



EXPERIMENT - 9

Software Testing and Quality Assurance

Abstract

Learn how to raise and report Bugs using Bug tracking tool (Bugzilla, Jira using QA Complete).

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EXPERIMENT – 9

Aim:

Learn how to raise and report Bugs using Bug tracking tool (Bugzilla, Jira using QA Complete).

Theory:

Bugzilla

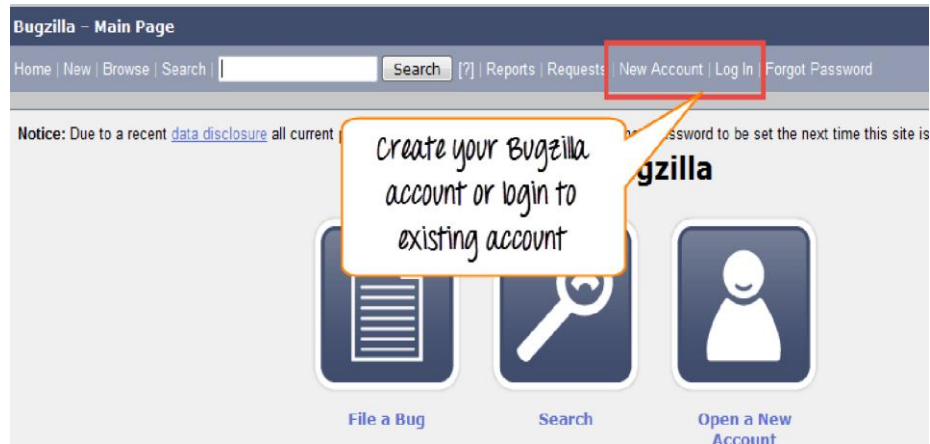
Bugzilla is an open-source issue/bug tracking system that allows developers to keep track of outstanding problems with their products. It is written in Perl and uses the MYSQL database. Bugzilla is a Defect tracking tool, however, it can be used as a test management tool as such it can be easily linked with other Test Case management tools like Quality Center, Testlink etc. This open bug-tracker enables users to stay connected with their clients or employees, to communicate about problems effectively throughout the data-management chain.

Key features of Bugzilla includes:

1. Advanced search capabilities
2. E-mail Notifications
3. Modify/file Bugs by e-mail
4. Time tracking
5. Strong security
6. Customization
7. Localization

How to log in to Bugzilla

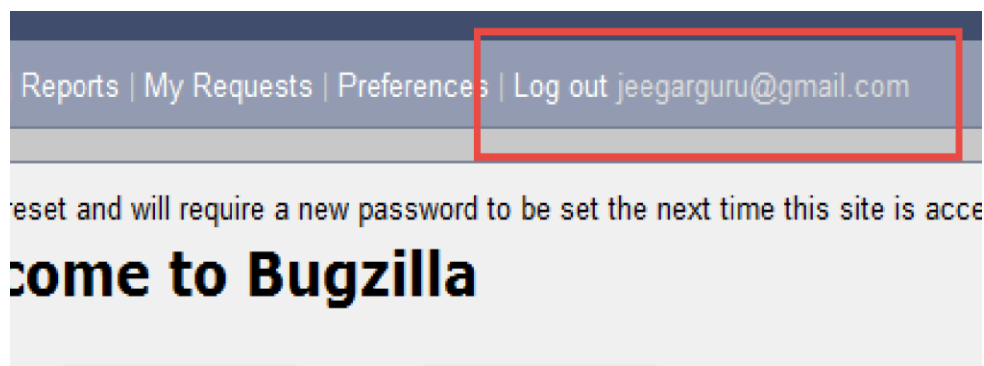
Step 1) Use the following link for your handons. To create an account in the Bugzilla tool or to login into the existing account go to New Account or Login option in the main menu.



Step 2) Now, enter your personal details to log into Bugzilla – User ID Password. And then click on “Log in”.

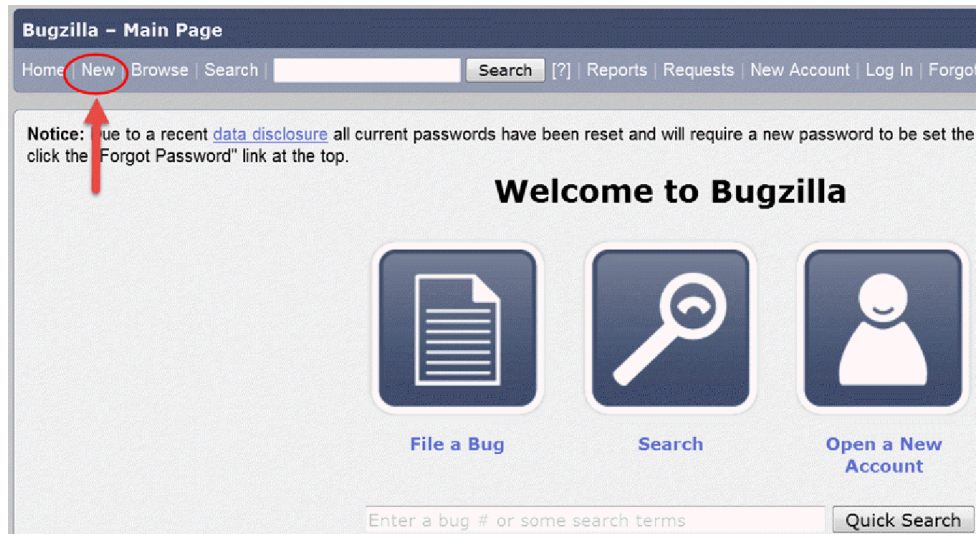


Step 3) You are successfully logged into the Bugzilla system.



Creating a Bug-report in Bugzilla

Step 1) To create a new bug in Bugzilla, visit the home page of Bugzilla and click on a NEW tab from the main menu.



Step 2) In the next window

- Enter Product
- Enter Component
- Give Component description
- Select version,
- Select severity
- Select Hardware
- Select OS
- Enter Summary
- Enter Description
- Attach Attachment
- Submit

Home | New | Browse | Search | Search [?] | Reports | My Requests | Preferences | Help | Log

Notice: Due to a recent [data disclosure](#) all current passwords have been reset and will require a new password to be set. Before reporting a bug, please read the [bug writing guidelines](#), please look at the list of [most frequently reported bugs](#).

[Show Advanced Fields](#) (* = Required Field)

1 * **Product:** Sam's Widget **Reporter:** jeegarguru@gmail.com

2 **Component:** Widget Gears **3 Component Description:** Gears for Sam's widgets

4 **Version:** unspecified **5 Severity:** normal

6 **Hardware:** PC **7 OS:** Windows NT

We've made a guess at your operating system and platform. check them and make any corrections if necessary.

8 * **Summary:**

9 **Description:**

10 **Attachment:**

11

If you don't fill the mandatory fields, you get the below window.

1 * **Summary:** Gears for sams widget twisted

You must enter a Summary for this bug.

Possible Duplicates:

Bug ID	Summary	Status	
7776	when using the Widget Gears, the mV signal unexpectedly goes to 0	CONFIRMED	<input type="button" value="Add Me to the CC List"/>
7777	Widget Gears causes wrong mV signal to appear	CONFIRMED	<input type="button" value="Add Me to the CC List"/>
12431	Widget Gears cannot start	IN_PROGRESS	<input type="button" value="Add Me to the CC List"/>
12480	The Gear of sams widgets failed its validation	CONFIRMED	<input type="button" value="Add Me to the CC List"/>
15407	Sams Widget came pipe	CONFIRMED	<input type="button" value="Add Me to the CC List"/>
21019	Gears are bound up	CONFIRMED	<input type="button" value="Add Me to the CC List"/>
21841	Widget gears are stuck	CONFIRMED	<input type="button" value="Add Me to the CC List"/>

Put your description over here

2 **Description:** The widget gears are twisted at the end and not showing correct signal

Step 4) Bug is created ID# 26320 is assigned to our Bug. You can also add additional information to the assigned bug-like URL, keywords, whiteboard, tags, etc. This extra information is helpful to give more detail about the Bug you have created.

- Large text box
- URL
- Whiteboard
- Keywords
- Tags
- Depends on

- Blocks
- Attachments

First Last Prev Next This bug is not in your last search results.

Bug 26320 - Gears for sams widget twisted (edit)

Status: **CONFIRMED** (edit)

Product: Sam's Widget
 Component: Widget Gears
 Version: unspecified
 Hardware: PC Windows NT
 Importance: P2 normal
 at Milestone: ---
 Assigned To: sam.folk-williams (edit) (take)
 QA Contact: (edit) (take)

Reported: 2015-01-07 02:50 PST by James
 Modified: 2015-01-07 03:10 PST (History)
 CC List: 1 user including you (edit)

See Also: (add)

Large text box: 1

2 URL:
 3 Whiteboard:
 4 Keywords:
 5 Tags:
 6 Depends on:
 7 Blocks:

Show dependency tree / graph

A multiple-select box: Always Appears
 Also Always Appears
 Third Value, Always

Drop Down List: --
 Date Time:
 Bug ID Field:
 Flags: None yet set (set flags)

Orig. Est.:	Current Est.:	Hours Worked:	Hours Left:	%Complete:	Gain:	Deadline:
0.0	0.0	0.0 + 0	0.0	0	0.0	2015-01-09

Summarize time (including time for bugs blocking this bug)

Attachments 8
 Add an attachment (proposed patch, testcase, etc.)

Step 5) In the same window if you scroll down further. You can select the deadline date and also the status of the bug. The deadline in Bugzilla usually gives the time limit to resolve the bug in the given time frame.

Orig. Est.:	Current Est.:	Hours Worked:	Hours Left:	%Complete:	Gain:	Deadline:
0.0	0.0	0.0 + 0	0.0	0	0.0	<input type="text"/>

Summarize time (including time for bugs blocking this bug)

Attachments
 Add an attachment (proposed patch, testcase, etc.)

Additional Comments:

Status: **CONFIRMED**
 CONFIRMED
 IN PROGRESS
 RESOLVED

James 2015-01-07 02:50:31 PST

Description [reply] [-]

Collapse All Comments
 Expand All Comments

The widget gears are twisted at the end and not showing correct signal

select deadline for your bug-report

You can select bug status over here

Save Changes

January 2015
 Su Mo Tu We Th Fr Sa
 28 29 30 31 1 2 3
 4 5 6 7 8 9 10
 11 12 13 14 15 16 17
 18 19 20 21 22 23 24
 25 26 27 28 29 30 31
 1 2 3 4 5 6 7

Create Graphical Reports

Graphical reports are one way to view the current state of the bug database. You can run reports either through an HTML table or graphical line/pie/bar-chart-based one. The idea behind the graphical report in Bugzilla is to define a set of bugs using the standard search interface and then choose some aspect of that set to plot on the horizontal and vertical axes. You can also get a 3-dimensional report by choosing the option of "Multiple Pages". Reports are helpful in many ways, for instance, if you want to know which component has the largest number of bad bugs reported against it. In order to represent that in the graph, you can select severity on X-axis and component on Y-axis and then click on generate a report. It will generate a report with crucial information.

Bugzilla - Generate Graphical Report

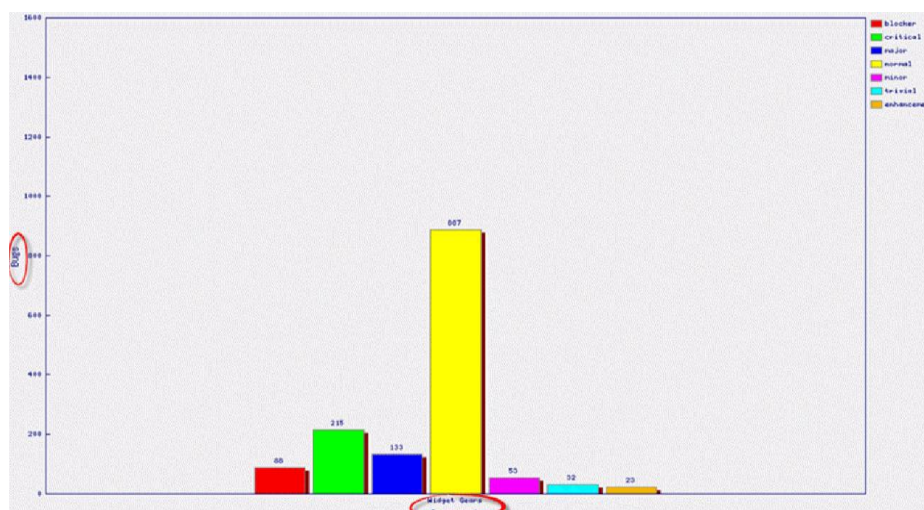
Home | New | Browse | Search | [?] | Reports | My Requests | Preferences | Help | Log out jeegarguru@gmail.com

Notice: Due to a recent [data disclosure](#) all current passwords have been reset and will require a new password to be set the next time this site is accessed. To do so, click the "Forgot Password" link at the top.

Choose one or more fields as your axes, and then refine your set of bugs using the rest of the form.

1 **Vertical Axis:** Severity
2 **Plot Data Sets:** ☒ Individually ☐ Stacked
3 **Horizontal Axis:** Component
4 **Multiple Images:** <none>
5 **Format:** ☐ Line Graph ☒ Bar Chart ☐ Pie Chart
6 **Summary:** contains all of the strings **Generate Report**
7 **Classification:** Unclassified Widgets Mercury
8 **Product:** Sam's Widget
9 **Component:** Widget Gears
10 **Status:** UNCONFIRMED CONFIRMED IN_PROGRESS RESOLVED VERIFIED
11 **Resolution:** FIXED INVALID WONTFIX LATER REMIND DUPLICATE

The graph below shows the Bar chart representation for the Bugs severity in component "Widget Gears". In the graph below, the most severe bug or blockers in components are 88 while bugs with normal severity are at the top with 667 numbers.



Jira

JIRA is a tool developed by Australian Company Atlassian. It is used for bug tracking, issue tracking, and project management. The name "JIRA" is actually inherited from the Japanese word "Gojira" which means "Godzilla". The basic use of this tool is to track issue and bugs related to your software and Mobile apps. It is also used for project management. The JIRA dashboard consists of many useful functions and features which make handling of issues easy. Some of the key features are listed below. Let's learn JIRA Defect and Project tracking software with this Training Course.

JIRA Scheme

Inside JIRA scheme, everything can be configured, and it consists of

- Workflows
- Issue Types
- Custom Fields
- Screens
- Field Configuration
- Notification
- Permissions

What is JIRA Issue?

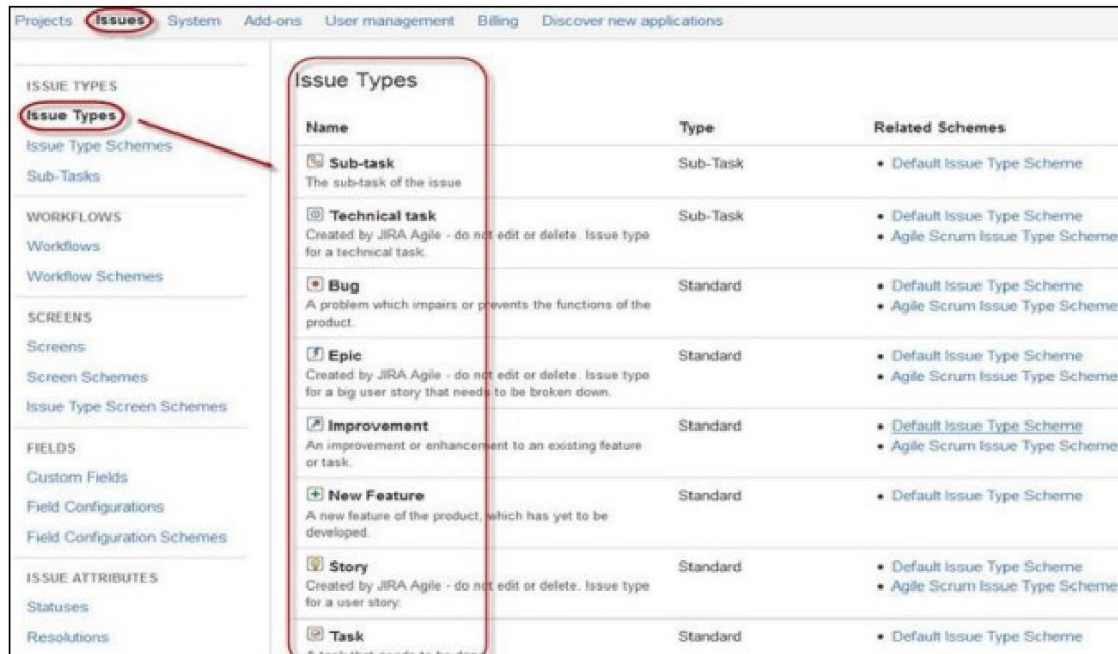
JIRA issue would track bug or issue that underlies the project. Once you have imported a project then you can create issues. Under Issues, you will find other useful features like

- Issue Types
- Workflow's
- Screens
- Fields
- Issue Attributes

Issue Types

Issue Type displays all types of items that can be created and tracked via JIRA. JIRA

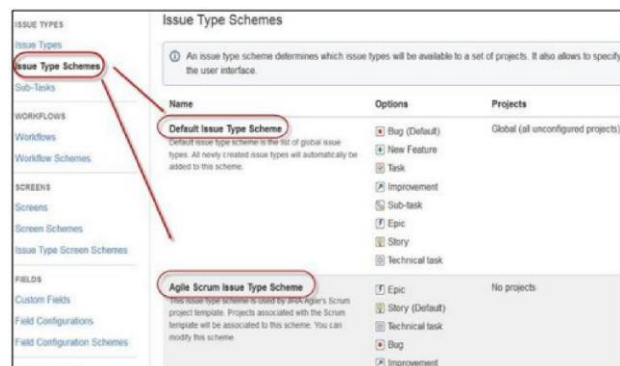
Issues are classified under various forms like new feature, sub-task, bug, etc. as shown in the screen shot.



Name	Type	Related Schemes
Sub-task The sub-task of the issue	Sub-Task	<ul style="list-style-type: none">Default Issue Type Scheme
Technical task Created by JIRA Agile - do not edit or delete. Issue type for a technical task.	Sub-Task	<ul style="list-style-type: none">Default Issue Type SchemeAgile Scrum Issue Type Scheme
Bug A problem which impairs or prevents the functions of the product.	Standard	<ul style="list-style-type: none">Default Issue Type SchemeAgile Scrum Issue Type Scheme
Epic Created by JIRA Agile - do not edit or delete. Issue type for a big user story that needs to be broken down.	Standard	<ul style="list-style-type: none">Default Issue Type SchemeAgile Scrum Issue Type Scheme
Improvement An improvement or enhancement to an existing feature or task.	Standard	<ul style="list-style-type: none">Default Issue Type SchemeAgile Scrum Issue Type Scheme
New Feature A new feature of the product, which has yet to be developed.	Standard	<ul style="list-style-type: none">Default Issue Type Scheme
Story Created by JIRA Agile - do not edit or delete. Issue type for a user story.	Standard	<ul style="list-style-type: none">Default Issue Type SchemeAgile Scrum Issue Type Scheme
Task A task that needs to be done.	Standard	<ul style="list-style-type: none">Default Issue Type Scheme

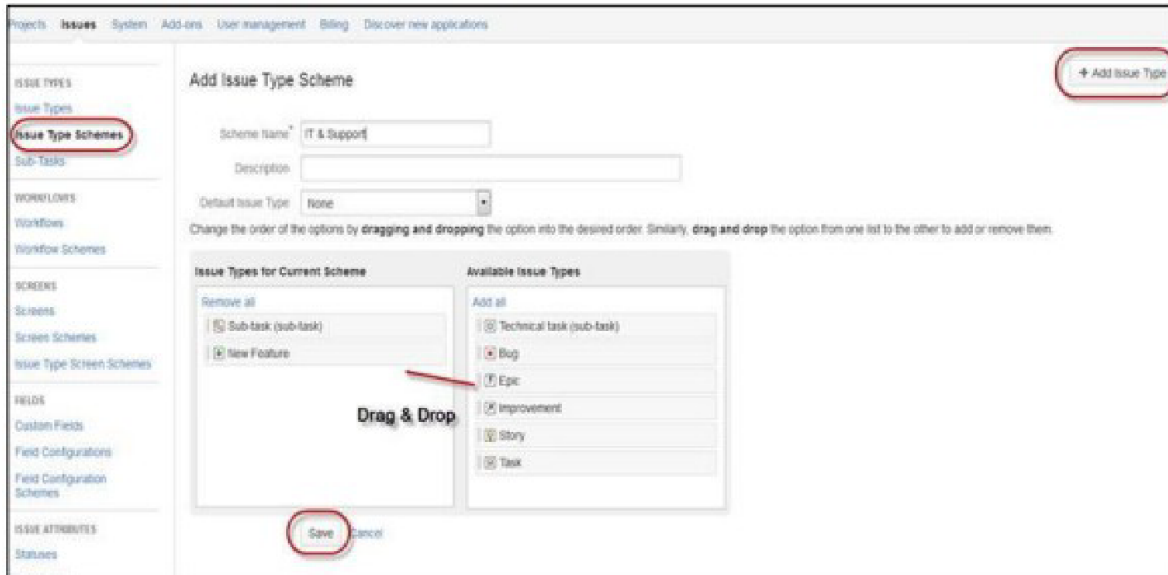
There are two types of Issue types schemes in JIRA:

- **Default Issue Type Scheme:** In default issue type scheme all newly created issues will be added automatically to this scheme.
- **Agile Scrum Issue Type Scheme:** Issues and project associated with Agile Scrum will use this scheme.



Name	Options	Projects
Default Issue Type Scheme Default issue type scheme for all JIRA projects. All newly created issue types will automatically be added to this scheme.	<ul style="list-style-type: none"><input checked="" type="checkbox"/> Bug (Default)<input checked="" type="checkbox"/> New Feature<input checked="" type="checkbox"/> Task<input checked="" type="checkbox"/> Improvement<input checked="" type="checkbox"/> Sub-task<input checked="" type="checkbox"/> Epic<input checked="" type="checkbox"/> Story<input checked="" type="checkbox"/> Technical task	Global (all unconfigured projects)
Agile Scrum Issue Scheme This issue type scheme is used by JIRA Agile's Scrum project template. Projects associated with the Scrum template will be associated to this scheme. You can modify this scheme.	<ul style="list-style-type: none"><input checked="" type="checkbox"/> Epic<input checked="" type="checkbox"/> Story (Default)<input checked="" type="checkbox"/> Technical task<input checked="" type="checkbox"/> Bug<input checked="" type="checkbox"/> Improvement	No projects

Apart from these two issue type schemes, you can also add schemes manually as per requirement, for example we have created IT & Support scheme, for these we will drag and drop the issue types from the Available Issue type to Issue type for current scheme as shown in the screenshot below.



JIRA Components

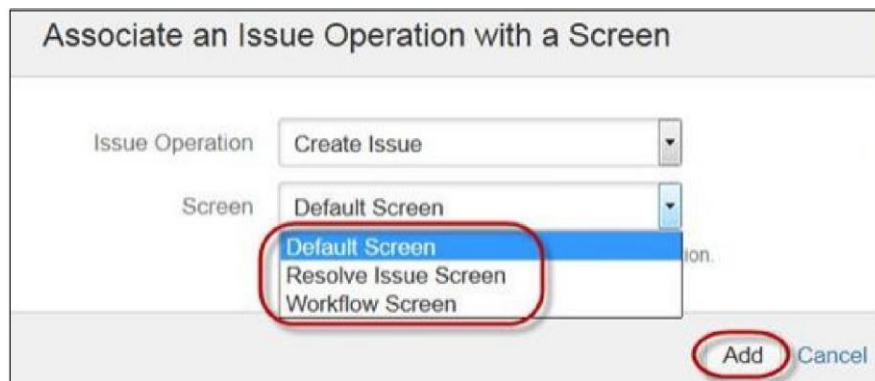
Components are sub-sections of a project; they are used to group issues within a project into smaller parts. Components add some structures to the projects, breaking it up into features, teams, modules, subprojects and more. Using components, you can generate reports, collect statistics, and display it on dashboards and so on.

To add new components, as shown in the below screen you can add name, description, component lead and default assignee.



JIRA screen

When an issue is created in JIRA, it will be arranged and represented into different fields, this display of fields in JIRA is known as a screen. This field can be transitioned and edited through workflow. For each issue, you can assign the screen type as shown in the screen-shot. To add or associate an issue operation with a screen you have to go in the main menu and click on Issues then click on Screen Schemes and then click on "Associate an issue operation with a screen" and add the screen according to the requirement.

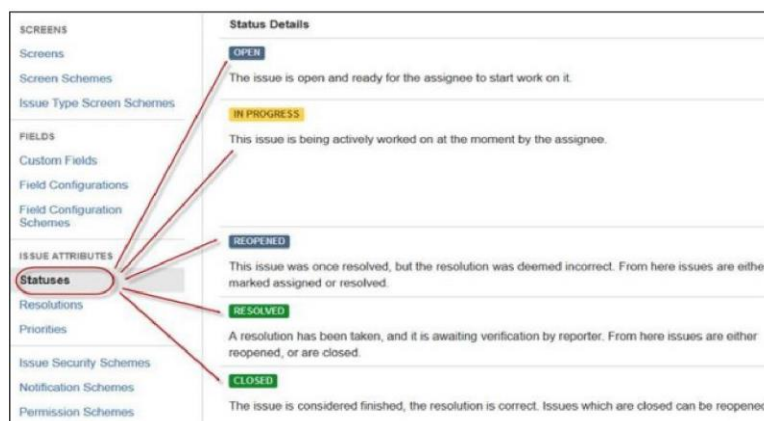


Issue Attributes

Issue Attributes encompasses

- Statuses
- Resolutions
- Priorities

Statuses: Different statuses are used to indicate the progress of a project like To do, InProgress, Open, Closed, ReOpened, and Resolved. Likewise, you have resolutions and priorities, in resolution it again tells about the progress of issue like Fixed, Won't fix, Duplicate, Incomplete, Cannot reproduce, Done also you can set the priorities of the issue whether an issue is critical, major, minor, blocker and Trivial.



Issue Security Schemes

This function in JIRA allows you to control who can view the issues. It consists of a number of security levels which can have users or groups assigned to them. You can specify the level of security for the issues while creating or editing an issue.

Similarly, there is a Default Permission Scheme any new project that is created will be assigned to this scheme. Permission Schemes allow you to create a set of permissions and apply this set of permission to any project.

Result:

The bug tracking tool was successfully studied and explained.

Viva Questions

Q1. Who benefits most from using the Bugzilla bug tracking tool?

Organizations involved in multiple software development projects would find Bugzilla very helpful in their efforts, as it provides them with a convenient centralized location for tracking ongoing initiatives and helps cut down on duplicate and unnecessary work. All members of the DevOps team, no matter what their involvement is during development, will find the software simple to use. To help maintain a hierarchy, the Bugzilla tool offers two access modes: user and administrator. The administrator role provides users with greater access to security, workflow monitoring and grouping features.

Q2 Why is JIRA used?

Jira Software is part of a family of products designed to help teams of all types manage work.

Originally, Jira was designed as a bug and issue tracker. But today, Jira has evolved into a powerful work management tool for all kinds of use cases, from requirements and test case management to agile software development.

Q3. What is the deployment environment for Bugzilla?

Bugzilla developed in LAMP (Linux, Apache, MySQL, and PHP) technology.

Q4. What is Bugzilla?

Bugzilla is a Web-based Defect Management Tool that allows Testing and Development teams to post and track defects and it is an Open source tool.

Q5: What are Bugzilla features?

The Bugzilla features are as follows:

- Integrated, product-based granular security schema
- Inter-bug dependencies and dependency graphing
- Advanced reporting capabilities
- A robust, stable RDBMS back-end
- Extensive configurability
- A very well-understood and well-thought-out natural bug resolution protocol
- Email, XML, console, and HTTP APIs