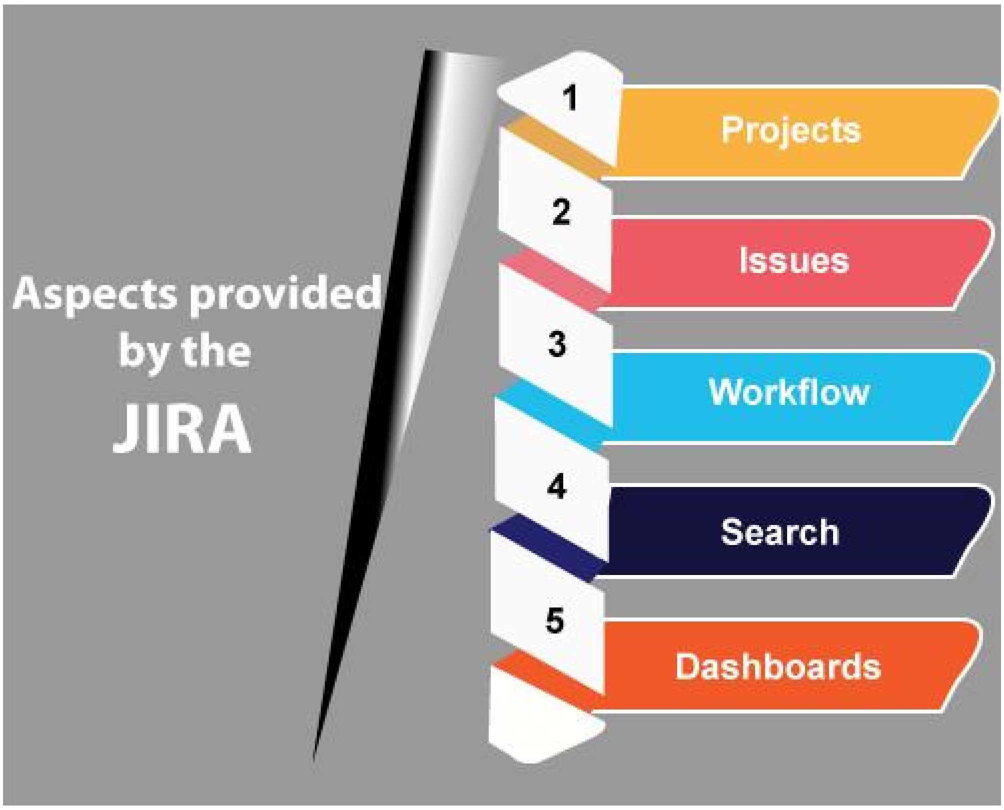
JIRA

What is JIRA?

JIRA is a software testing tool developed by the Australian Company Atlassian. It is a bug tracking tool that reports all the issues related to your software or mobile apps. The word JIRA comes from the Japanese word, i.e., "Gojira" which means Godzilla.

JIRA is based on the Agile methodology and the current version of the Jira is 6.



- **Projects:** It is used to manage the defects very effectively.
- **Issue:** It is used to track and manage the defects/issues.

- **Workflow:** Processes the Issue/Defect life cycle. Suppose we have a business requirement, we create the technical design and from the technical design, we create the test cases. After creating the test cases, coding is done, and then testing is performed on the project. This design workflow is possible by using Jira.
- **Search:** Find with ease. Suppose we have done with a project at the beginning of the December and its version is 1.0. Now, we move to version 1.1 and completed at the end of December. What we are doing is that we are adding new versions. Through Jira, we can get to know that what happened in the earlier versions, how many defects occurred in the earlier projects and the learning we achieve from the earlier projects.
- **Dashboards:** Dashboard is a display which you see when you log in to the Jira. You can create multiple dashboards for multiple projects. You can create the personal dashboard and can add the gadgets in a dashboard so that you can keep track of the assignments and issues that you are working on.

Why JIRA

- **Plan, Track and Work Faster**

  JIRA is a bug-tracking tool mainly used to track, organize, and prioritize the bugs, newly added features, improvements for certain software releases. Projects are subdivided into issues and issues can be of multiple types such as bug, new feature, improvement, and documentation tasks.

When the release date of software comes near, then software developers need to focus on the remaining issues which are to be fixed before the specified date. It also becomes difficult for the QA to maintain the status of the documentation, i.e., sometimes it becomes hard to keep track of everything.

JIRA is a good choice for handling the above issues. It enables software developers to track issues and improvements. It manages the projects as well as maintain the technical documentation.

- **The main source of information**

  JIRA is the primary source of information for the next software release. On JIRA, the whole team of the software developers can plan for the new features which are to be added and bugs to be fixed in the next release.

  It also helps the QA team in writing the technical documentation. Through JIRA, the QA team can check the status of each feature that is newly added by the software developers, and according to that, they can plan how to document for the new version.

- **Organize the documentation tasks**

  JIRA tool is used to organize the documentation tasks. It is useful in grouping the multiple tasks by using the component functionality, and even you can create your own documentation. In this way, you can create a structured way of documentation.

- **Track the progress of our documentation**

  It is a very useful tool in tracking the progress of our documentation. JIRA tool provides a very important feature, i.e., pie chart macro. In the pie chart macro, you can view tasks such as Open tasks, Closed tasks, Resolved tasks.

- **Helps to meet the deadlines of a documentation release.**

  You can define the specific due date or deadline for the release of documentation, and even you can configure the JIRA tool with the notifications so that you can finish your documentation in time.

- **Measures the time spent on documentation**

  JIRA tool does not have the default functionality for measuring the time spent on documentation. JIRA tool is bundled with the Tempo Timesheets, which measures how much time has been spent on the documentation.

- **Provides feedback faster**

  JIRA tool provides the Confluence pages where you can connect to the issues in just a few clicks. If something needs to be updated, then you can create the issues directly from the Confluence page.

What is JIRA used for?

Jira software can be used for the following purposes:

- Requirements and Test case management
- In Agile Methodology
- Project Management
- Software Development
- Product Management
- Task Management
- Bug Tracking

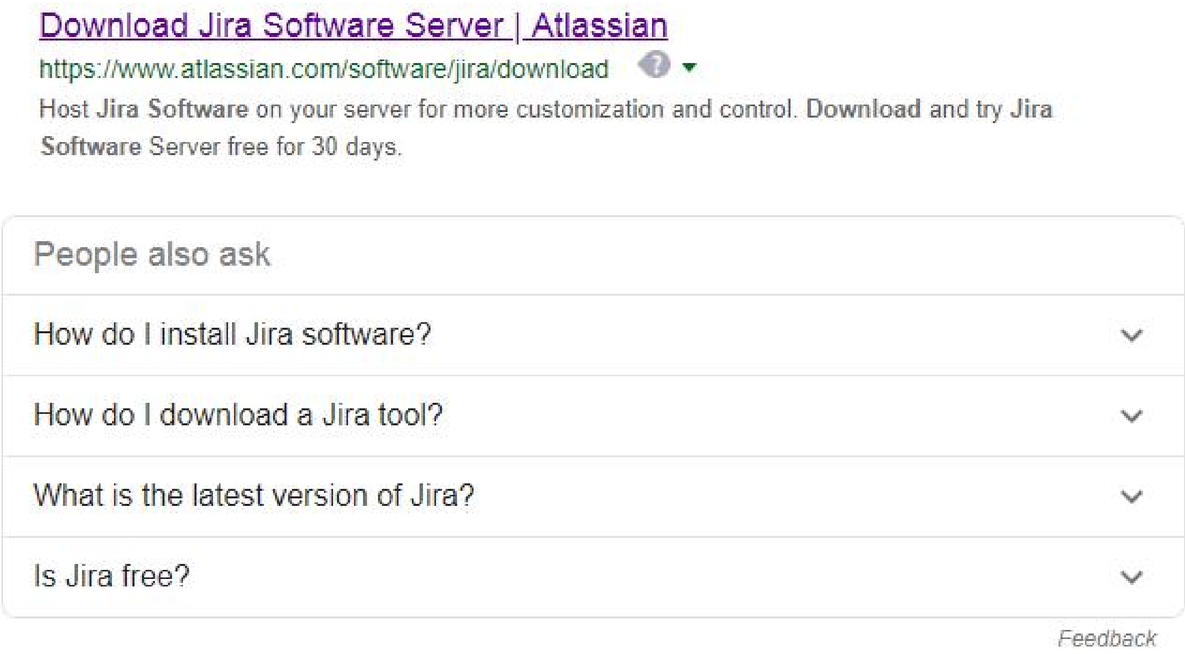
JIRA Installation

JIRA is a centralized software in which all the projects are logged into a central database and goes through the workflows. Workflow controls the status of the project.

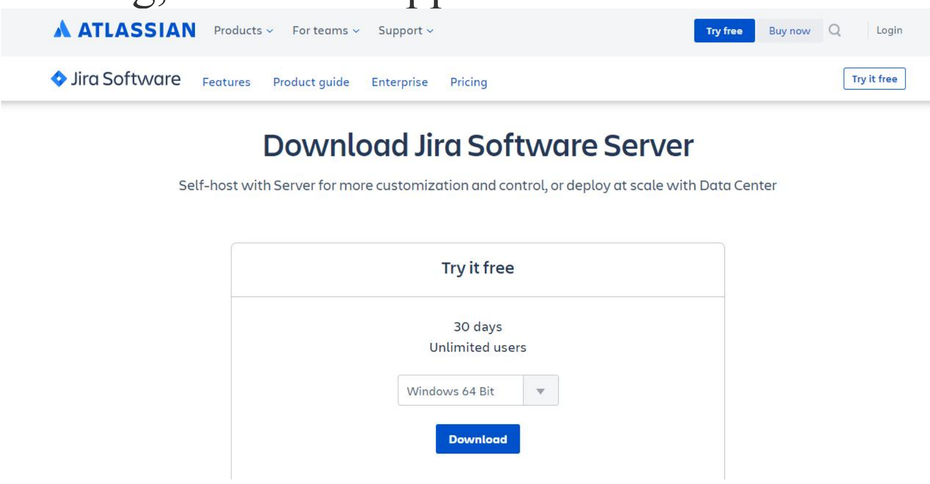
How to download and install the JIRA software

Following are the steps to download and install the JIRA software:

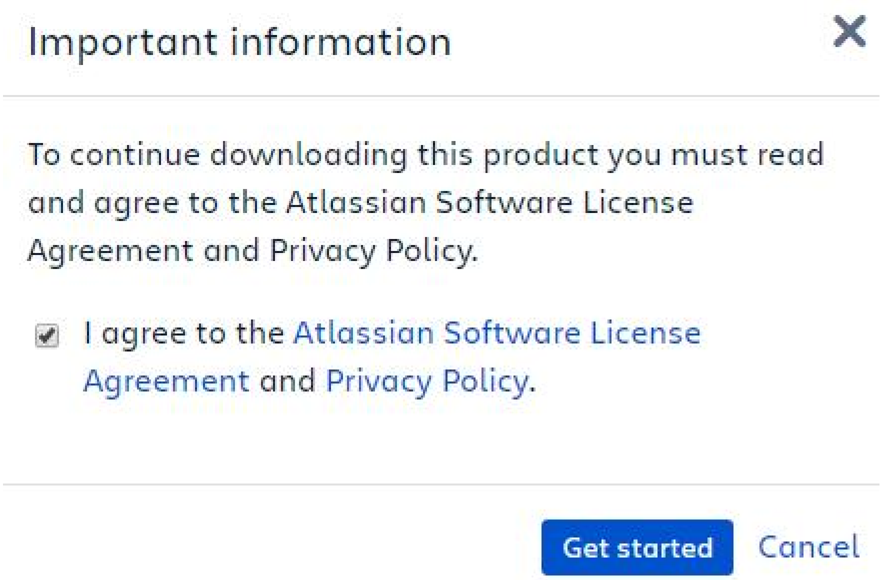
Step 1: Type "**Download JIRA software**" in the Google search engine box. The screen appears as shown below:



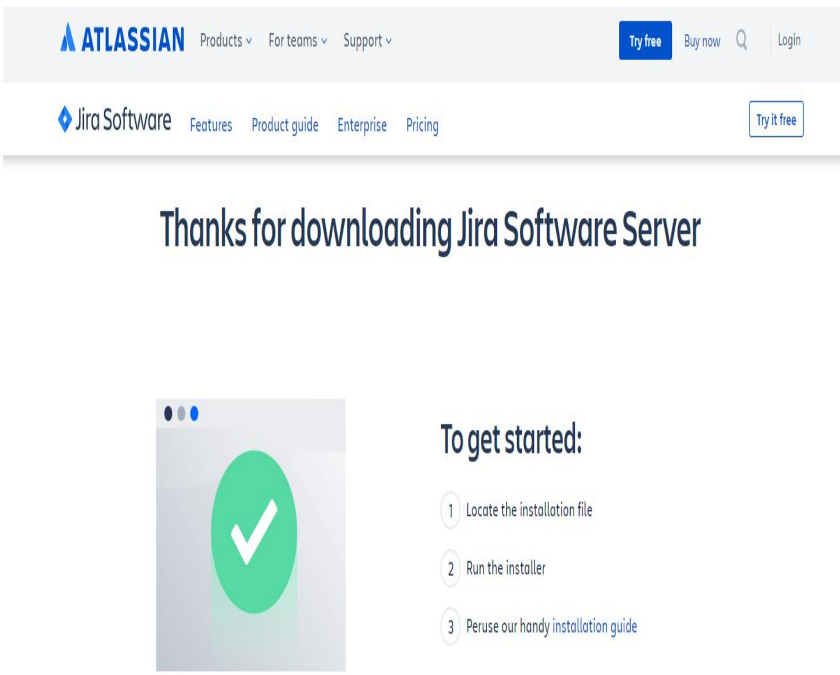
Step 2: Click on the "**Download Jira Software Server**". On clicking, the screen appears shown as below:



- In the above screen, choose the OS environment type and then click on the **Download button**. Suppose, I am working on the Windows, then I choose "**Windows 64 Bit**".
- On clicking on the **Download** button, the dialog box appears which is shown below:

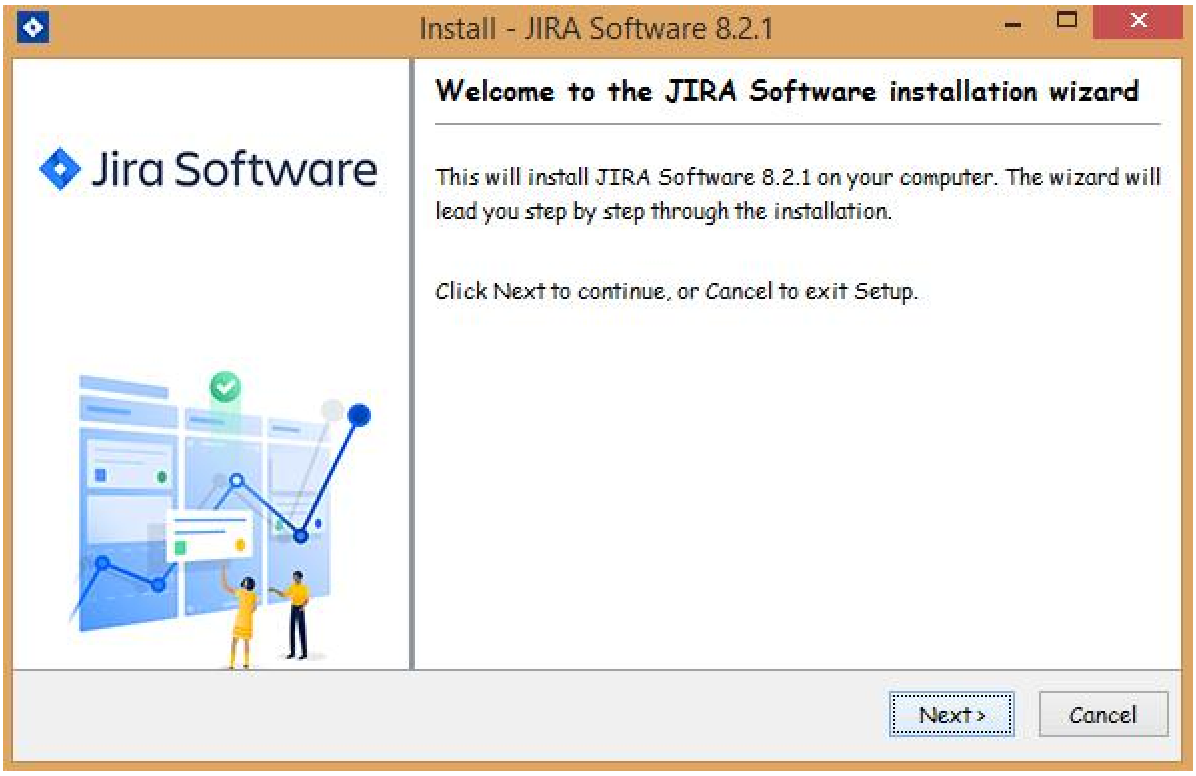


- In the above dialog box, click on the checkbox, and then click on the "**Get started**" button. On clicking on the Get started button, the screen appears shown as below:

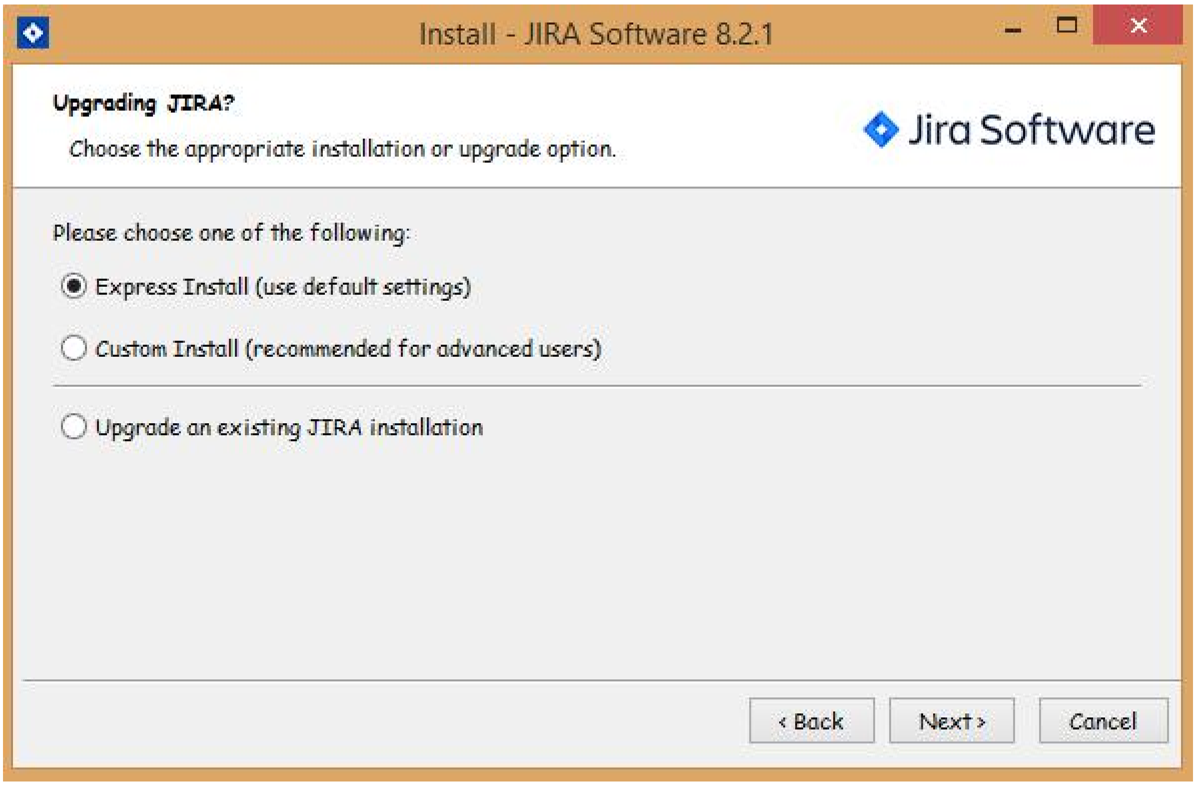


- Now, move to the **.exe** file which has been downloaded. Click on the downloaded file. On clicking on the downloaded file, the installation will get started.

- An installation wizard will appear shown as below:

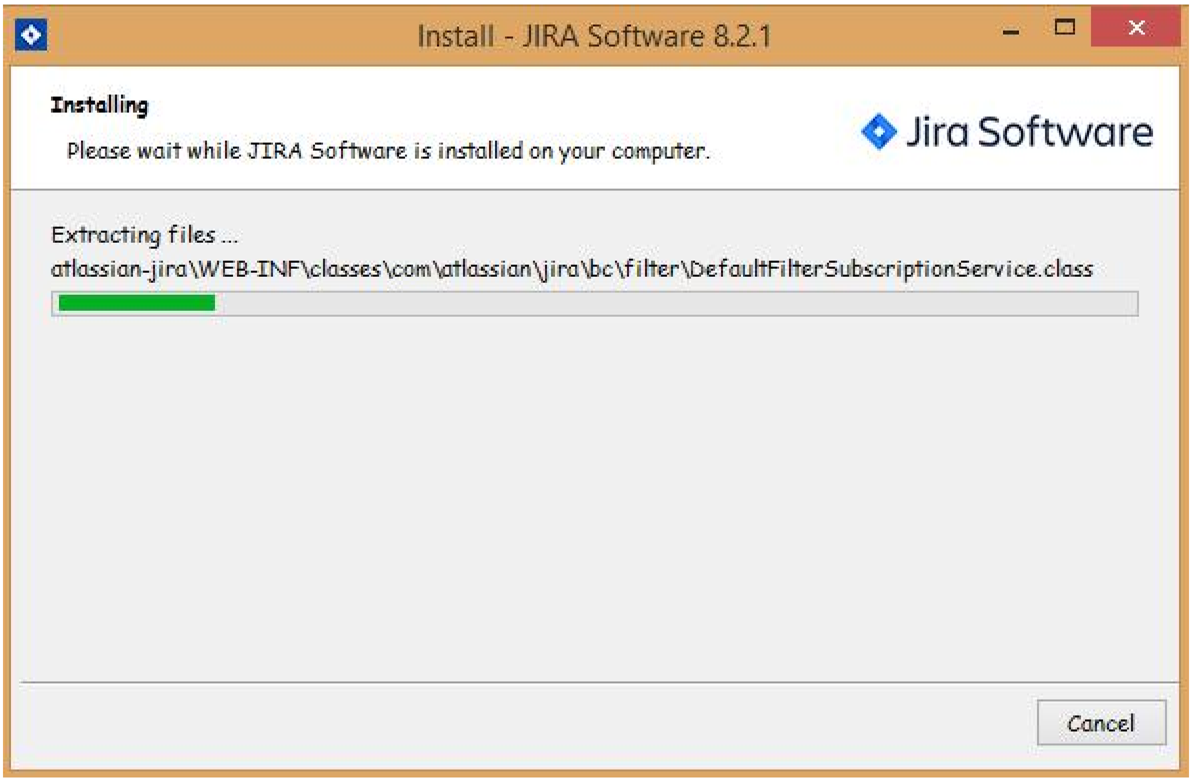


- Click on the **Next** button.
- Choose the appropriate type of installation and then click on the **Next** button.

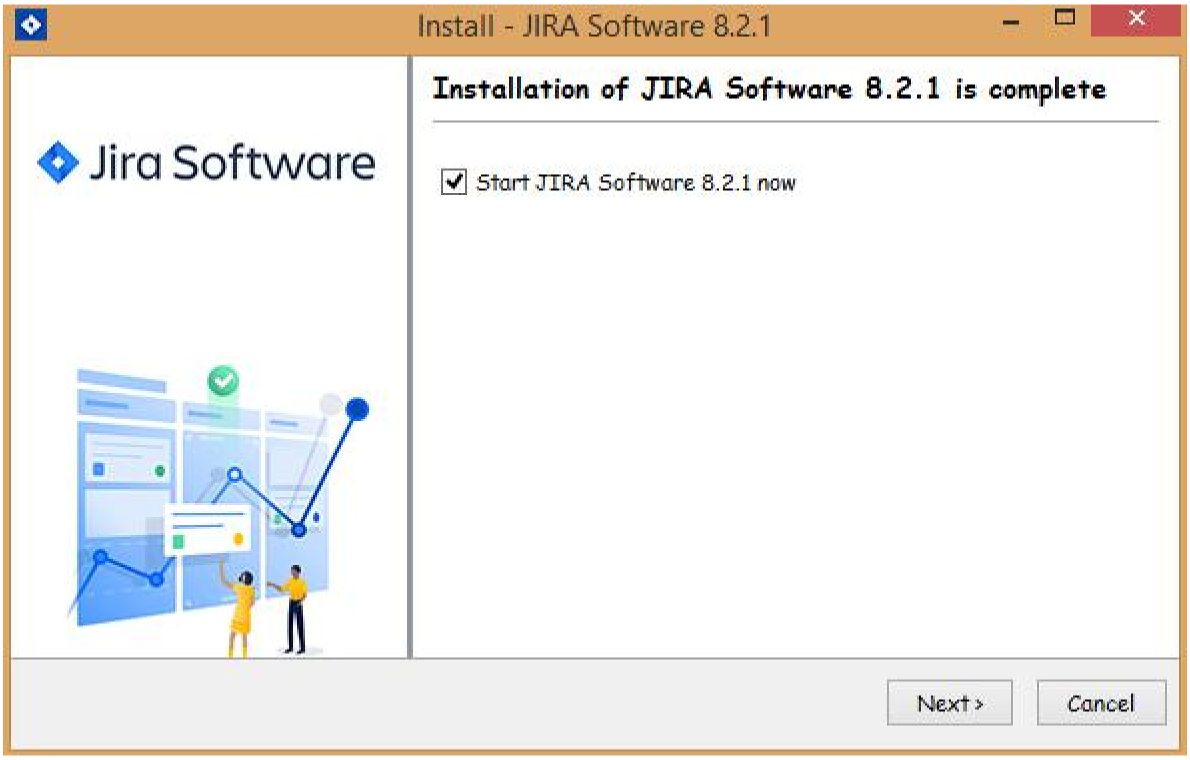


- The details on which JIRA software have been shown below. Click on the **Install** button.

- The below screen shows that the installation has been started.

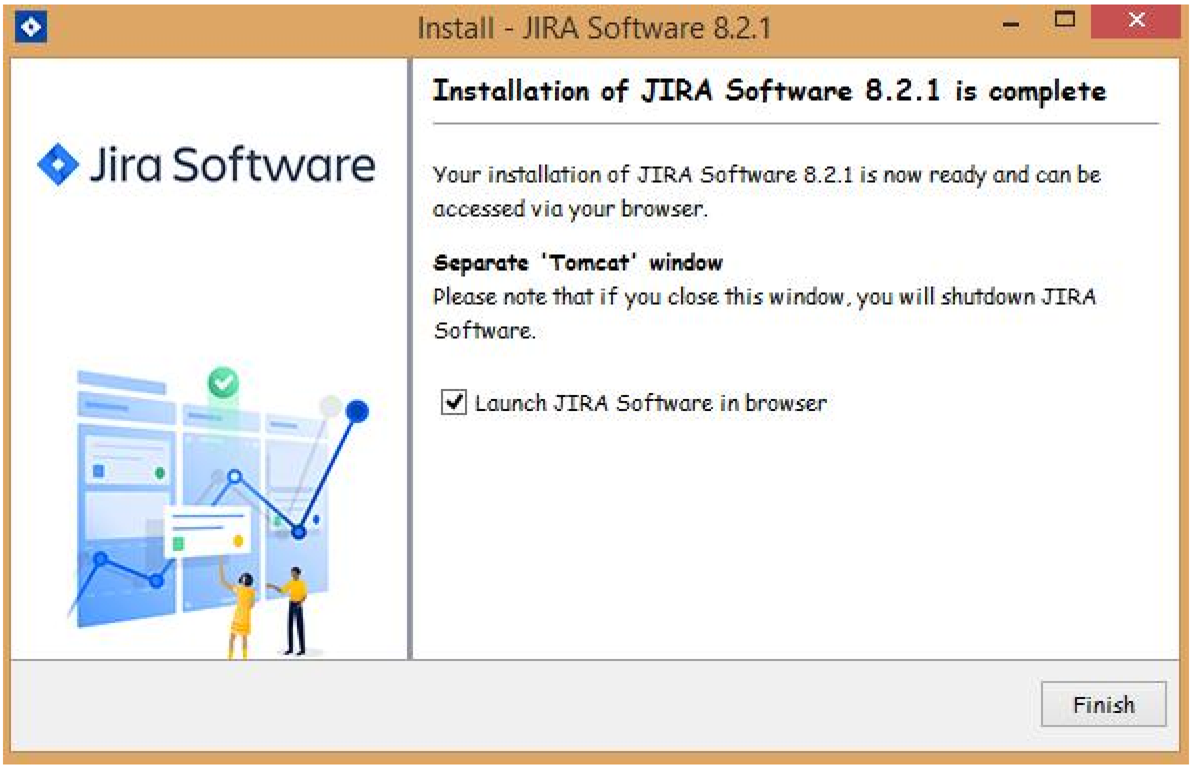


- After the completion of the installation, the screen appears as shown below:



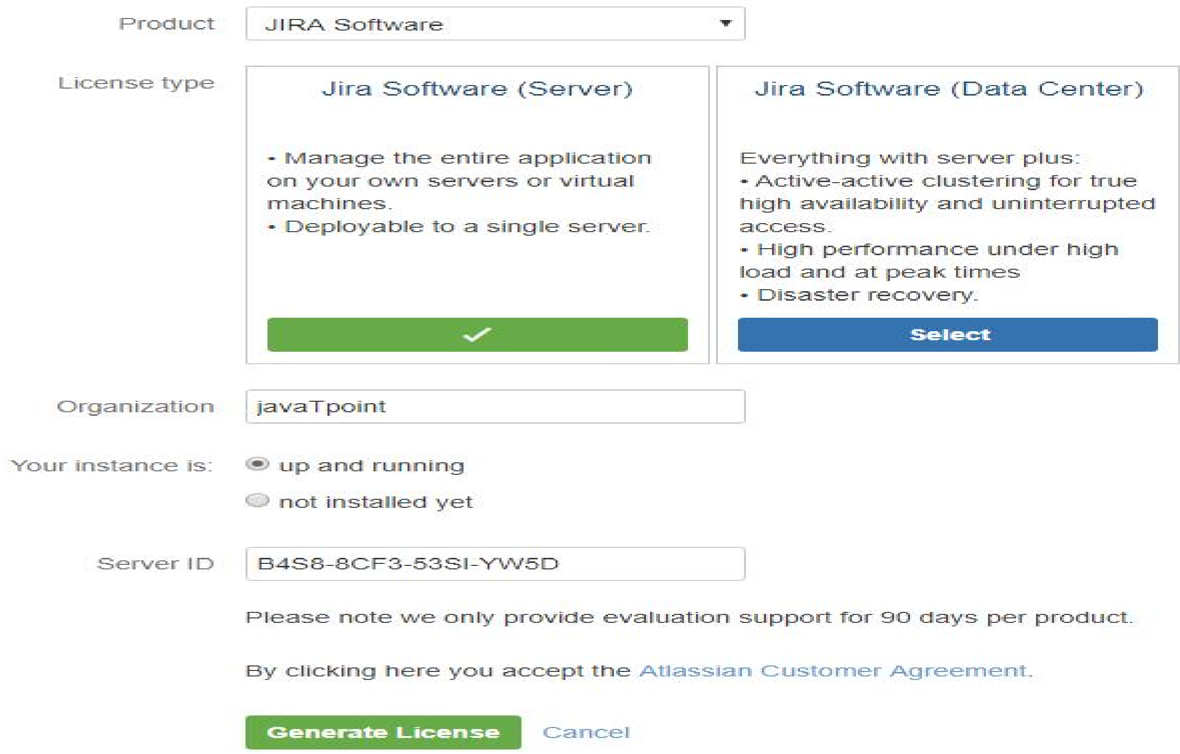
- On clicking on the Next button, the launching of JIRA software gets started.

- Click on the **Finish** button.

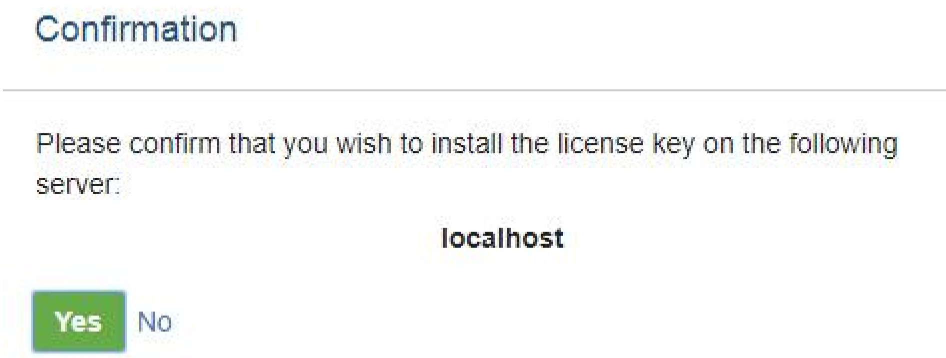


Now, JIRA has been launched in your web browser. You have to sign-up to the account in Jira.

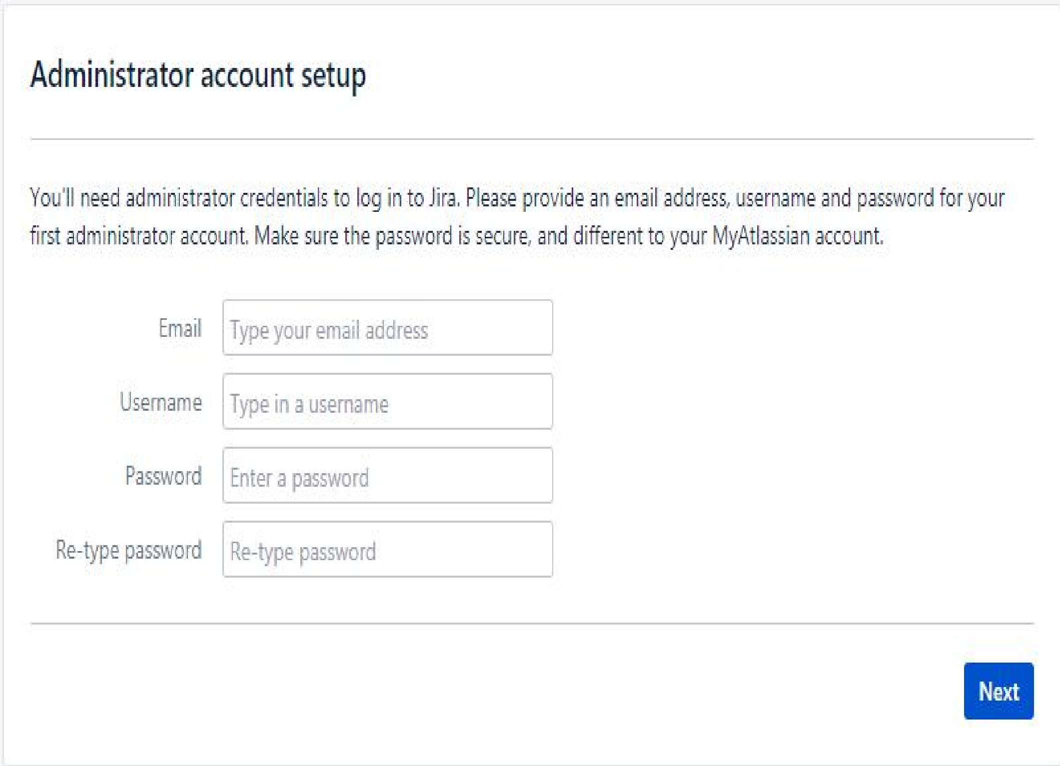
- You have to select the License type and enter the name of your organization.



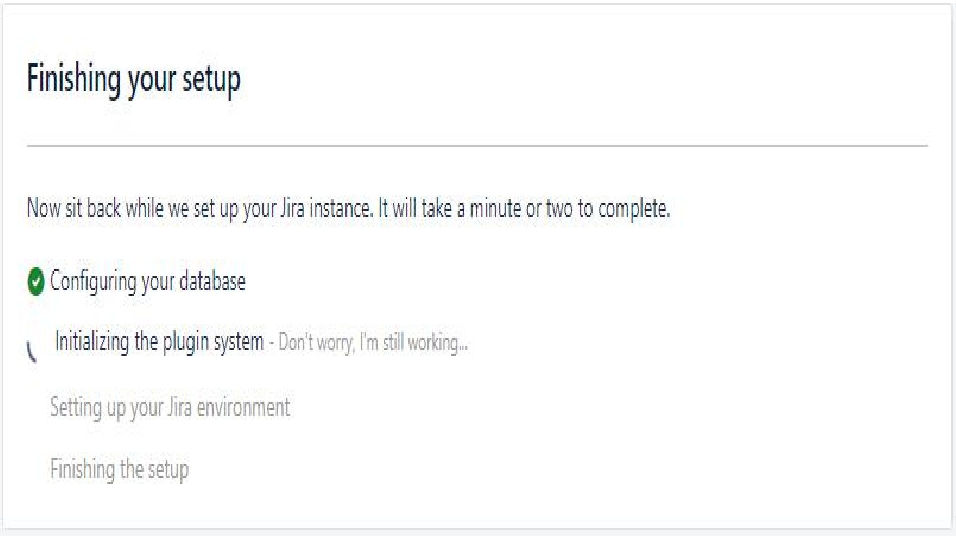
- After clicking on the Generate License button, a pop-up box appears which is a confirmation box that ask you whether you want to install the license key on the server or not. Click on the '**Yes**' button.

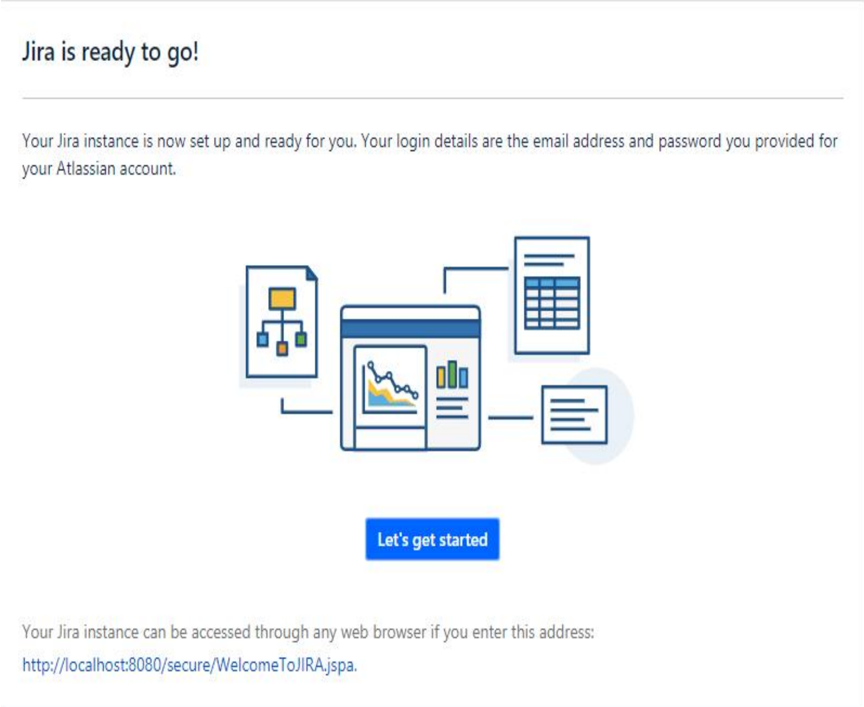


- Fill the administrator details which are required to log in to Jira. Click on the **Next** button.



- Jira will start finishing your setup.



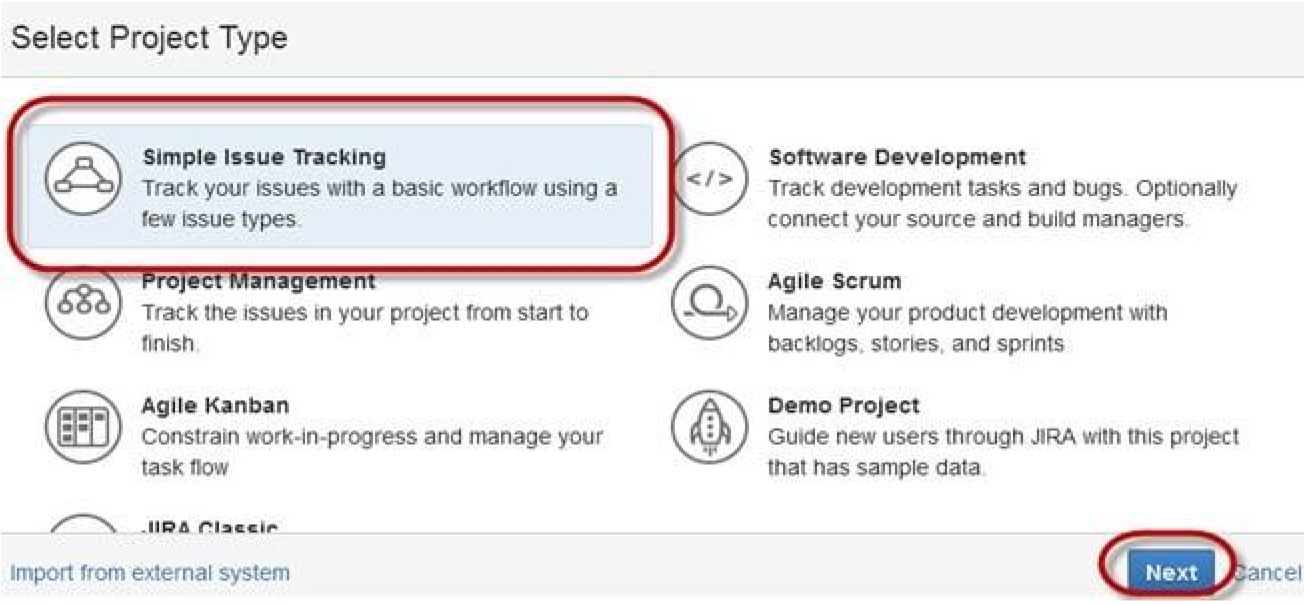


How to create an issue in JIRA

Here is the step by step process to create, edit, and summarize an issue in JIRA, an effective Jira tool for testing.

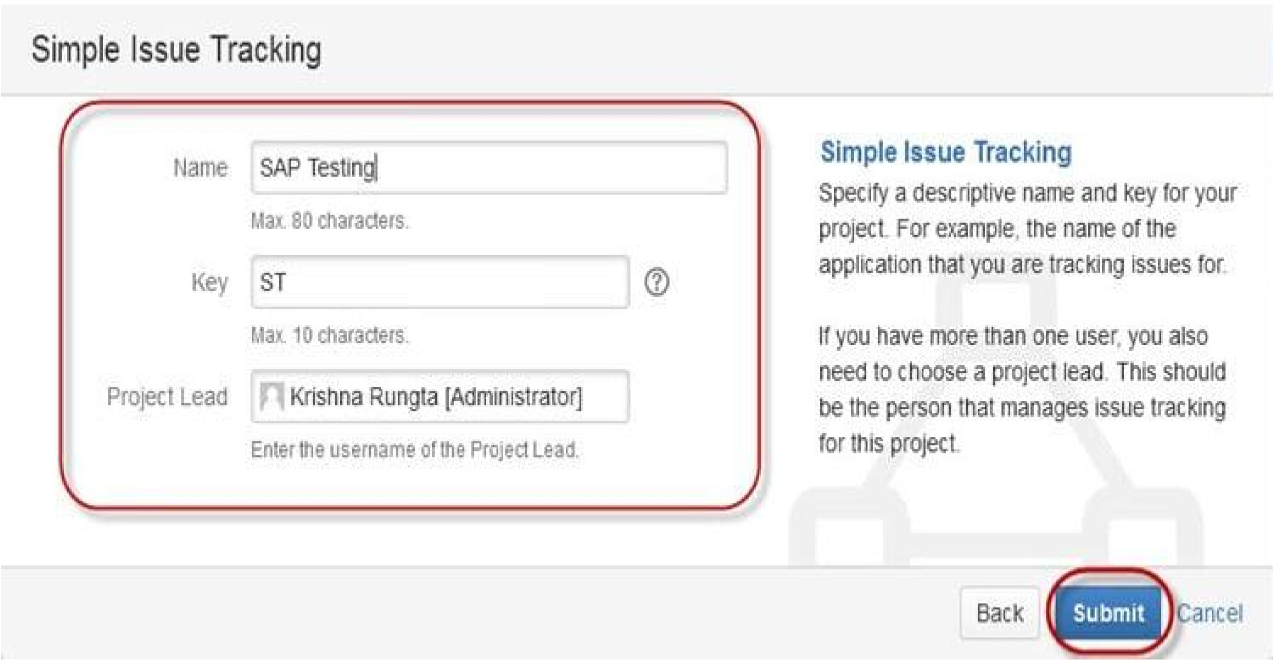
Step 1) Open Jira software and login with your ID and password

JIRA Dashboard will open when you enter your user ID and password. Under free JIRA dashboard you will find option **Project,** when you click on it, it will open a window that list out options like **Simple Issue Tracking, Project Management, Agile Kanban, Jira Classic** and so on as shown in screen shot below.



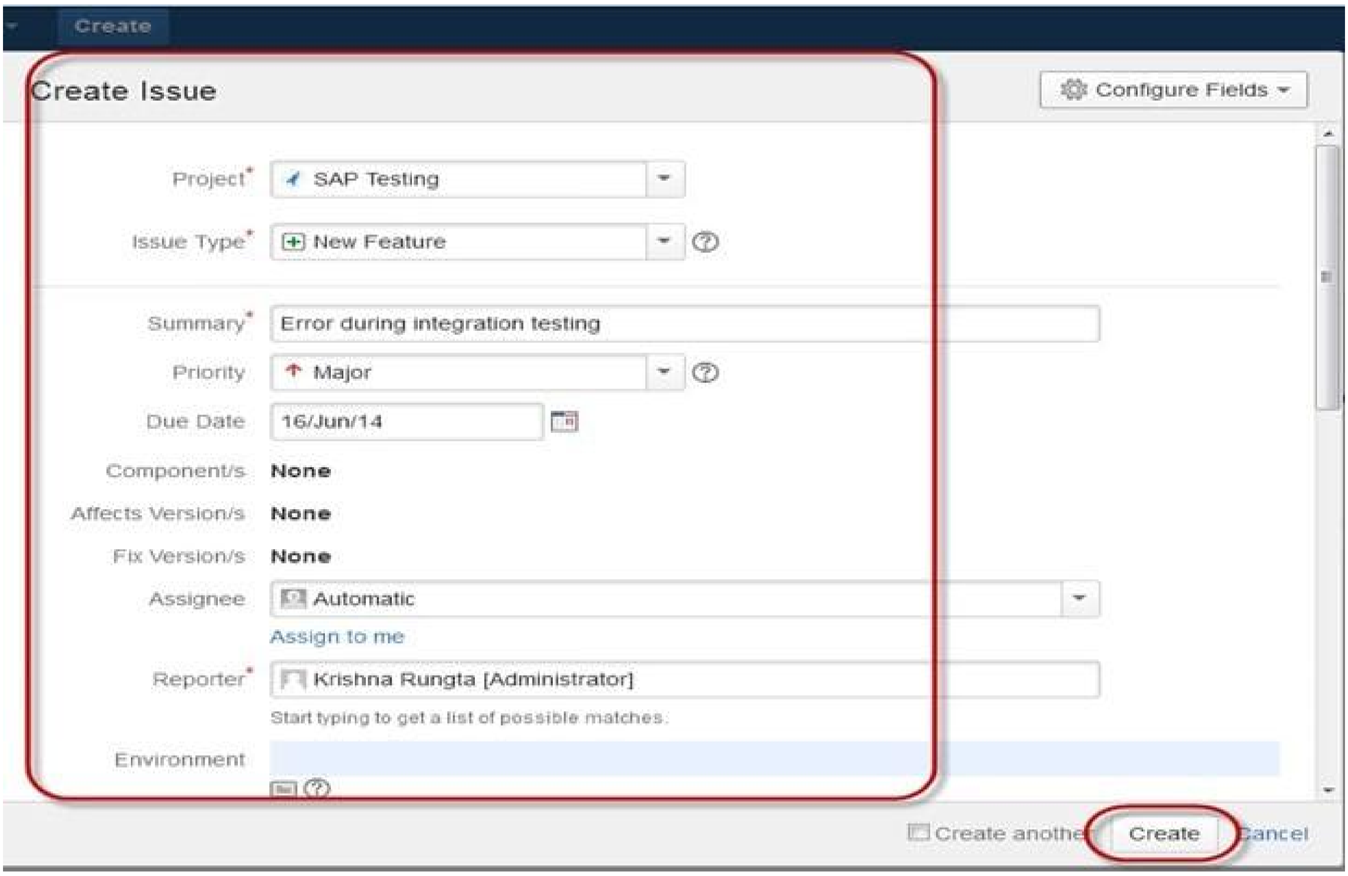
Step 2) Provide issue details

When you click on option **Simple Issue Tracking,** another window will open, where you can mention all the details about the issue and also assign the issue to the responsible person.

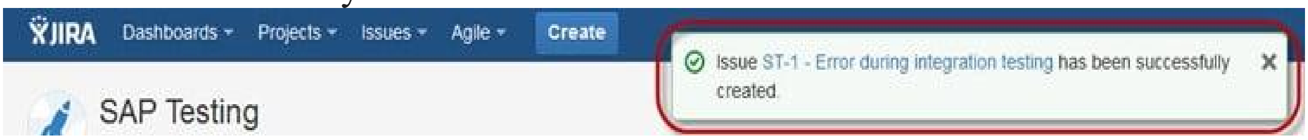


Step 3) Provide detailed information to create an issue

When you click on "Submit" button, a window will open where you can perform a list of work like creating issues, assigning issues, check the status of issues like- resolved, In-Progress or closed and so on.

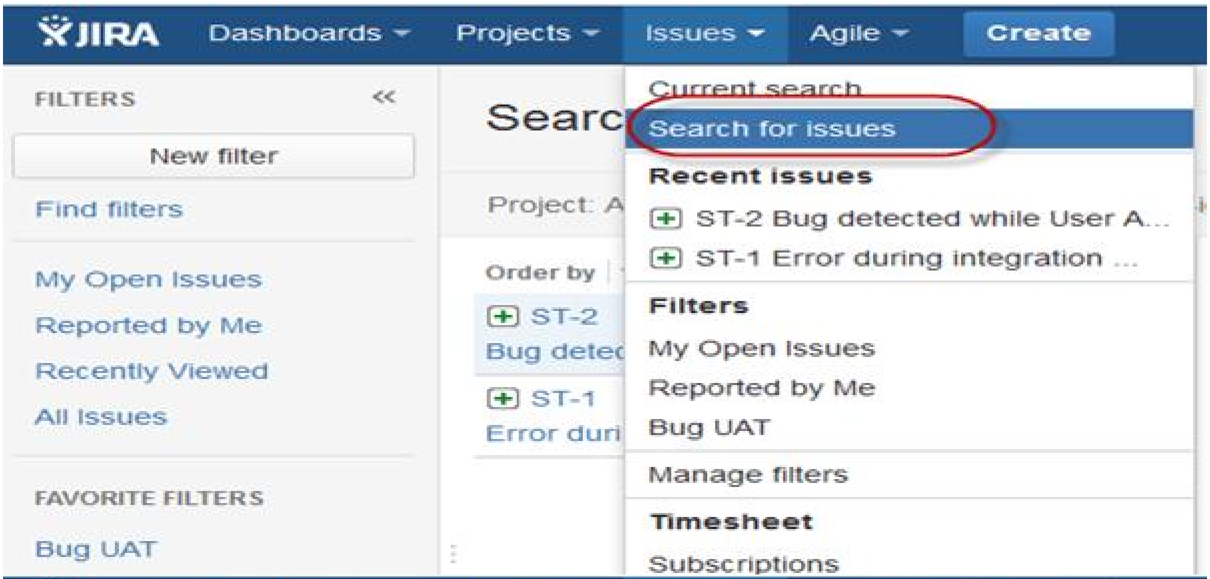


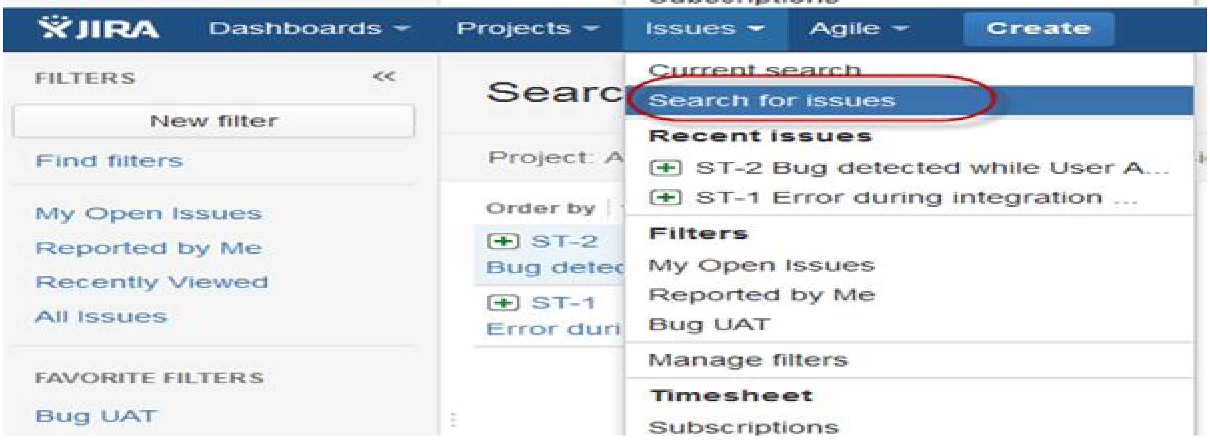
Once the issue is created a pop-up will appear on your screen saying your issue is created successfully as shown in the screen shot below



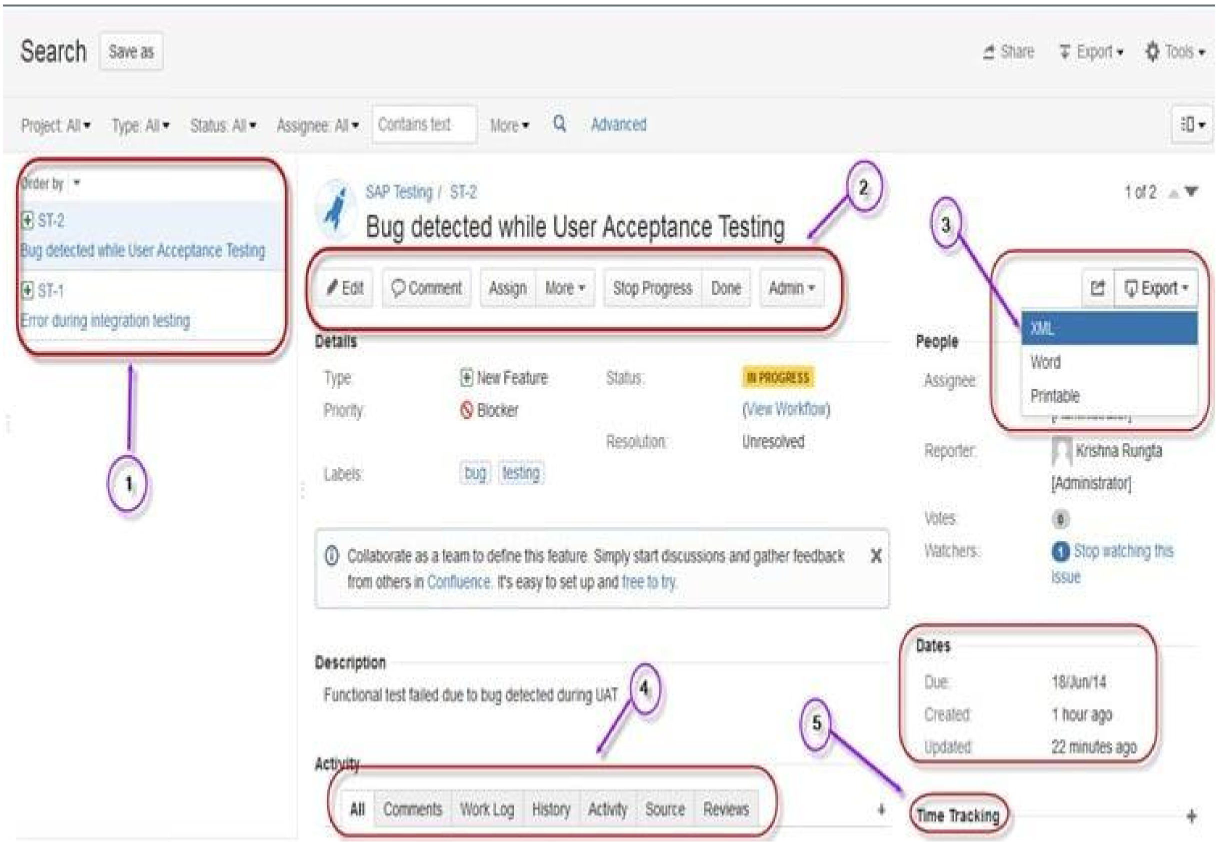
Step 4) Open the Issues menu to search and perform multiple functions on issues

Now if you want to edit an issue or you want to export the issue to XML or Word document, then you can hover your mouse on main panel and click on **Issues**. Under **Issues** options click on **search for issues** that will open a window from where you can locate your issues and perform multiple functions.





When you select the **"search for Issues"** under **Issues,** a window will appear as shown in the screen shot



1. **Search for issues** option will bring you to a window where you can see the issues created by you like here we have issues ST1 and ST2
2. Here in the screen shot you can see the issue **"Bug detected while User Acceptance Testing"** and all the details related to it. From here, you can perform multiple tasks like you can **stop the progress on issues, edit the issues, comment on the issues, assigning issues** and so on
3. Even you can export issue details to a XML or Word document.
4. Also, you can view activity going on the issue, reviews on the issue, work log, history of the issue and so on.

5.

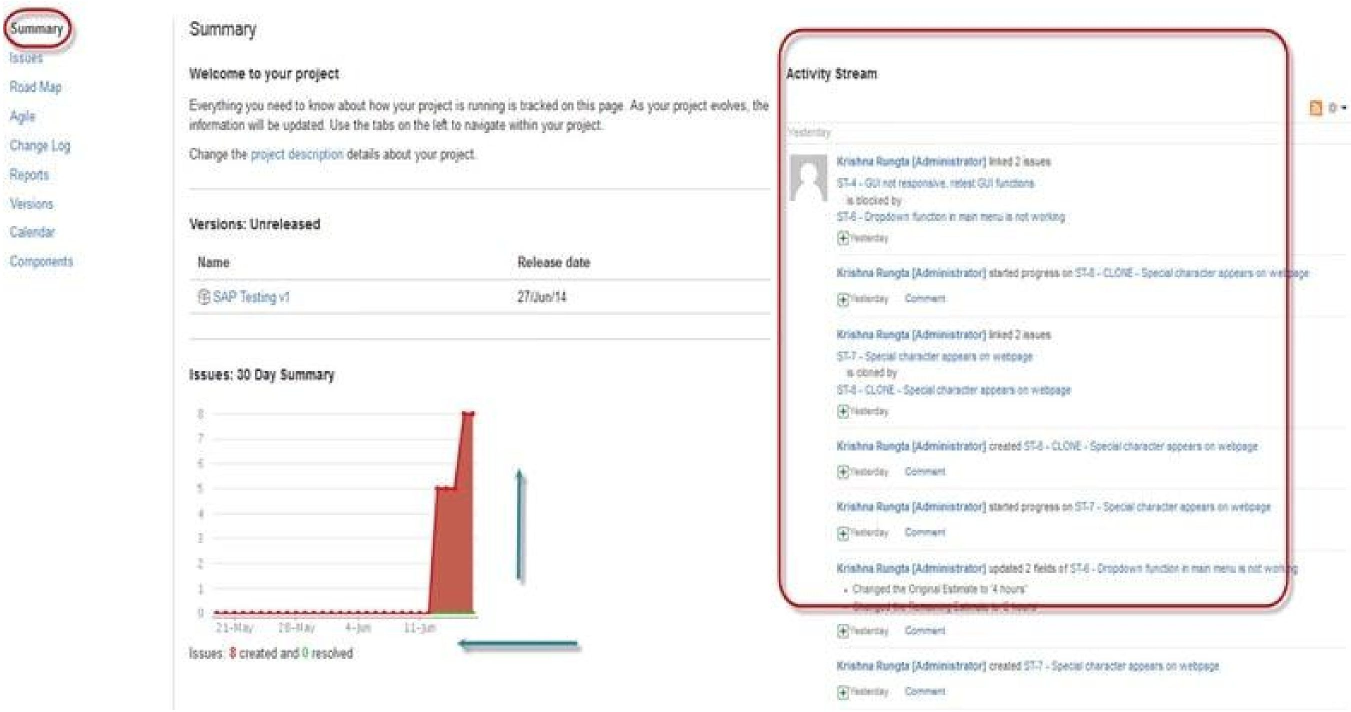
Under the time tracking option, you can even see the estimation time to resolve the issues

6.

In the same window, you can set a filter for the issue and save them under **Favorite Filters**, so when you want to search or view a particular issue you can locate it using the filter.

Step 5) Click on the Summary option to view the details about issues

To view the summary of the issue, you can click on options **summary,** this will open a window which will show all the details of your project and progress on this chart. On the right-hand side of the summary window, there is an **Activity Stream** which gives the details about the issues and comments made by the assignee on the issue.



What is JIRA Issue?

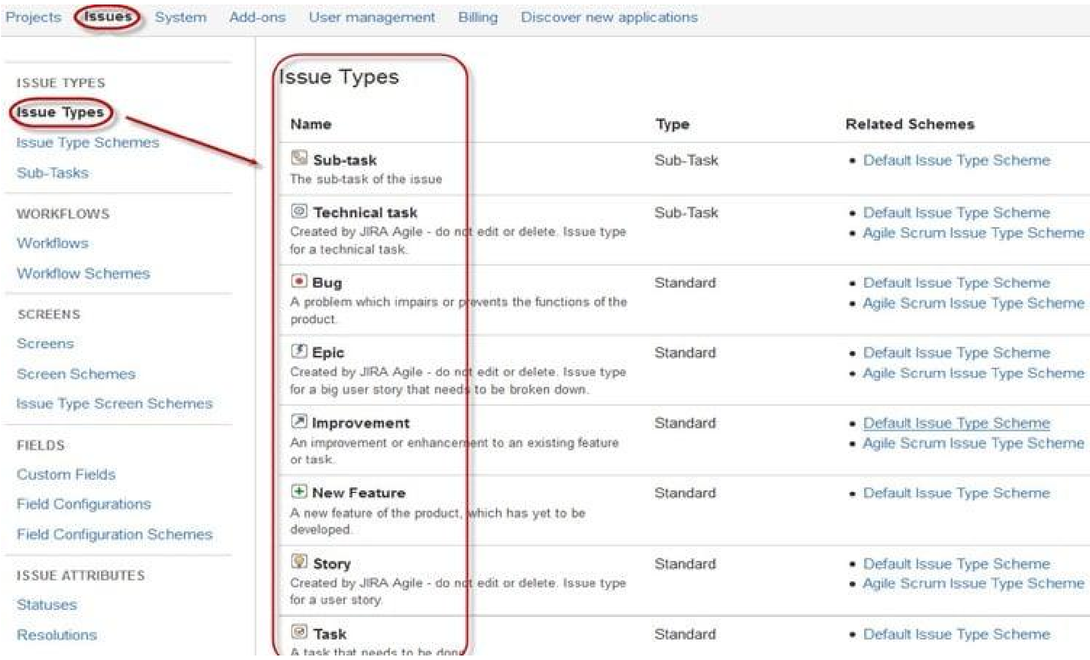
JIRA issue would track bug or issue that underlies the project. Once you have imported project then you can create issues.

Under Issues, you will find other useful features like

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

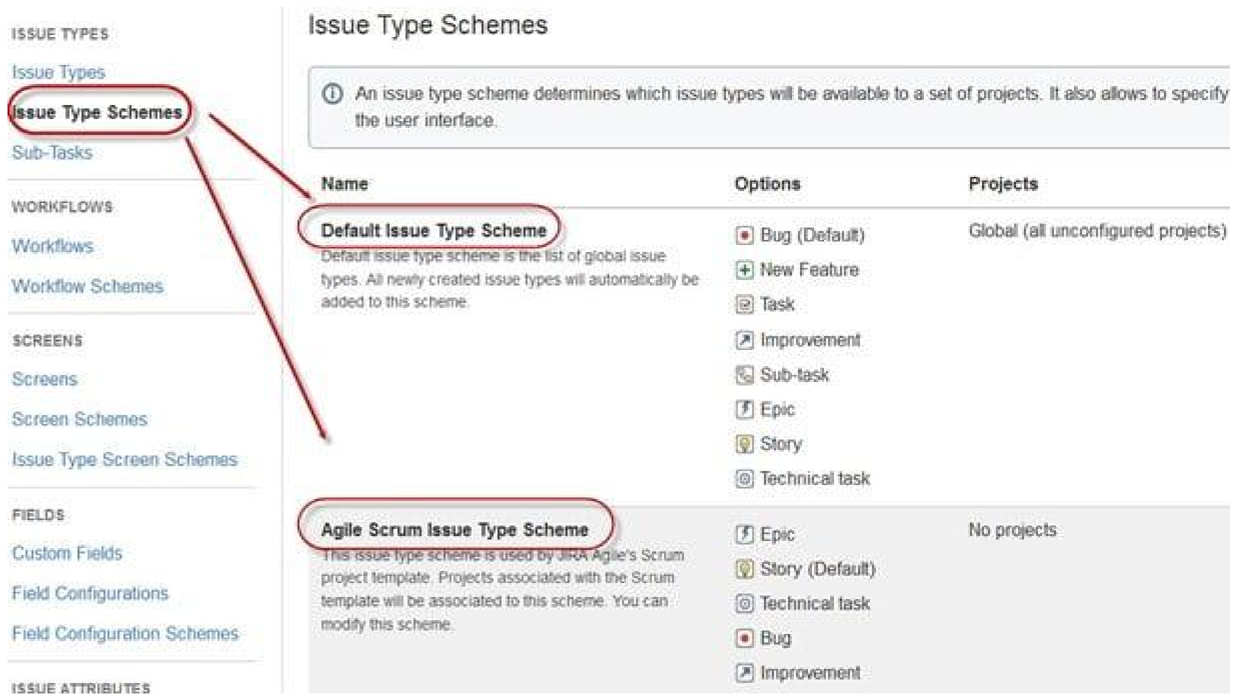
Jira Issue Types

Issue Type displays all types of items that can be created and tracked via Jira testing tool. JIRA Issues are classified under various forms like new feature, sub-task, bug, etc. as shown in the screen shot.

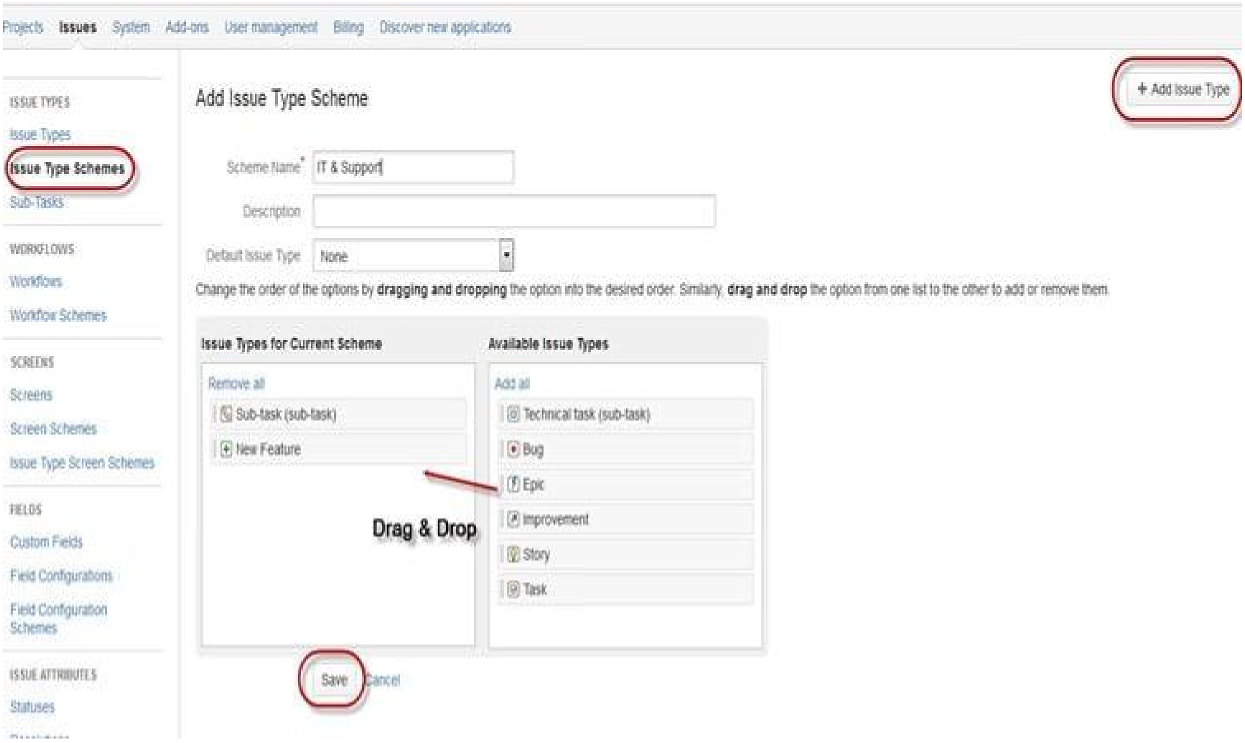


There are two types of Issue types schemes in Jira project management tool, one is

- **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 screen shot below



JIRA - Search

JIRA has powerful and very efficient search functionalities. A user can search issues across Projects, Versions and Components using various search types. JIRA allows saving the search criteria to utilize next time as filters; even these filters can be shared by others as well.

Types of Searching Options

JIRA has a couple of fundamental ways to search issues. The most important ones are as follows.

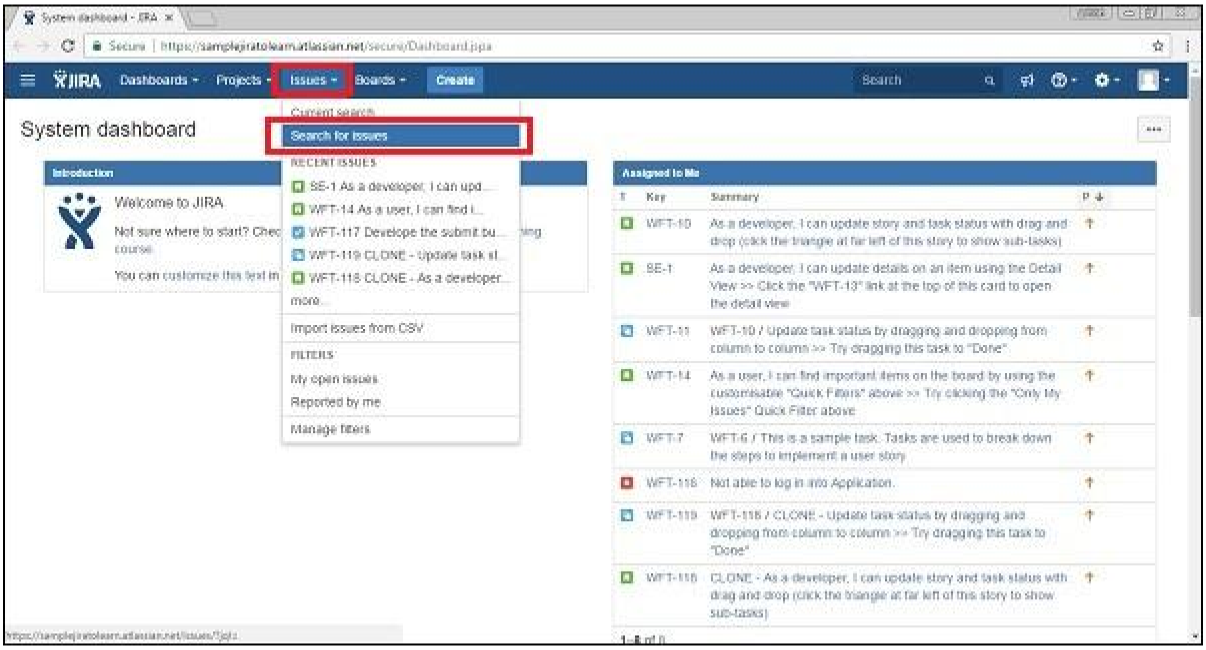
- Basic Search
- Quick Search

Let us now understand both of these search types in detail.

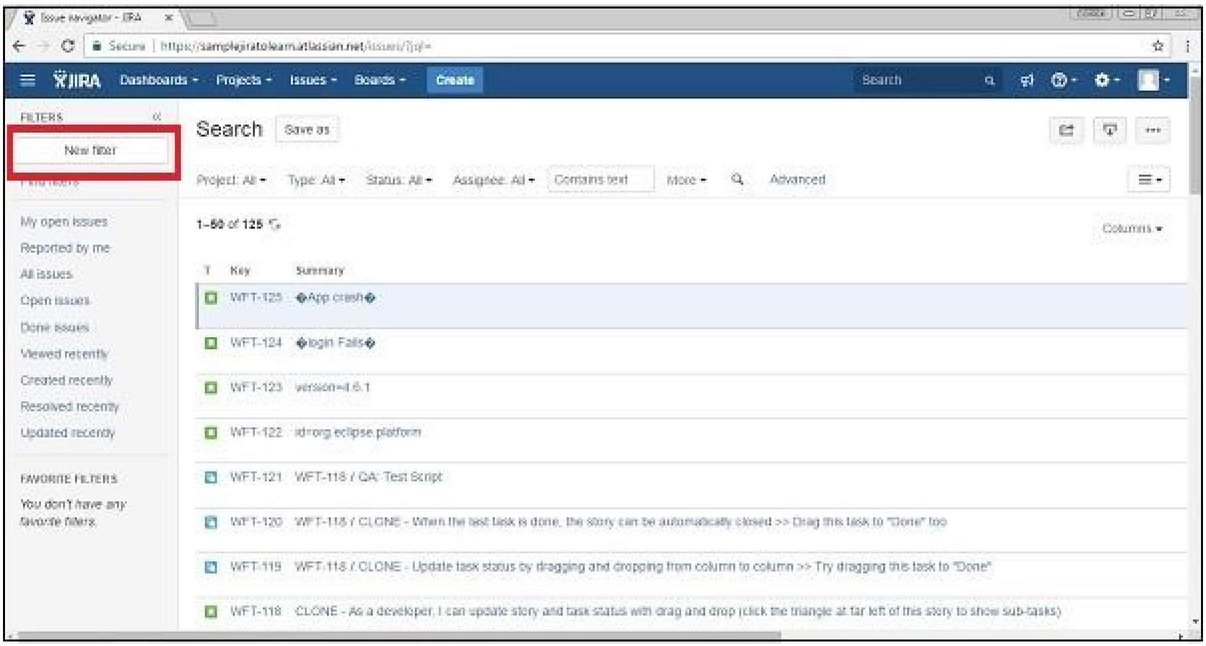
Basic Search

Basic Search in JIRA is a user-friendly interface that can be used easily to find out the issues. It uses the JQL queries in the backend. To do a basic search in JIRA, the user has to follow the steps given below.

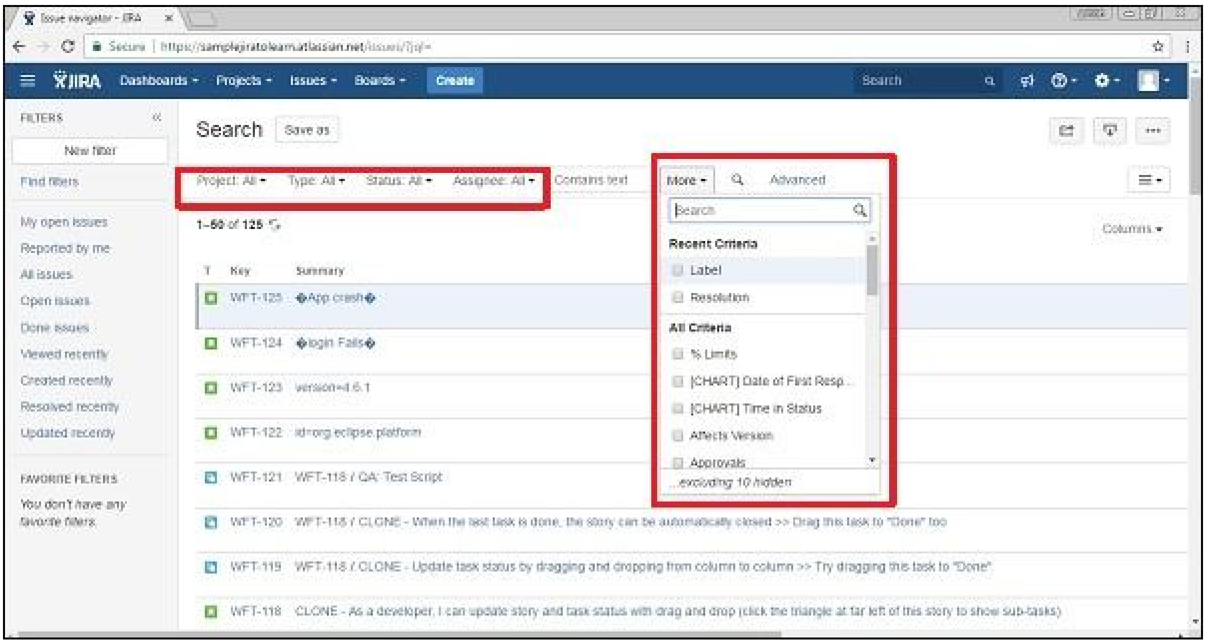
Step 1 − Navigate to issues → Search Issues. The following screenshot shows how to access the Search for Issues feature −



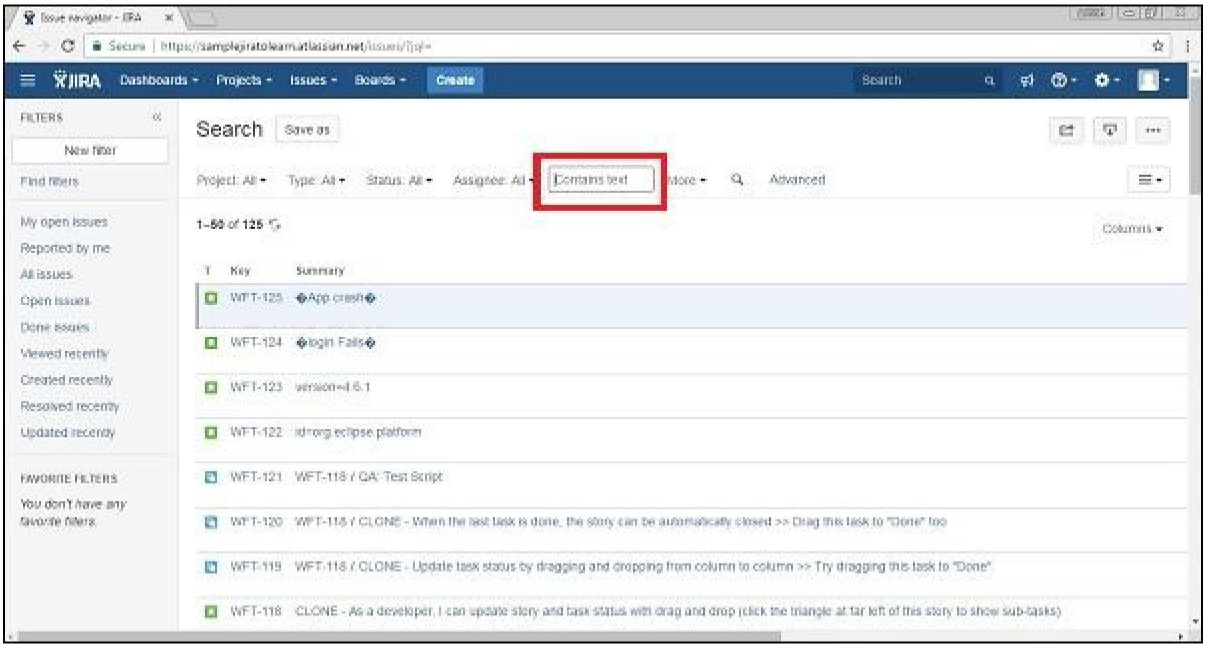
Step 2 − A search page displays. If it has any existing Search criteria, then click on the New Filter to reset it. The following screenshot shows how to define a new search criteria.



Step 3 − Set the search criteria against different fields like Project, Type, Status and Assigned. Then click on More and select any field to search with additional fields. The following screenshot shows what all criteria's can be set to search issues.



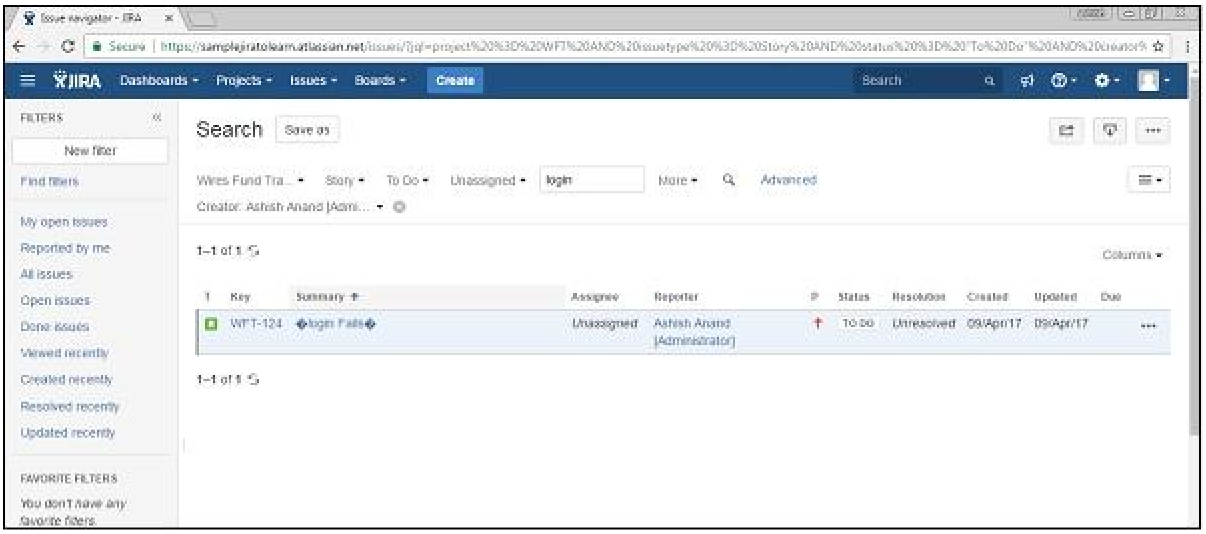
Step 4 − If the user wants to search against any specific text, keywords, start typing in the **Contains text** box. The following screenshot shows how to search specific text in issues.



Step 5 − A user can use wildcards or operators in all text based fields to search specific strings. For example −

- Single character wildcard - te?t
- Multiple characters wildcard – win*
- Boolean operators - "atlassian jira" || confluence

Based on different search criteria, the following result is displayed. The following screenshot shows the list of searched issues.



JIRA - Advanced Search

Apart from the type of searches explained in the previous chapter, JIRA also has a few advanced search options, which can be performed using the following three ways.

- Using Field Reference
- Using Keyword Reference
- Using Operators Reference

These above-mentioned three ways have been explained in detail below.

The user should consider the following points while performing any advanced search.

-

Advanced search uses structured queries to search for JIRA issues.

Search results displays in the Issue Navigator.

-
-

Search results can be exported to MS Excel and many other available formats.

-
-

Save and Subscribe features are available to advanced searches.

An advanced search uses the JIRA Query Language known as JQL.

A simple query in JQL consists of a field, operator, followed by one or more values or functions. For example, the following simple query will find all issues in the "WFT" project −

```
Project = "WFT"
```

JQL supports SQL like syntax such as ORDER BY, GROUP BY, ISNULL() functions, but JQL is not a Database Query Language.

Using Field Reference

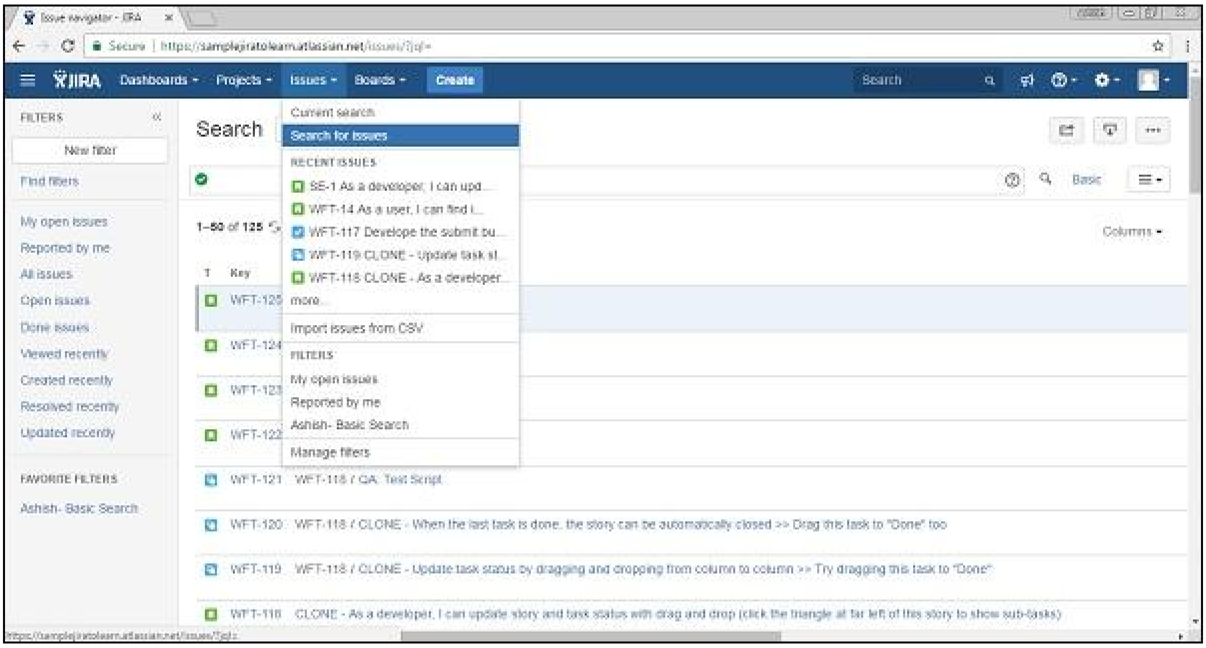
A field reference means a word that represents the field name in the JIRA issue including the custom fields. The syntax is −

```
<field name> <operators like =,>, <> “values” or “functions”
```

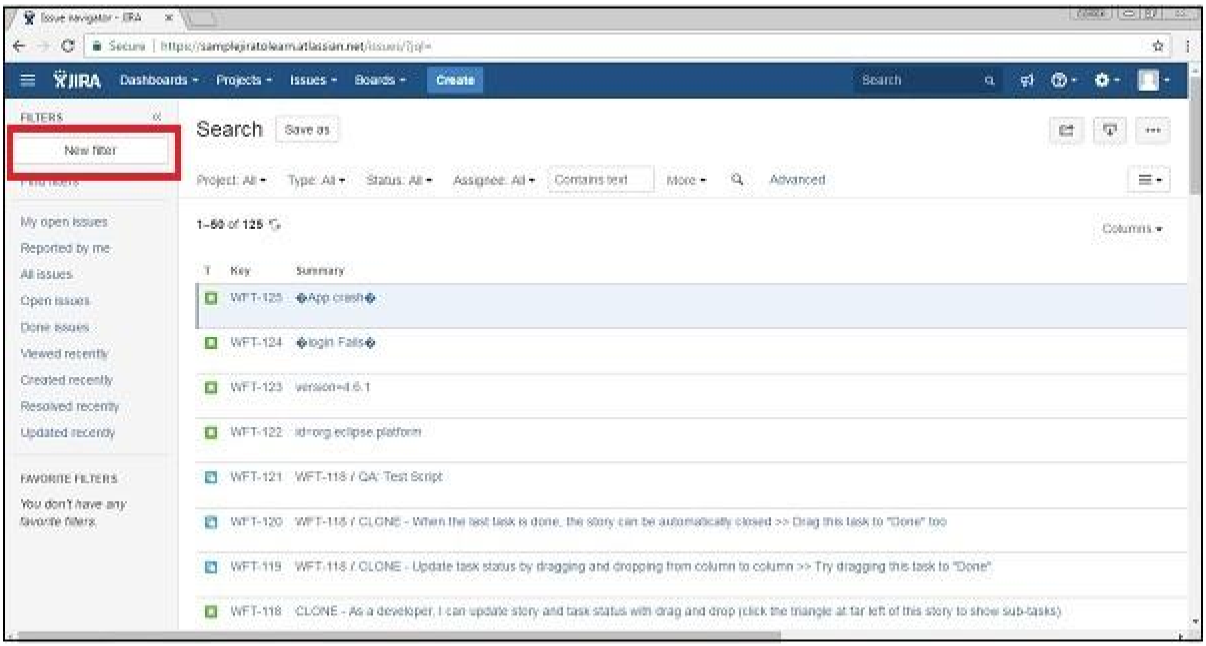
The operator compares the value of the field with value presents at right side such that only true results are retrieved by query.

- Go to Issues → Search for Issues in the navigator bar.

The following screenshot shows how to navigate the Search section.



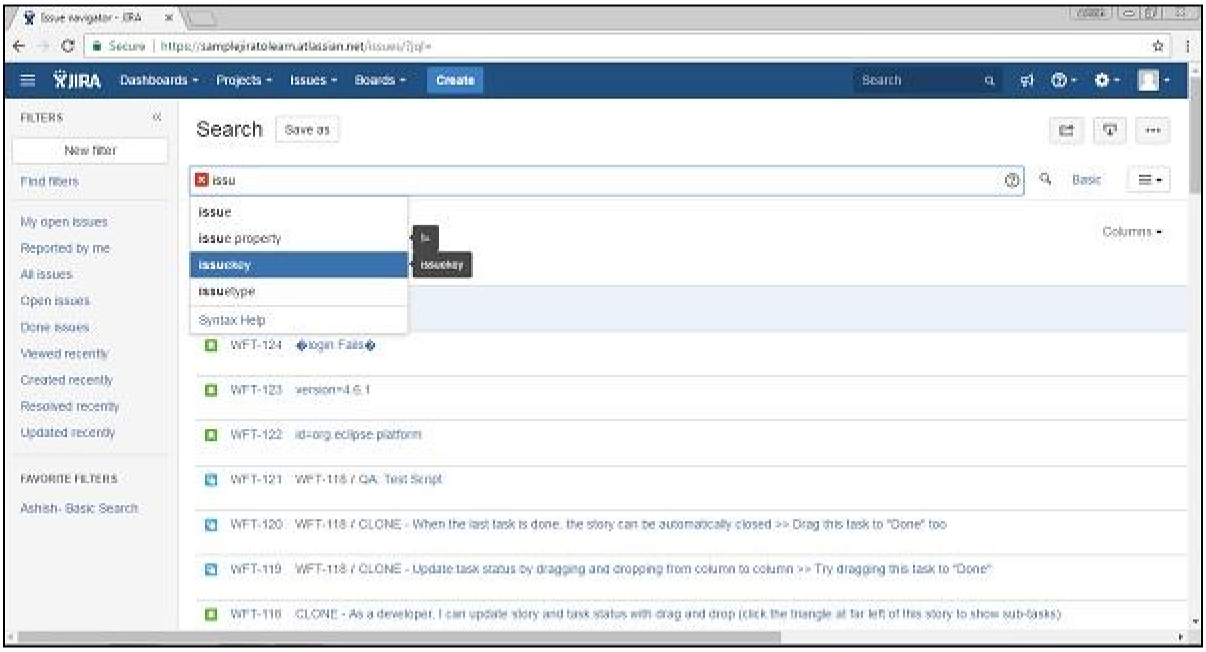
If there is an existing search criterion, click on the New Filter button to reset the criteria. The following screenshot shows how to start with a new criteria –



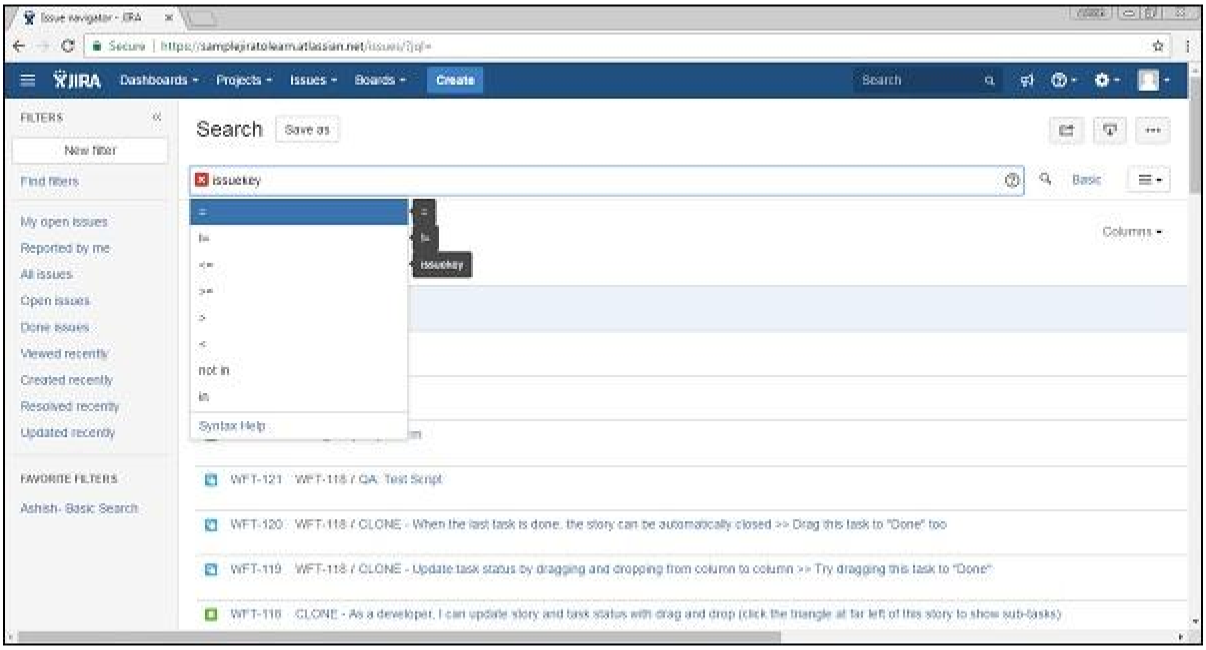
Type the query using the Field, Operator and Values like **issueKey = "WFT-107"**.

There are other fields as well – Affected Version, Assignee, Attachments, Category, Comment, Component, Created, Creator, Description, Due, Environment, etc. As soon as the user starts typing, the auto-complete functionality helps to write in the defined format.

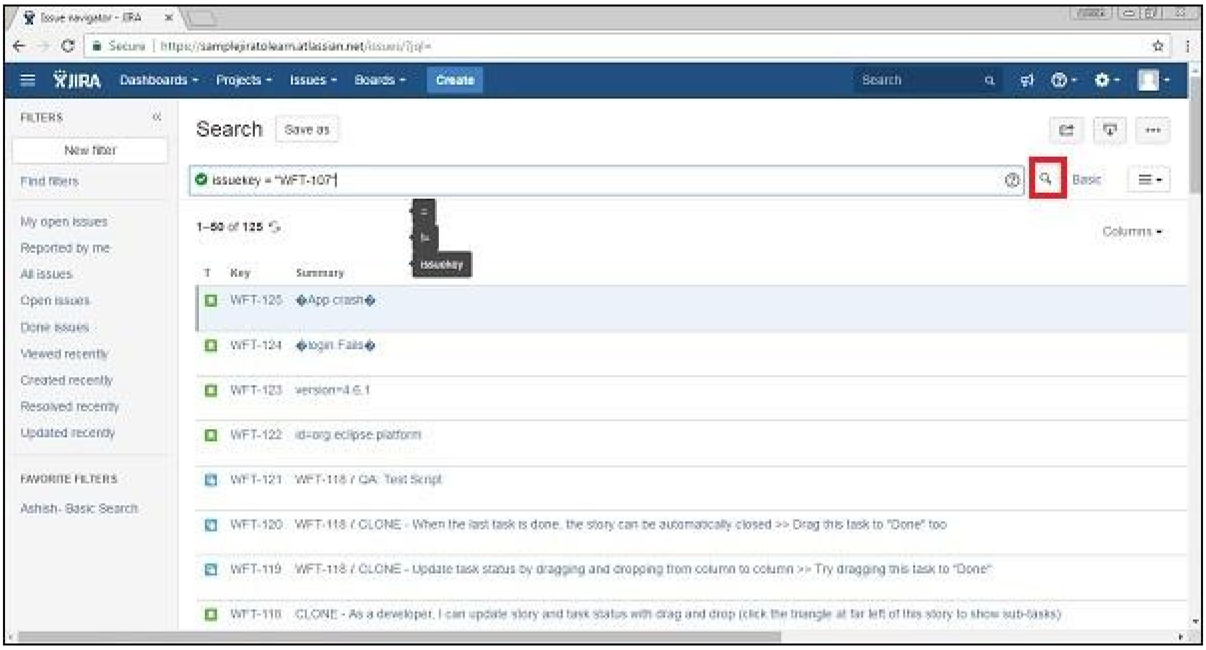
The following screenshot shows how to add Field Name criteria using advanced features.



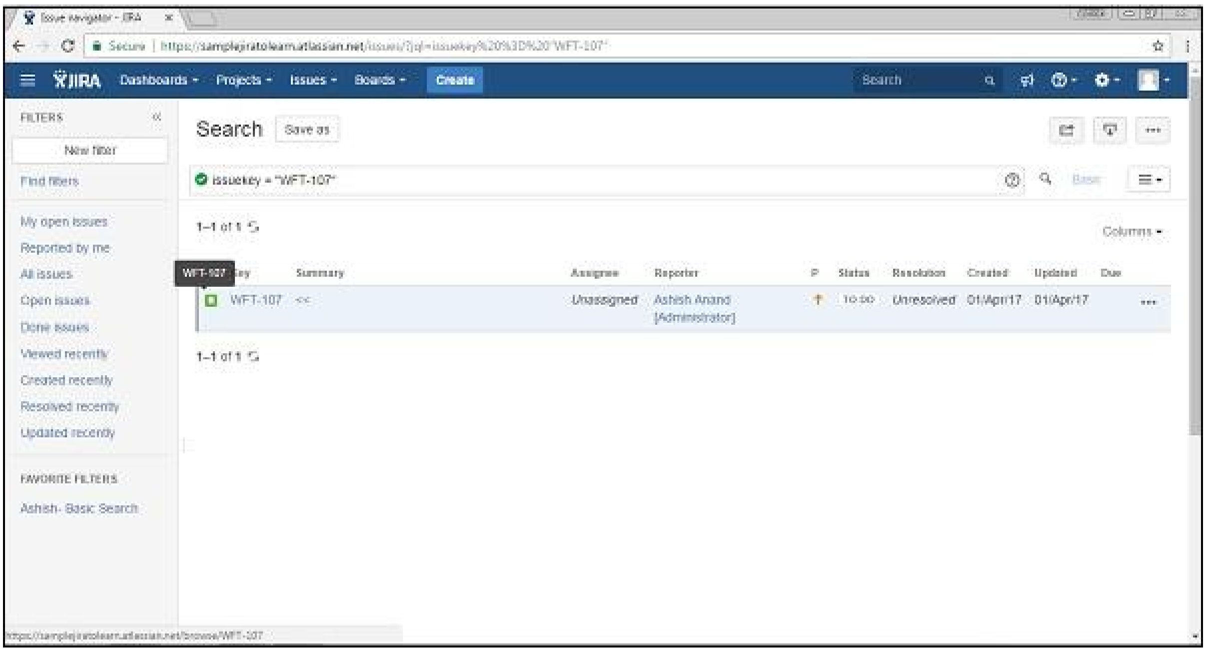
Operator selection − The following screenshot shows how to select operators.



The next step is to enter the value and then click on the Search symbol. The following screenshot shows how to add values and search.



the following screenshot shows the search result based on criteria set.



Using Keyword Reference

Here, we will understand how to use a keyword reference and what its advantages are

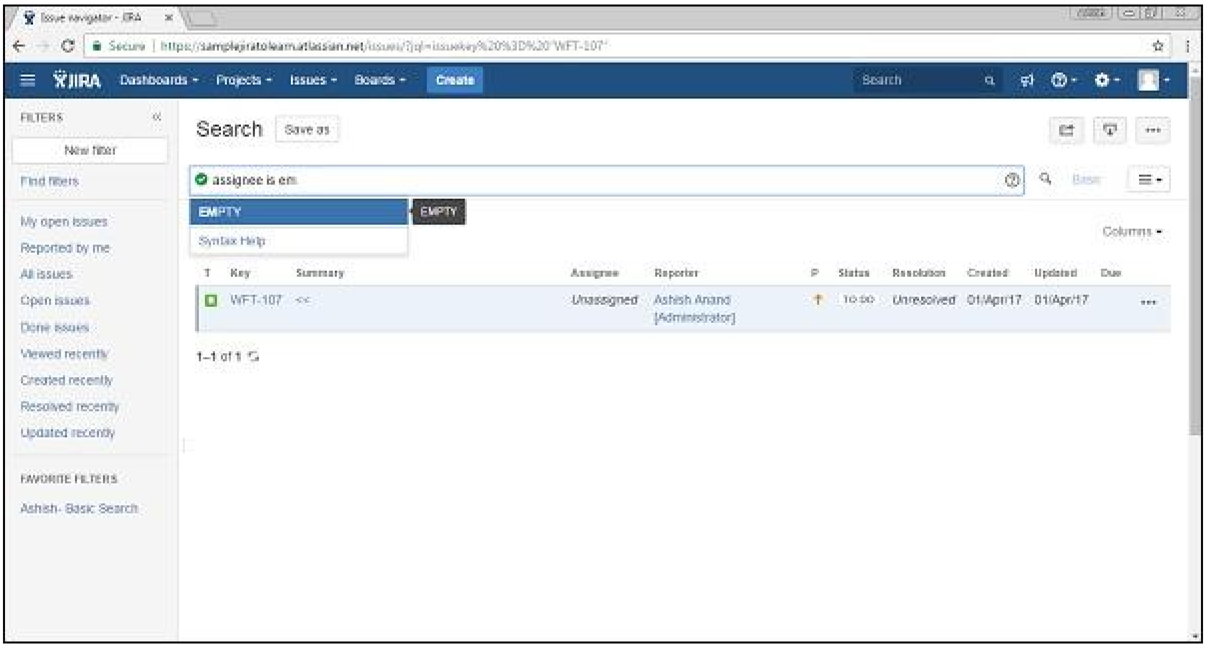
A keyword in JQL –

- joins two or more queries together to form a complex JQL query.
- alters the logic of one or more queries.
- alters the logic of operators.
- has an explicit definition in a JQL query.
- performs a specific function that defines the results of a JQL query.

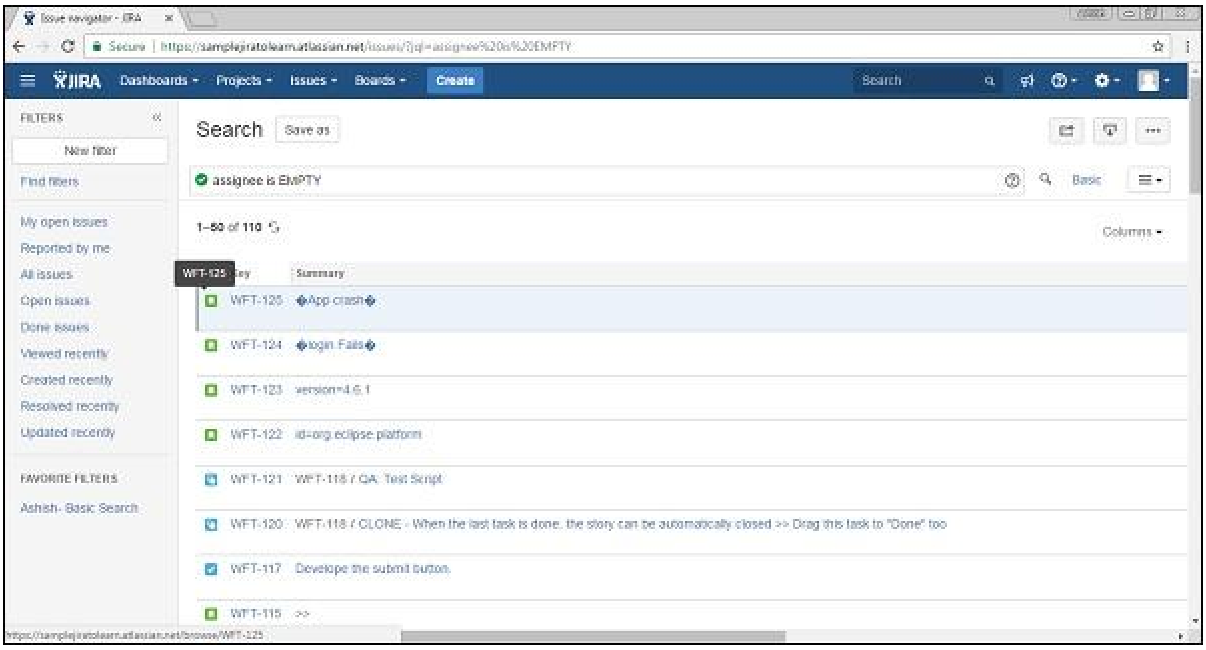
List of Keywords −

- AND − ex - status = open AND priority = urgent And assignee = Ashish.
- OR − ex – duedate < now() or duedate is empty.
- NOT − ex – not assignee = Ashish .
- EMPTY − ex - affectedVersion is empty / affectedVersion = empty.
- NULL − ex – assignee is null.
- ORDER BY − ex – duedate = empty order by created, priority desc.

Similar to field reference, as soon as the user starts typing, the auto-complete functionality helps to get the correct syntax. The following screenshot shows how to add keywords.



Click on the Search symbol and it will provide the search results. The following screenshot shows the result based on a criteria set.



Using Operators Reference

Operators are used to compare values of the left side with the right side, such that only true results display as the search result.

List of Operators

- Equals: =
- Not Equals: !=
- Greater Than: >
- Less Than: <
- Greater Than Equals: =>
- Less than equals: =<
- IN
- NOT IN
- CONTAINS: ~
- Does Not contain: ! ~
- IS
- IS NOT
- WAS
- WAS IN
- WAS NOT IN
- WAS NOT
- CHANGED

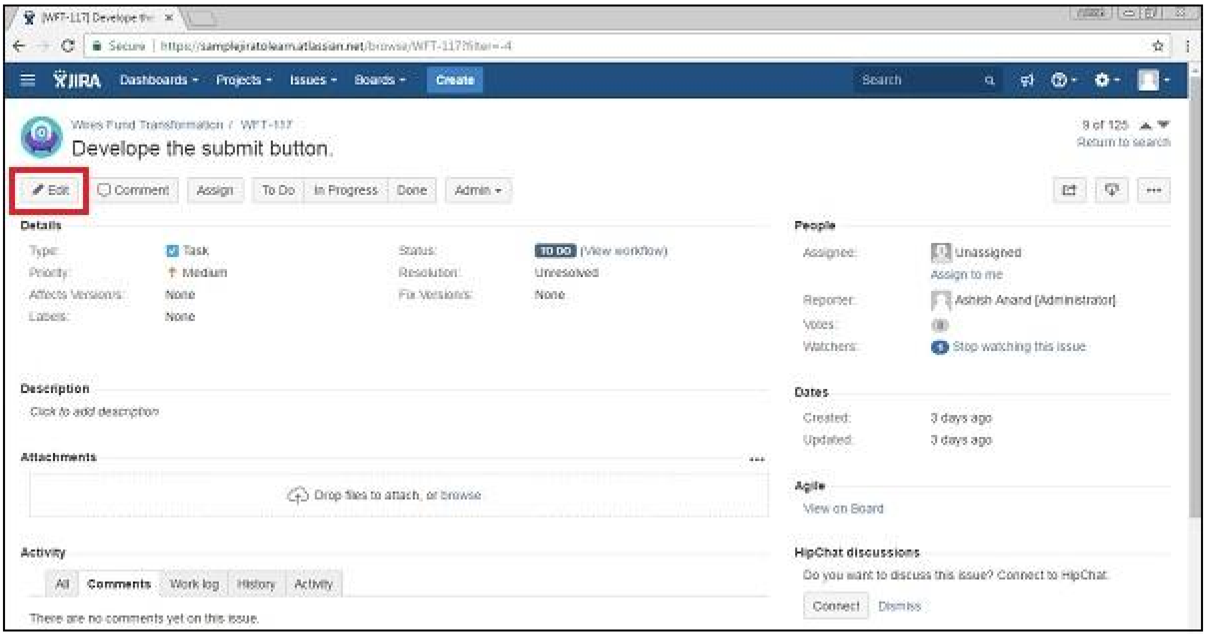
Similar to the Field and the Keyword Reference, these operators can also be used to enhance the search results.

JIRA - Edit an Issue

To edit an issue in JIRA, the user has to navigate to the issue, which is required to edit and the click on the issue to open the page.

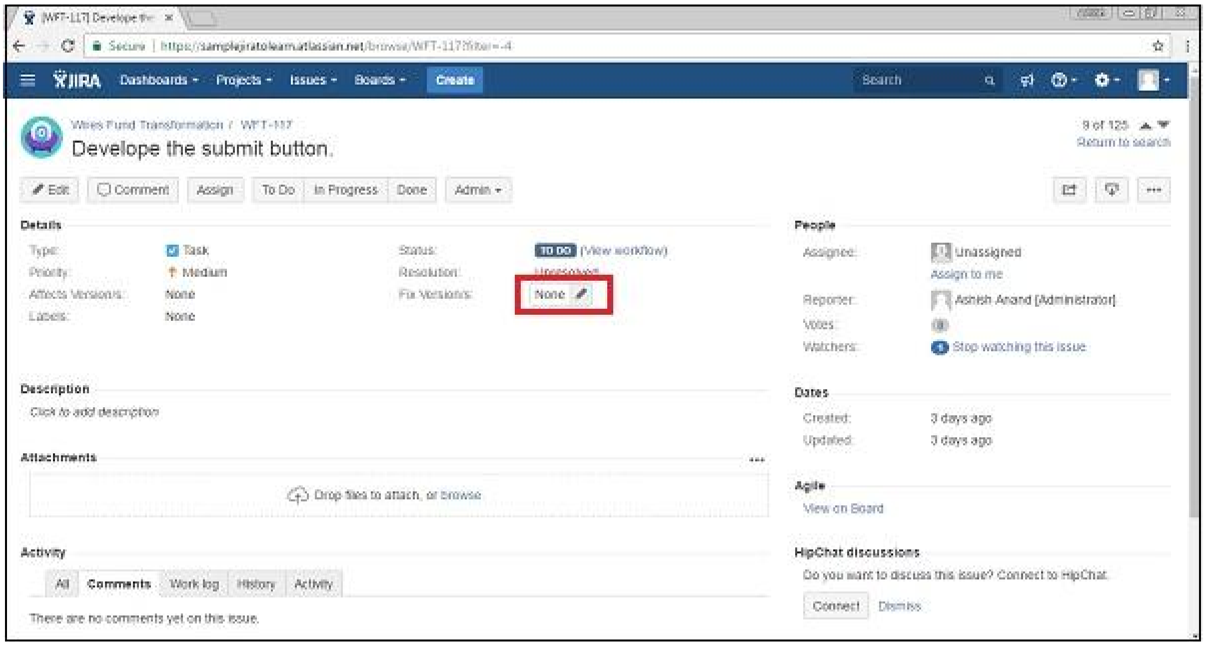
The next step is to click on the **Edit** button, which is present at the top left hand side of the view issue page. It will open the edit issue page that is similar to the create page.

The following screenshot shows how to access the **Edit** functionality.

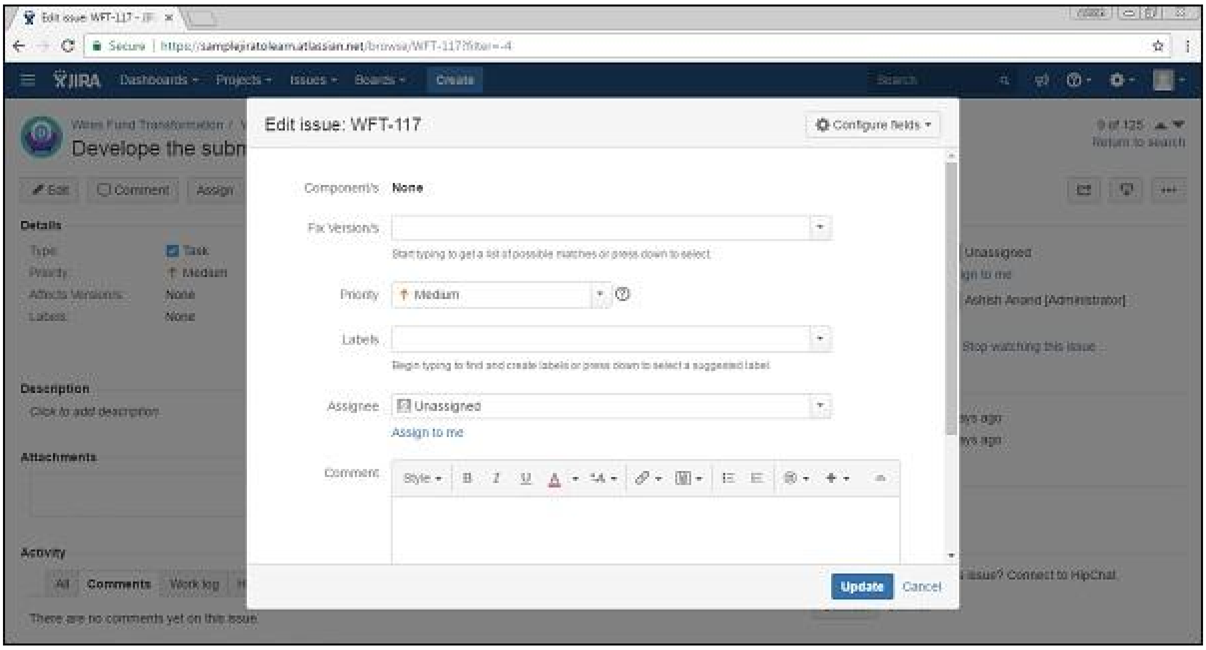


Or, hover the mouse over the field and click on the **Pencil Icon** to edit the specific field inline.

The following screenshot shows how to edit a specific field without clicking on main edit button –

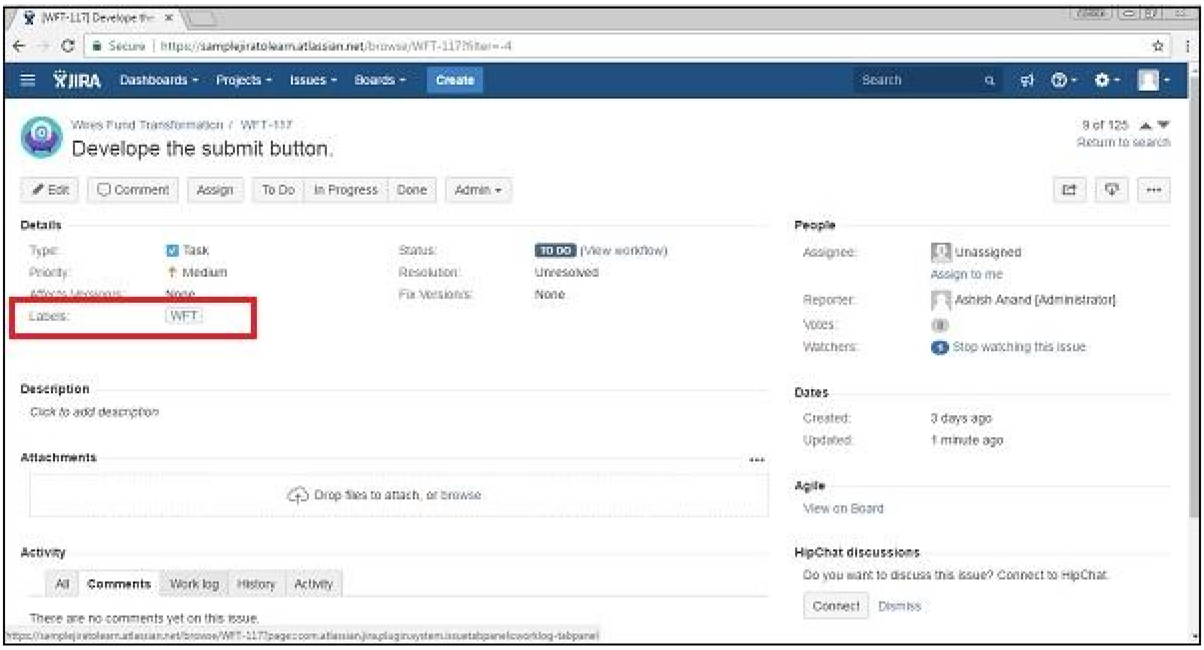


Modify the issue details in the corresponding field of the edit Issue page. The Following screenshot shows the edit page to update details of an issue.



Once the update is completed, click on the Update button. The user will be able to see the edited text/fields in the View Issue Page.

The Following screenshot shows the updated details –



JIRA - Email an Issue

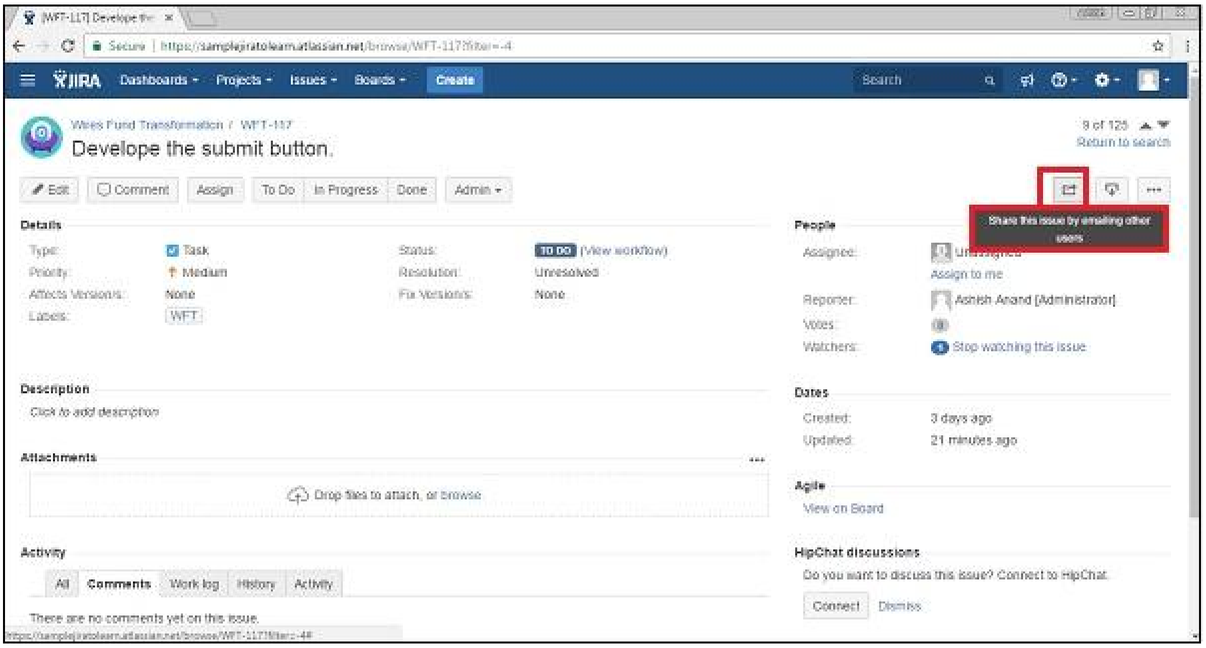
A user can email an issue to other JIRA users. There are two ways to do it –

- By share an issue and
- By mention these users in issue’s Description or Comment field.

Let us now discuss each of these in detail.

Sharing an Issue

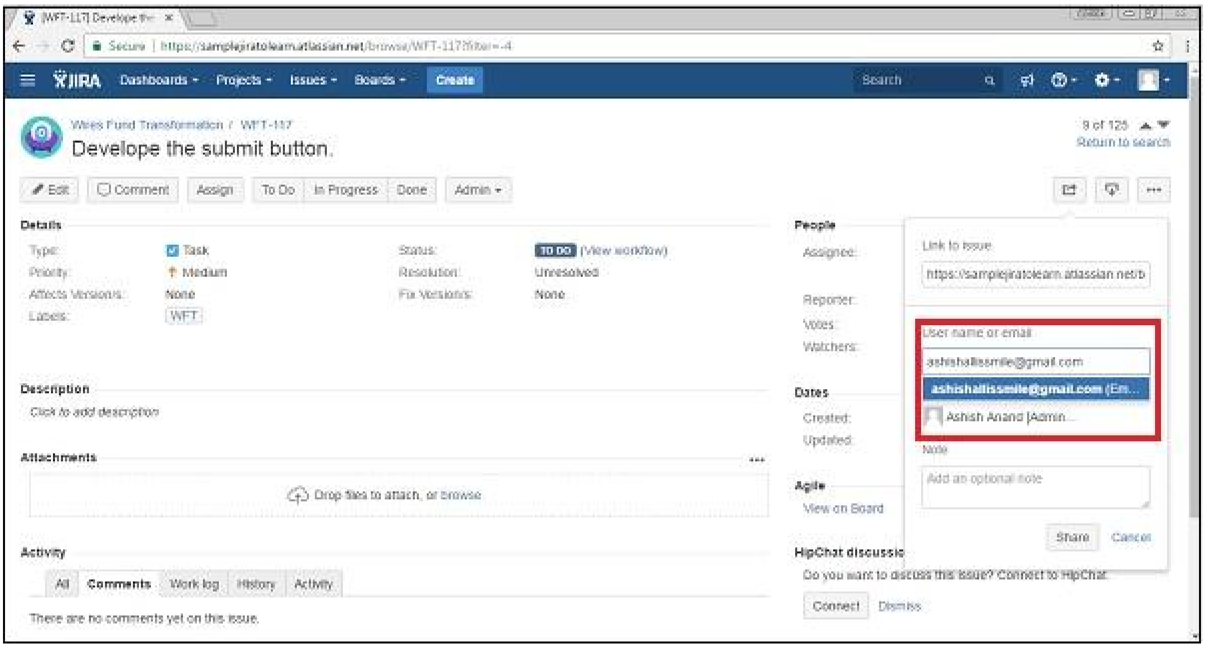
To begin with, the user should navigate to the issue that is required to share and click to view the issue. Click on the **Share Symbol** on the top right hand side of the page. The following screenshot shows where the sharing option present at issue page –



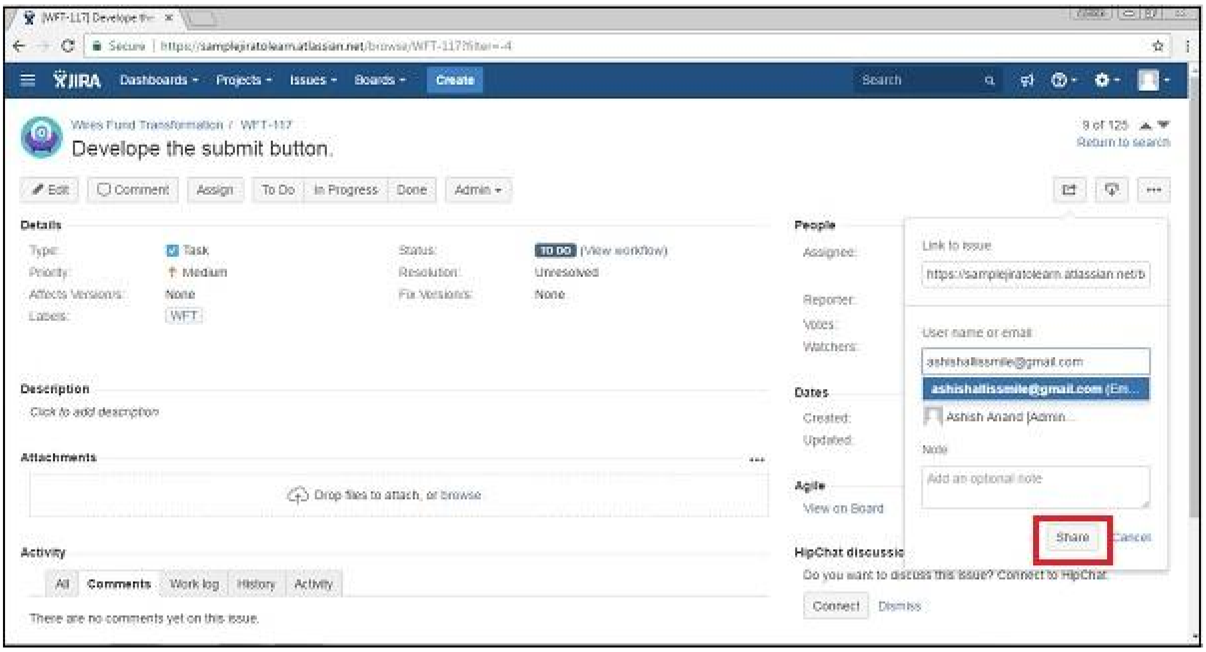
You can write the JIRA users' name by typing their usernames or partially/all of their full names as registered with JIRA or type the email addresses of the individuals with whom you would like to share the issues.

When the user starts typing a JIRA user's username or name, or a previously specified email address, an auto-complete dropdown list of users appears.

The Following screenshot shows how to provide email addresses or select from the auto-completion suggestions.



Add optional note. Click on the Share button present in the Share wizard section. The following screenshot shows how to share/email an issue to a user.

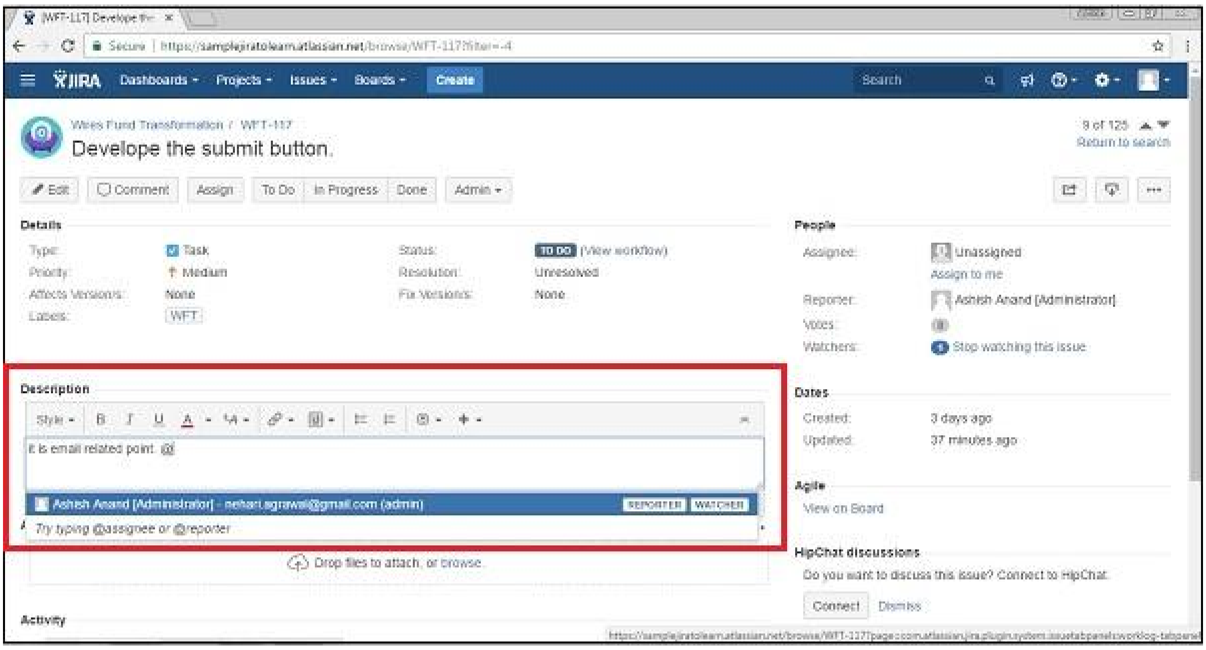


Mention Users in Description / Comment

In the issue's **Description** or the **Comment** field, type '@' and then the first few characters of the JIRA user's username or partially/all of their full name as registered with JIRA.

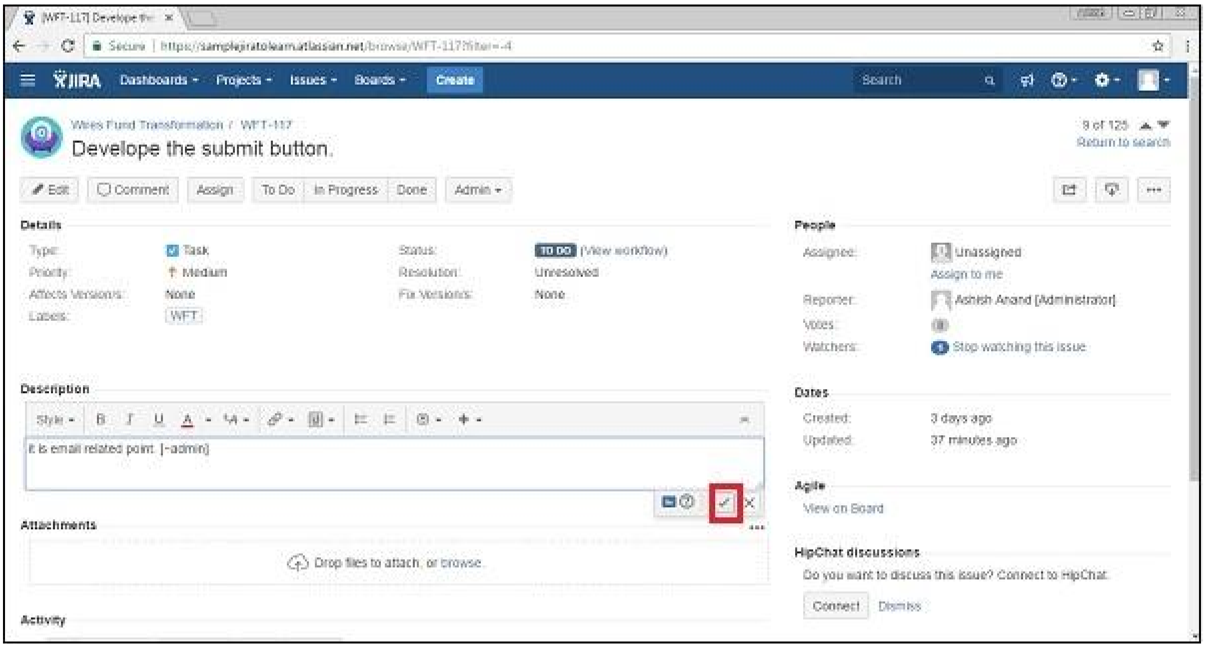
As the user starts typing, a list of suggested users will appear in a dropdown list below the field. The user should select based on the referenced users by completely typing the JIRA user's username or choose from the list of suggested users in the dropdown list.

The following screenshot shows how to mention the user’s name/email in the description.



Click on submit the field. JIRA will send that user an email message indicating that you mentioned them on that issue.

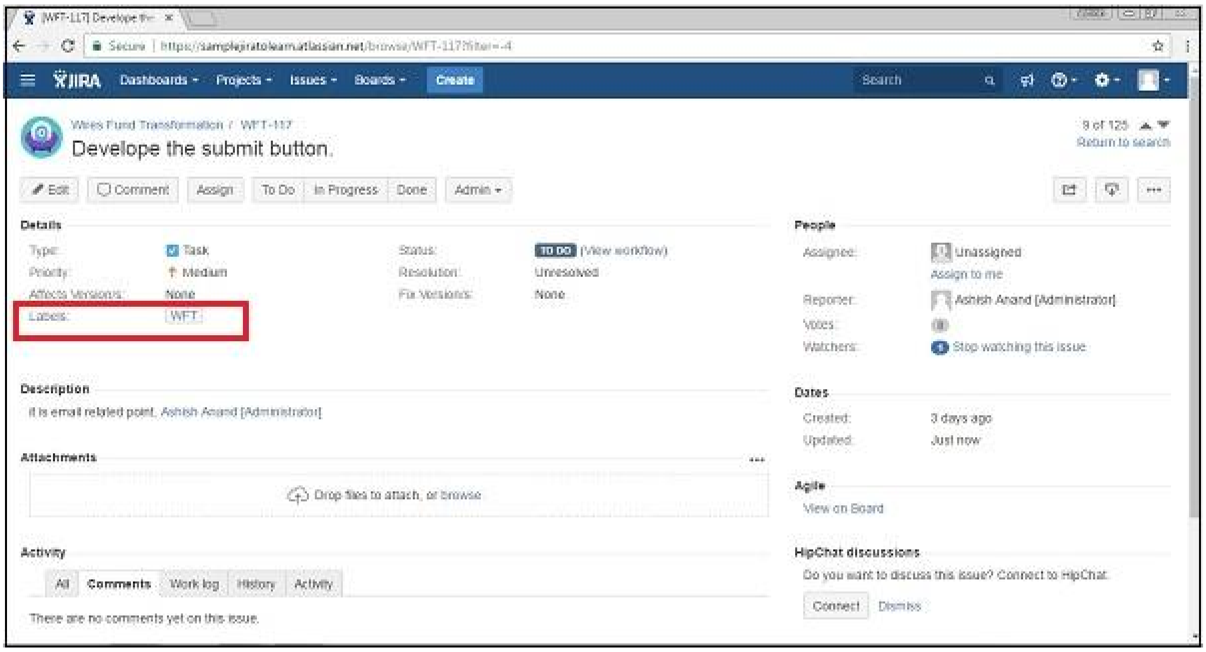
The following screenshot shows how to submit mentioning the user’s email in the description.



JIRA - Label an Issue

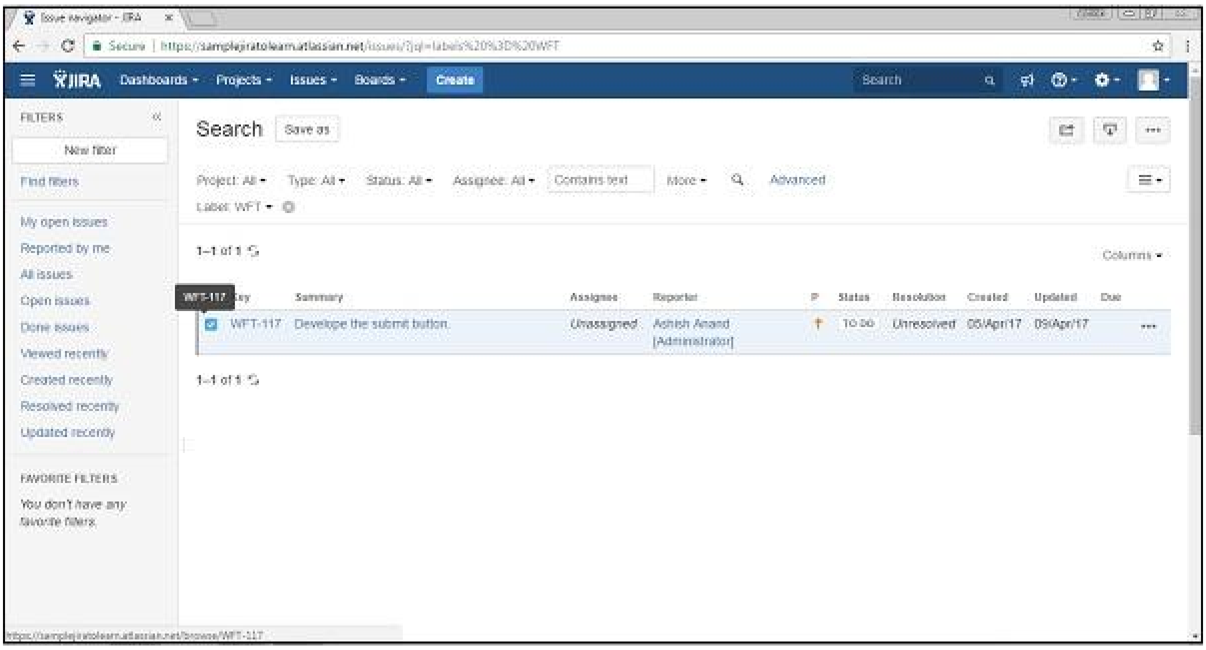
A Label is used to categorize an issue. It is similar to the hashtag (#) used in twitter, Facebook or other social sites. It also helps while searching an issue. While viewing an issue, the label appears in the detail section of the issue.

The following screenshot shows where the labels are present in the issue detail page.



Once the user clicks on the label i.e. WFT, it will display the list of issues having the same label.

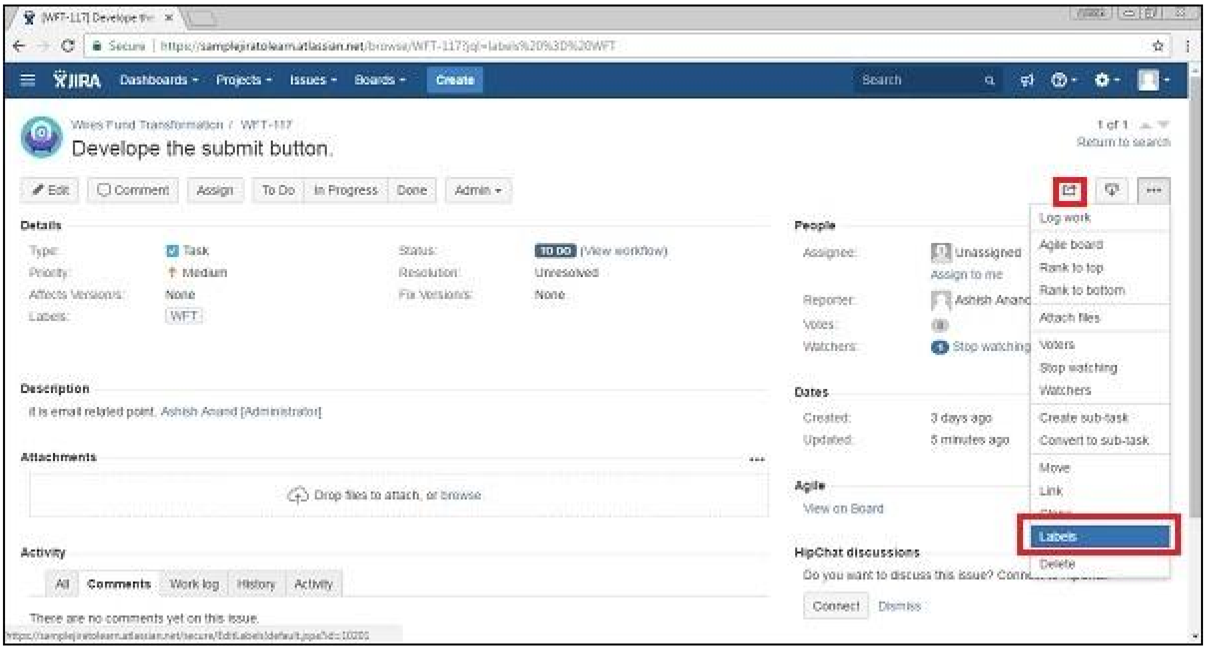
The following screenshot shows how to search issues using label names –



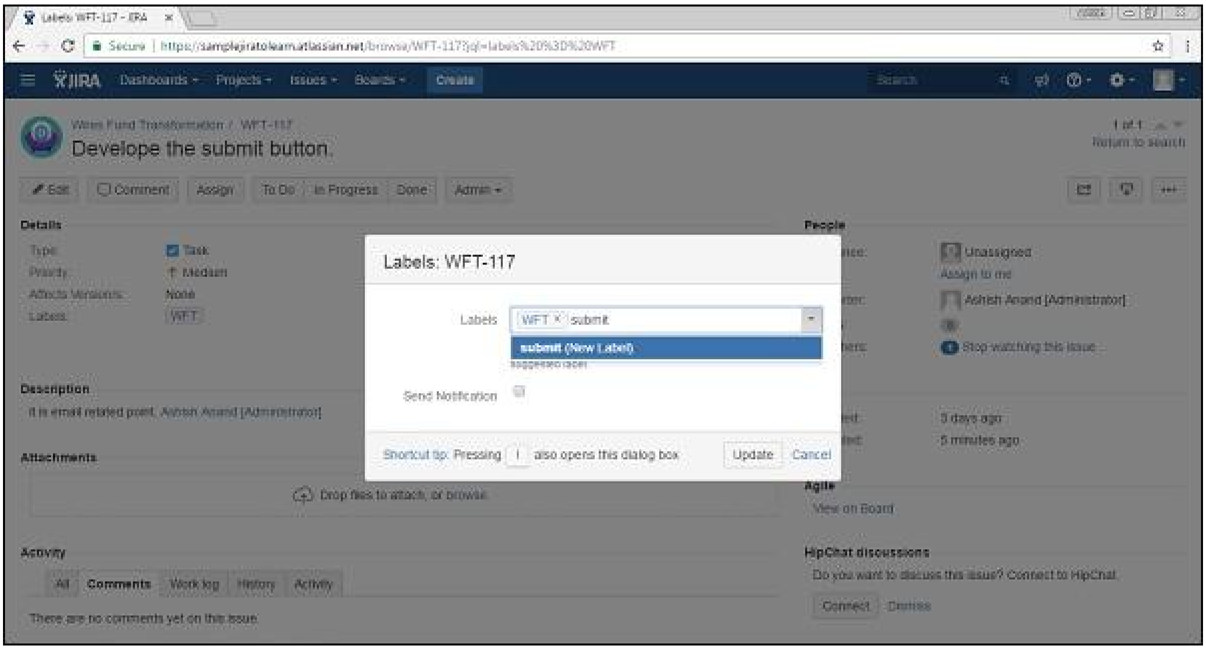
Add and Remove Labels

To add or remove labels, a user has to go to the View Issue page and select the issue that needs to add labels. Click on More → Labels. A dialogue box will appear.

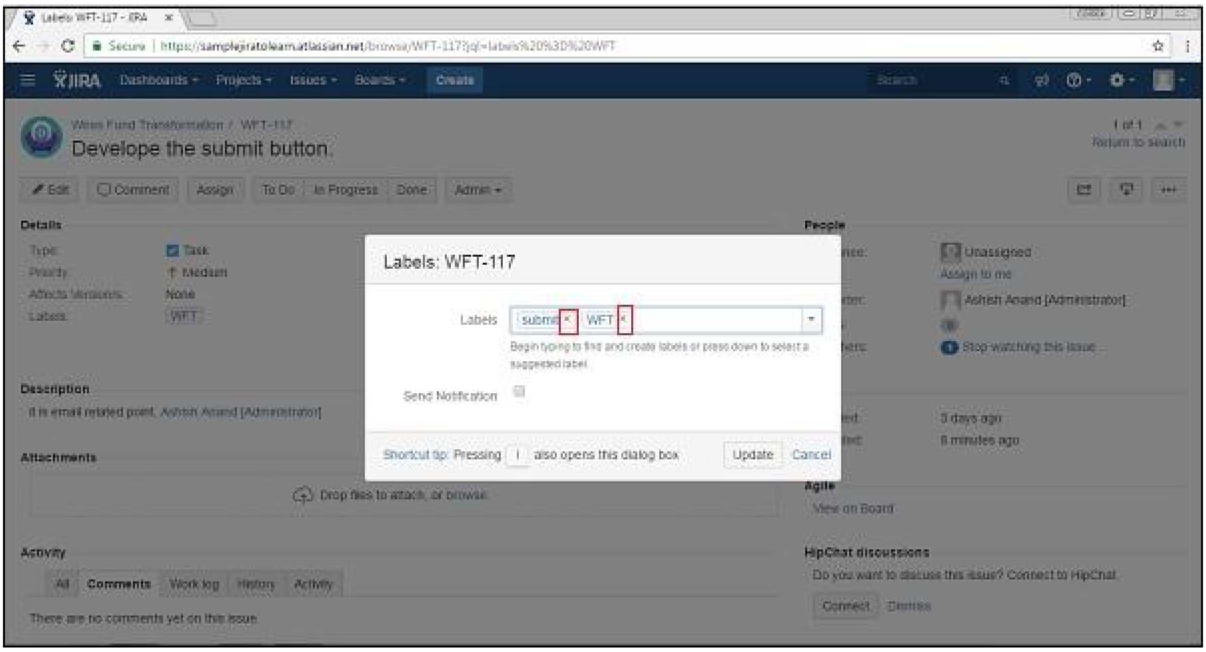
The following screenshot shows how to access the Label features.



Start typing the label and select from the suggestions. The following screenshot shows how to add labels.

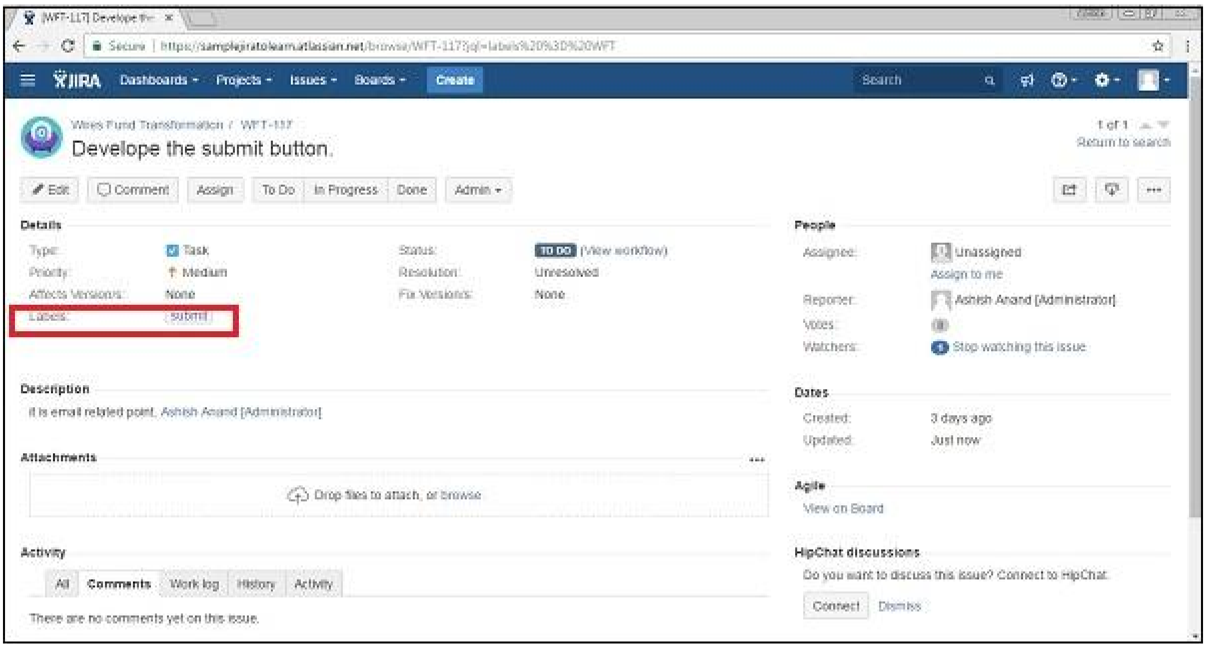


To **'Delete'** a label, click on the close (x) sign, which appears beside the label name. The following screenshot shows how to delete an existing label −



Click on the Update button. Labels are added / removed from an issue and can be verified in the **Detail Section** of the View Issue Page.

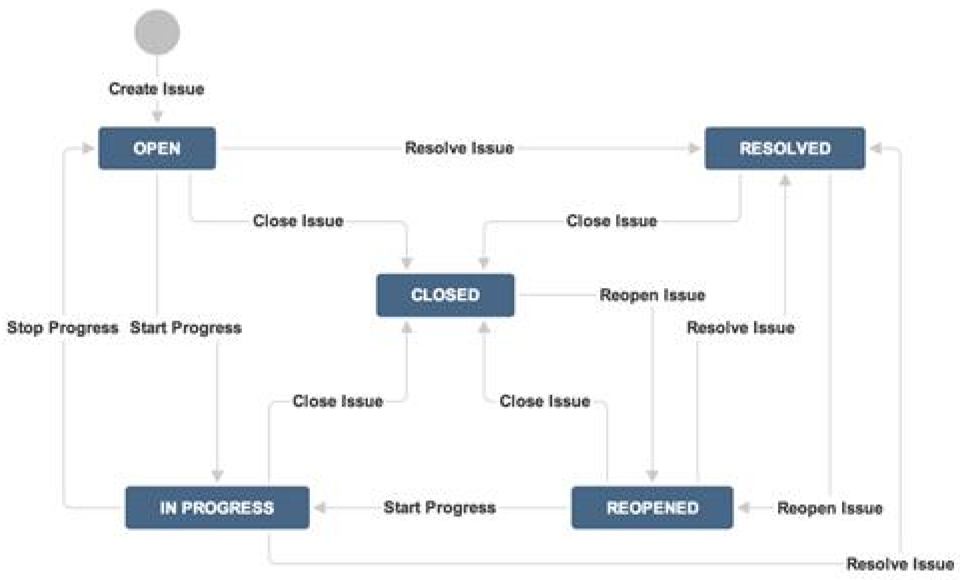
The following screenshot shows where to verify the updated labels.



WorkFlow

A JIRA workflow is a set of statuses and transitions that an issue goes through during its lifecycle. JIRA workflow encompasses five main stages once the issue is created.

- Open Issue
- Resolved Issue
- InProgress Issue
- ReOpened Issue
- Close Issue



While workflow in JIRA comprises of **Statuses, assignee, resolution, conditions, validators, post-function's and properties**

- **Statuses:** It represents the positions of the issues within a workflow
- **Transitions:** Transitions are the bridges between statuses, the way a particular issue moves from one status to another
- **Assignee:** The assignee dictates the responsible party for any given issue and determines how the task would be executed
- **Resolution:** It explains why an issue transitions from an open status to a closed one
- **Conditions:** Conditions control who can perform a transition
- **Validators:** It can ensure that the transition can happen given the state of the issue

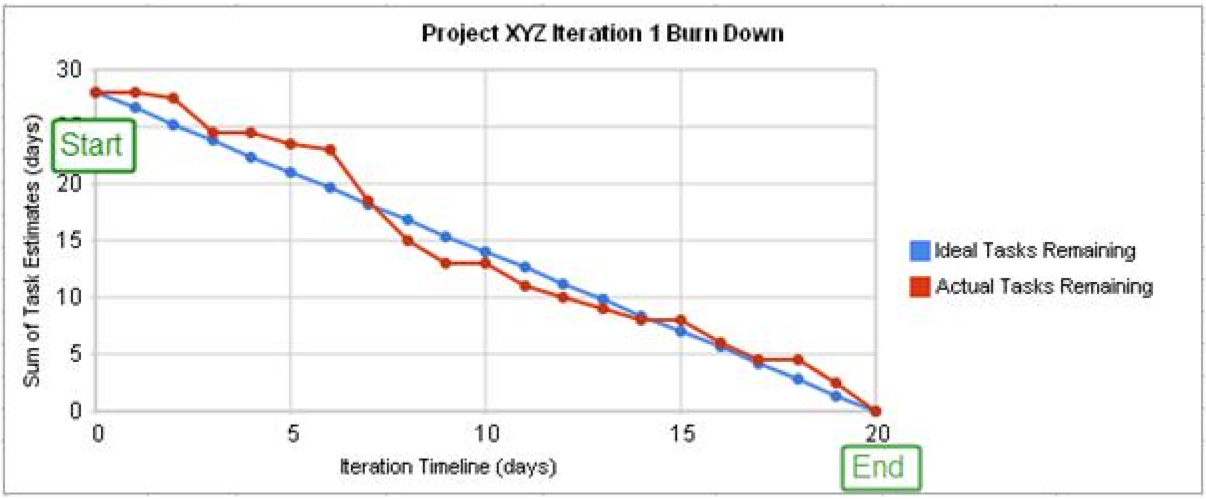
- **Properties:** JIRA recognizes some properties on transitions

Plug-ins in JIRA

There are plug-ins available for JIRA to work more effectively, some of these plugins are Zendesk, Salesforce, GitHub, Gitbucket and so on. Some of them enables support team to report issues directly into JIRA, creates unlimited private repositories with full featured issue and test management support, etc.

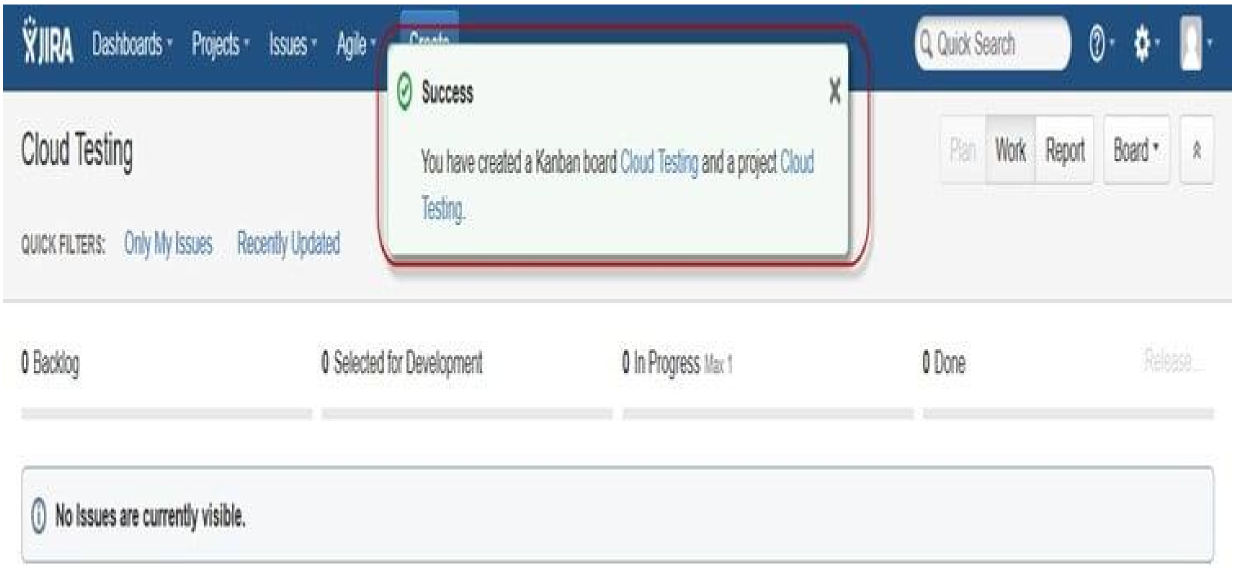
Reports in JIRA

To track the progress in Agile, a **Burndown Chart** shows the actual and estimated amount of work to be done in the sprint. A typical burndown chart will look somewhat like this, where the red line indicates the actual task remaining while the blue line indicates ideal task remaining during the scrum cycle.



Kanban Board and Managing issues

Like Agile Scrum board, we can also create a Kanban Board, here we have created a project name Cloud Testing. Kanban board is useful for the team that managing and constraining their work in progress. Kanban boards are visible in Work mode but not in Plan mode.



Here we have created an issue " **Bug detected while load testing"** and **"Check issues related to cloud server"** in Kanban Board as shown in the screenshot below, it also shows their status as well highlighted in red.

Kanban is considered as the best methodology for bug fixing and maintenance release, where incoming task is prioritized and then worked accordingly. There are few measures which can make Kanban more efficient.

1. Visualize your workflow
2. Limit the work in progress
3. Work on Issues
4. Measure the cycle time

JIRA Scrum vs. JIRA Kanban

Scrum	**Kanban**
Reports	**Reports**

Scrum	Kanban
Burndown Chart: The chart shows all the changes and scope changed while the sprint is still on, other charts include Sprint Report, Velocity Chart, Epic Report, etc.	Control Chart: It allows you to measure the cycle time for issues, showing the mean time and actual time taken to complete issues
Agile Board It allows the team to see the progress of sprints. This is the work mode, where you can see the board itself broken down into different statuses.	**Constraints** Team can decide whether to increase or decrease the number of issues that should be displayed in each status.
Backlog This is where team will plan sprints and estimate stories that will go into each sprint	**Workflow** You can map columns to the statuses of your workflow. Simply by adding or removing columns the workflow can be changed when required.