Test

In very simple terms, a Test is a sequence of steps coupled with conditions or variables, test inputs, and an expected result. It is intended to establish the quality, performance, or reliability of a piece of the system, i.e., test target. Usually, every requirement or objective the test target is expected to achieve needs at least one Test. The success of the Test is determined by comparing expected and actual results. In Xray, a Test case is an issue. You can create Tests just like creating any other issue in Jira.

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Manual Tests

Manual Tests are manually executed by testers without using any automation tools. It requires a tester to play the role of an end-user whereby they use most of the application's features to ensure correct behavior. Usually, manual Tests are defined with a Test script that users must follow in order to assert the expected functionality. The Test script can be organized in steps where each step has the action and expected result. Other types of manual Tests (e. g. Exploratory Tests) do not have any structure or even a Test script.

Automated Tests

Automated Tests are executed through an external tool which controls the execution of tests and the comparison of actual outcomes to predicted outcomes. They can automate some repetitive tasks in a formalized testing process already in place, or add additional testing that would be difficult to perform manually.

Test Types

Xray supports the following **kinds** of Tests:

- **Steps** - defined with an ordered list of steps. Each step contains the action and the excepted result along with other fields.
- **Gherkin** - defined using the **Gherkin** language for BDD.
- **Unstructured** - defined with a single text field without any enforced structure.

When Xray is first installed, one **Test Type** is installed for each Test **kind** that Xray supports:

- **Manual (**Steps kind**)**
- **Cucumber (**Gherkin kind**)**
- **Generic (**Unstructured kind**)**

The **Test Type** is specified using a custom field from Xray within the Test issues.

Configuring Test Types

It is possible to define additional Test Types in the Xray custom field. In Jira's administration, you may add other values for the "Test Type" custom field (see list below). For example, you may want to differentiate automated tests that may exist simultaneously in a project.

Test Type custom field possible values	Internally will be handled as ...
"Manual"	Steps kind
"Cucumber", "Automated[Cucumber]", "Gherkin", "Behave", "SpecFlow", "Behat"	Gherkin kind
"Generic", "Automated[Generic]"	Unstructured kind

All **other** Test Types that you define will be mapped automatically to **Unstructured** Tests.

Test Type mapping

We have a feature planned in our roadmap to allow users to create their own Test Types and map them to any kind in Xray.

Manual and Automated Tests relation to Xray Test Types

All Xray Test Types can be executed manually by testers directly in Jira or automatically by a machine (perhaps within a Continuous Integration environment).

Manual Tests in Xray were designed to be executed manually within Jira. However, it is also possible to import execution results for Manual tests as well using the Xray REST API.

In the same way, although **Cucumber** Tests were designed to be automated Tests, these can also be executed manually within Xray. In fact, this is a usual pattern for defining Tests using a domain-specific language that can later be automated.

Unstructured or Generic Test Types in Xray can also be used for manual or automated Tests. When importing execution results from frameworks other than Cucumber/Gherkin, Xray will do the auto-provisioning of Tests by creating **generic** Tests. Another example of **Unstructured** Tests is **Exploratory** Tests. You can create a custom Test Type named "**Exploratory**" that Xray will map by default to the **Unstructured** Test Type. An Exploratory Test is also a manual Test because the execution will be driven by the testers and not by a machine.

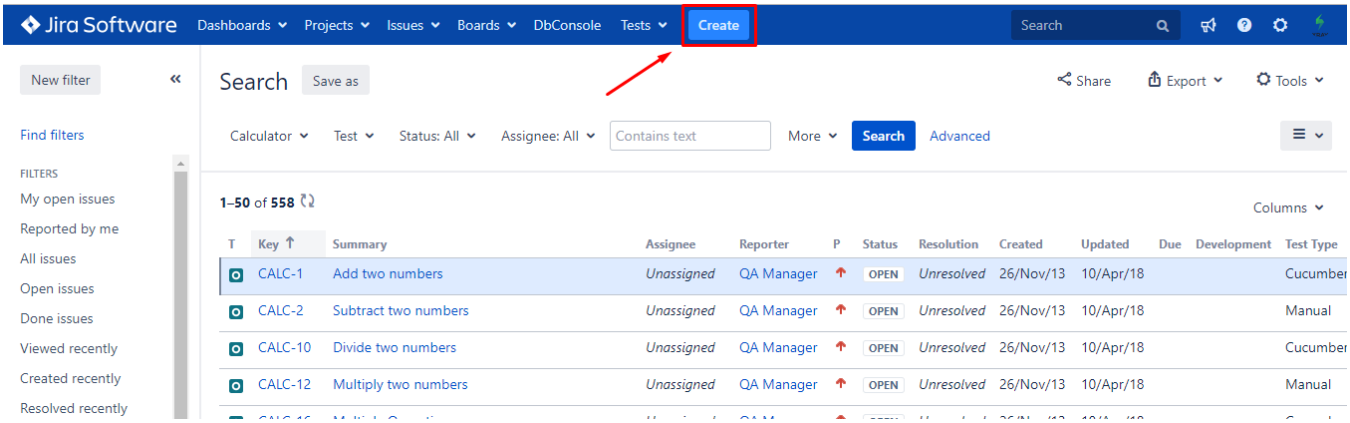
Issue Actions

The sections below describe all the available actions for Test issues.

Create

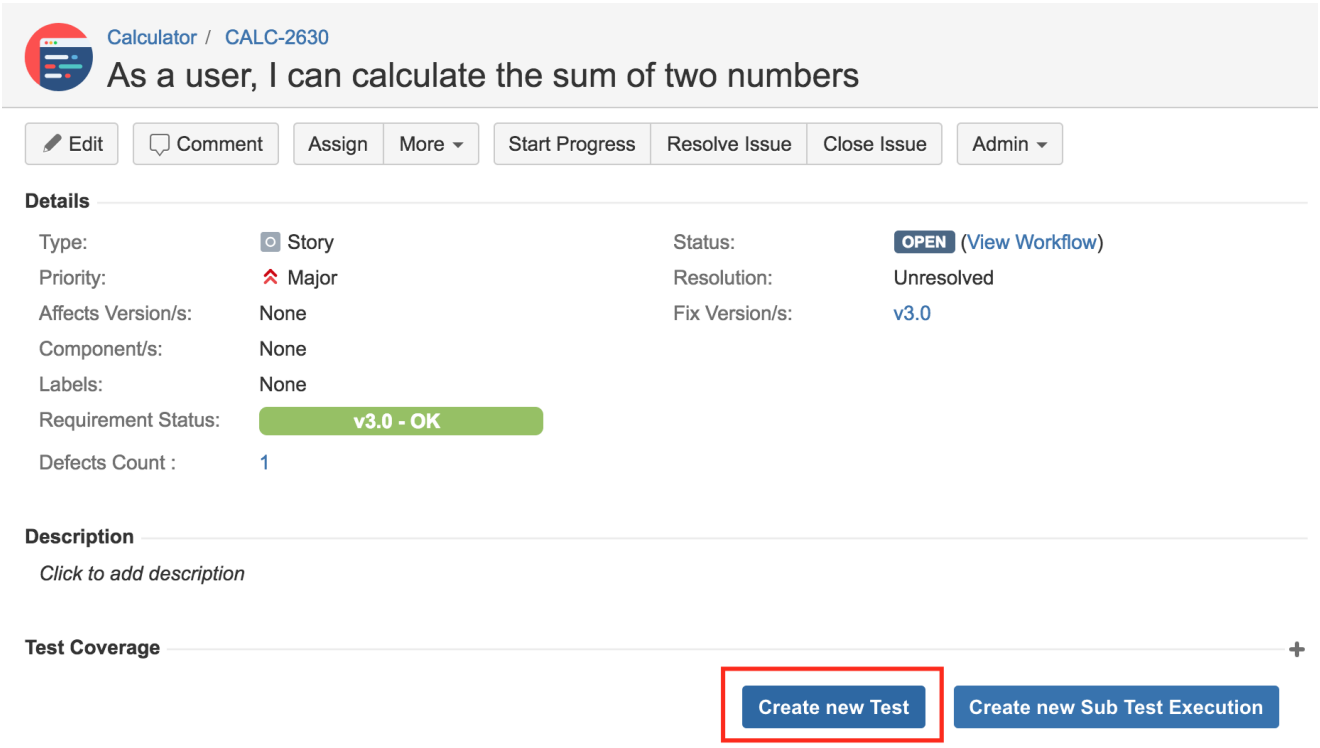
Creating a Test case is just creating a new issue with type **Test**. Test issues can be created in different contexts.

Using the global "Create" button or shortcut



From the Requirement issue screen

In order to create a new Test Issue directly from the requirement issue screen, and link it automatically to the requirement,

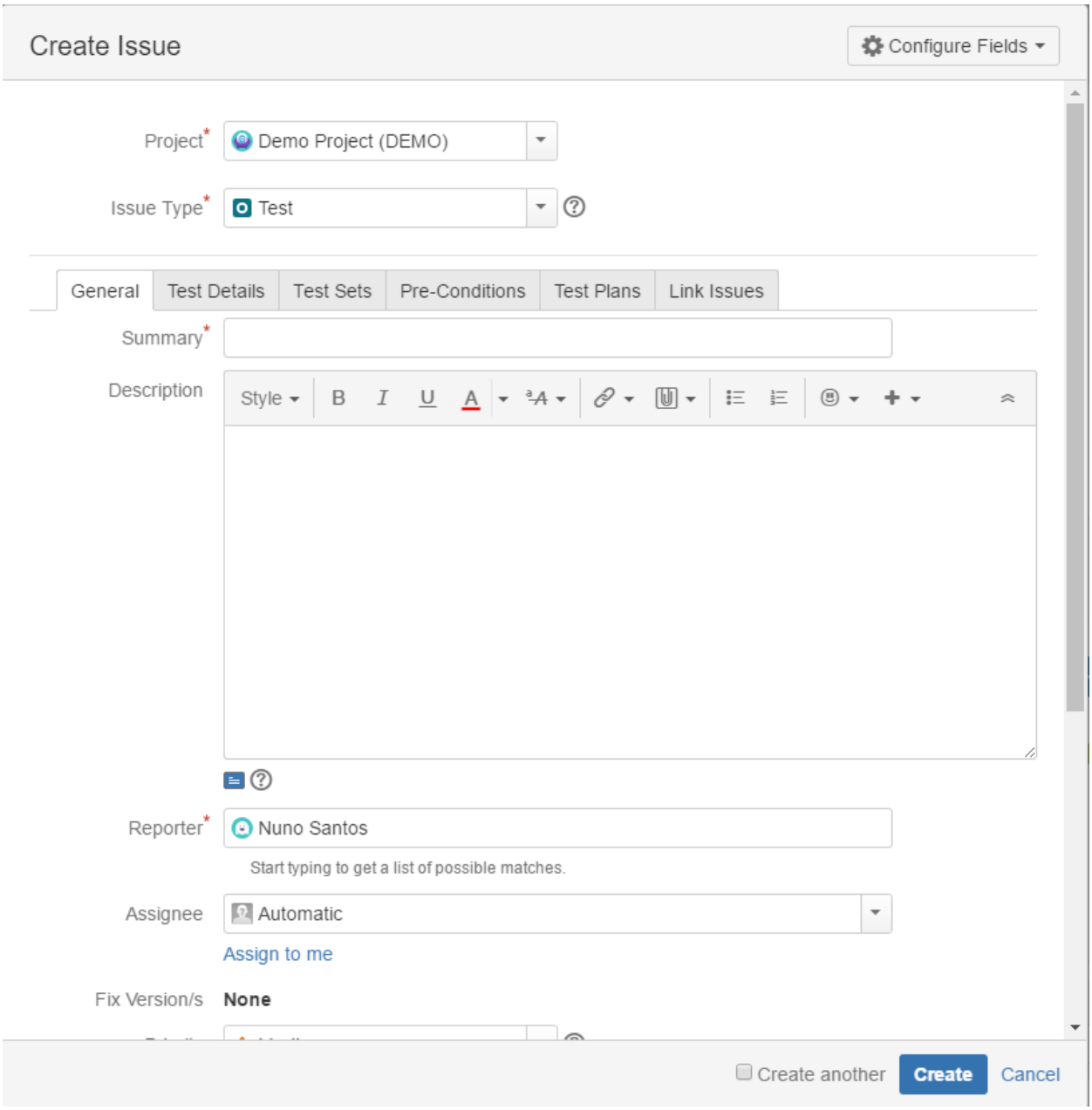


In order to create a new Test Issue,

Step 1: Click the **Create Issue** button (from the context above) to open the **Create Issue** dialog box/page.

Step 2: Select the **Project** and on **Issue Type,** select the Test issue type.

Step 3: Under the **General** tab, type a **Summary** for the test and fill all appropriate fields — at least, the mandatory ones marked with an asterisk.



Step 4: On the **Test Details tab**, select the **Test Type** and complete all appropriate fields;

- Steps (Manual Tests)
- Gherkin (BDD Tests)
- Unstructured (Generic Tests)

Optional:
- Click on the Test Sets tab to associate the current issue with Test Sets.
- Click on the Pre-Conditions tab to associate the current issue with Pre-Conditions.
- Click on the Test Plans tab to associate the current issue with Test Plans.
- Click on the Link Issues tab to link with other issues and specify the nature of the association.
- To create a series of similar tests – within the same **Project** – check the **Create another** box at the bottom of the dialog.

Step 5: When you are satisfied with the content of your test, click the **Create** button.

Step 5a: If you checked the **Create another** box, a new **Create Issue** dialog appears. This issue is automatically pre-populated with your previous test details while leaving the **Summary** field blank.

Edit

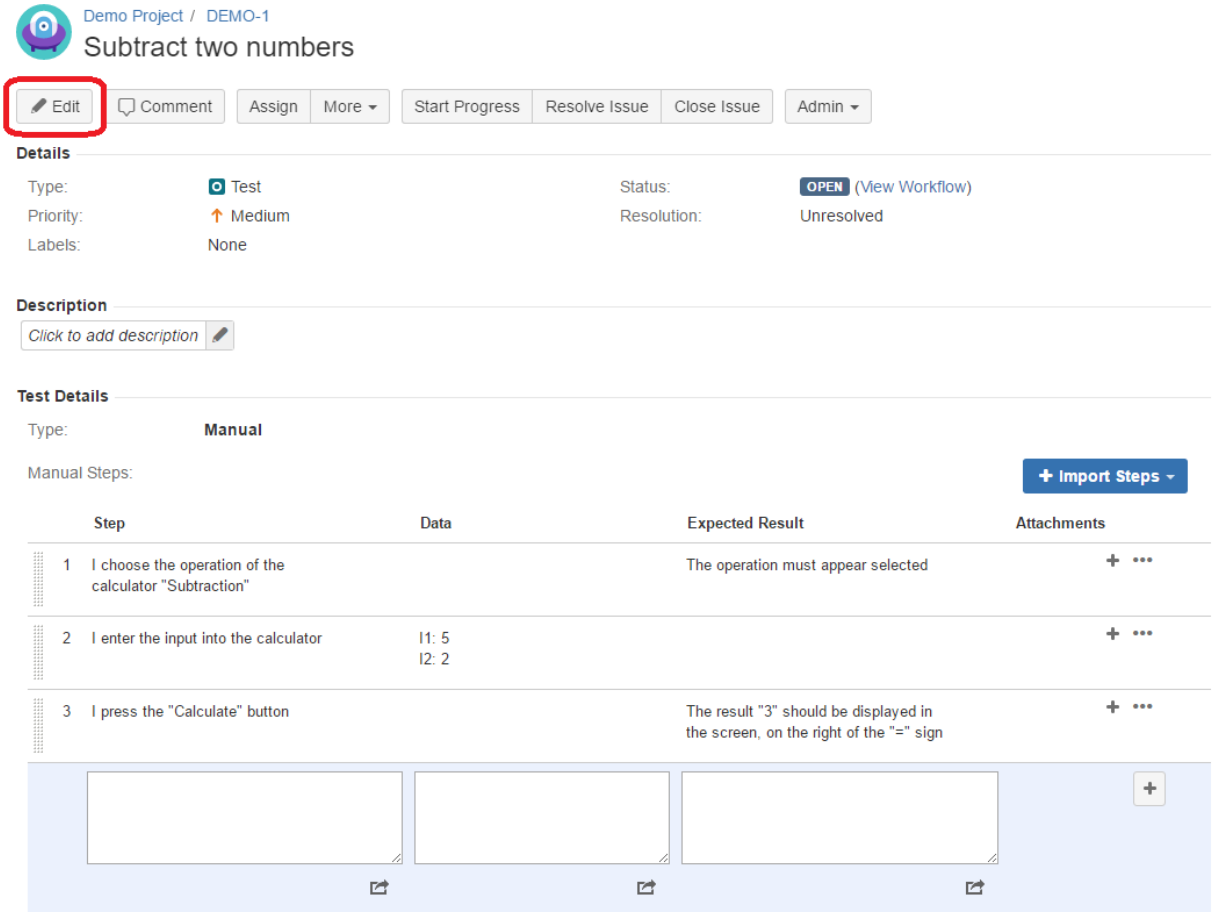
Test issues can be edited using:

- Jira "Edit Issue" dialog
- Inline edit in Xray fields

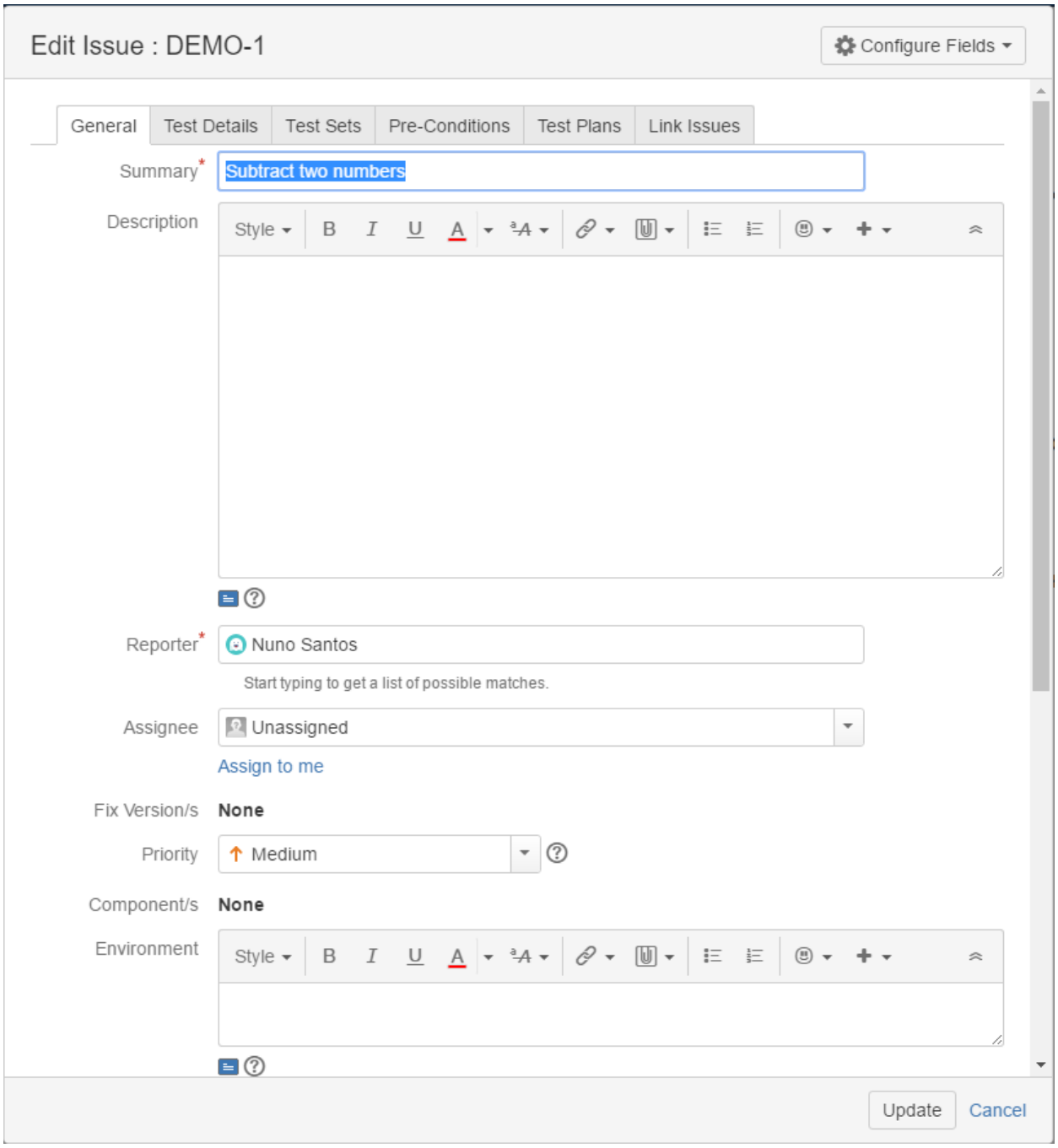
Using the Jira Edit Issue dialog

The Edit Issue dialog box is similar to the Create Issue dialog box, and can be accessed through the following steps:

Step 1: Click the **Edit** button (at the top-left of the 'view issue' page) to open the **Edit Issue** dialog box.



Step 2: Modify your Test's details in the appropriate fields of the **Edit Issue** dialog box General tab.



Step 3: Click on the **Test Details** tab to edit the Test Type and any complementary fields.

- Steps (Manual Tests)
- Gherkin (BDD Tests)
- Unstructured (Generic Tests)

Optional:
- Click on the Test Sets tab to edit Test Set associations.
- Click on the Pre-Conditions tab to edit Pre-Condition associations.
- Click on the Link Issues tab to edit Links with other issues.

Step 4: Click the **Update** button to save your changes.

Inline Editing Xray Tests

Xray Test issue sections support inline editing similar to Jira native and custom fields inline edit. This prevents full page reloads when modifying fields.

Within the **Test Details** web panel, users will be presented with a different UI and fields based on the Test Type. The Test Type field can also be changed inline. Please refer to following pages for more details for each Test Type:

- Steps (Manual Tests)
- Gherkin (BDD Tests)
- Unstructured (Generic Tests)

> **Edit Permissions**
>
> You can only inline edit Xray fields if you have permission to edit the Test issue.

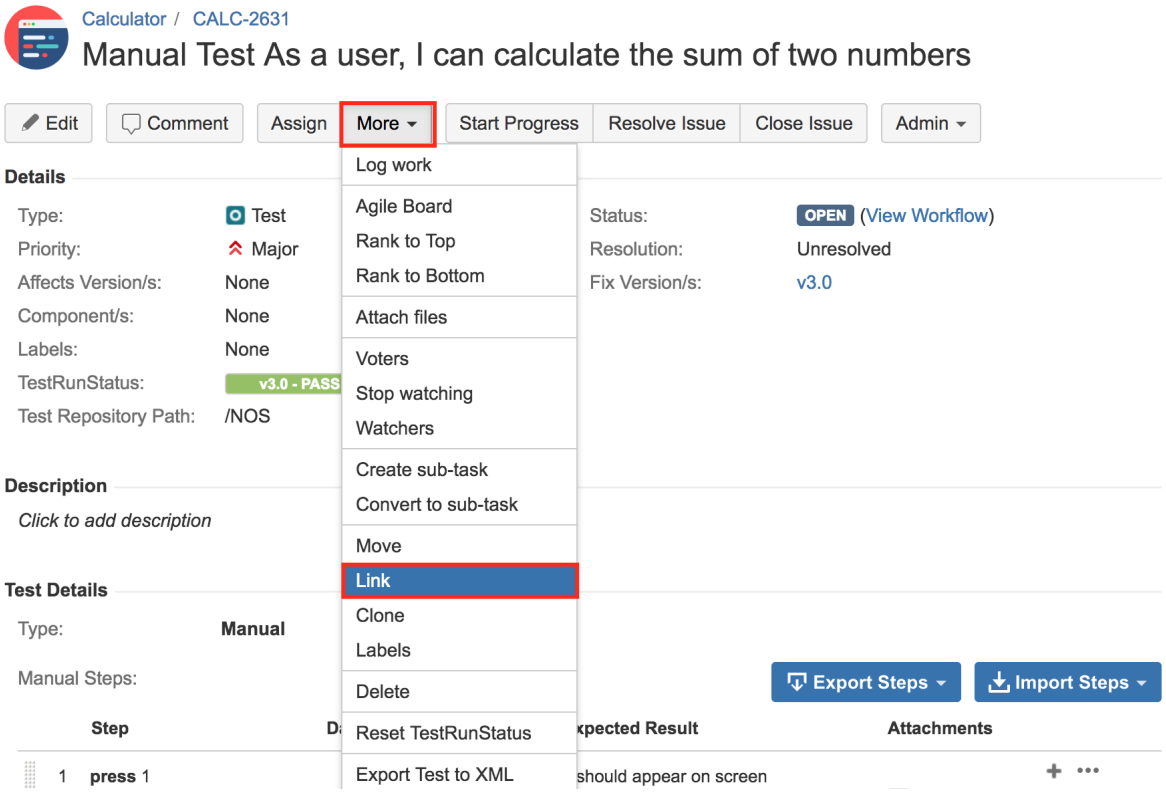
Link Test to requirement(s)

Covering some requirement issues with an existing Test can either be done from the Test issue screen or from the requirement issue screen.

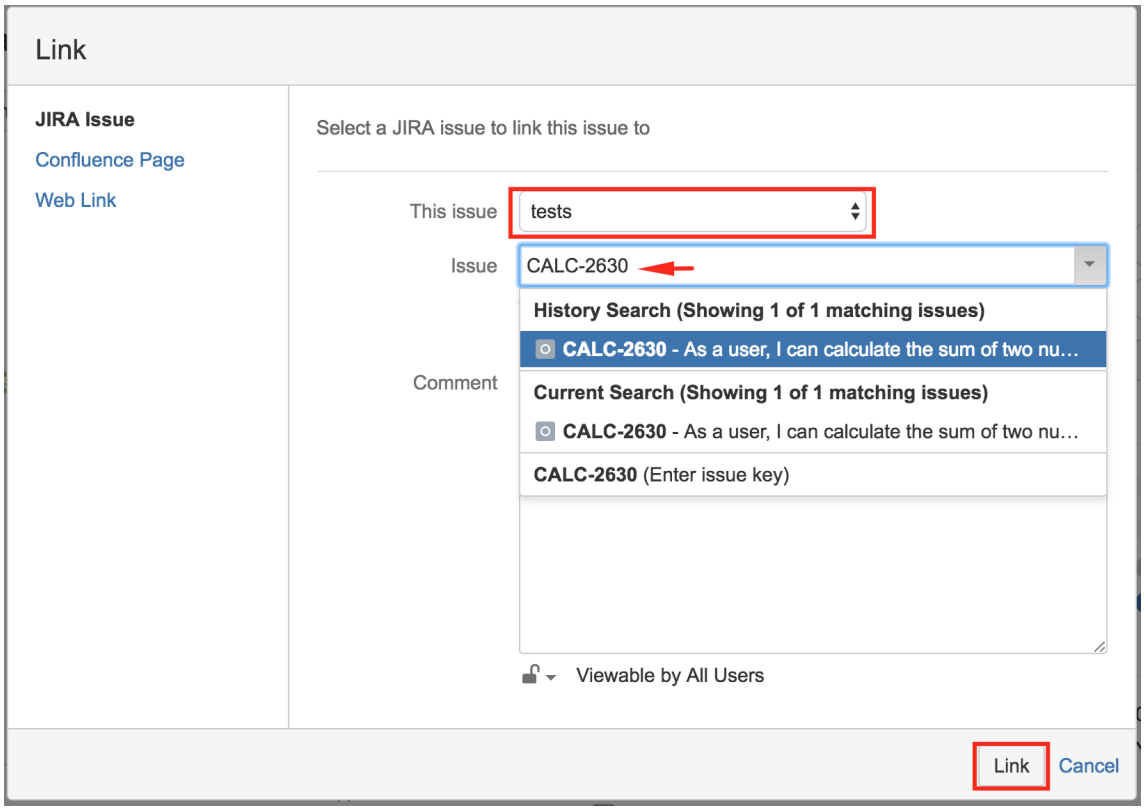
From the Test issue screen

To link some existing Test case to some requirement directly from the Test issue screen, you just need to create a "tests" link between it and the requirement

Step 1: Click on **More** and then **Link**



Step 2: Make sure that the created link is "tests" (i.e. the Test covers the given issues)



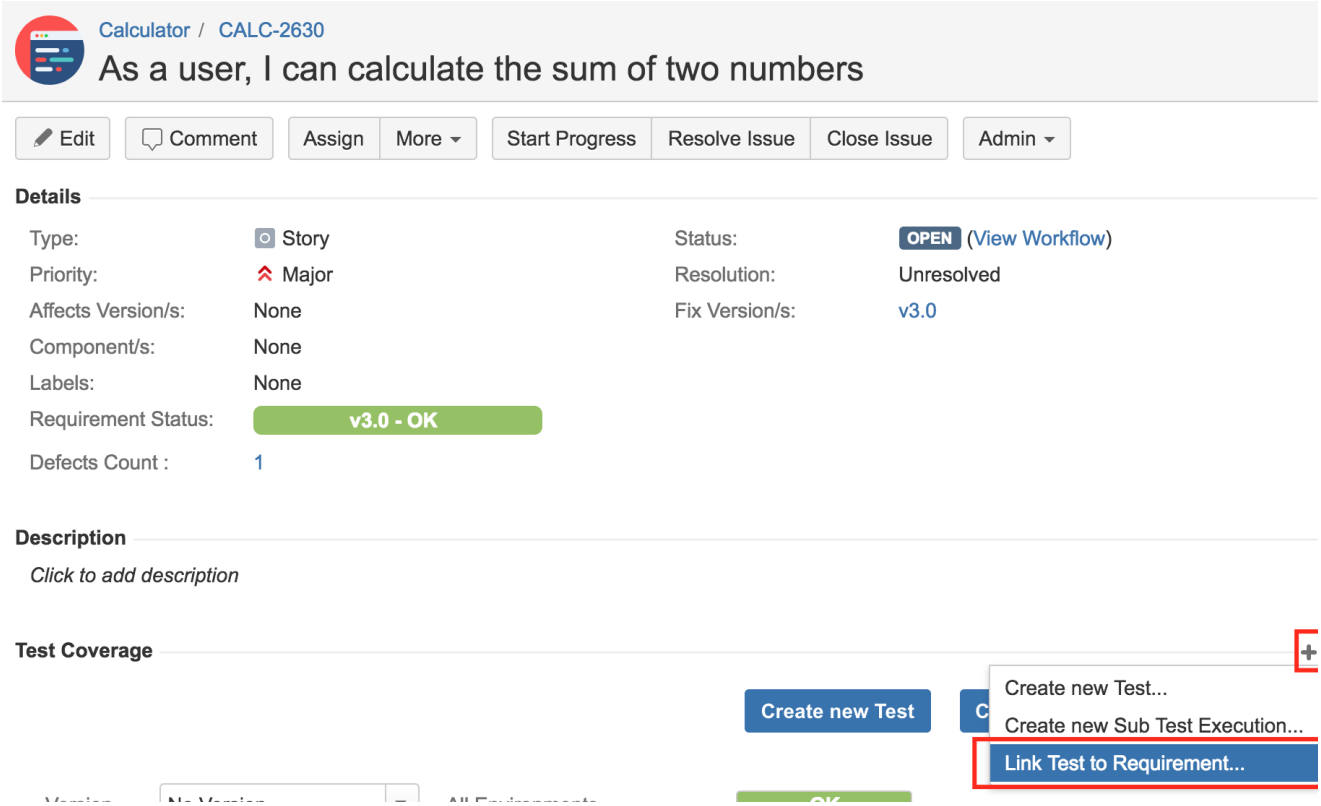
Step 3: Enter one, or more, issue key(s) of the requirement you wish to validate

Step 4: Click on "Link"

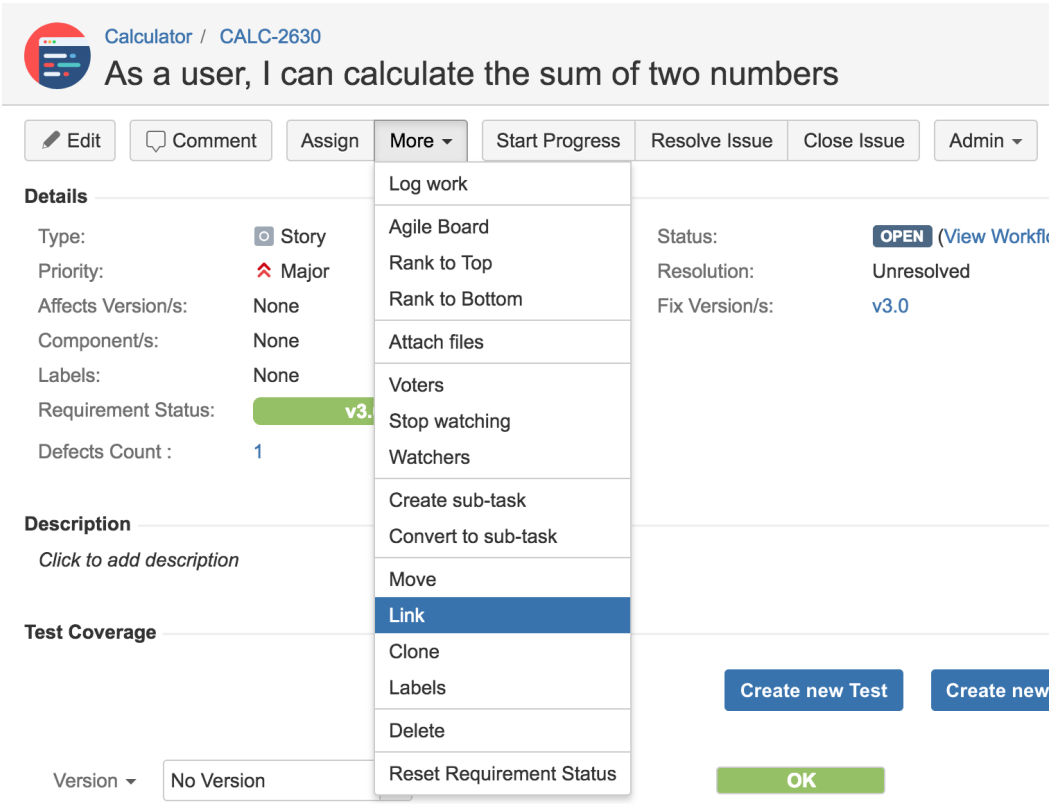
From the requirement issue screen

To link existing Test cases to a requirement directly from the requirement issue screen, we can do it using two different shortcuts as detailed in the first step below.

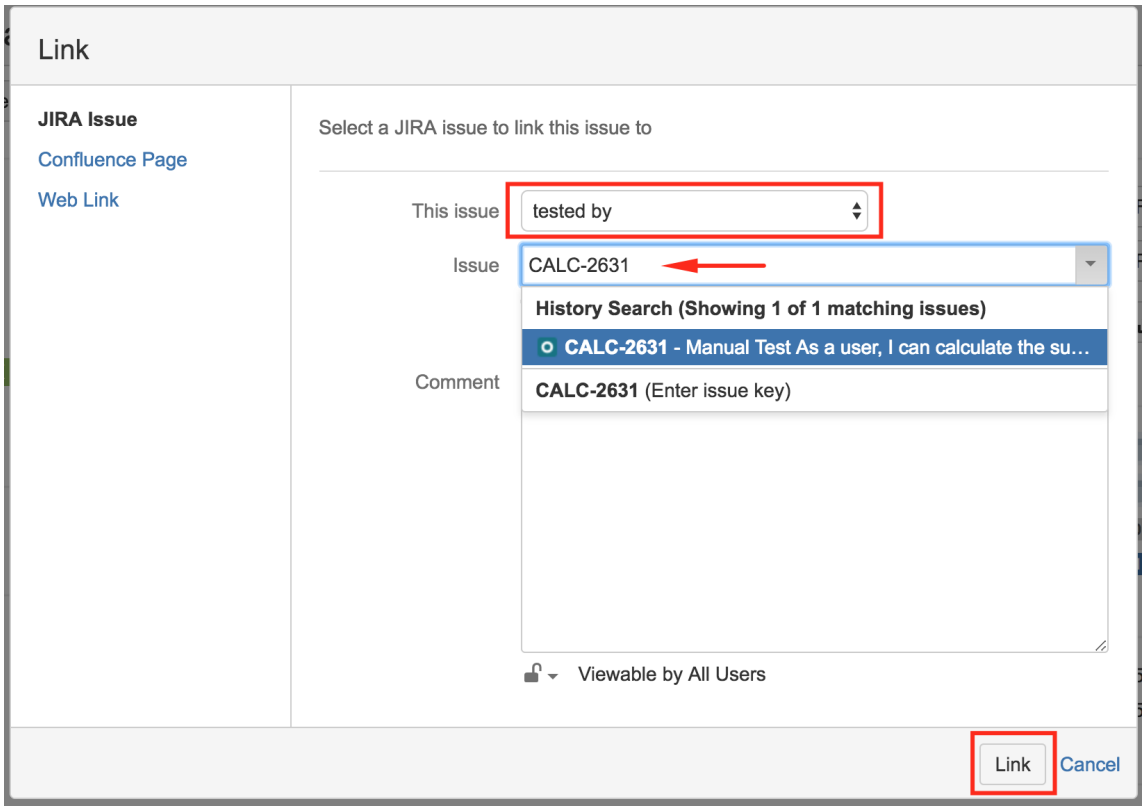
Step 1a: **Using the "+" icon on the Test Coverage panel** - Click the **Edit** button (at the top-left of the 'view issue' page) to open the **Edit Issue** dialog box.



Step 1b: Using the Jira native issue link creation dialog - Click on **More** and then **Link**



Step 2: Make sure that the created link is "tested by" (i.e. the requirement will be tested by the given issues)



Step 3: Enter one, or more, issue key(s) of the Test cases that validate your requirement.

Please note

You may also specify Test Set issue keys; in this case, the link will be created between the requirement and the Test Set.

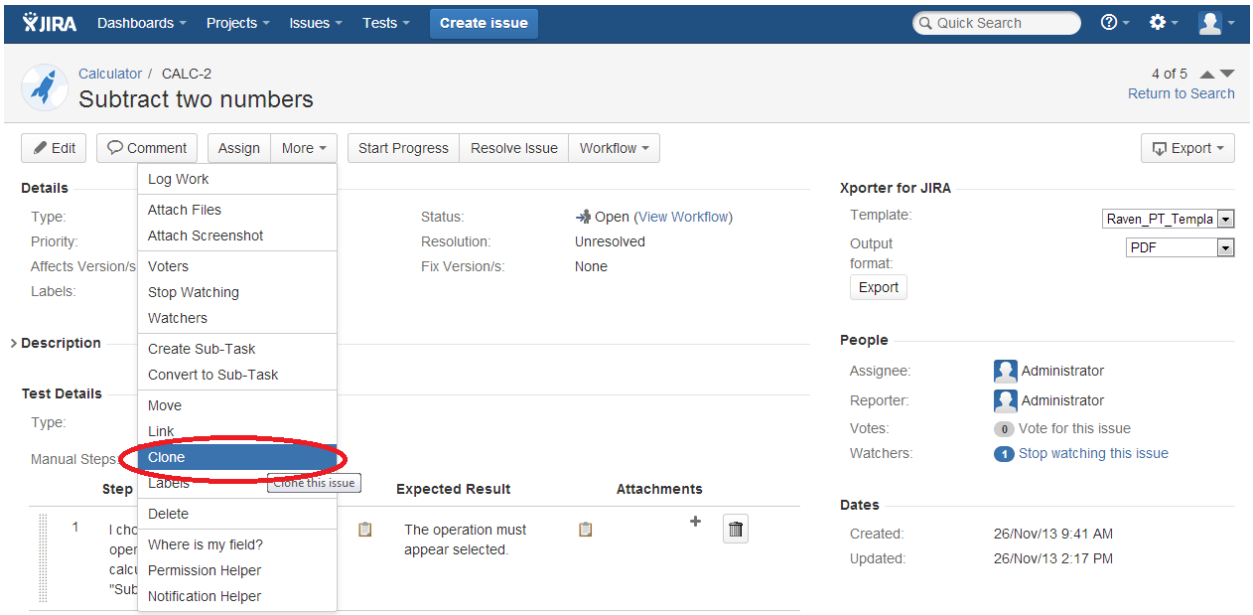
When you do this, you'll have a dynamic coverage of the requirement based on the Tests belonging to the Test Set. That mean that you can then add or remove Tests to/from the Test Set and they will be covering the requirement or not depending on being or not on the Test Set.

Step 4: Click on "Link"

Clone

Cloning a Test issue creates a new Test with all the information of the cloned Test, except its executions. Therefore, the cloned issue will not be associated with any Test Execution issue.

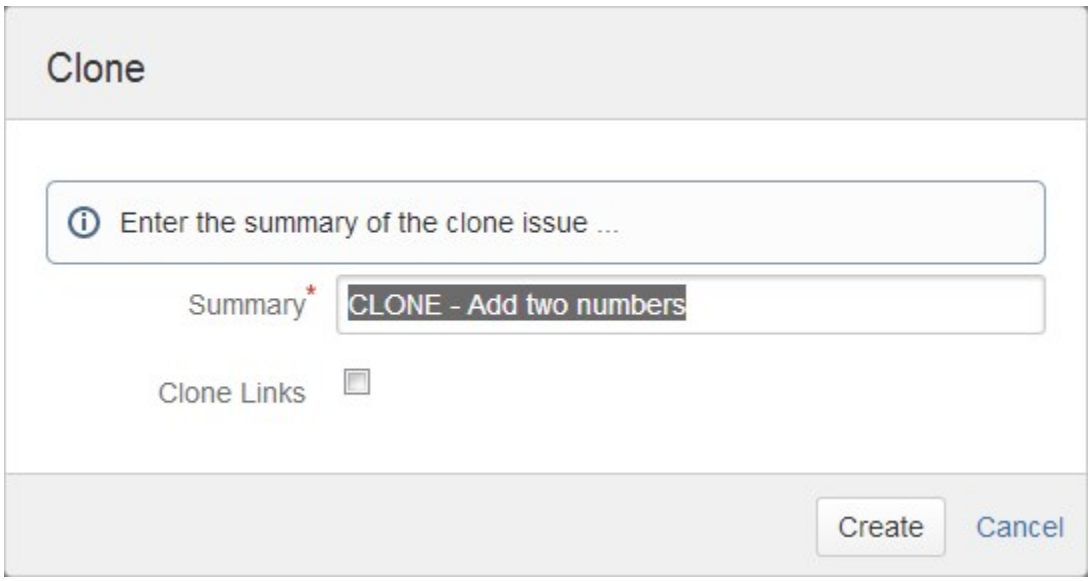
Step 1: Select **More > Clone.** The **Clone Issue** screen will appear.



Step 2: You can edit the clone Test's **Summary** if you wish.

- If the test contains links to other issues, you can select whether or not to include the links in the new clone test.
- If the test contains sub-tasks, you can select whether or not to create the sub-tasks in the new clone test.
- If the test contains attachments, you can select whether or not to include the attachments in the new clone test.

Step 3: Click **Create**.



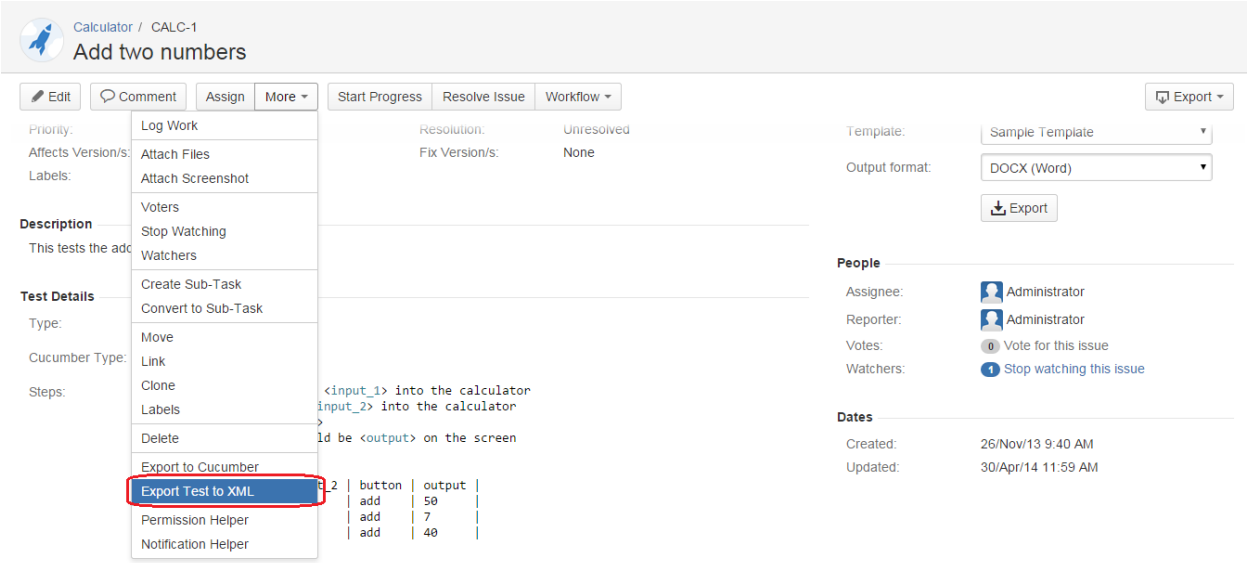
Export Test to XML

Xray Test issues can be exported to XML. This export differs from the Jira default action for exporting to XML. Rather than exporting all fields, the Xray export action will only export to XML the most relevant fields for Tests, such as the Test definition fields, Pre-Conditions and some issue-tracking information.

To export a Test issue to XML,

Step 1: Open the Test issue view page.

Step 2: Select **More > Export Test to XML.** The resulting XML file will be downloaded to the browser.



Export Test Runs to CSV

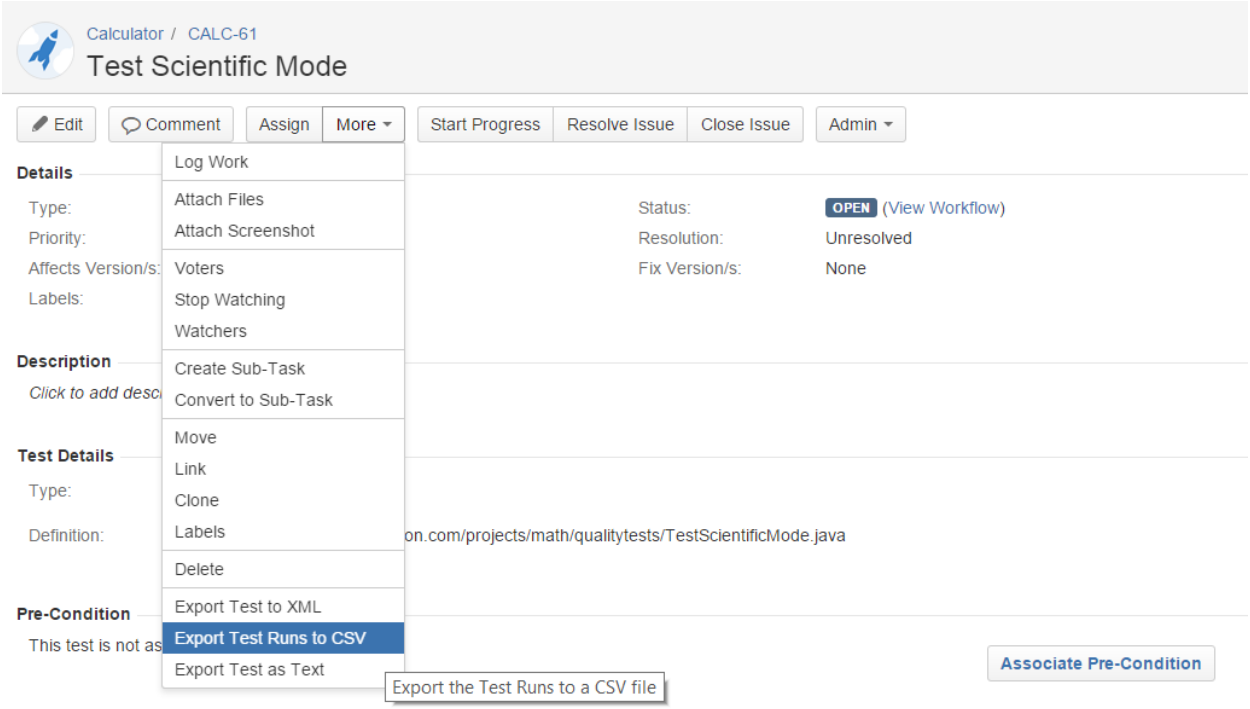
Xray Test Runs can be exported to CSV. Xray export action will export to CSV the most relevant fields for Test Runs such as:

- Test Key
- Test Execution Key
- Executed By
- Assignee
- Start
- Finish
- Defects issue keys (list separated by ",")
- Attachment JIRA links (list separated by ",")
- Comment
- Status

To export a Test Run to CSV,

Step 1: Open the Test issue view page.

Step 2: Select **More > Export Test Runs to CSV.** The resulting CSV file will be downloaded to the browser.



Test Issue Layout

Xray provides additional web panels into the Test issue page:

- Test Details
- Pre-Conditions
- Test Sets
- Test Plans
- Test Runs

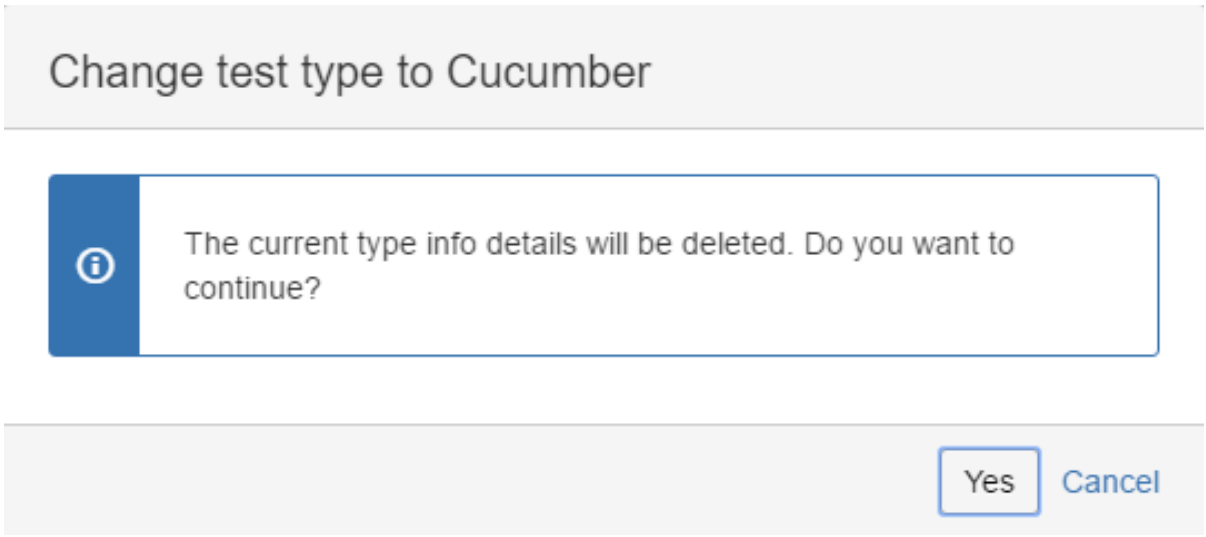
Test Details

Within the **Test Details** web panel, you can define the Test Type and Test Specification.

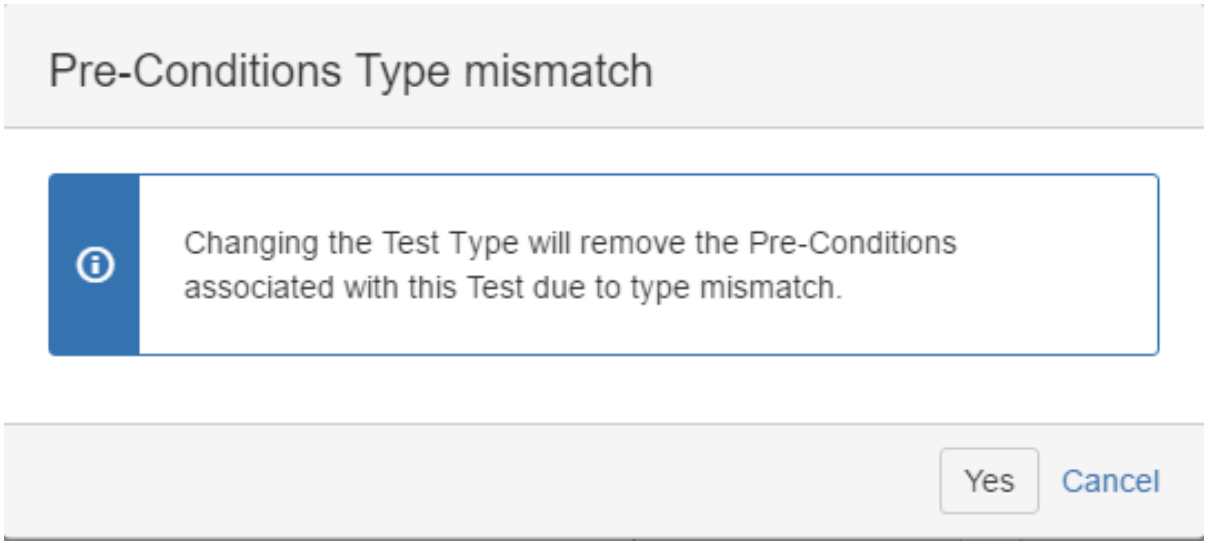
Changing the Type of a Test

In the Global Preferences, Xray allows you to configure if a test definition is deleted or not.

If enabled, the previous Info details will be deleted.



Otherwise, the Info details will not be deleted, and it'll be possible to undo the Test Type change operation and keep the previous information.



Additionally, in both cases, because each pre-condition must be of the same Type of the Test, any associated Pre-Conditions will be lost.

Please check how to define each Test Type in the child pages below:

- Steps (Manual Tests)
- Gherkin (BDD Tests)
- Unstructured (Generic Tests)

Pre-Conditions

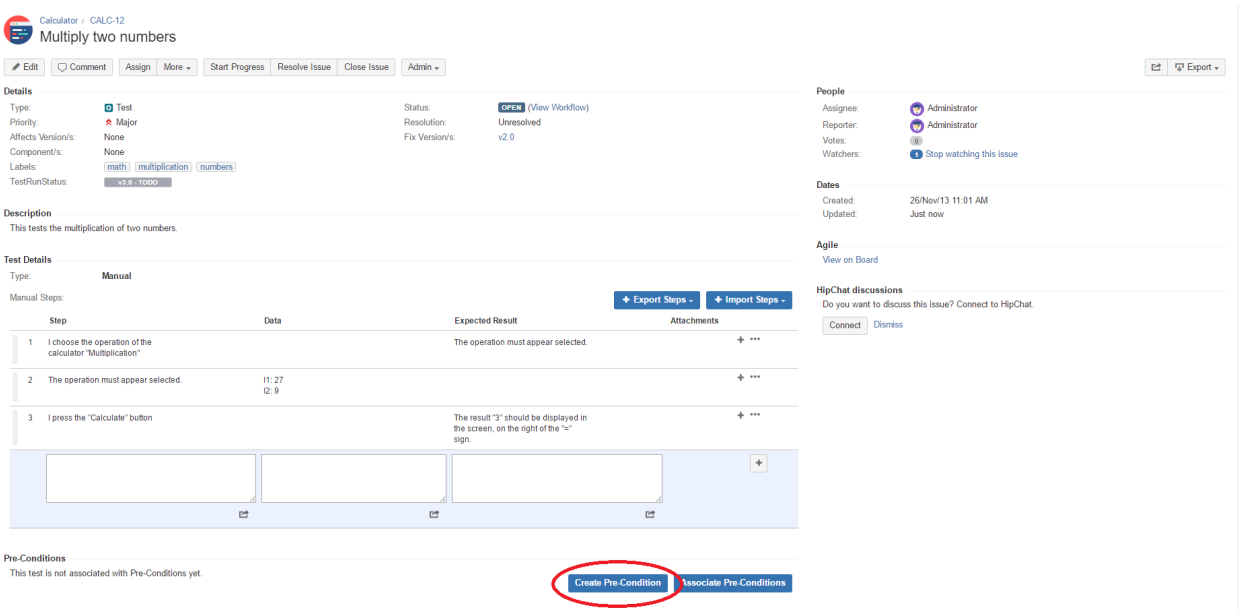
This web panel displays a data-table with all the Pre-Condition issues associated with the current Test. You can also create new Pre-Conditions, associate existing Pre-Condition issues, and remove the association between the Test and Pre-Conditions. It is possible to preview each Pre-Condition definition by clicking on the preview button for each data-table row.

Create Pre-Condition

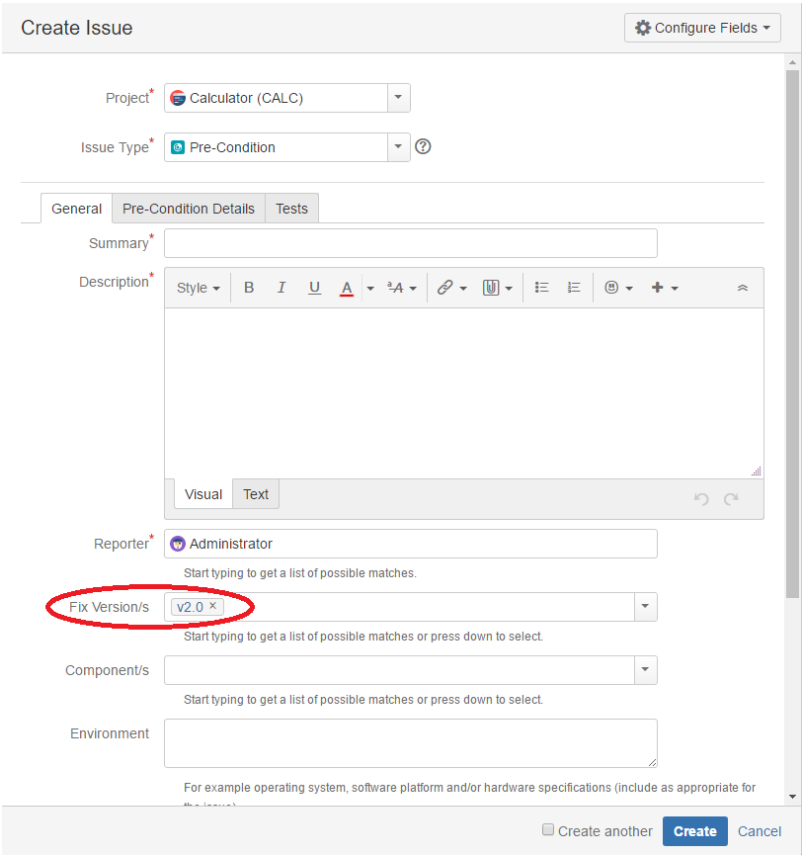
To create a Pre-Condition directly associated to the current Test from the Test issue view screen:

Step 1: Open the **Test** issue view screen you wish to create a **Pre-Condition** with.

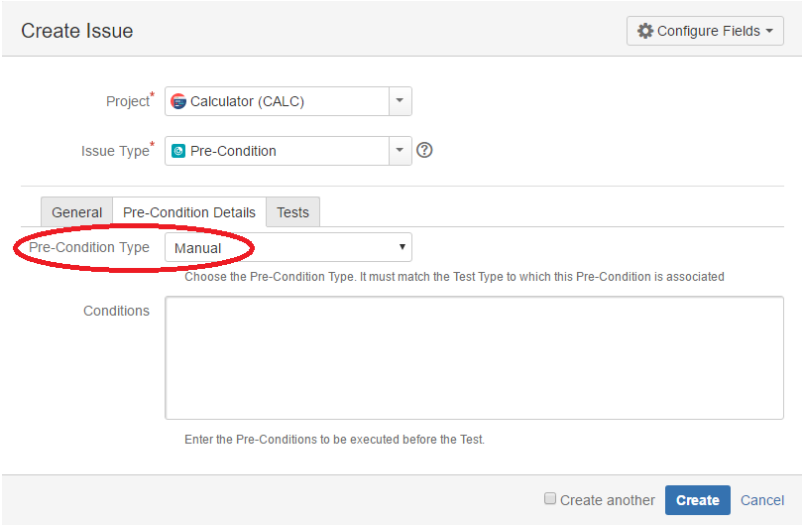
Step 2: Click the **Create Pre-Condition** button (under the **Pre-Condition** section on the view page) to open the **Create Issue** dialog box.



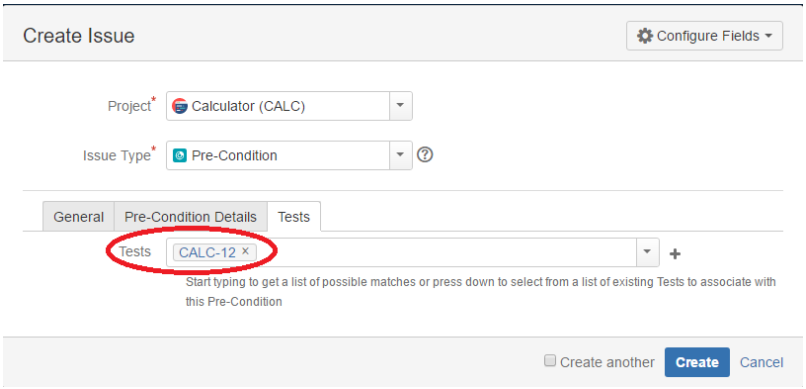
Step 3: Type a **Summary** for the Pre-Condition and complete all appropriate fields — at least, the required ones marked by an asterisk.This issue is automatically pre-populated with your previous Test issue **Fix Version/s**.



Step 4: On the Pre-Condition Details tab, complete all appropriate fields. This issue is automatically pre-populated with your previous **Test type**.



Step 5: **Optional.** Click on the Tests tab to edit Test associations to associate more Tests. This issue is automatically pre-populated with your previous **Test key**.



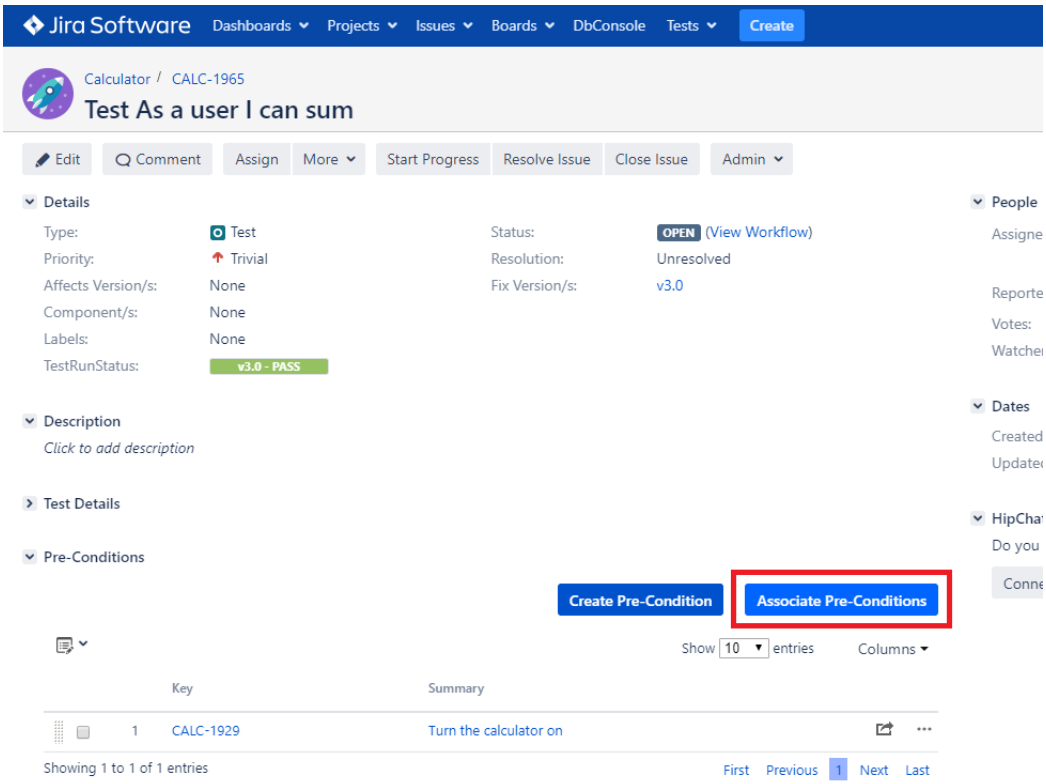
Step 6: Click **Create**.

Associate Pre-Conditions

To associate Tests with a Pre-Condition from the Test issue view screen:

Step 1: Open the **Test** issue view screen you wish to associate a **Pre-Condition** with.

Step 2: Click the **Associate Pre-Condition** button (under the **Pre-Condition** section on the view page) to open the **Issue Picker D ialog**.

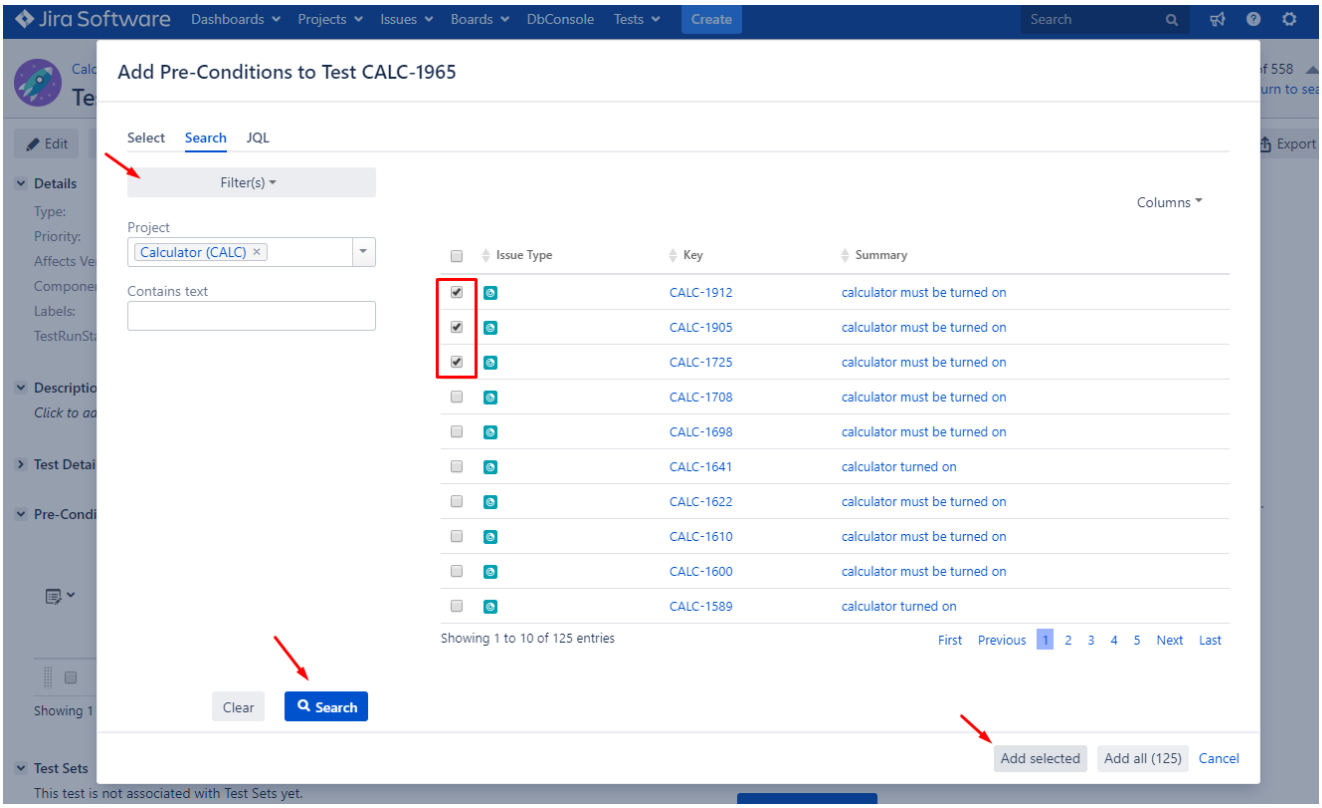


Step 3: Open the **Search** tab.

> **How to use de Issue Picker Dialog**
>
> This is an example of how to add tests, using some of the features available in the Search tab.
>
> For more information, please visit the Issue Picker Dialog detailed overview.

Step 4: Configure the search.

- Use the **Filters** dropdown button to **include extra fields** in the search criteria.
- **Fill in** the field values.
- **Press** the search button.



Step 5: Select and Add Pre-conditions.

- Once the results are obtained you can **order, add/remove columns** to the results list (the columns selection is saved as a preference).

- **Check** the pre-conditions you wish to add from the listed results.

Step 6: Add tests by pressing " **Add selected** ".

Remove Pre-Conditions

To remove a Pre-Condition association from the Test issue view screen:

Step 1: Open the Test you wish to remove the Pre-Condition association.

Step 2: On the Pre-Conditions table, hover over the desired Pre-Condition row and click on the **Trash** button that appears in the end of the row. You will be prompted with a confirmation dialog.

Reorder Pre-Conditions

Pre-Conditions within a Test issue can be reordered. There are two ways to change the order of Pre-Conditions:

Drag-and-Drop

To reorder Pre-Conditions,

Step 1: Open the Test issue.

Step 2: Hover over the desired Pre-Condition row (under the **Pre-Condition** section on the view page) and the drag handle column.

Step 3: Click the drag handle and move the Pre-Condition up or down on the current page.

Change Rank Action

This action allows users to change the Rank of a Pre-Condition between pages.

To change the rank of a Pre-Condition through the action:

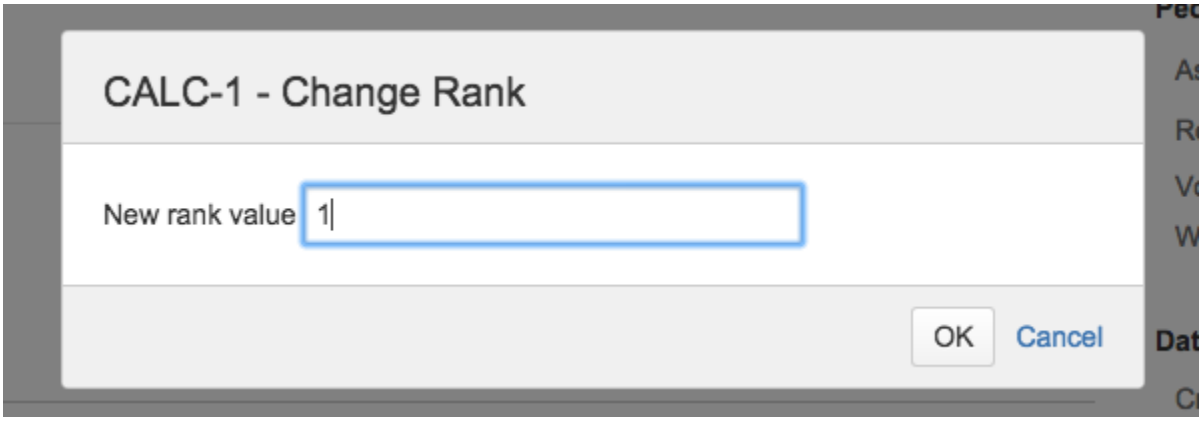
Step 1: Open the Test issue.

Step 2: Hover over the desired Pre-Condition (under the **Pre-Condition** section on the view page).

Step 3: Click the gear that appears in the last column. The actions menu should pop up with the available actions.

Step 4: Click the **Move To** action. The change rank dialog appears.

Step 5: Enter the desired index number (1-based) and click **OK.**



Test Sets

This web panel displays a data-table with all the Test Set issues associated with the current Test. You can also add the current Test issue to other Test Set issues, and remove the association between existing Test Sets.

Associate Test Sets

Prompts the user with the Xray issue picker dialog to search and select Test Set issues to associate with the current Test.

Remove Test Sets

Removes the current Test from the selected Test Set issues.

Configure Test Set Columns

Xray provides the ability to configure columns for the Test Sets table. This configuration is specific to each user and can be restored to the default configuration defined in the Default columns layout page in Xray app administration.

To configure columns for the Test Sets table,

Step 1: Open the Test issue.

Step 2: Click on **Columns,** select the dropdown that appears in the Test Sets section, above the table in the top right corner. A list of the current configure columns and all available columns appear.

Step 3: Add or remove columns by clicking the checkboxes next to each field.

Step 4: Click the **Done** button when finished or **Cancel** to abort this operation. The table refreshes with the configured columns.

Restoring Columns to Default Configuration

To restore columns in the Test Sets table to the default configuration,

Step 1: Open the Test issue.

Step 2: Click on the **Columns** select dropdown that appears in the Test Sets section, above the table in the top right corner. A list of the current configure columns and all available columns appear.

Step 3: Click the **Restore Columns** link above the columns list. The table refreshes with the default configured columns.

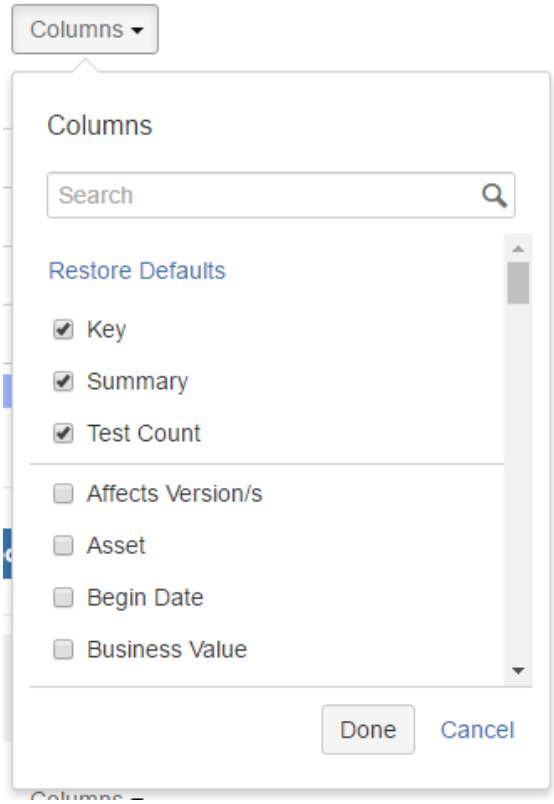
Change Columns Order

To reorder columns in the Test Sets table,

Step 1: Open the Test issue.

Step 2: Hover over the desired column header.

Step 3: Click on the column header and drag it to the desired position.



Test Plans

The Test Plans web panel displays a data-table with all Test Plan issues that include the current Test. It is also possible to see the progress status of each Test Plan. POssible actions are:

Associate Test Plans

Prompts the user with the Xray issue picker dialog to search and select Test Plan issues to associate with the current Test.

Remove Test Plans

Removes the current Test from the selected Test Plans.

Configure Test Plan Columns

Xray provides the ability to configure columns for the Test Plans table. This configuration is specific to each user and can be restored to the default configuration defined in the Default columns layout page in Xray app administration.

To configure columns for the Test Plans table,

Step 1: Open the Test issue.

Step 2: Click on **Columns,** select the dropdown that appears in the Test Plans section, above the table in the top right corner. A list of the current configure columns and all available columns appears.

Step 3: Add or remove columns by clicking the checkboxes next to each field.

Step 4: Click the **Done** button when finished or **Cancel** to abort this operation. The table refreshes with the configured columns.

Restoring Columns to Default Configuration

To restore columns in the Test Plans table to the default configuration,

Step 1: Open the Test issue.

Step 2: Click on **Columns,** select the dropdown that appears in the Test Plans section, above the table in the top right corner. A list of the current configure columns and all available columns appears.

Step 3: Click the **Restore Columns** link above the columns list. The table refreshes with the default configured columns.

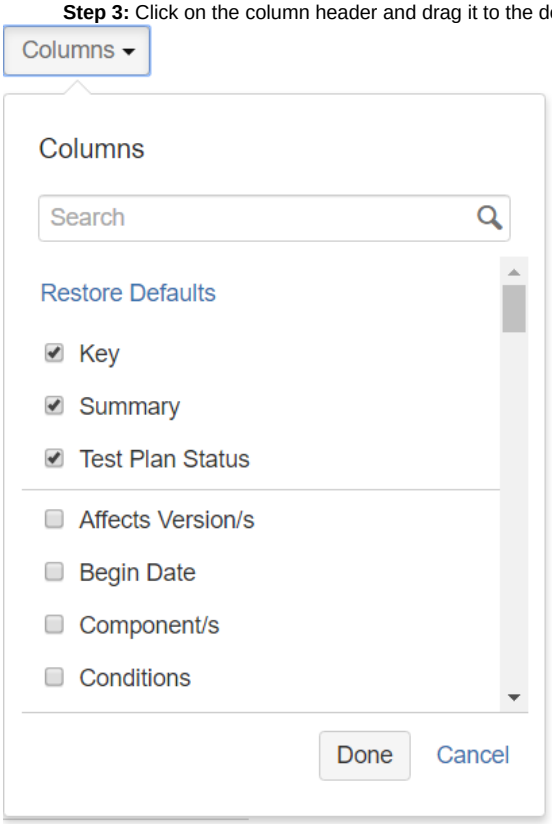
Change the Order of Columns

To reorder columns in the Test Plans table,

Step 1: Open the Test issue.

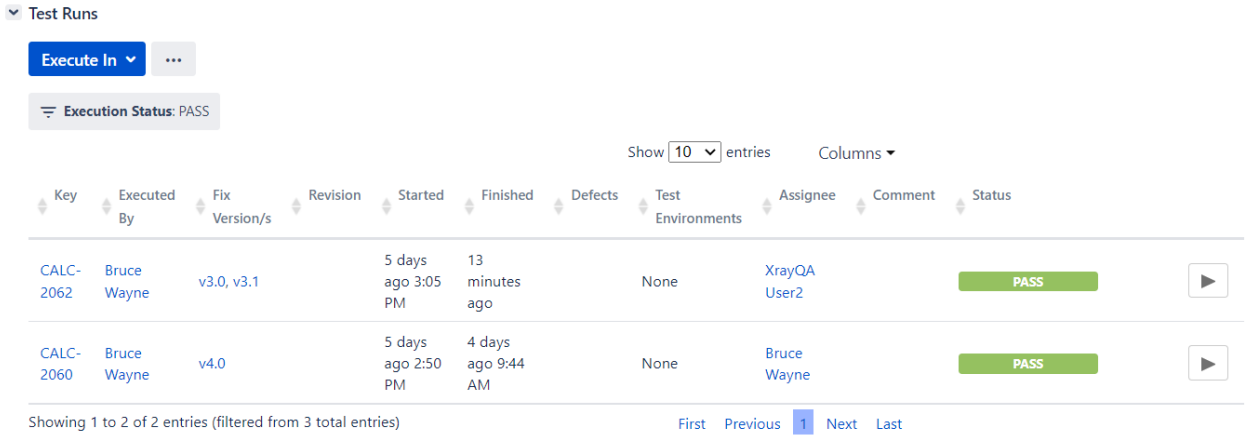
Step 2: Hover over the desired column header.

Step 3: Click on the column header and drag it to the desired position.



Test Runs

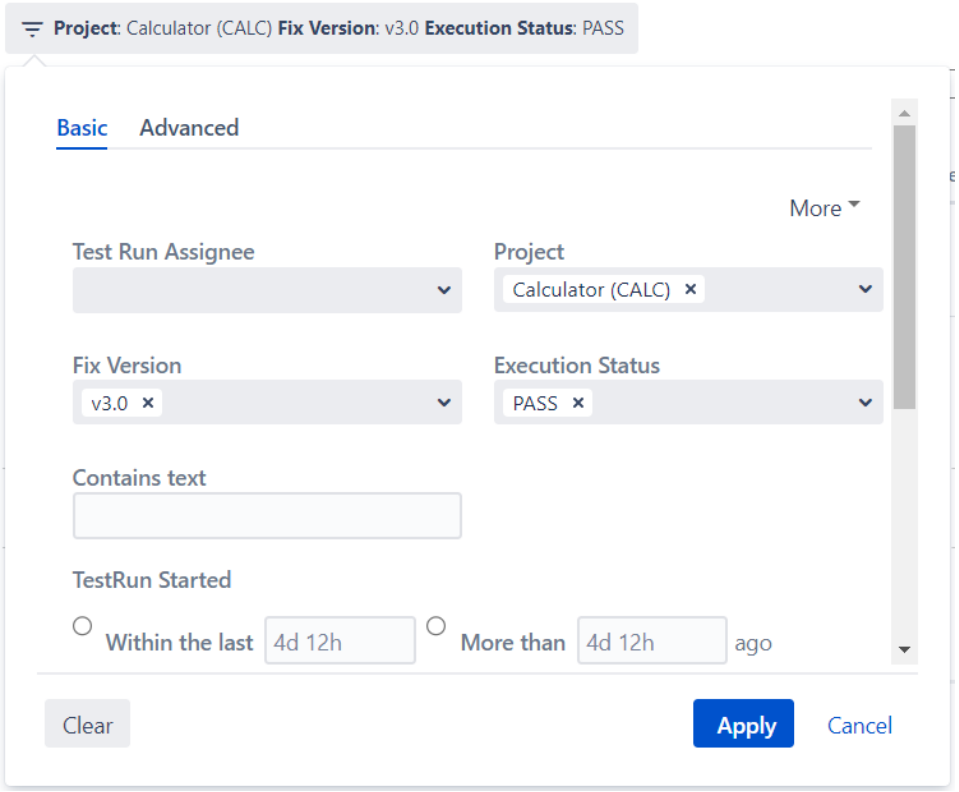
The Test Runs web panel displays a data-table with all executions for the current Test. From this panel, you can filter the Test Runs, create new ad-hoc executions, and create new executions for existing Test Execution issues.



Filtering

Users can filter the Test Runs using the following fields:

- Project
- Fix Version (project dependent)
- Status
- Start date
- Finish date



Configuring Columns

More info in Test Runs.

Executing

A button named "Execute In" is provided on the top actions of the web panel. This button is a dropdown with two options:

- **Execute In > New Test Execution** - Prompts the user with a Jira create issue dialog to create a Test Execution for the current Test. The user has the option to navigate directly to the execution page of the newly created Test Run.

- **Execute In > Existing Test Execution** - Prompts the user for an existing Test Execution issue. This creates a new Test Run on the existing Test Execution. The user has the option to navigate directly to the execution page of the newly created Test Run.

For each row in the data-table users can also inline execute Test Runs (provided that they have permission to do so), or jump into the execution page.