

# Test Case Designer



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## Overview

Xray Test Case Designer is a revolutionary test design optimization tool that will increase the effectiveness of your testing

It is used by teams in the early stages of the testing processes (and by teams when they're creating scenario-based requirements). Benefitting from Intelligent Augmentation algorithms, Xray Test Case Designer test sets have been repeatedly proven to find more defects (and find them more efficiently) than hand-selected test sets.

To do so, it carefully constructs combinations of test conditions to achieve as much coverage as possible in as few tests as possible using applied statistics-based optimization methods that have been refined over more than 40 years.

This is the core feature of Xray Test Case Designer, and to achieve that it focuses on these areas:

- Systematically avoiding wasteful repetition.
- Systematically covering not only all user-specified requirements, but also 100% of all of the application's critical interactions.
- doing so in the lowest mathematically possible number of tests.

GENERATE EXACTLY THE RIGHT TESTS  
VERY QUICKLY AND SYSTEMATICALLY

— THEN —

**EXECUTE** EXACTLY THE RIGHT TESTS  
TO UNCOVER MORE DEFECTS EARLIER

EXECUTE **EXACTLY** THE RIGHT TESTS  
TO AVOID ALL WASTEFUL REPETITION

EXECUTE EXACTLY **THE** RIGHT TESTS  
TO OPTIMIZE LEARNINGS EVERY STEP

EXECUTE EXACTLY THE **RIGHT** TESTS  
TO COVER ALL CRITICAL INTERACTIONS

EXECUTE EXACTLY THE RIGHT **TESTS**  
WITH PRECISE TEST COVERAGE REPORTS

With Xray Test Case Designer, you'll test much faster. You'll also achieve objectively much better testing. Let's begin by discussing three key ways Xray Test Case Designer will save you and your colleagues time before we explain how scenarios you'll generate using the tool are far more thorough than the ones selected by hand.

#### **Design Faster**

Generate test models in seconds at the push of a button



Generating tests models in Xray Test Case Designer is a fundamentally different process than selecting and documenting individual tests by hand, one by one. Generating optimized scenarios using Xray Test Case Designer requires that a thoughtful designer starts by identifying inputs and variation ideas and entering those into the tool.

Once identified, you'll be able to generate entire sets of extremely thorough and extremely efficient scenarios in seconds and adjust them as necessary.

### Approve Faster

Clearly communicate testing coverage for faster approvals



Each time you generate a set of scenarios, Xray Test Case Designer automatically creates insightful interaction coverage reports that make it clear exactly what (and what is not) covered after any scenario you choose. These visualizations facilitate clear and efficient communication between stakeholders. With Xray Test Case Designer's coverage graphs in hand, you will immediately have clear, actionable, and fact-based answers to the questions posed above and the related questions of "How many tests are enough?"

### Automate Faster

Quickly transform optimized scenarios into automated tests



If a large percentage of your automated tests today are individually written using hard-coded variables, the SDET's, Developers, and/or automation engineers responsible for scripting and maintaining those would love our tool.

Xray Test Case Designer enables accelerated, **optimized in-sprint automation** because you can:

- Rapidly create clear, consistent steps that leverage Behavior Driven Development principles – the largest benefit is the one-to-many relationship between Xray Test Case Designer scripts and the data scenarios.
- Export one Scenario block into multiple skeletal scripts based on the language of your choosing.
- Maintain and reuse the script components much faster thanks to the model-based approach.

### Eliminate wasteful redundancy

Stop hand-selecting redundant tests.  
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The most common type of wasteful repetition is that certain system paths and certain combinations of test inputs get tested again and again in test after test.

Based on our experience analyzing thousands of hand-selected test sets, even when those sets achieve "requirements coverage," they consistently fail to thoroughly test critical system interactions.

Eliminate Gaps



Xray Test Case Designer uses sophisticated test generation algorithms powered by Intelligent Augmentation to systematically eliminate these coverage gaps. Whether a system under test has 50 critical interactions or 50,000 critical interactions, Xray Test Case Designer will keep track of 100% of them and ensure your tests cover all of them (and do so in the fewest possible scenarios).

Maximize variation and thoroughness

The majority of software defects are triggered by simple interactions within a system.

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Every test you generate with Xray Test Case Designer is optimized to achieve maximum coverage, allowing teams to achieve greater coverage in fewer overall tests.

Xray Test Case Designer will guarantee that 100% of those system interactions are covered in as few tests as possible.

Features

	Supported?
Create, view, edit, copy Test Models	✓
Test Model revisions	✓
Import Test Models from Excel	✓
Import Test Models from mind maps (OPML)	✓
Share Test Models	✓
Export Test Models	

<b>Parameters</b>	
Create, view, edit Parameters	✓
Order Parameters	✓
Add Value Expansions	✓
Bulk update	✓
<b>Rules</b>	
Constraints definition	✓
Invalid constraints	✓
Bound constraints	✓
Forced Interactions definition	✓
Import Forced Interactions	✓
<b>Scenarios</b>	
Standard and optimized scenarios generation	✓
Multi way interactions	✓
Mixed-strength interactions	✓
Scenario Freeze option	✓
Export Scenarios	✓
<b>Scripts</b>	
Manual Tests	✓
Native support for BDD (Gherkin/Cucumber)	✓
<b>Analysis</b>	
Coverage Matrix	✓
Coverage Graph	✓
<b>Review</b>	
Notes	✓
Mind Map View	✓
Scorecard	✓

## Access Test Case Designer



Xray Test Case Designer is a feature included in Xray Enterprise offer, to access this feature you need to make sure that:

- Xray Enterprise Requires an active [Xray license](#)
- Xray Enterprise active [license](#)
- Minimum Xray version 6.3.0

When a valid Xray Enterprise license is detected, a new Xray Enterprise configuration option will be made available to setup your Test Case Designer instance

## Initial Setup

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Access the new "Xray Enterprise" global option

**Jira Software** Dashboards ▾ Projects ▾ Issues ▾ Boards ▾ Plans ▾ Tests ▾ Help ▾

**Administration** 🔍 Search Jira admin

Applications Projects Issues **Manage apps** User management Latest upgrade report System

ATLASSIAN MARKETPLACE  
Find new apps  
**Manage apps**

ADVANCED ROADMAPS FOR JIRA  
Advanced Roadmaps permissions  
Advanced Roadmaps license details  
Hierarchy configuration  
Dependencies  
Advanced Roadmaps early access features

XRAY  
Miscellaneous  
Custom Fields  
**Xray Enterprise**  
Issue Type Mapping  
Requirement Coverage  
Requirement Projects  
Document Generator  
Test Statuses  
Test Step Statuses

### Manage apps

You can install, update, enable, and disable apps here. [Find new apps](#).

Filter visible apps ▾ | User-installed ▾

#### User-installed apps

- Atlassian Troubleshooting and Support Tools
- Jira Cloud Migration Assistant
- Xporter
- Xray
- Xray Enterprise

[Audit log](#) | [JIRA update check](#) | [Settings](#) | [Enter safe mode](#)

The Universal Plugin Manager (v5.1.5) by Atlassian

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Provide the specific URL that Xray provided you (If you don't have this URL please contact support)

**Jira Software** Dashboards ▾ Projects ▾ Issues ▾ Boards ▾ Plans ▾ Tests ▾ Help ▾ **Create** 🔍 Search

**Administration** 🔍 Search Jira admin

Applications Projects Issues **Manage apps** User management Latest upgrade report System

ATLASSIAN MARKETPLACE  
Find new apps  
Manage apps

ADVANCED ROADMAPS FOR JIRA  
Advanced Roadmaps permissions  
Advanced Roadmaps license details  
Hierarchy configuration  
Dependencies  
Advanced Roadmaps early access features

XRAY  
Miscellaneous  
Custom Fields  
**Xray Enterprise**  
Issue Type Mapping  
Requirement Coverage  
Requirement Projects  
Document Generator  
Test Statuses  
Test Step Statuses

### Xray Enterprise Settings

This page contains settings related with Xray Enterprise.

#### Xray Test Case Designer

Custom URL  [Clear](#)

Defines the Xray Test Case Designer URL so users can access through the project menu. The Xray Test Case Designer menu option will only be displayed if an URL is provided and the project is an Xray project.

[Save](#)

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The Test Case Designer menu option is now available on your Xray enabled projects



## Terms & Concepts

### Test Model

A Test Model is an abstraction of a focused use case that we aim to test. This model is made around a specific scope (e.g., "book a flight") that can be exercised in different ways, depending on a combination of input parameters (e.g., "origin, destination, number of seats, date"). To find bugs related with the input parameters and increase the related coverage, an optimized set test cases (manual or automated) can be derived from it. More [info on Test Models here](#).

### Parameters

The parameters are used to define the variables, and the related possible values, that are applicable to the Test Model. Usually these refer to the input variables.

Parameters, together with the restrictions specified using Rules, will be used to derive the combination of parameter/values.

More [info on Parameters here](#).



Test parameterization is a powerful practice that allows the same test to be executed multiple times with different parameters. Parameters are similar to input values (variables) that can change with each execution.

### Rules

While Parameters are used to enumerate, in general, the variables in our Test Model and the values they can have, Rules allow us to apply some restrictions as we may not be interested in having all the combinations of these variables.



Rules can be used to define what parameter values can never be tested together, as they either don't make sense in reality (e.g., Windows + Safari) or because they may not be representative/relevant.

In the other hand, Rules can also be used to enforce scenarios where parameter values can only be tested together.

More [info on Rules here](#).

## Scenarios

Scenarios are the generated combination of input parameter values, where each row represents a combination of parameters (and their values) to be used in a test.

We can think of Scenarios as an optimized dataset that will be used to iterate our Test Model multiple times, and thus test it under slightly different circumstances.

Not all combinations of parameter/values are created. Test Case Designer uses coverage optimization algorithms (pairwise, n-wise) to achieve a high level of coverage with in few tests. This can be adjusted to achieve a greater coverage if needed. More [info on Scenarios here](#).

## Scripts

While Scenarios focus on data that will be used for our tests, Scripts provide the actual context so that testers know how/where to apply it.

Scripts have the detailed steps with actions and expectations for our test scenarios.

Scripts can be either manual test scripts or automated test scripts.

For manual test scripts, detailed steps and expected results can be specified, where parameters may be mentioned. These will be replaced by the respective values whenever generating the tests later on.

For automated test scripts, Gherkin (e.g., Cucumber) Scenario or Scenario Outline can be specified or even Robot Framework test cases. Similarly to manual test scripts, parameters can be mentioned in the specification, so they can be replaced later on by proper values. More [info on Scripts here](#).