

Performing exploratory testing with Xray

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Overview

Exploratory testing is an approach for testing where the testers plays a key role in uncovering problems that otherwise could stay unnoticed.

While exploring, testers perform test ideas by interacting with the target system, from where they observe and get insights for further test ideas.

Therefore, there's no predefined script for the tests. What we do is dynamic, based on real-time feedback we get from the system, together with our knowledge and context that are key to identifying problems and gaps in our systems.

Learn more [here](#).

Process at a glance

In exploratory testing, usually we start with a goal, or a so called **charter**. The charter is a high-level description of what we aim to test and the why, for the purpose of the time we decide to allocate to it.

Sometimes, our testing **sessions**, where we perform the actual testing, may be well-delimited (e.g., 30min sessions), or may not have an exact time frame.

During our session, we take notes and other evidence (e.g., screenshots, videos, logs) that we can then **share** and **debrief** with the team afterwards. We may even report defects or create new ideas in the backlog.

Exploratory testing with Xray

First, we need to use some entity as an abstraction of an exploratory test. In fact, exploratory tests are... tests. Therefore, we will use Test issues for this purpose.

By default, in Xray we have different types of Tests, including "Manual" (i.e. scripted, composed of well-known predefined steps), Cucumber (i.e. Gherkin), and Generic (i.e., unstructured tests).

For defining our test charter, we'll use unstructured tests; we can either use Tests of "Generic" test type or even, probably better, create a specific test type and name it, for example, "Exploratory".

In sum, an exploratory test in Xray will be a Test. A testing session, that represents the testing performed for a given charter, will be abstracted as a Test Run for the exploratory Test.

Exploratory Testing (ET) concept	Xray concept
Test / Test charter	Test <ul style="list-style-type: none">• Unstructured (e.g., "Generic" or custom test type such as "Exploratory")• Charter can be set on the Definition field
Session	Test Run

How to create an Exploratory test type in Xray cloud

The screenshot shows the Xray Settings page in Jira. The left sidebar contains navigation links for ET Workshop, Back to project, Project settings, Details, People, Automation, Features (marked as NEW), Summary, Issue types, Issue layout, Workflows, and Screens. The main content area is divided into 'Xray Settings' and 'Test Types'. The 'Test Types' section displays a table with columns: Position, Option, Kind, Order, and Action. The table lists three test types: Manual (Steps, DEFAULT), Generic (Unstructured, Set Default), and Cucumber (Gherkin, Set Default). The 'Exploratory' test type is highlighted with a red box and a red arrow. Below the table, the 'Add New Test Type Option' form is visible, with fields for Option (Please Type the Option Name) and Kind (Steps), and an 'Add' button.

Position	Option	Kind	Order	Action
1.	Manual	Steps	↓↑	Delete DEFAULT
2.	Generic	Unstructured	↑↑↓↓	Delete Set Default
3.	Cucumber	Gherkin	↑↑↓↓	Delete Set Default
	Exploratory	Unstructured	↑↑	Delete Set Default

Add New Test Type Option

Option: Kind:

Using Xray built-in capabilities

To perform exploratory testing, as seen earlier, we just need to use Tests (either of Generic type or of a specific custom type such as Exploratory).

The process would be similar to how we manage "manual"/scripted test cases:

1. define the Test
2. link it to some story or requirement, generally speaking
3. organize it in a Test Repository folder or add it to some Test Set kind of list
4. add it to some Test Plan
5. "execute" it

The steps 2-4, even though optional, are common.

Let's focus our attention on defining the Test and then on the "execution" (i.e., the actual testing session).

Defining an exploratory Test and its charter with Xray

To define an exploratory test, the process is similar to the creation of typical Test in Xray, with some subtle nuances.

1. Create an exploratory Test issue
 - a. for the Summary, use a name that summarizes the test charter
 - b. choose the proper test type, as mentioned earlier
 - c. fill out the "Definition" field, with the test charter

Create issue

Project

Calculator (CALC)

Import issues

Issue type

Test

Learn more

Status

To Do

This is the issue's initial status upon creation

Summary

security on login page

Components

Attachment

Drop files to attach or browse

Description

☐ Create another issue

Cancel

Create

d.

Projects / Calculator / CALC-243

security on login page

[Attach](#)
[Create subtask](#)
[Link issue](#)
[Test details](#)

Description

Add a description...

Test details

[Test details](#)
[Preconditions](#)
[Test Sets](#)
[Test Plans](#)
[Test Runs](#)

Test Type

Exploratory

Definition

Explore the login page

Using Chrome and valid and invalid logins

To discover problems with security

Performing the test session (i.e., "executing" the test)

Before performing our test session, we need to schedule an execution for our Test. The way to do this in Xray, is to schedule a Test Execution for our Test (or to include our Test in an existing Test Execution).

Test Executions can be created from multiple places (e.g., from Test Repository, Test Plan, etc), including directly from the Test issue screen.

security on login page

- Attach
- Create subtask
- Link issue
- Test details
-

Description

Add a description...

Test details

- Test details
- Preconditions
- Test Sets
- Test Plans
- Test Runs



This test hasn't been executed, yet

A test issue is a template that only contains the specification. To execute this test, you need to create a test run by starting an ad hoc execution or by adding this test to an existing test execution issue.

Execute in

New test execution...

Existing test execution...

Exploratory App

Create Test Execution

Project

Calculator

Summary

Ad-hoc execution for CALC-243

Assignee

Sérgio Freire

Choose a user to assign the Test Execution

Fix Version/s

Select...

Test Environment

Select...

Revision

The system revision for the test execution

☒ Execute Immediately

CreateCancel



Please note

If you have multiple testers involved in your exploratory session, then you can create different Test Executions each one assigned to a different tester; you may use the Test Execution planning dates to define the fixed time-frame allocated to your session. The Test Execution description can be used to specify the tester charter, which complements and focuses the session charter for the tester(s) involved in that Test Execution. Please note that a Test Execution can only contain the same Test one

During the test session, on the Test Run execution screen, we can:

- **report the overall status of our testing session, using the Execution Status field.** For example, as PASS if all seems good enough, or as FAIL if there are major issues; you can also use custom test run statuses if you want
- **leave notes, using Comment section.** As it supports wiki markup, we can use it to organize our text notes; even though there's no structure, we recommend having a brief summary and having the text notes organized by categories
- **report defects, on the Defects section**
- **attach evidence, on the Evidence section.** We can attach logs, or other files that may be relevant, including screenshots; we can use our tool of choice for taking screenshots. You can use copy&paste; whenever "pasting" an image the following dialog will appear

Attach Screenshot

Login Page

Please input your user name and password and click the login button.

User Name:

Password:

LOGIN

Filename *

screenshot-1

Location

Overall Evidence

Save

Cancel

security on login page

Execution Status: **FAILED**

Timer: 00:00:00

Started On: 14/Mar/2023 04:09 PM

Assignee: Sérgio Freire

Finished On: 14/Mar/2023 04:09 PM

Executed By: Sérgio Freire

Test Environments: -

Findings:

- Defects (1):
 - GLOBAL CALC-245 hardcoded credentials
- Evidence (2):
 - GLOBAL log.html
 - GLOBAL 2001-984h.jpg
- Comment:

Summary: major issues; not ready to go live

Ideas:

 - x
 - y

Concerns:

 - a
 - b

Test details

Test Issue Links:

- created
- CALC-245 hardcoded credentials

Definition:

Explore the login page

Using Chrome and valid and invalid logins

To discover problems with security

Using Xray together with Xray Exploratory App

The Xray Exploratory App (XEA) is a side companion desktop app that is used to assist testers on exploratory testing related tasks.



Brief list of Xray Exploratory App features

- Charter definition
- Session management
 - Countdown timer (optional)
- Note taking
 - Categorized text (e.g., problem, question, idea, etc)
 - Screenshots + visual notes
 - Audio clips
 - Video
- Timeline
 - Track the sequence of actions
- Generate PDF reports, locally
- Report results to Jira, using Xray
 - Notes
 - Screenshots
 - Track impacts on related requirements

To be able to use Xray Exploratory App, please see its [Getting Started](#) documentation that details the installation and configuration process.

Concerning the integration with Xray, there are two main flows to have in mind:

1. define the test charter in Xray, by creating an exploratory Test, and then use XEA to assist on note-taking and report results back to Jira, where the team can analyze them and track its impacts
2. use XEA to define the test charter, assist on note and evidence taking during testing, and then report results back to Jira, where the team can analyze them and track its impacts

The subtle difference is which tool we'll use to create/define the exploratory Tests. Teams may use the first approach, where Xray is the master, if they wish to follow similar processes as they do for manual scripted test cases, and have some sort of management/planning.

Starting an exploratory testing session for an existent Test in Xray

In this scenario, we're considering that an exploratory test and its charter have already been defined and exists in Xray.

The exploratory test may have been created in Xray (see above instructions on how to use Xray for defining exploratory tests) or by Xray Exploratory App on a previous session (please see information ahead on how to use Xray Exploratory App to create Tests).

Having the Test, how can we start our testing session and use XEA to assist us?

We can either start the session right from Xray, or directly from XEA.

Starting the session from Xray

To start a session from Xray, we need first to schedule a execution for our test by creating a Test Execution with it, or adding it to an existing Test Execution and then use the option to execute it using Xray Exploratory App from the test run details screen.

Projects / Calculator / CALC-243

security on login page

Attach

Create subtask

Link issue

Test details

Description

Add a description...

Linked issues

created

CALC-245

hardcoded credentials

TO DO

Test details

Test details

Preconditions

Test Sets

Test Plans

Test Runs

Execute in

New test execution...

Existing test execution...

Exploratory App

Primary

Fix versions

Revision

Status

Actions

☐

CALC-244

Ad-hoc execution for CALC-243

FAILED

...

Prev

1

Next

Total 1 issues

Create Test Execution

Project

Calculator

Summary *

Exploratory session for CALC-243

Assignee

Sérgio Freire

Choose a user to assign the Test Execution

Fix Version/s

Select...

Test Environment

Select...

Revision

The system revision for the test execution

Execute with Exploratory App

Cancel

Xray Exploratory App • Jira: xraytutorials.atlassian.net

Test Timeline

Project
Calculator

Test run:
Exec CALC-246 • Test CALC-243

Assignee
Sérgio Freire

Summary*
security on login page


Priority
Medium


00:00:00 Set a time limit for your test session

Test type

Test definition
Explore the login page
Using Chrome and valid and invalid logins
To discover problems with security

Test execution*
CALC-246 - Exploratory session for CALC-243

 Start session

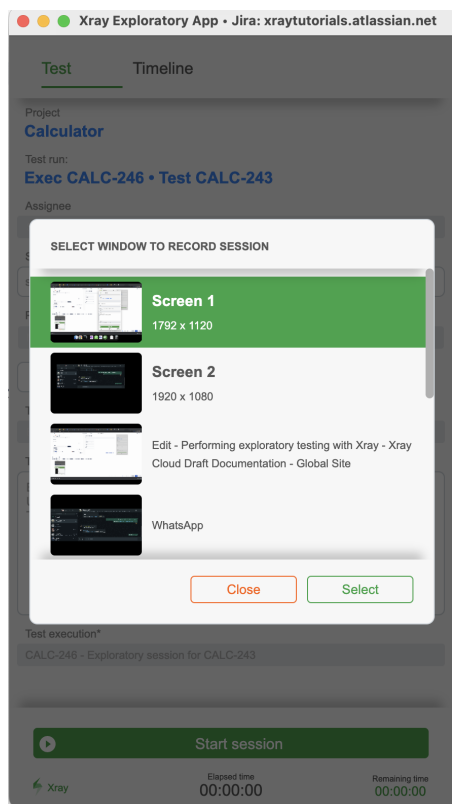
 Xray

Elapsed time
00:00:00

Remaining time
00:00:00

Then start your session.

First, you need to select the screen/application you wish to record (in case you aim to take screenshots or record videos).



We can then perform exploratory testing and use Xray Exploratory App to assist us during the process. In the end, results can be uploaded to Xray to the original Test Execution created in Xray, being associated with the corresponding Test Run of the exploratory Test.



While exploring your target app/system, use Xray Exploratory App to:

- take notes, take screenshots and/or videos, attach evidence

Xray Exploratory App • Jira: xray-demo3.getxray.app

Test Timeline

Project
CALC

Test run:
Exec CALC-265 • Test CALC-262

Assignee
Assigned To Admin

Summary*
security on login page

Priority
Critical

00:00:00 Set a time limit for your test session

Test type
Exploratory

Test definition
Explore the login page
Using Chrome and valid and invalid logins
To discover problems with security

Screenshot Record video
Take a note Record audio
Pause session End session

Xray Elapsed time 00:00:49 Remaining time 00:00:00

- report defects, whenever you take a screenshot, record a video, or a audio memo

Comment Type
Comment

Clear

Add Issue Add Defect Discard Save

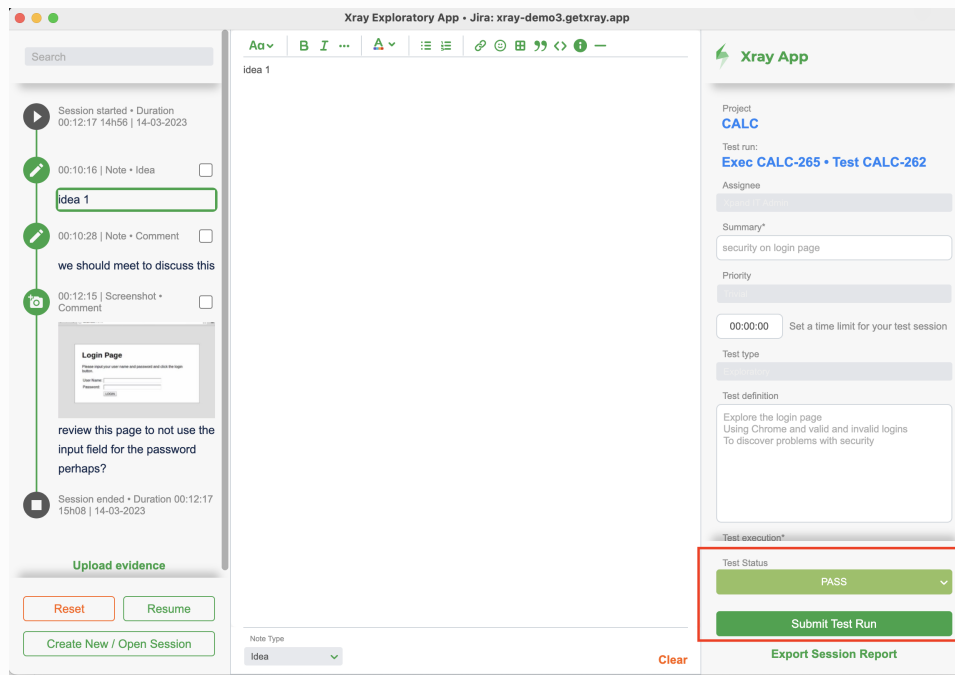
- create other issues (e.g., includable ideas for the backlog), whenever you take a screenshot, record a video, or a audio memo

Comment Type
Comment

Clear

Add Issue Add Defect Discard Save

After finishing exploring, end your session, review it, choose properly the test status you aim to report, and choose the option to upload the results to Xray and Jira (i.e., "Submit Test Run").

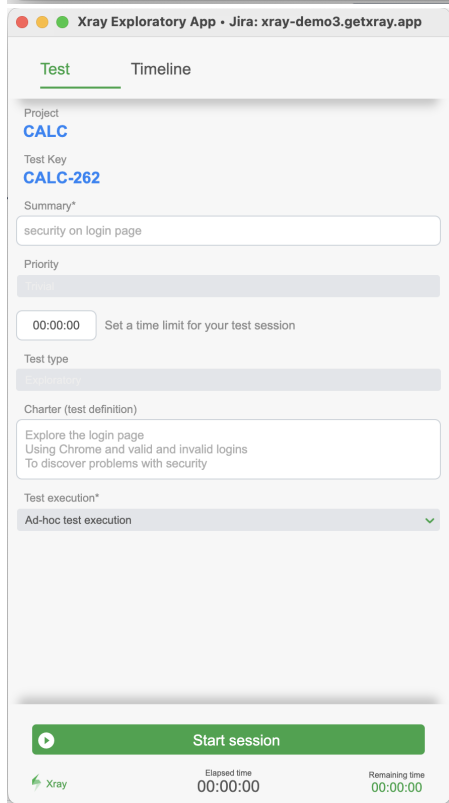
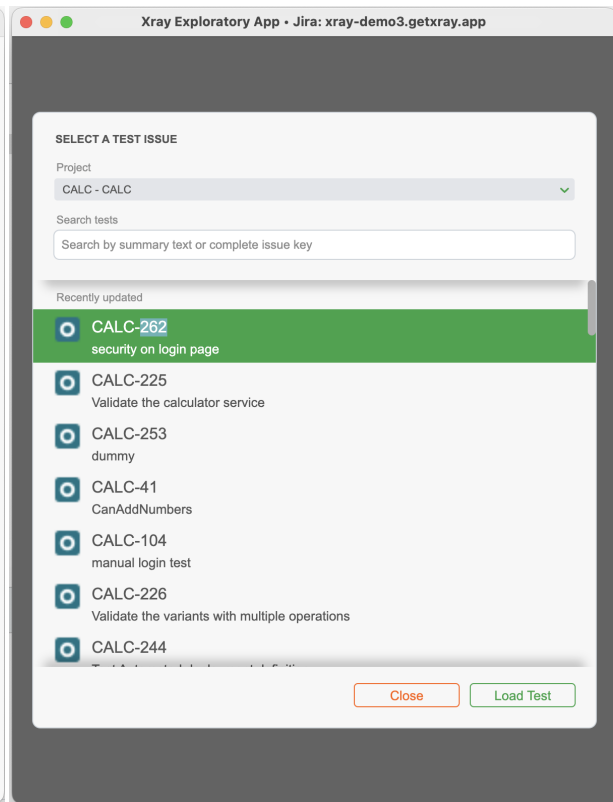
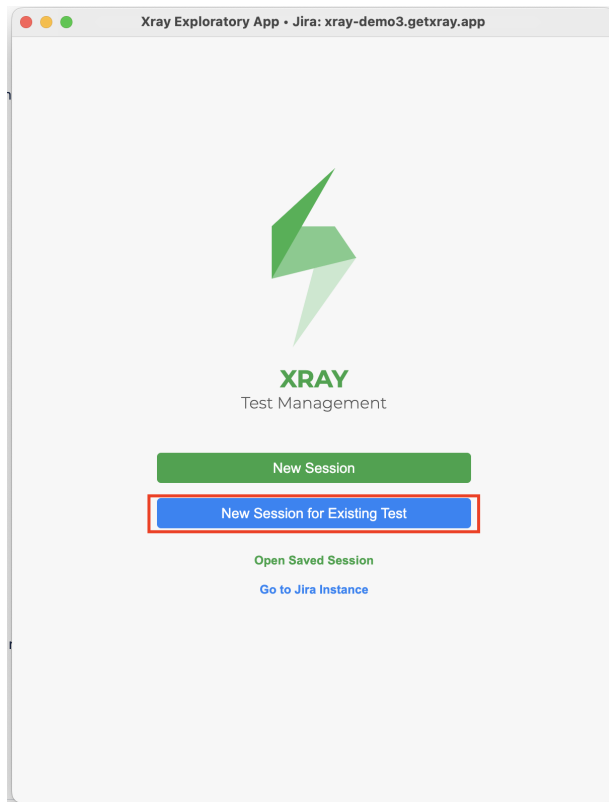


Please see Xray Exploratory App's documentation for more [information on executing exploratory testing sessions](#) and all the available options.

Starting the session directly from XEA

Assuming Xray Exploratory App is installed and the [connection to the Jira/Xray instance have been configured](#), we just need to start Xray Exploratory App and choose "New Session for Existent Test".

Then we need to select the Jira project where we have our Test, and then identify it by its issue key. Then we just need to load it and start our testing session.

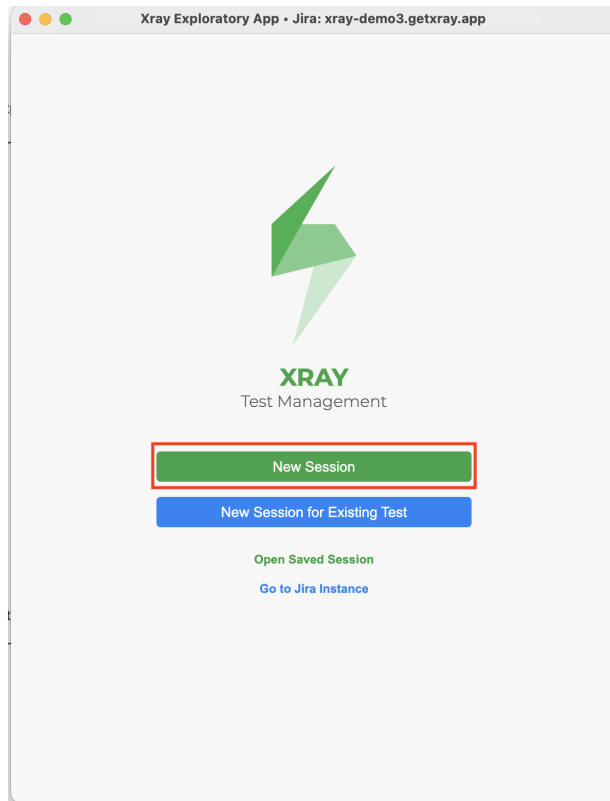


We can then perform exploratory testing and use Xray Exploratory App to assist us during the process. In the end, results can be uploaded to Xray to a newly created Test Execution having the Test we selected along with its result (i.e., the corresponding Test Run).

Please see Xray Exploratory App's documentation for more [information on executing exploratory testing sessions](#) and all the available options.

Create a new exploratory test using XEA and report results to Jira and Xray

Assuming Xray Exploratory App is installed and the [connection to the Jira/Xray instance have been configured](#), we just need to start Xray Exploratory App and choose "New Session".



Then we need to select the Jira project where we aim to create our Test on, along with some additional information:

- **Summary:** for a brief summary of our test charter
- **Test Type:** make sure to select the proper you will be using as an abstraction of exploratory tests (e.g., "Exploratory", "Generic")
- **Charter:** the test charter

Xray Exploratory App • Jira: xray-demo3.getxray.app

Test

Timeline

Please select a project and define the required fields for your test. Start a test session. When you are done, review and upload to Jira/Xray.

Project*

CALC - CALC

✓

Summary*

security test

00:00:00

Set a time limit for your test session

Test type

Exploratory

✓

Charter (test definition)

Aa

B

I

...

A

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...

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...

...

...

...

...

Explore the login page
Using Chrome and valid and invalid logins
To discover problems with security

Test execution*

Ad-hoc test execution

✓

Preconditions

Add precondition

+

Requirements

Add requirement

+

Start session

Xray

Elapsed time
00:00:00

Remaining time
00:00:00

We can then perform exploratory testing and use Xray Exploratory App to assist us during the process. In the end, results can be uploaded to Xray to a newly created Test Execution having the newly created Test along with its result (i.e., the corresponding Test Run).

Please see Xray Exploratory App's documentation for more [information on executing exploratory testing sessions](#) and all the available options.