Select the user you want to edit from the left column. On the right you see a list of their current subscriptions.
4. If you're an organization administrator, select **Unsubscribe** in the **Action** column or to remove multiple subscriptions, select the subscriptions you want to remove, then select **Unsubscribe selected**. If you're a project administrator, select the items you want to mute and select **Mute subscriptions**.

> **TIP**
> Organization administrators can also edit group subscriptions by selecting **Admin > Organization > User groups > Subscriptions**.

Grant project permissions

> **NOTE**
> You must have at least project administrator permissions to complete this task. An organization administrator [591] or system administrator [506] can also grant permissions at an organization or project level. A system administrator can enable or disable the project administrator's ability to grant project permissions [509].

1. Select **Project > Project Permissions**.



2. Select the project, component, set or item for which you want grant permissions in the project selector on the left. From here, you can use the toolbar to:
   - Select **Add permissions** to add a new user or group.
   - Select **Modify** in the row of a user or group you want to edit.
   - Select **Remove** in the row of any user or group for which you want to delete permissions.
   - Select **Override** to override the inherited permissions for this user or group.

> **TIP**
>
> When a row contains the value **True** in the **Inherited** column and is highlighted in green, this means the group or individual has received its permissions from a higher level. Select **Override** in the **Actions** column to change these inherited permissions.

3. In the **Add/Edit access** window, you can grant the set of permissions that come with the role of project administrator, or you can grant access permissions for the selected item, set, component. Select **Save**.
4. Alternatively, select **Remove** to take away all permissions from the user or group for that project, set, or folder.

Reference

Jama Connect provides several tools and topics that help you use the application and quickly find answers, whether you're a new or experienced user.

- Glossary of terms [679]
- Quick find [141]
- Best practices and guardrails [672]
- Application performance testing [674]
- Keyboard shortcuts [673]
- Permissions by license type [585]
- Get help [677]

Permissions

Permissions allow users to do things such as access, modify, and delete items, as well as to perform other specific tasks. Permissions control how users experience Jama Connect by restricting actions they can perform and the content they can see.

What determines permissions?

- License type [585] assigned to a user
- Roles [669] (permission sets) granted to a user
- Access permissions [671] granted to a user for specific projects or containers

Who grants permissions?

- System administrator [506]
- Organization administrator [591]
- Project administrator [664]

License types and permissions

The type of license limits the possible permissions and roles that can be granted to a user. License types include creator, stakeholder, test runner, and reviewer.

Regardless of assigned license type, each user has a unique login consisting of username and password. Organization admins and user admins can view the current license [589] assigned to users, as well as assign users license types [583].

Creator and reviewer licenses can be named licenses or float licenses; test runner licenses and stakeholder licenses are named only.

Types of licenses

License type	Definition	Named license	Float license
Creator	Gives full read and edit rights and full access to reviews to active users who daily manage items and projects.	X	X
Test runner	Gives basic permissions to read and review, as well as the ability to create test plans and defects, to execute test runs, and to add attachments to test runs during execution.	X	
Stakeholder	Gives read-only privileges to those who need visibility into a project, but don't need editing rights. Stakeholders can view items, provide comments, and act as reviewers.	X	

License type	Definition	Named license	Float license
Reviewer	Grants permission to participate in reviews, act as approver, moderator, or review administrator, and to respond to comments in the stream. Reviewers can't initiate reviews or access items in the core project.	X	X
Temporary	A 30-day full creator license automatically granted to a non-licensed individual, invited by email to a review or to comment in the stream. The only default permissions are for the discussion thread or review to which they were invited.	X	X
Collaborator	A legacy license; gives read-only privileges to users needing visibility into a project, but not editing rights. They can view items, provide comments, participate in (but not create) reviews, execute test runs, and log defects.	X	X

Permissions by license type

The type of license assigned to you defines your permissions, which in turn determine your ability to create and edit items and to access items as read-only.

With a creator license and read-only permissions to a project, you can:

- Execute test runs
- Log defects from the test run execution window

PERMISSIONS	LICENSE TYPE				
	Creator	Stakeholder	Collaborator	Test runner	Reviewer
Read/Write					
Create test plans	X			X	
Execute test runs	X		X	X	
Log defects (from test run window)	X		X	X	
Manage attachments	X			X*	
Manage relationships	X			X*	
Add baselines	X				
Edit, delete, restore user-created baselines	X				
Add and edit items	X				
Read-only					
Share filters	X				
Share custom report templates	X				
View baselines	X	X	X	X	
Create filters	X	X	X	X	
Export reports	X	X	X	X	
Read and initiate stream threads	X	X	X	X	
Comment on items	X	X	X	X	
View items in projects	X	X	X	X	
View dashboards	X	X	X	X	
Review					
Initiate	X				
Moderate	X			X	
Participate	X	X	X	X	X
Approve	X	X	X	X	X
Electronically sign	X	X	X	X	X
Reply to stream comments	X	X	X	X	X
Risk					
Initiate	X				
Moderate	X				
Participate	X				
View (if invited)	X	X	X	X	

* Permissions that are included with each license type.

Roles

A *role* is a set of permissions that allows a user to perform specific functions. Each permission type defines the functions it allows.

An admin grants permissions by role [669] to an individual or to a group.

NOTE

Permission roles are different from other types of roles such as review roles [155] and Signer roles [247].

Types of roles

Role	Definition
System admin [482] (self-hosted only)	Handles installation, setup, and configuration of Jama Connect, and has no access to projects. System admin is a special user that isn't a role for other users. It doesn't require a license and logs in to the system with the username "root."
Organization admin [555]	Controls all aspects of configuring Jama Connect, its users, and its groups.
User admin [575]	Manages licenses, users, and groups; can see all users and organization groups in the system.
Process admin [595]	Configures content and connections within Jama Connect; controls item types, pick lists, relationship rules, Review Center, and workflow; delegates these responsibilities to appropriate users and groups.
Project admin [644]	Focuses on permissions, project groups, and workflow customization.
Add Project	Allows a user to create a new project or duplicate an existing project where that user is project admin.
Review admin [183]	Manages the advanced reuse rules accessible via the reuse dialog within a project. Reuse rules are focused on item types and are available to all users in all projects where they have a creator license.
Reuse admin [300]	Manages reuse. Requires read access to the synchronized items they are working with, and write permissions to edit, synchronize, reuse, or duplicate those items.
Report admin [572]	Allows the report developer to upload and manage BIRT, Velocity, and Word templates. Reports are assigned to specific projects where the report admin has project management rights.

User admin limitations

- Can set permissions only for groups/users on projects where they are project admin.
- Can manage organization group membership only for groups where they are a member.
- Can't make changes or additions to users or groups that have been assigned to organization or process admins except for activation/deactivation and license management.
- Can manage only members of a group where they are also a member. This restriction ensures they don't unintentionally provide or remove access to unknown or existing projects.

IMPORTANT

Users must have the license type [585] that allows for the permissions granted with each role.

Permissions granted by role

A set of permissions is included with the user's license type [585]. Users can also be assigned roles [594] that grant additional permissions.

PERMISSIONS	ROLES									
	System	Organization	User	Process	Project	Add Project	Review	Reuse	Risk	Report
Setup										
Install the application	X									
Configure email servers	X									
Re-index system	X									
Configure authentication	X									
Upload reports (self-hosted)	X	X								
Write										
Add, edit, delete reuse rules								X		
Add and edit item types		X		X						
Add users	X	X	X							
Add projects		X				X				
Configure reports (self-hosted)	X	X								X
Configure organization	X	X								
Configure process (item types, picklists, rules)		X		X						
Set project permissions	X	X	X		X					
Edit, delete, or recover any baseline		X			X					
Delete or recover baseline sources		X			X					
Add releases		X			X					
Create dashboards		X			X					
Select item types for projects		X		X	X					
Manage permissions for existing users		X	X		X					
Review										
Recover a deleted review		X					X			
Risk										
View all analyses									X	
Edit templates									X	

For role-related permissions to work, users must have the required license type.

	REQUIRED LICENSE TYPE					
ROLES	Creator	Stakeholder	Collaborator	Test Runner	Reviewer	None
System administrator						X
Organization administrator	X					
Project administrator	X					
Reuse administrator	X					
Review administrator	X				X	
Risk administrator	X					
Report administrator	X					

Roles and permissions

Permissions and roles control how users experience Jama Connect. They restrict users' actions or the content users can see.

Roles provide access to the administrative features of Jama Connect. Roles are assigned by administrators to individual users or to groups.

Permissions control read and write access to your project. You can be granted permission to an entire project, to a project's folders, or to a collection of items in a project. Permissions are assigned to individual users or to groups.

Permissions are inherited from higher levels in the organization structure and can be set at different levels:

- Organization
- Folder
- Project

Once permissions are set on a project, they can be adjusted based on the organization of the project Explorer Tree.

> **NOTE**
> To be able to access the project, admins must set the permissions before adjusting a set or component.

Best practices for admins

- Set permissions at the highest level possible. This helps you track existing permissions for a user or group when many one-off changes are made.
- Use groups instead of individual users. Using groups reduces the volume of entries and ensures consistent setup of users who require similar access.

Permission questions and scenarios

Question	*I want to provide general user management to my IT group, but how do I restrict access to sensitive projects and project groups?*
Answer	Assign the user admin role. This role is limited to viewing and administering project-level permissions on projects only where they are a project admin. They can still create users, deactivate existing users, manage their participation in organization groups, and configure licenses.
Question	*Can a user admin grant themselves or others the process role or organization admin role? Can they change their own permissions?*

Answer	No, only an organization admin can set the org and process roles. A user admin must be a project admin to adjust permissions to a project. If they remove their own project admin role, they no longer have access to that project's permissions.
Question	*Why aren't there any options to override permissions on certain users or groups?*
Answer	This restriction controls visibility and access across projects that might belong to different divisions or contains sensitive information that you don't want exposed to all users. If you want your user admin (user or group) to have access to all projects and project groups, assign the project admin role at the organization level.
Question	*Why can't my user admin see all groups where a user is assigned?*
Answer	By default, user admins can't access all projects. The user must be a project admin to access the groups for that project.
Question	*Why can't my user admin manage the membership in an organization group?*
Answer	User admins can only provide access to projects they can access. To access a project, they must be a member of that project's organization group. When they aren't a member of the organization group, the project isn't visible to them, so they can't provide access.
Question	*Why am I getting "no permissions" error when I try to add a user to a group?*
Answer	The group might have permission to access projects that you don't.
Question	*Why can't my process admin see all projects when assigning relationship rules?*
Answer	A project might contain sensitive information, so access is restricted. The list of projects shows only projects where the process admin is also a project admin. If you want your process admin (user or group) to have access to all projects and project groups, assign the project admin role at the organization level.
Question	*Is there a way to limit the item types that a process admin is able to see?*
Answer	Not at this time. This is a future option under consideration.
Question	*I just made a user an organization admin. Why can't the user access certain projects?*
Answer	The option to override an organization admin's access is no longer available. To avoid confusion, remove any overrides on organization admin users/groups that you made in the past.
Question	*Does the process admin have access to all projects and users?*
Answer	Process admins only have access to the projects where they are a project admin. They do have access to users and organization groups for assigned workflow transitions.
Question	*The @mention feature isn't working for my users, regardless of project permissions on the Stream page.*
Answer	The top-level option to create comments has a new configuration that disables this option by default. Context-free comments (not made from a project or item) created confusion and exposed users and groups to all system users. The @mention from the Stream page is now limited to include only users and groups that align with the commenter's project permissions. This change tightens security and eliminates accidental exposure of users or groups.
Question	*As a project admin, why can't I add users to my project if they are in the same system?*
Answer	Your organization has configured the settings for Jama Connect to restrict project admins' visibility of users and groups to only their project's permissions. If you want your project admins to have access to all users and groups, your organization admin can configure the setting on the Organization Detail page.
Question	*I've given a user with read/write permissions access to a set in my project, but they still can't see the project.*
Answer	Permissions must first be set on the project. Once the user has read or read/write permissions to the project, they can access the set. You can provide or remove permissions to other sets or components in the project to modify access.
Question	*I removed a user's access to a component. Why can they still see it?*
Answer	Users receive the highest level of rights assigned to them. If a user is part of a group that has permissions to a component, you can make one of the following changes: • Change that group's permissions to exclude the component. • Remove the user from the group so the individual entry is now the highest level of rights assigned.

Access permissions

With access permissions, a user can create, read, and edit items.

Levels of access permissions

- Read/Write — A user with these access permissions can read write edit and delete
- Read-only — A user with these permissions can read, but not create or edit items.

How permissions are granted

- Organization admin — Grant access permissions at an organizational level [591].
- Project admin — Grant access permissions at a project level [664].

Relationships and access permissions

Your ability to interact with relationships depends on your access permissions for each of the related items. Read more about permissions [585].

Permissions for current item...	Permissions for related item...	You can...
Read/Write	Read only	• View trace relationships. • View ID and name of related item. • Modify relationships. • Create new relationships. • Navigate to related item and clear suspect links.
Read only or Read/Write	No permission	• View trace relationships, but not modify or create new relationships. • See ID and name, but not navigate to related item.
Read only	Read/Write	• View trace relationships. • Modify relationships. • Create new relationships. • Navigate to related items and clear suspect links.
Read/Write	Read/Write	• Create, modify, and delete relationships. • Navigate to related items and clear suspect links.
Read only	Read only	• View trace relationships. • Navigate to related items, but not create or modify relationships between the two items.

Best practices and guardrails

Best practices and guardrails provide proven guidance that helps you get the most out of your experience with the Jama Connect application.

Change/use this...	For this result...
Explorer Tree settings	When your project has a large number of items, you can improve performance by changing the Explorer Tree settings to only show folders and components [47].
Filters	Filters that run against all projects find and display results for all items in your Jama Connect application. Filters like these can return large data sets and degrade performance. To assure quality performance, make filters more specific to return only the results you need.
Items and attachments	When working with more than 1,000 items per folder, hide items in the Explorer Tree [47] and work with them in List View [53] in the center panel. To move multiple items, rather than multi-select in the Explorer Tree, multi-select in the List View and drag them to their new location in the Explorer Tree. Files larger than 25 MB aren't indexed so their content isn't searchable. • Indexed file types: PDF, DOC, DOCX, PPT, PPTX, TXT, RTF • Non-indexed file types: XLSX, XLS, XML, HTML, HTM
Item field content	Keep the content of item fields to fewer than 10,000 characters (2,000 words). When you compare review versions, the applications might skip fields with lengthy content. Reuse and synchronization of hundreds of items can affect system performance, causing it to feel slower than usual for users and decrease performance for other processes such as exporting.
Reuse and synchronization	If you try to reuse and synchronize a very large number of items, a warning appears if it’s likely to impact performance. If you still want to do this, consider reusing items in smaller batches or starting a large reuse and synchronize process during off hours when there is less competition for resources.

Keyboard shortcuts

Use the following shortcuts to navigate throughout the Jama Connect application.

> **NOTE**
> In general, Mac users can substitute the **Cmd** key for the **Ctrl** key and the **Option** key for the **Alt** key. Depending on your keyboard, you might also have to press the **Fn** key.

Table 5. General navigation

Key command	Function
Esc	Close an open window.
Tab	Navigate from field to field in List View or Single Item View.
Enter	Selects a highlighted button or open a selected item.
Arrow keys	Scroll through items, tags, releases, baselines, or test plans in the left panel.

Table 6. Inline editing in List View

Key command	Function
Esc	Cancel unsaved changes.
Tab	Move cursor between editable fields.
Enter	Save changes and move to the next item in the list.

Table 7. Rich text accessibility

Key command	Function
Alt + 0	Open window with accessibility instructions.
Alt + F10	Enter the toolbar or the tab list of the open window.
Ctrl + right-click (Windows) **control + command + click** (Mac)	Access native browser spellcheck menu.
Tab	Move to the right between groups of toolbar buttons.
Shift + tab	Move to the left between groups of toolbar buttons.
Right arrow	Move to the next button to the right.
Left arrow	Move to the next button to the left.
Enter	Activate a selected button or menu option.

Table 8. Rich text navigation

Key command	Function
Home	Jump to the beginning of the line.
Ctrl + Home	Jump to the beginning of the document.
End	Jump to the end of the line.
Ctrl + End	Jump to the end of the document.
PgDn	Scroll down the document by the length of the editing area.
PgUp	Scroll up the document by the length of the editing area.
Ctrl + L	Open the link window.

Table 9. Rich text writing and formatting

Key command	Function
Shift + Enter	Add a line break.
Ctrl + Z	Undo the last change.
Ctrl + Y	Redo the last change.
Ctrl + C	Copy a text fragment to the clipboard.
Ctrl + V, Shift + Insert	Paste a text fragment from the clipboard.
Ctrl + X, Shift + Del	Cut a text fragment to the clipboard.
Ctrl + B	Apply or remove bold formatting.
Ctrl + I	Apply or remove italic formatting.
Ctrl + U	Apply or remove underline.
Ctrl + A	Select all field contents.
Shift + Arrow	Select text letter by letter.
Ctrl + Shift + Arrow	Select text word by word.
Shift + End	Select a text fragment from the cursor to the end of the line.
Shift + Home	Select a text fragment from the beginning of the line to the cursor.
Ctrl + Shift + End	Select a text fragment from the cursor to the end of the document.
Ctrl + Shift + Home	Select a text fragment from the beginning of the document to the cursor.
Shift + PgDn	Select a text fragment of approximately the length of the editing area, starting from the cursor and going down.
Shift + PgUp	Select a text fragment of approximately the length of the editing area, starting from the cursor and going up.

Table 10. Review navigation

Key command	Function
Tab	Move from one highlighted comment to another.

Application performance testing

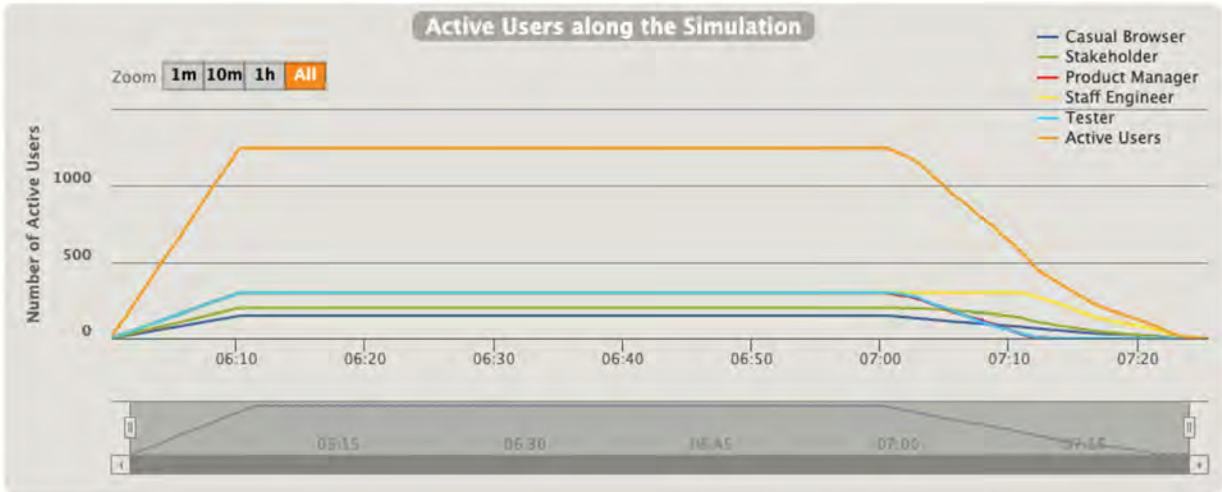
Jama Software runs daily performance testing of Jama Connect. The frequency depends on your environment.

- Self-hosted environment — Daily performance testing
- Cloud — Continuous performance monitoring

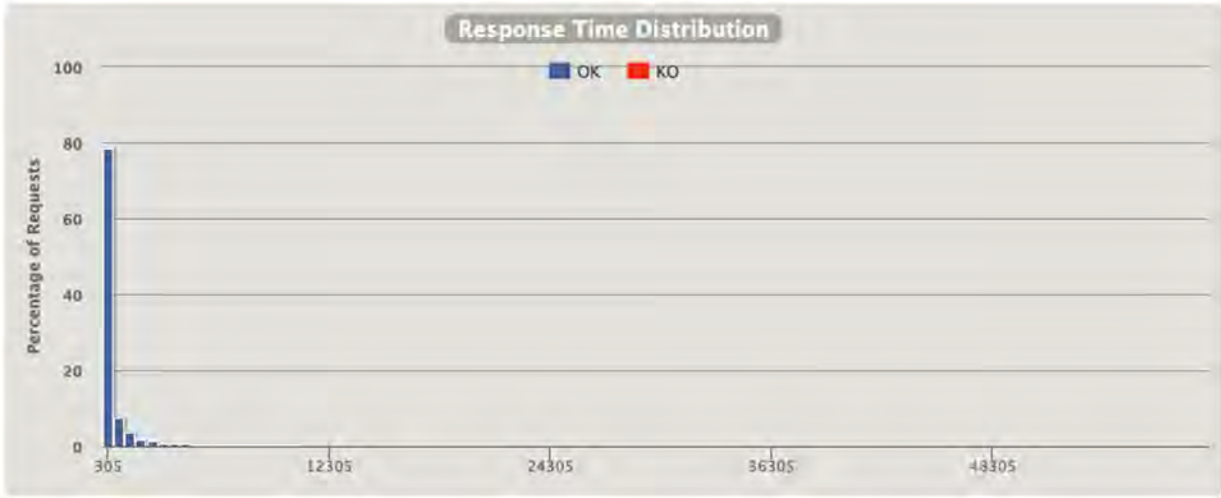
Self-hosted performance test results

These performance test results indicate a large self-hosted environment with 1,250 concurrent users.

- All requests were serviced during the testing period of 90 minutes with no un-intentional errors.
- 82% of requests were serviced in under 1 second.
- Longer running operations (like bulk updates and copies) were serviced within tolerances.



- Performance tests consider different user personas commonly found in our customer base, with the most common and active users being Staff Engineers and Testers (Creators [666]).
- The total of unique, concurrent users spread across the personas was 1,250.

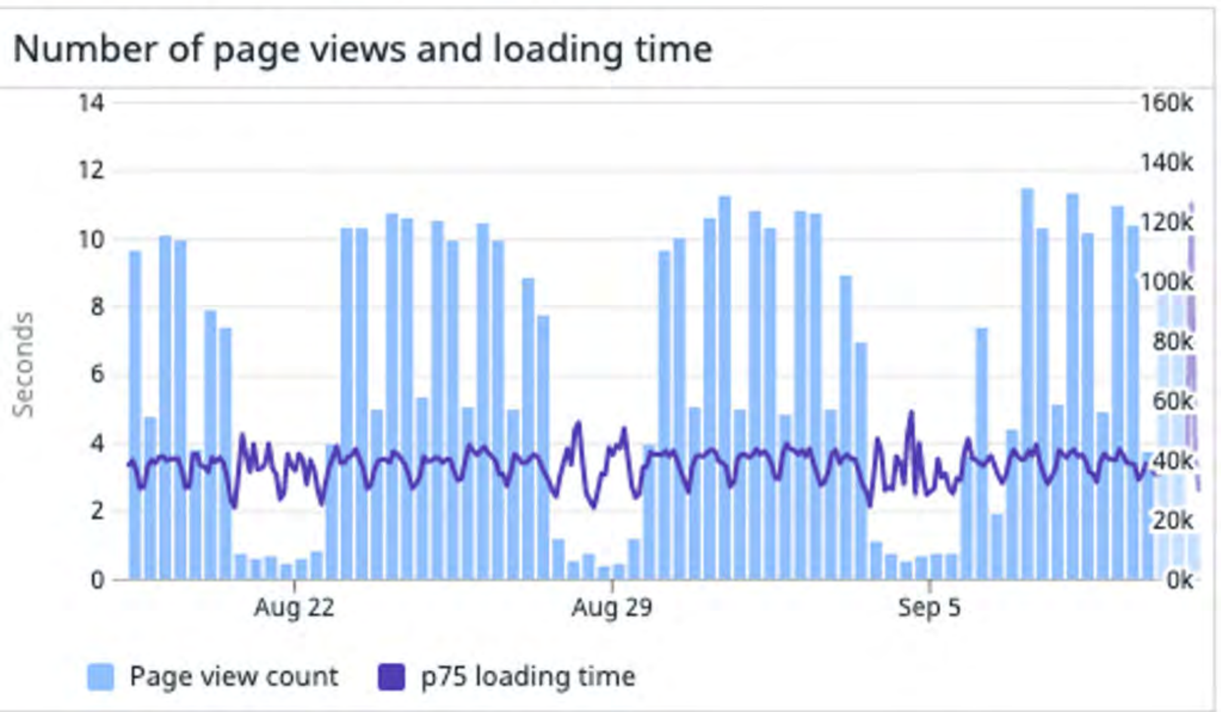


- This graph shows the distribution of serviced requests during the test with response times expressed in milliseconds (ms).
- 79% of requests were serviced in under 305ms with 99.5% of requests serviced in the consumer web target of under 3 seconds.

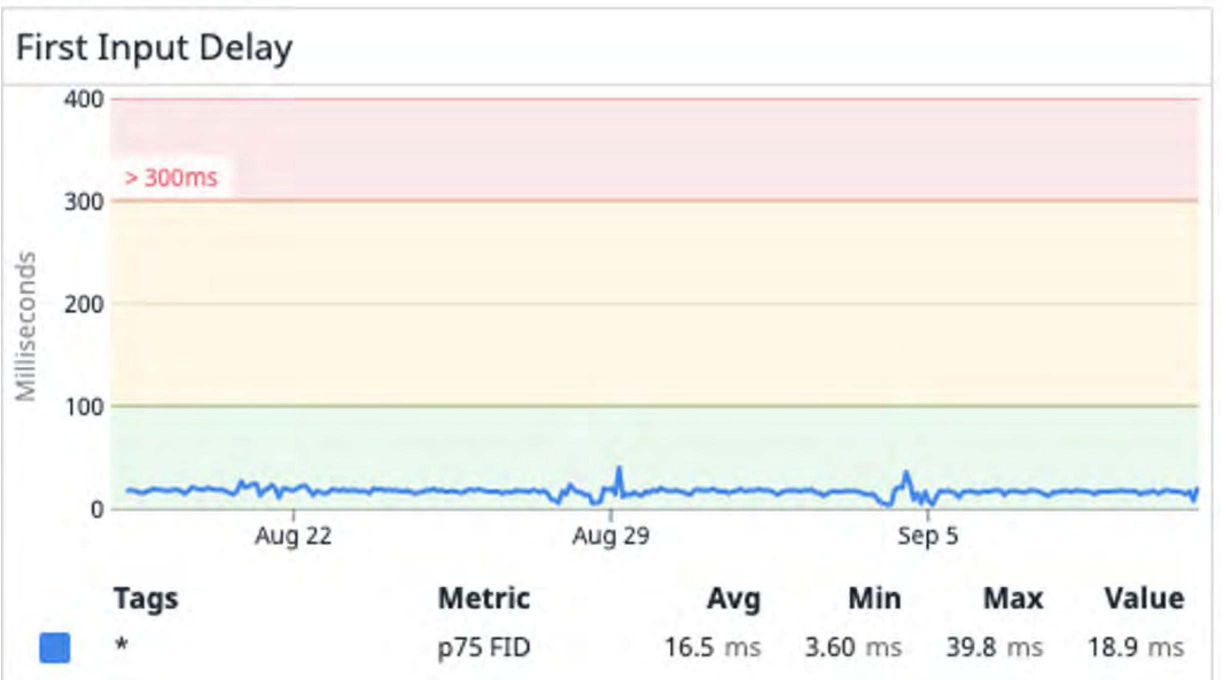
Cloud performance test results

Jama Software continuously monitors application performance in the cloud. We utilize Real User Monitoring (RUM) technology to understand performance at the end-user level.

This performance monitoring includes network latency and transmission of the entire user request across our global customer base.



- The Jama Connect cloud environment serves an average of over 6 million pages per month with hundreds of millions of total requests.
- The P75 total page load time (from request to full browser paint) averages 3.41 seconds.
- The P75 total page load time (from request to full browser paint) averages 3.41 seconds. The cumulative average of all page loads is under 3 seconds (2.66).



- We gauge cloud performance on a consumer web scale, which is superior to most enterprise B2B applications.
- First Input Delay (FID) averages 16.5ms across the cloud environment and is a critical component of a responsive web experience.

Get help

Do you have a question that's not covered in the *Jama Connect User Guide*?

Visit our Support Community where you can find answers, start discussions, share ideas, and access developer documentation.

As part of your contract, your organization can get additional help from our support staff. Your organization's named support contact can submit tickets directly to our support staff.

If you have a large team to train quickly, need to integrate Jama Connect with other tools, or want to go beyond the basics, Jama Software offers training courses and other professional services to help you be more successful.

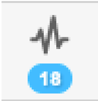
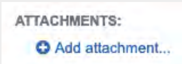
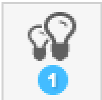
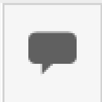
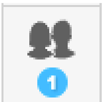
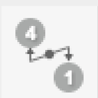
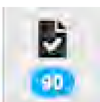
- Education and Tutorials
- How-To Videos and other Resources
- Business Services

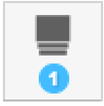
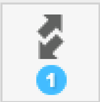
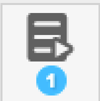
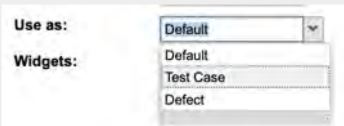
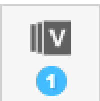
Let us know how we can help you.

Widgets

A *widget* is small embedded application that adds functionality to the dashboard or to item types.

This table includes all widget types, their definitions, and how they are used.

Widget	Definition
Activities* 	Lists all the changes users made to an item: adding, relating, editing, deleting, and restoring. Activities are listed in chronological order. Users can search their activity history and filter on activity types.
Attachments* 	Shows external files attached to an item: images, documents, and spreadsheets. If your organization has a document management system, link from a Jama Connect item to the file in your document management system, rather than duplicating files in Jama Connect.
Change Request* 	Indicates that the item is linked to one or more change requests. **Example**: If the icon includes a number, the item is linked to that many change requests and is automatically added if the item is linked to a change request.
Comments 	Indicates that a user made comments on the item. Generally used for day-to-day collaboration with colleagues and tracking questions, decisions, and issues about items. These comments are only visible to users with permission to see the Jama Connect project. Comments from reviews are separate and not included here. Enabled by default.
Connected Users 	Shows a creator, editor, or someone who has commented, subscribed, or is @mentioned in an item. Also shows users on upstream or downstream traced items. Enabled by default.
Items to be changed 	Indicates when a user links to requirements, tests, and other items that require a change. Visible only on item types where the Change Request widget is enabled.
Links* 	Adds links to an item by associating a link with that item or embedding a link in a rich text field within the item. Hyperlinks can also be added in any rich text field.
Relationships* 	Shows items that are related for traceability. **Example**: A requirement might be linked to upstream customer needs multiple downstream test cases.
Review comments 	Shows comments for reviews where this option is enabled.
Risk* 	Shows the link from requirements, mitigations, or verifications to a particular risk.

Widget	Definition
Sub items 	Shows the number of items directly under a currently viewed item in the Explorer Tree. **Example**: The "System" component has five sub items: 
Synchronized Items* 	Monitors differences between reused items and containers. The number of items that an item is synchronized with is displayed in the blue circle. **Example**: If a source item version changes, all reused items are flagged as "out of sync" so you can compare differences.
Tags* 	Labels items so you can find similar items quickly. Any user with create and edit permissions can add a new tag. Users with project admin permissions can edit or delete existing tags.
Test Runs 	Shows the results from a Test Plan and Test Cycle. Jama Connect allows one Test Case to many Test Run results. The number indicates the number of active Test Runs. Visible only on item types where the "Use as" setting is Test Case: 
Versions* 	Shows the number of versions. A new version is created each time you change an item. You can compare versions or revert to a past item.

* Widget is only visible on item types where an organization admin has enabled [599] it.

Recommended

At minimum, enable these widgets:

- Activities
- Relationships
- Synchronized items
- Versions

Glossary

Term	Definition
actions	A tag that identifies a comment in a stream conversation as one of three types: decision, question, or issue.
approver	A role in the review process with the ability to approve or reject an item for correctness or completeness.
attachment	External files such as images, documents, and spreadsheets that can be attached to an item.

Term	Definition
baseline	A fixed reference point that captures the state of selected items and their relationships within a project at a specific point in time.
Baseline Compared to Current Report	A report that displays a side-by-side comparison of items and relationships in a baseline and their current versions.
Baseline Comparison Report	A report that displays a side-by-side comparison of items and relationships in two baselines.
baseline ID	A unique ID assigned to each baseline. Baseline IDs are automatically generated and numbered sequentially in the order they were created. They can't be edited or duplicated.
batch transitions	A workflow feature that allows you to select multiple items of the same item type and transition them to a different workflow status.
Bidirectional Traceability Report	A report that displays upstream and downstream relationships for a selected container of items.
bookmarks	Links to content you view frequently at the top of your homepage.
bottom panel	A panel that slides in from the bottom of the center panel to give more detail on items such as relationships, the activity stream, version history, and merged items.
change request	A formal proposal that identifies changes to items in a specific product or system.
child item	An item that falls hierarchically below a parent item of the same item type.
collaborator license	A named or floating license that gives read-only privileges to users needing visibility into a project, but not editing rights. These users can view items, provide comments, participate in (but not create) reviews, execute test runs, and log defects.
comments	User-created messages found in the stream or in reviews.
Compare View	A side-by-side view of content that helps you compare differences between versions of an item.
component	A structural container used to organize a project into more manageable pieces.
container	A Jama Connect unit for organizing document items. Containers include three types: components, sets, and folders.
contributor	In risk analysis, a role in that can open, view, and edit any analysis where the user is invited. Contributors must have a creator license in Jama Connect.
coverage	The extent to which items are validated by another item.
Coverage Explorer	A tool to view or export a set of items, including related items that provide needed coverage.
creator license	A named or floating license that gives full read and edit rights, and full access to reviews, for those who are active users managing items and projects on a daily basis.
dashboard	A visual display of Jama Connect data. It can be configured to show key metrics about your project, to highlight which areas might need attention.
dashboard widget	A small embedded application that compiles and displays data from a single project or filter.
downstream	A way to identify a relationship between items. If one item is downstream from another, it might be impacted by that item.
electronic signatures	A digital process that indicates a user's acceptance of a document, item, or process. In Jama Connect, electronic signatures are used to approve a review or baselines.
Explorer Tree	A method of structurally and visually organizing the sets, components, folders, and items in your project hierarchy.
export	An action that extracts data from Jama Connect to a Word or Excel document.
field	A fixed location in a unit of data such as a record or computer instruction that has a specific purpose and usually a fixed size.
filter	A method to display subset of items, users, or reviews from a larger collection. These are available as simple or advanced filters.
folder	A type of container used to organize your work. Jama Connect uses item folders, baseline folders, and project folders.
global ID	A unique identifier of items connected through synchronization.
homepage	The start page that is displayed when Jama Connect first opens. It can show links to your most relevant content, like bookmarks, recent views, open reviews, and stream comments or actions.
Impact Analysis	In requirements management, a method to show the implications of a proposed change to all upstream and downstream related items.
Import	An action that incorporates data into Jama Connect from an external source such as Microsoft Word, Excel, and IBM doors.

Term	Definition
Import Relationships Plugin	A tool that helps you batch-create links between existing items in the application.
index	A list of information about each item that ensures proper display, sorting, filtering, and searching of data.
item	The building blocks of Jama Connect. Projects are made up of items. Items are made up of fields. Items can be containers (sets, folders, components or parent items) or documents (features, requirements, test cases, tasks, defects).
item counter	A tool that automatically assigns numbers to items as part of their ID.
item ID	Unique identifiers for each item that, unlike a Global IDs, can't be duplicated.
Items in a Set Report	A report that displays a tabular list of items in a set.
item types	The templates for sets used within each project.
item widget	A graphical element of the UI that adds functionality to an item type, for example, adding links, attachments, relationships, and tags.
left panel	The area of the UI where you can find and organize your data. It contains the Explorer Tree, advanced filters, releases, baselines, tests, and tags.
license	The document that gives permission to an organization to install and run the Jama Connect application.
license type	The possible permissions and roles that can be granted to a user (for example, creator, stakeholder, test runner, and reviewer).
List View	A way of viewing data from multiple items in a table with a different field in each column so you can sort, select, and compare items at a glance.
lock	A method to make items read-only. Locks can be set automatically or manually.
moderator	A user who creates and manages a review. Moderators must have a creator license type.
notifications	Optional emails sent to groups or individuals alert you when certain changes are made.
Office Templates	Word documents and Excel spreadsheets that allow you to add formatting to your exports.
organization	A representation of the entire group of users who have access to your instance of Jama Connect as well as all the projects, items, and data.
organization admin	A role with administrative control of the Jama Connect application. An organization might have one or more organization administrators.
permissions	A way of allowing users the ability to access, modify, and delete items or perform other specific tasks.
pick lists	A set of defined values that can be entered into a field.
project	A way of organizing your data in Jama Connect. A project is made up of items, filters, baselines, releases, reports, and tests.
project admin	A role that has the necessary permissions to manage a particular project.
project key	A unique identifier, automatically created with each project, which makes up the first part of each item's Unique ID.
project workflow	A well-defined sequence of the tasks and activities required to complete a specific project. In Jama Connect, you set up a workflow in Projects, so that users can move project items along a similar path as they progress.
Reading View	A way of displaying text and images for a particular group of items so you can read through selected items like a document.
relationship	A way of linking items together that can help you assess the impact an item or group of items can have on other items.
Relationship Status Indicator	A tool that shows the number of relationships an item has, as well as whether those relationships meet the project's relationship rules.
release	A group of items that are developed together and mapped to a specific completion date.
Release Status Report	A report that displays the current state of the items within a particular release.
Replicated snapshot	A backup of the Admin Console settings, Docker containers, and the Jama Connect license.
report	A document that helps you analyze the current status and progress in your work. Reports can include graphs, tabular data, metrics, and other roll-ups.
required fields	String, text, or date fields that are configured so that the user must enter data into the field before saving an item.
REST API	An application program interface to assist developers in a clean, straightforward integration with the application.
reuse	The duplication of an item within a project or to a different project where it can be modified without affecting the original item.

Term	Definition
reuse admin	A role with the permissions needed to manage reuse.
review	A process that helps teams, stakeholders, and customers collaborate in Jama Connect discuss, review, revise and approve information.
review admin	A role with the permissions needed to manage reviews.
Review Center Stats Report	A report that displays the progress of a specific review.
reviewer	A role that participates in a review to provide feedback.
reviewer license	A named or floating license that grants permission to participate in reviews, act as approvers, moderators, or review administrators, and respond to comments in the stream. A reviewer license doesn't allow users to initiate reviews or access items in the core project.
Reviews workflow	A tool for moderators to update the status of reviewed items. When configured, the reviews workflow automatically updates field values for review items of the same type and review status.
right panel	A panel that slides out to provide more specific information about the data you selected.
risk control measures	The procedures or requirements implemented to reduce risk levels.
risk control options	The means by which a risk is reduced.
risk control verification	Confirmation that specified requirements were fulfilled.
risk ID	A unique ID assigned to each row in an analysis. They are automatically generated across all analyses and are numbered sequentially in the order they were created.
risk management	The systematic application of management policies, procedures and practices to the tasks of analyzing, evaluating, controlling, and monitoring risk. (ISO 14971)
search	A function or process of finding letters, words, files, or other data in an index of all database fields, as well as text within Word, PDF, or text attachments, to display a list of resulting items.
signature meaning	A system setting that states the meaning of the electronic signature. It's required for FDA 21 CFR Part 11 compliance. In Jama Connect, it defaults to "I approve this review" and can't be modified. The signature meaning is visible in review invitations.
signer role	A role for an approver in the review process. Approval is provided with an electronic signature. Signer roles are created from user group names.
role	A set of permissions granted to a user so that they can perform a particular job.
set	A structural container with configurable access rights, used to group items of the same type. It can also contain folders, text Items, child text items and child items of the same type.
set key	The key that identifies item sets within your project. The key doesn't have to be unique across sets or projects.
sequence of events	The events that lead to a hazardous situation.
severity	The measure of the possible consequences of a hazard.
stakeholder license	A named license that gives read-only privileges to those who need visibility into a project, but don't need editing rights. Stakeholders can view items, provide comments, and act as reviewers.
Single Item View	A way to display the information about one item in the center panel.
stream	A collection of the most recent comments and activities (adds, deletes, or edits).
suspect links	Suspect links on an item mean it might no longer be correct or complete, because changes were made to items upstream.
synchronization	A method for monitoring for differences between reused items and containers. When differences exist, users can update the data for those items or containers.
system admin	A role that handles the overall installation, setup, and configuration of Jama Connect. The system admin doesn't have access to projects, doesn't require a special license, and is the only user who can log in to the system as "root user."
system fields	Automatically created fields such as name, test steps, test case status, and review status, which provide system functionality and can't be disabled or deleted.
system health report	An optional feature that notifies administrators of areas of the application that can affect performance and user experience.
tags	Labels that you can attach to items to help identify items that have something in common.
Task List with Estimates Report	A report that displays all item types and sums their estimates if applicable.

Term	Definition
temporary license	A 30-day full creator license, automatically granted to a non-licensed individual whose email address is used to invite them to a review or to comment in the stream. It has no default permissions except for the discussion thread or review to which they were invited, although an organization administrator can add permissions.
test case	Items that contain the tests needed to validate or verify product features or systems.
test case status	An automatically calculated status that indicates the state of the last edited test run associated with that test case.
test cycle	Groups of test cases converted into a series of test runs that are ready for execution.
test group	A way to combine and label similar tests in a test plan.
test plan	An item that documents the overall strategy for validating or verifying that a product or system meets its design specifications and requirements.
Test Plan Detail Report	A report that displays the details of a test plan.
test run	An item used to record results for a test case you ran against your product.
test runner license	A named license that includes basic permissions to read and review, as well as the additional ability to create test plans and defects, and execute test runs.
test run status	An indicator of the current state of a test run, which is used in calculating test case status.
test steps	Distinct steps used to run a test.
text item	A specific and unique type of item that lives outside the boundary of other item types and doesn't function as a full feature. Unlike other item types, text items can be used as part of a mixed item set.
thread dumps	A snapshot of the state of your application instances' processes at a point in time.
toolbar	The part of the UI that is located at the top of the center panel. From there you can switch views, filter items, configure fields, and export your data.
traceability	A method for showing the relationship between items that depend upon and define each other. You can always travel upstream or downstream to get more context and trace product definition from high level requirements all the way through final tests.
trace matrix	A visual representation of relationships within a project.
Trace Relationships Report	A report that displays items with their downstream relationships.
Trace View	A way of displaying related upstream and downstream items, missing relationships, and item details in context of their relationship.
trial license	A 30-day license granted to new users who sign up for a trial of Jama Connect on jamasoftware.com.
upstream	A way to identify a relationship between items. If one item is upstream from another, it might impact that item.
unique ID	An ID that identifies an item with a project key, set key, and a set counter. A unique ID (also called item ID) remains the same even if the item name or content is changed. It can't be edited or duplicated.
user	A basic role associated with a unique Jama Connect login. Each user has their own license type, groups, and permissions.
user group	A way to manage notifications, permissions, access, and actions for multiple users at a time.
User Import Plugin	A tool that allows organization admins to add multiple users at once by importing a spreadsheet.
User List Report	A report that displays a list of all the active and inactive users associated with the organization.
version	One of a sequence of copies of an item, each incorporating new modifications. There are versions of reviews and versions of items.
viewer	A role that can read, but not edit, a risk analysis.
widgets	Small embedded applications that add functionality to the dashboard or item types.
workflow	An automated set of transitions from one status to another, over the course of an item's lifespan.

Jama Connect Interchange (JCI)

Jama Connect Interchange™ is an integration platform that seamlessly integrates Jama Connect with other best of breed tools like Atlassian Jira and Microsoft Excel.

Unlike other integration tools in the marketplace, JCI is built, supported, and continually enhanced by dedicated teams at Jama Software. This means JCI is deeply integrated with Jama Connect configurations and workflows, providing you with a smart and seamless sync while you continue to work in your tool of choice.

JCI supports both cloud-based and self-hosted instances of Jama Connect.

To access the JCI library of resources, including release notes and a dedicated user guide, visit the JCI sub-community on the Jama Software Community site. To learn about the key benefits and common use case, see the Jama Connect Interchange Datasheet.

To find out whether JCI would be a good fit for your organization, contact your Customer Success Manager.

Jama Software® Requirements Advisor

FAQ

For Jama Connect Cloud customers, you can use the Requirements Advisor to check the quality and accuracy of your requirements, leveraging the power of natural language processing.

Why is it important to write good requirements?

Well-written requirements are critical for the development of any successful system. Requirements drive the design, development, and user experience of the system. Well-written requirements can improve productivity and quality. Each requirement states something that is necessary, verifiable, and attainable.

Is my requirements data secure?

Yes. Requirements Advisor uses the same portfolio of security solutions as the production release of Jama Connect.

Your requirements statements stay within the Jama Connect Cloud with the same proven protections of Jama Connect.

What are the benefits of Advisor for Jama Connect?

- Improve the quality of your requirements statements quickly and efficiently using systems engineering optimized natural language processing.
- Reduce risk of late-stage errors.
- Assist development teams in standardizing your process and language used for requirements authoring to save time and enhance accuracy.

When was Requirements Advisor released in Jama Connect?

- **Beta:** Limited customer beta began calendar Q2 2022
- **Release:** Initial product release in Jama Connect 8.80
  Jama Software reserves the right to continue development and consider potential, future Jama Connect integration options. Users can contribute to future capabilities by using the beta and providing feedback to Jama Software. Jama Software retains the rights to Jama Software Requirements Advisor and all derivative works.

How are requirements statements evaluated?

Requirements Advisor applies industry best-known methods from both INCOSE and EARS.

What is INCOSE?

The International Council for Systems Engineering (INCOSE) is a not-for-profit membership organization founded in 1990 with the following goals:

- Develop and disseminate the interdisciplinary principles and practices that enable the realization of successful systems.
- Promote international collaboration in systems engineering practice, education, and research.

- Assure the establishment of competitive, scale-able professional standards in the practice of
- Encourage governmental and industrial support for research and educational programs that will improve the systems engineering process and its practice.

Learn more about INCOSE

Why use INCOSE Rules?

INCOSE reflects the principles and processes of system engineering. The INCOSE *Guide for Writing Requirements* focuses on authoring requirements in the context of systems engineering. It emphasizes the need to consider the context of the system-of-interest when writing requirements. Considering the environment in which the developed system is located is an integral part of the systems approach.

What is the INCOSE Guide for Writing Requirements?

International Council for Systems Engineering (INCOSE) created and published the first *Guide for Writing Requirements* in July 2009. Since then, the document has undergone several reprints, which incorporated the suggestions and comments of various practitioners. At the time of this publication, the latest version of the guide is (V3), published in June 2019.

What is EARS?

Alistair Mavin, ("Mav"), the originator of the Easy Approach to Requirements Syntax (EARS), describes it as follows:

"EARS is a mechanism to gently constrain written requirements. The EARS patterns provide structured guidance that enable authors to write high-quality requirements."

Mav and his colleagues at Rolls-Royce PLC developed EARS while analyzing the airworthiness regulations for a jet engine's control system. The regulations contained high-level objectives, a mixture of implicit and explicit requirements at different levels, lists, guidelines, and supporting information.

In the process of extracting and simplifying the requirements, Mav noticed that the requirements all followed a similar structure. He found that requirements were easiest to read when the clauses always appeared in the same order. These patterns were refined and evolved to create EARS.

There is a set syntax (structure), with an underlying ruleset. A small number of keywords are used to denote the different clauses of an EARS requirement. The clauses are always in the same order, following chronological logic. The syntax and the keywords closely match common usage of English and are therefore intuitive.

The notation was first published in 2009 and has been adopted by many organizations across the world.

Learn more about EARS

Why use EARS?

System requirements are usually written in unconstrained natural language (NL), which is inherently imprecise. Often, requirements authors are not trained in how to write requirements. During system development, requirements problems spread to lower levels. This creates unnecessary volatility and risk, impacting program schedule and cost.

EARS reduces or even eliminates common problems found in natural language requirements. It is especially effective for requirements authors who must write requirements in English, but whose first language is not English. EARS has proven popular with practitioners because it is lightweight, there is little training overhead, no specialist tool is necessary, and the resulting requirements are easy to read.

Learn more about these patterns

Who is using EARS?

EARS is used worldwide by large and small organizations in different domains. These include blue chip companies such as Bosch, Honeywell, Intel, Rolls-Royce, and Siemens.

The notation is taught at universities around the world including in France, Sweden, United Kingdom, and the United States.

What are EARS patterns?

Following are the six fundamental EARS patterns:

- Ubiquitous requirements
- State-driven requirements
- Event-driven requirements
- Complex requirements
- Option feature requirements
- Unwanted behavior requirements

Learn more about these patterns