Requirements and Defects

Definition

Requirements and Defects are two concepts commonly related to Tests.

A **Requirement** represents a singular documented physical and functional need that a particular product or process must be able to perform. It is also an important input into the verification process, since a test should trace back to a specific requirement, showing what elements and functions are necessary for the particular project. Most of the time, Requirements are the only coverable/testable entities.

A **Defect** represents a condition in a software product which does not meet a software requirement (as stated in the requirement specifications) or end-user expectations (which may not be specified but are reasonable). It can be displayed as an error, flaw, failure, or fault in a computer program or system that produces an incorrect or unexpected result, or causes it to behave in unintended ways.

These two concepts can be mapped to different issue types in organizations.

Both Requirement and Defect issue types in your Jira instance (as well as any other issue type) can be configured in the Xray project settings as **coverable /testable entities**. When an issue type is configured to be coverable/testable, Xray provides specific web panels and reports to display the coverage of issues as well as their latest status regarding testing.

Defect issues types can also be mapped in the Xray project settings as **Defects**. With this configuration, Xray sets the default issue type when creating defects from testing, as well as providing reports specific to defects.
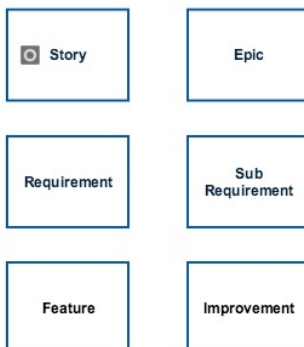
> ⓘ **Please note**
>
> Both the **Test Coverage** and **Defects** can be configured for each project independently. Go to Project Settings > Xray settings.

A typical Jira configuration can have the following issue types configured for **Test Coverage** or mapped as **Defects**.
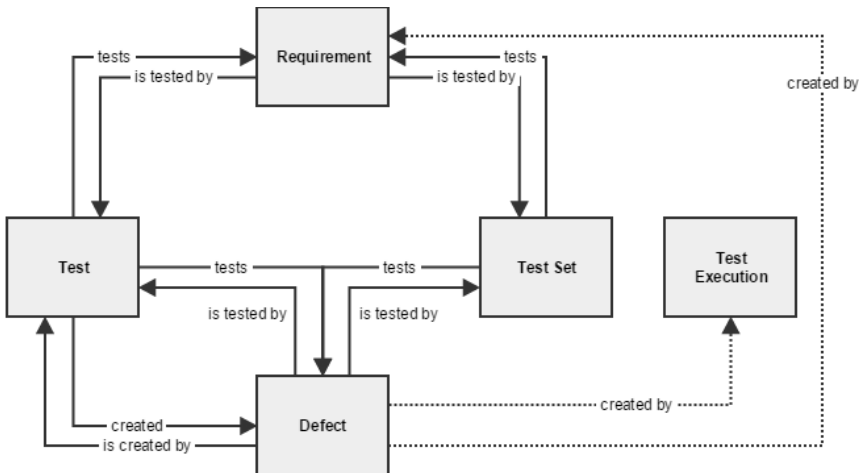

Often, a Defect issue type is also configured as a testable entity. To ascertain that a Defect does not occur again, it can be considered for testing. Xray allows the same issue type to be mapped as being Coverable and as a Defect. A Defect can then be associated with Test issues and be considered for Test Coverage charts.

ⓘ

Requirements and Defect issues can be associated with **Tests** and **Test Set** issues within the Jira default linking mechanism. There are specific issue link types for associating these issue types:

- Requirement R **"is tested by"** test T (or test set TS)
- Test T (or test set TS) **"tests"** requirement R
- Defect D **"is created by"** test T
- Defect D "**is tested by**" test T (or test set TS)
- Test T "**created**" defect D
- Test T (or test set TS) "**tests**" defect D

Sub-Requirements

A requirement can be associated with sub-requirements, resulting in a hierarchy of requirement issues. "Epic" requirements can thus be decomposed into smaller requirements, each associated with specific tests. This decomposition of requirements facilitates the management of epic requirements and makes their coverage analysis easier.

The requirement > sub-requirement (i.e., parent > child) relation can be defined in the "Issue Type Mapping" configuration section of Xray. Sub-Requirements can be associated with requirements using the Jira linking mechanism or using "Sub-Task" requirement issues.

Below are the different ways Xray considers issues as sub-requirements of a given "requirement".
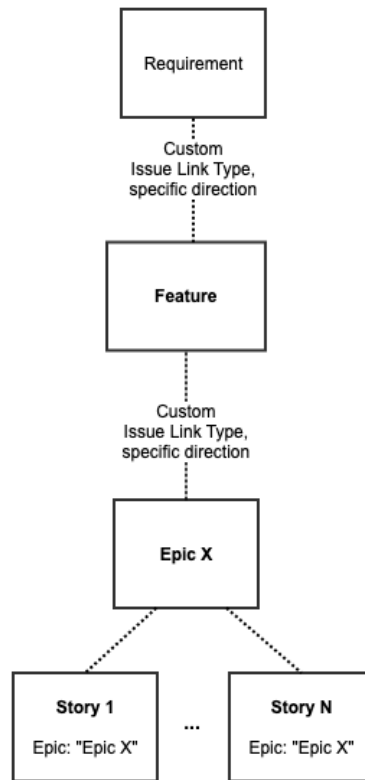
Xray also allows to have more than 2 levels of requirements, to achieve it you must define a custom issue link and use it to define the issue links relations between requirements.
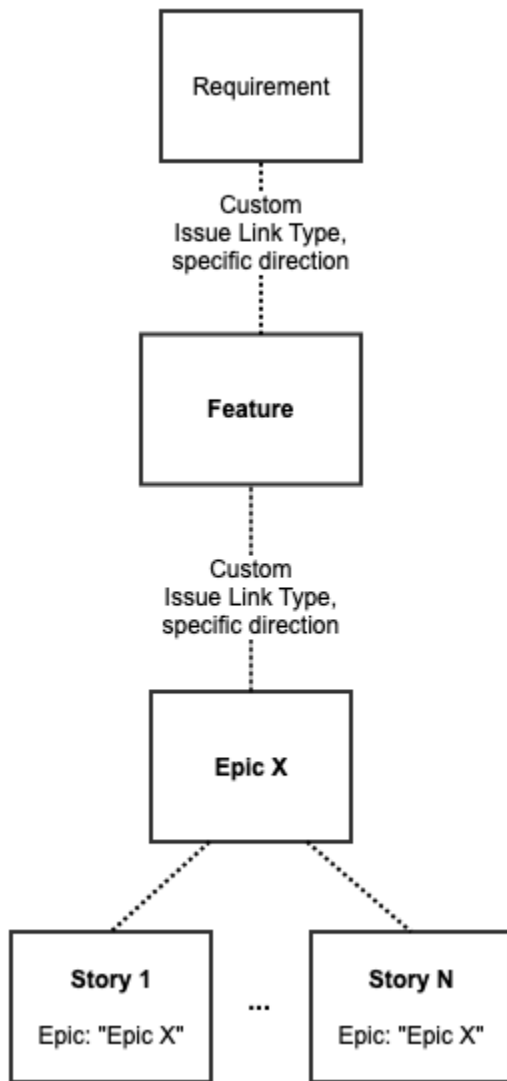
For more information on Coverage Status, please go to the Coverage Analysis page.

Associating a Requirement with a Test

There are several ways to associate a Requirement issue with a Test issue.

From the Requirement issue view screen

Step 1: Open the Requirement you wish to associate a Test with. In the given example, Story issue types are mapped as Requirements.

Step 2: Click on **Link issue** button**.** The **Link** section will appear.

As a user, I want to have version control for documents

📎 Attach   ☑️ Create subtask   🔗 Link issue ⌄   ☰ Test Coverage   •••

Link issue

Description

Add a description...

Test Coverage   •••

No Tests are associated with this issue.

UNCOVERED

Create Test   Create Sub Test Execution

Step 3: On the field of the middle, select the **is tested by** option.

As a user, I want to have version control for documents

📎 Attach   ☑️ Create subtask   🔗 Link issue ⌄   ☰ Test Coverage   •••

Description

Add a description...

Linked issues

Local ⌄	is tested by ⌄	Stor

OPEN ISSUES

▶️ STORE-89 Test Execution for Test Plan STORE-4...

⭕ STORE-88 Test As a user, I want to have version...

▶️ STORE-86 TE for STORE-27 - N002

▶️ STORE-85 TE for STORE-27 - N001

▶️ STORE-78 Ad-hoc execution for STORE-76

🔵 STORE-71 As a user I can perform the login in t...

⭕ STORE-69 Add item to cart

⭕ STORE-68 Search for articles by keyword

⭕ STORE-67 Search for articles by shop name

Test Coverage

Create Test   Create Sub Test Execution

Calculate the Test Coverage for the following scopes.

Latest   Version   Test Plan

Test Environment

All Environments ⌄

Step 4: In order to select the **Tests or Test Sets** to be associated, you can:

- Input the desired Test/Test Set **Issue Key** on the **Issue** field
- Click on the **Down Arrow** on the Issue field and select the Test from its **Issue** list
- Click on the **search for an issue** link to use the **Find Jira issues** browser

Step 5: Click **Link**.

From the Test issue view screen

Step 1: Open the **Test** you wish to associate a **Requirement** with.

Step 2: Click on **Link issue.** The **Link** section will appear.

Step 3: On the field of the middle, select **tests** option.

Step 4: In order to select the **Requirements** to be associated, you can:

- Input the desired Requirement **Issue Key** on the **Issue** field
- Click on the **Down Arrow** on the Issue field and select the Requirement from its **Issue** list
- Click on the **search for an issue** link to use the **Find Jira issues** browser

Step 5: Click **Link**.

From the Test Set issue view screen

Step 1: Open the **Test Set** you wish to associate a **Requirement** with.

Step 2: Click on **Link issue.** The **Link** section will appear.

Step 3: On the field of the middle, select **tests** option.

Step 4: In order to select the **Requirements** to be associated, you can:

- Input the desired Requirement **Issue Key** on the **Issue** field
- Click on the **Down Arrow** on the Issue field and select the Requirement from its **Issue** list
- Click on the **search for an issue** link to use the **Find Jira issues** browser
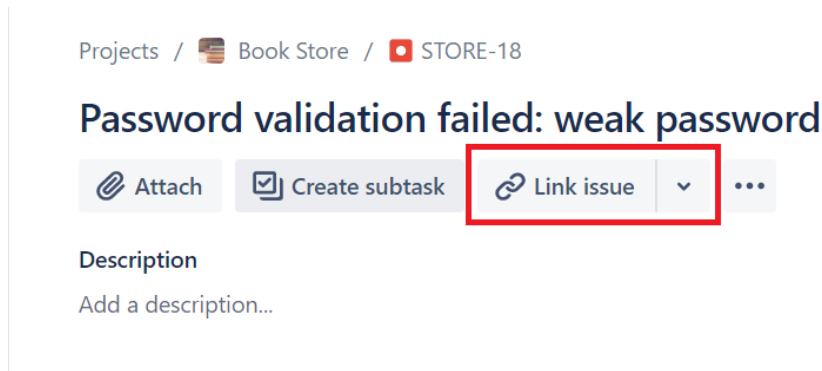
Step 5: Click **Link**.

Associating a Defect with a Test

There are two ways to associate a Defect issue with a Test issue.

From the Defect issue view screen

Step 1: Open the **Defect** you wish to associate a **Test** with.

Step 2: Click on **Link issue.** The **Link** section will appear.

Step 3: On the field of the middle, select either the **created by** or the **tested by** option.

Password validation failed: weak password

📎 Attach   ☑ Create subtask   🔗 Link issue   ⌄   ⋯

Description

Add a description...

Environment

None

Linked issues   ＋

created by

🟦 STORE-38 Manual test of strong password validation   ↑ 👤 TO DO ⌄

▶ STORE-45 Iteration 1 - TP v1.0   ↑ 👤 TO DO ⌄

| Local ⌄ | created by ⌄ | STORE-17 |

OPEN ISSUES

📗 STORE-17 As a user, I want to be enforced to have

STORE-17 (Exact key)

Activity

Show: Comments History Work log   Newest first ⌄

Step 4: In order to select the **Tests** to be associated, you can:

- Input the desired Test **Issue Key** on the **Issue** field
- Click on the **Down Arrow** on the Issue field and select Tests from its **Issue** list
- Click on the **search for an issue** link to use the **Find Jira issues** browser

Step 5: Click **Link**.

From the Test issue view screen

Step 1: Open the **Test** you wish to associate a **Defect** with.

Step 2: Select **More > Link.** The **Link** screen will appear.

Step 3: On the **This issue** field, select either the **created** or the **tests** option.

Step 4: In order to select the **Defects** to be associated, you can:

    - Input the desired Defect **Issue Key** on the **Issue** field
    - Click on the **Down Arrow** on the Issue field and select Defect from its **Issue** list
    - Click on the **search for an issue** link to use the **Find Jira issues** browser

Step 5: Click **Link**.