EXPERIMENT - 9

Software Testing and Quality Assurance

Abstract

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

Syeda Reeha Quasar

14114802719

EXPERIMENT – 9

Aim:

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

Theory:

Bugzilla

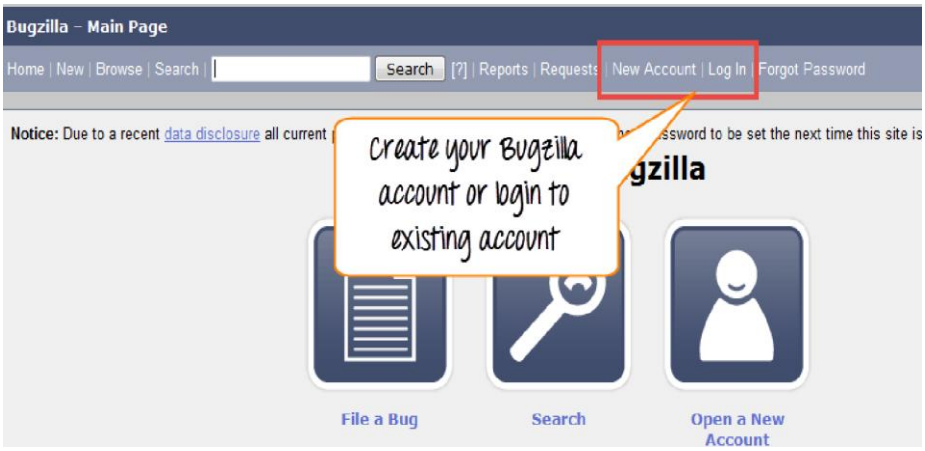
Bugzilla is an open-source issue/bug tracking system that allows developers to keep track of outstanding problems with their products. It is written in Perl and uses the MYSQL database. Bugzilla is a Defect tracking tool, however, it can be used as a test management tool as such it can be easily linked 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:

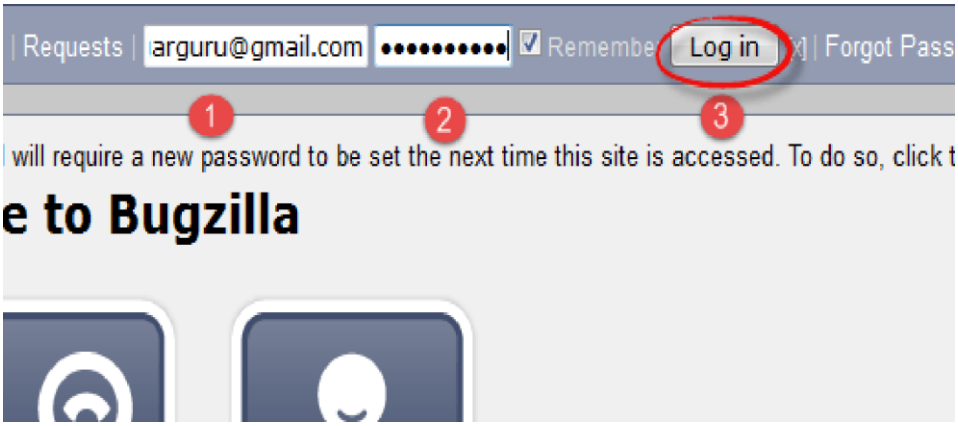
1. Advanced search capabilities
2. E-mail Notifications
3. Modify/file Bugs by e-mail
4. Time tracking
5. Strong security
6. Customization
7. Localization

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.



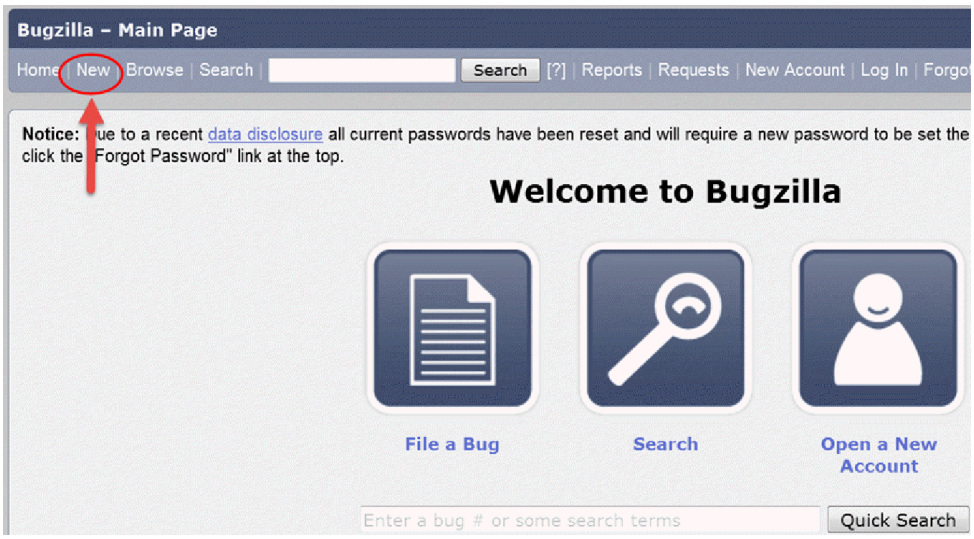
Step 2) Now, enter your personal details to log into Bugzilla – User ID Password. And then click on "Log in".



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

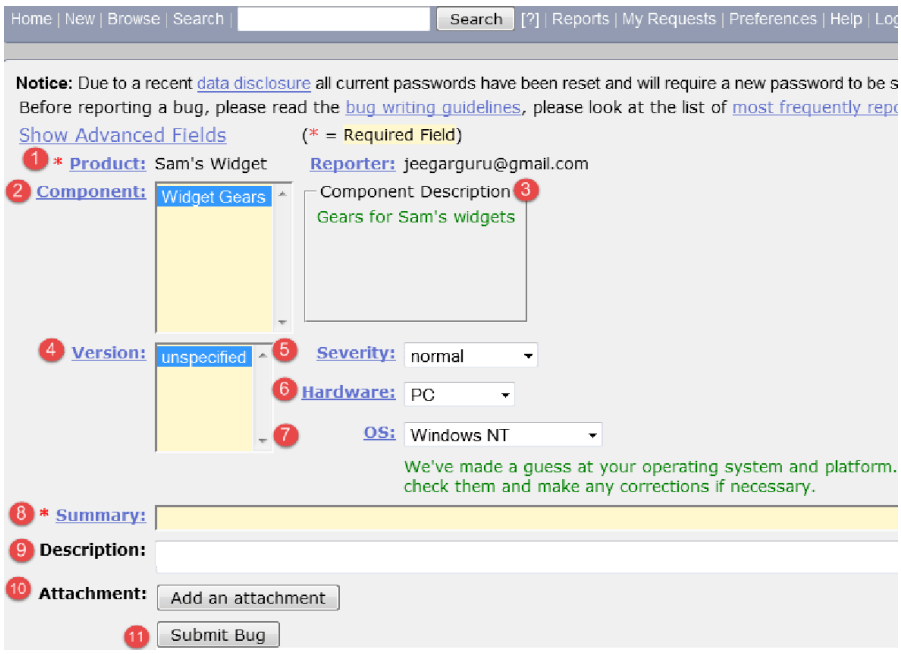
Creating a Bug-report in Bugzilla

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.

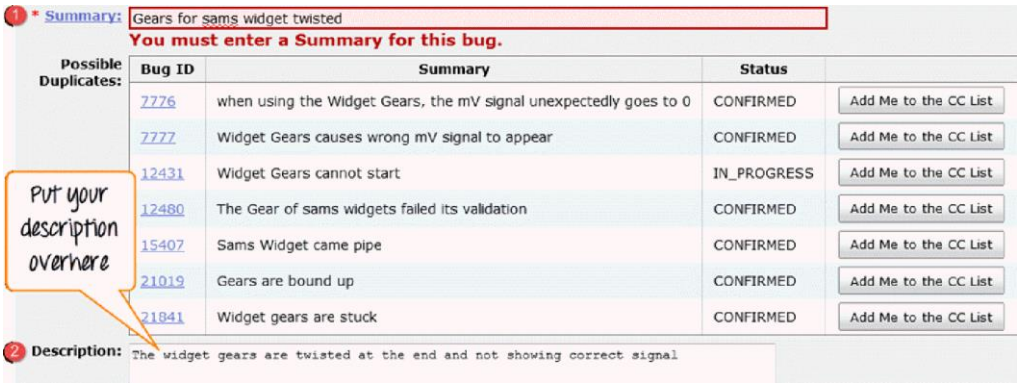


Step 2) In the next window

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



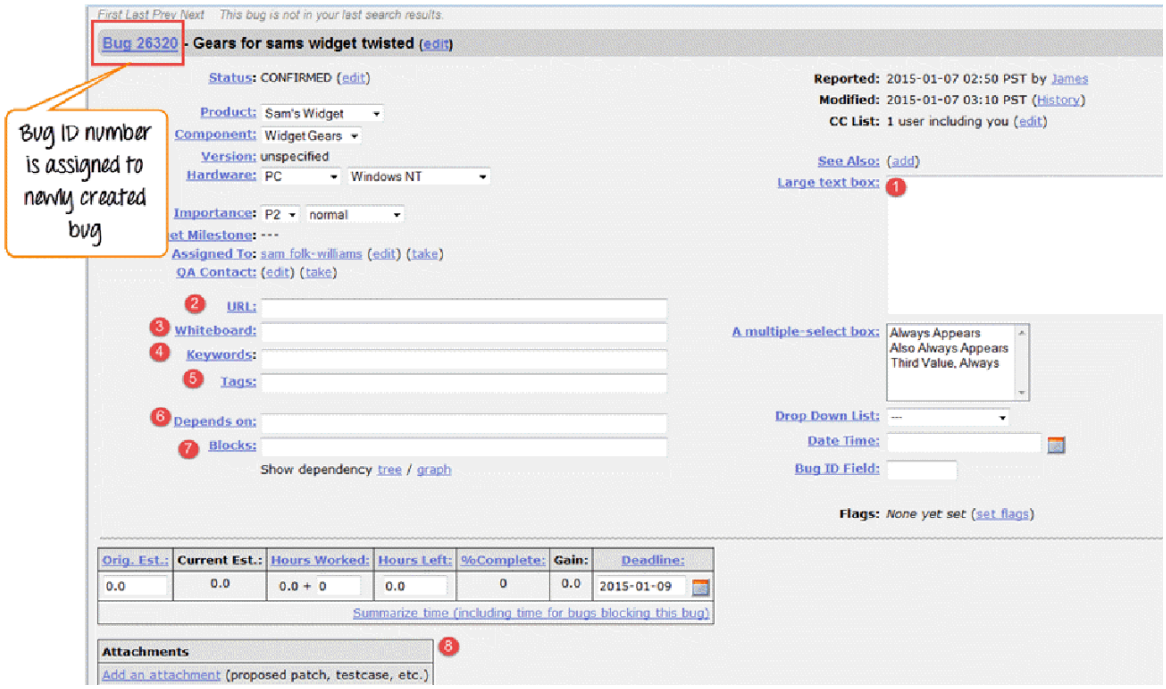
If you don't fill the mandatory fields, you get the below window.



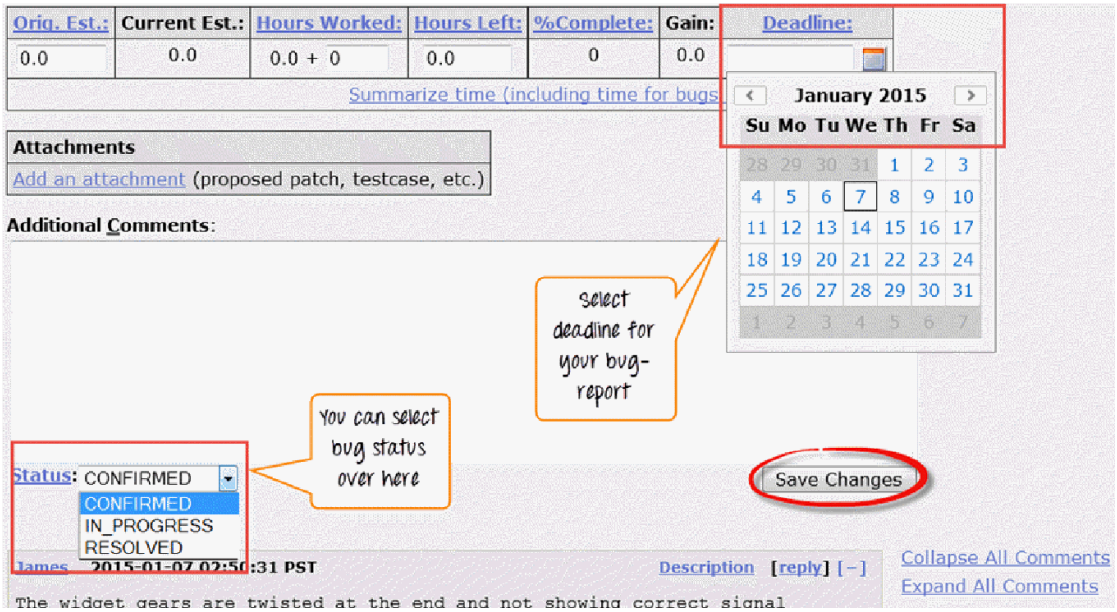
Step 4) Bug is created ID# 26320 is assigned to our Bug. You can also add additional information to the assigned bug-like URL, keywords, whiteboard, tags, etc. This extra information is helpful to give more detail about the Bug you have created.

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

- Blocks
- Attachments

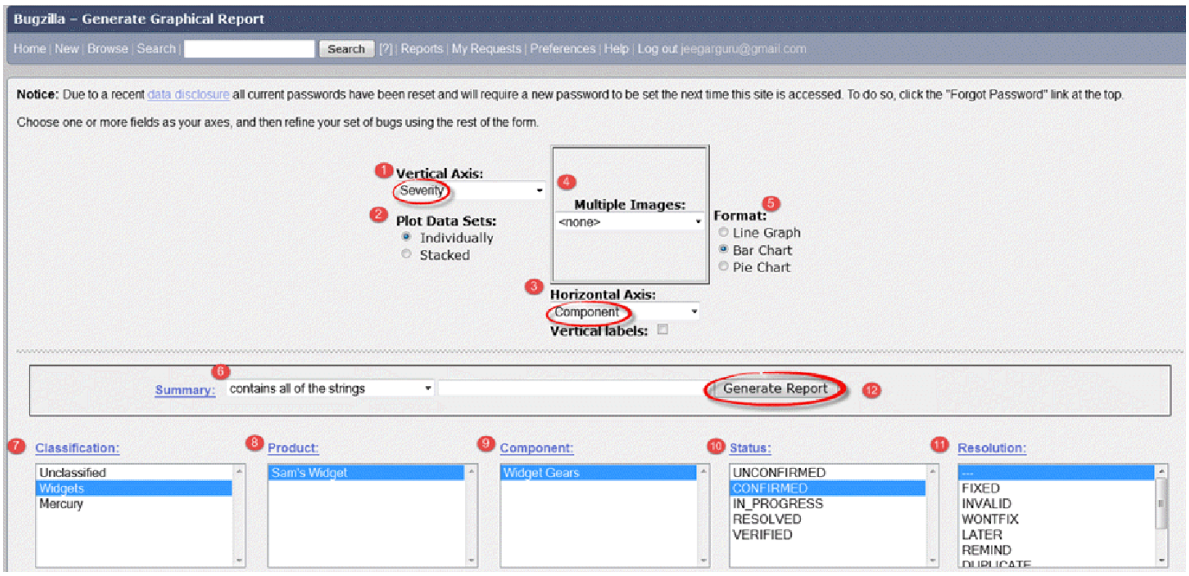


Step 5) In the same window if you scroll down further. You can select the deadline date and also the status of the bug. The deadline in Bugzilla usually gives the time limit to resolve the bug in the given time frame.

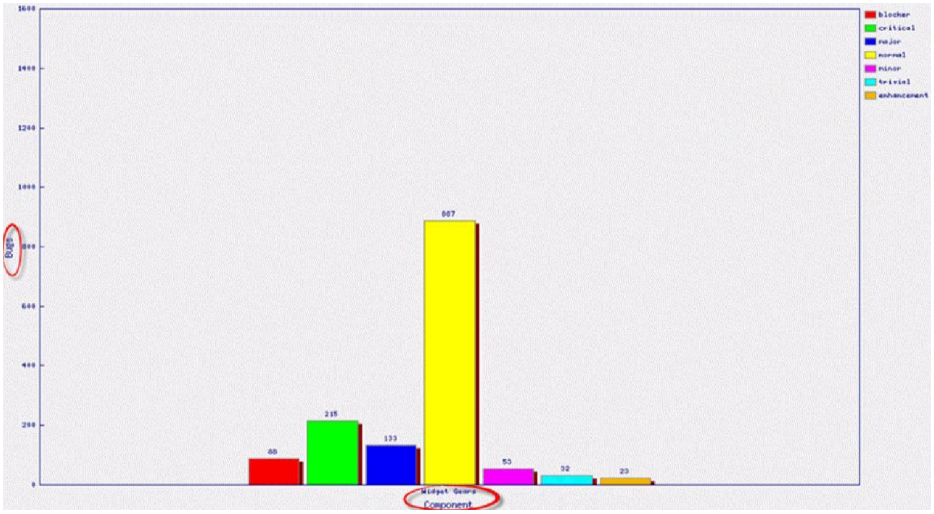


Create Graphical Reports

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.



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

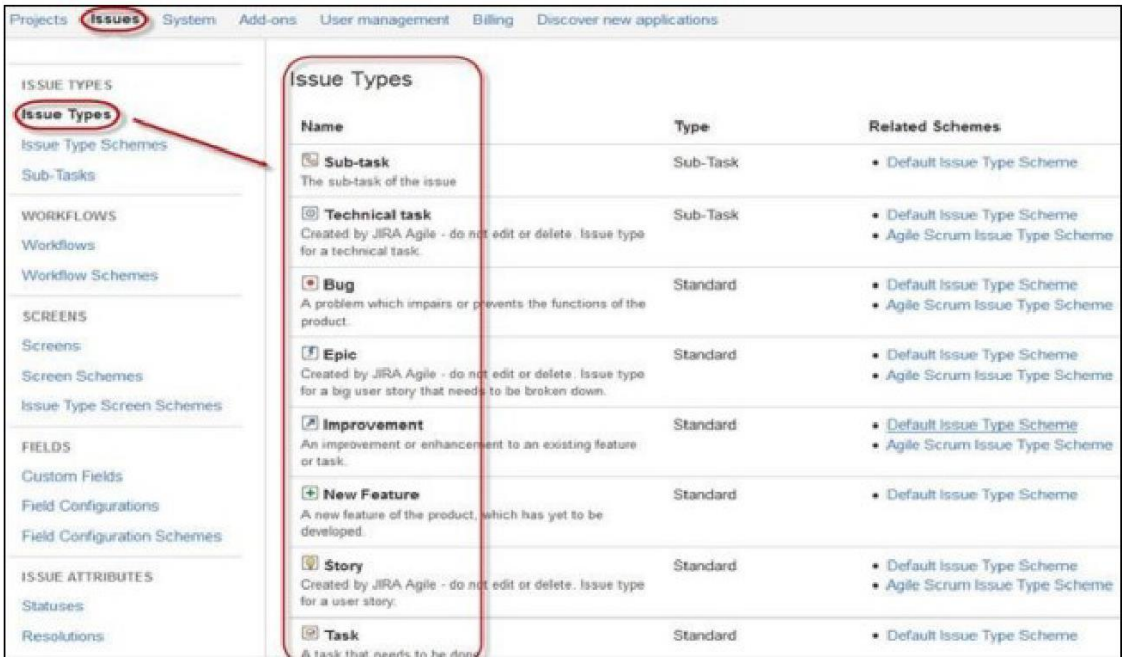
What is JIRA Issue?

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

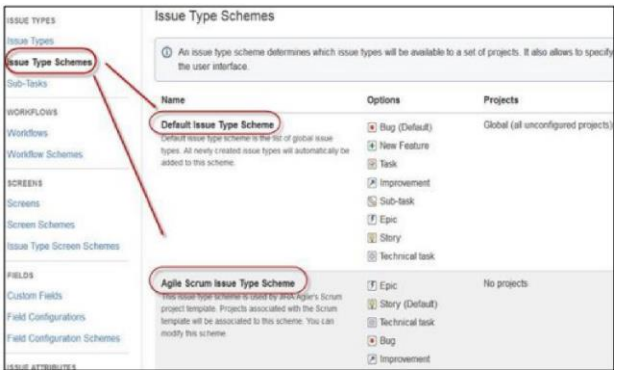
Issue Types

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.

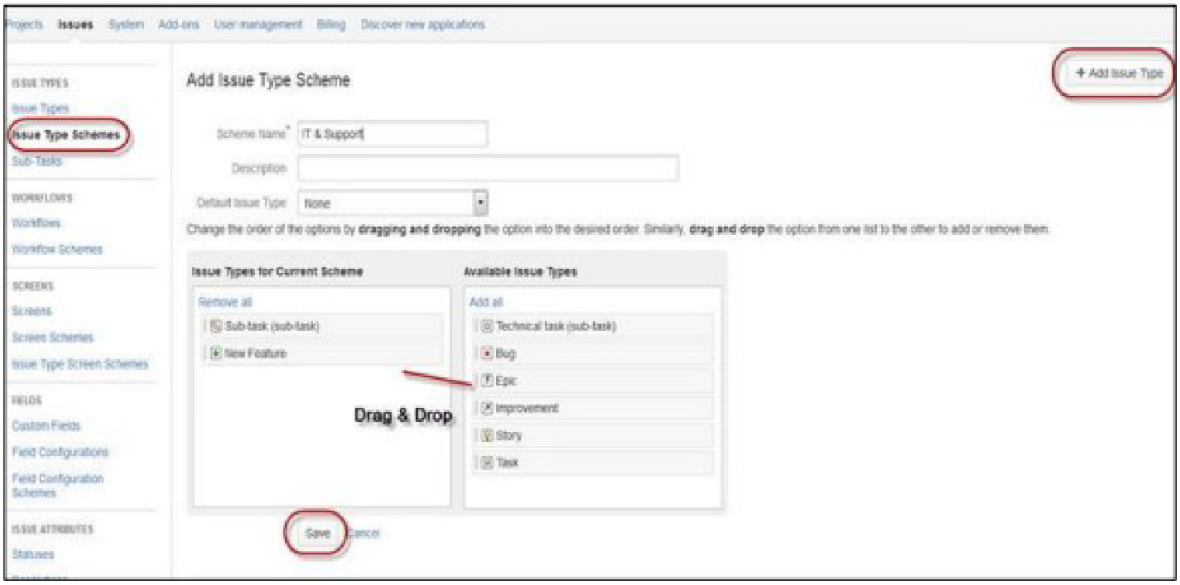


There are two types of Issue types schemes in JIRA:

- **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.



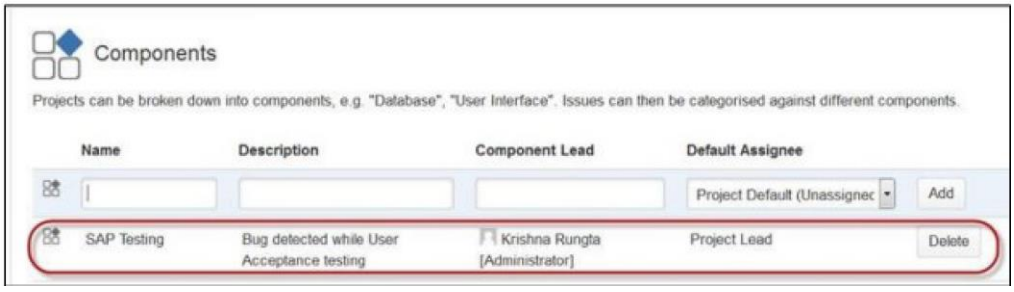
Apart from these two issue type schemes, you can also add schemes manually as per requirement, for example we have created IT & Support scheme, for these we will drag and drop the issue types from the Available Issue type to Issue type for current scheme as shown in the screenshot below.



JIRA Components

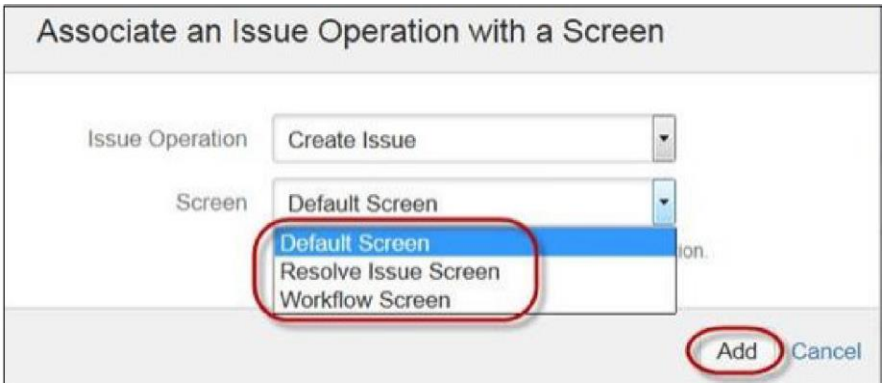
Components are sub-sections of a project; they are used to group issues within a project into smaller parts. Components add some structures to the projects, breaking it up into features, teams, modules, subprojects and more. Using components, you can generate reports, collect statistics, and display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