Exploring Mantis - Bug tracking tool

Assignment-4

GROUP - 7

MEMBERS:

1. Dipayan Maity 2021CSB039
2. Aaratrika Banerjee 2021CSB040
3. Pantho Propan Debnath 2021CSB041
4. Dipmay Biswas 2021CSB043
5. Ketan Khandenwal 2021CSB045

➢What is Mantis?

Mantis Bug Tracker is an open source web-based application tool. It is used for Bug Tracking throughout the Defect Lifecycle. Along with bug tracking, Mantis supports Release Features to manage various releases of a project or a software.

Mantis is also known as MantisBT, which stands for Mantis Bug Tracker. The name and logo of Mantis refers to the Mantidae family of insects. In software, it is referred to as a bug.

Mantis provides Demo, Download (to set up your own Mantis) and Hosting version of the tool. It supports various features for Issue Tracking and life cycle along with Release Management.

The development of Mantis started in 2000 by Kenzaburo Ito. Later in 2002, other team members (Jeroen Latour, Victor Boctor and Julian Fitzell) joined. The basic version 1.0.0 of Mantis was released in February 2006.

In 2012, GitHub became the official repository for the Mantis project source code.

Purpose of the Bug Tracking Tool :

- To track all bugs/issues throughout the Defect life cycle.
- To manage at Release level as well.
- Supports Analytic and Reporting features.
- Supports plug-in with other softwares and IDE to make it more strong and effective.

➢The Path for Software Download :

Mantis is a web application, provides a private website to individuals or a set of requested users belonging to the same company/project.

Mantis can be run at the server side. It is a PHP-based application and supports all OS platforms such as Windows, Linux of different versions, MAC, etc. It supports mobile browsers as well in mobile views.

To download Mantis, go to https://www.mantisbt.org/ and click Download.

➢Target Platform and Installation Procedure :

❖ System Requirements –

Since Mantis is a web-application, it follows the concept of client/server. This means, Mantis can be installed centrally on the server and users can interact with it through web-browsers using a website from any computer.

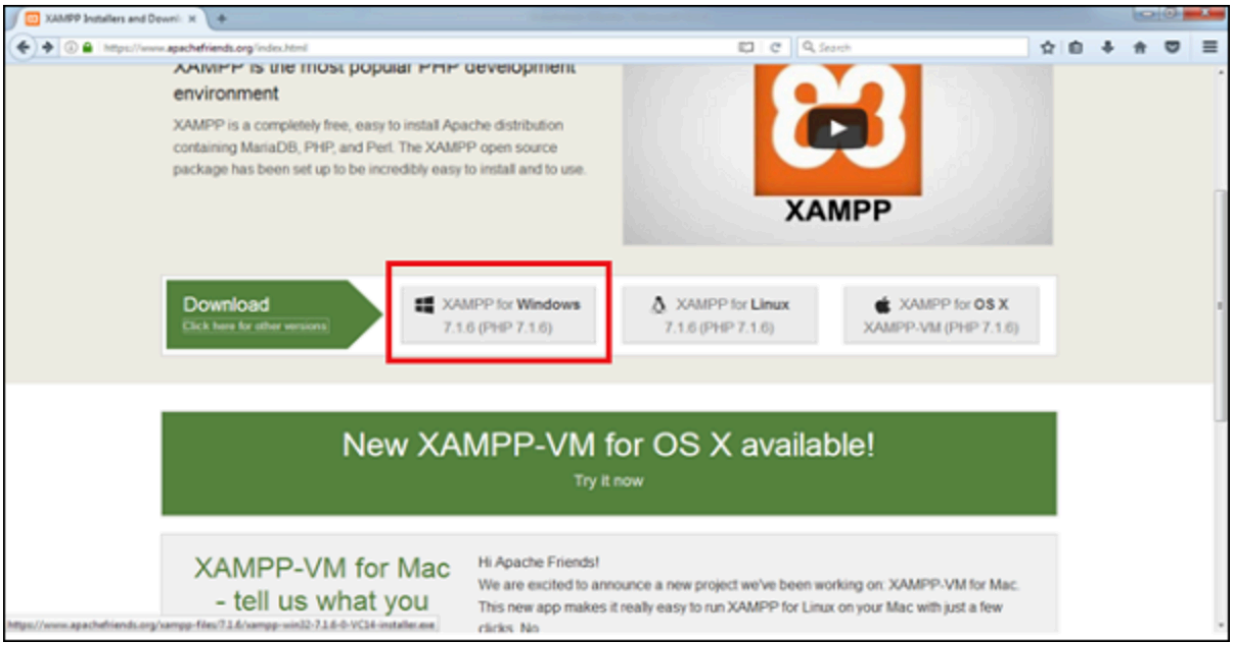
- **Web Server** – Mantis is tested with Microsoft IIS and Apache. However, it can work with any latest web server software. Mantis only uses a **.php** file. Configure the web server with **.php** extension only.
- **PHP** – The web server should support PHP. It can be installed as CGI or any other integration technology.
- **Mandatory PHP Extensions** – Extensions for RDBMS are mysqli, pgsql, oci8, sqlsrv mbstring is required for Unicode - UTF-8 support.
- **Optional Extensions** – Curl, GD, Fileinfo.
- **Database** – Mantis requires a database to store its data. MySQL and PostgreSQL are supported by RDBMS.
- **Client Requirements** – Firefox 45 and above, IE 10 and above, Chrome, Safari, and Opera.

❖ Installation of System Requirements –

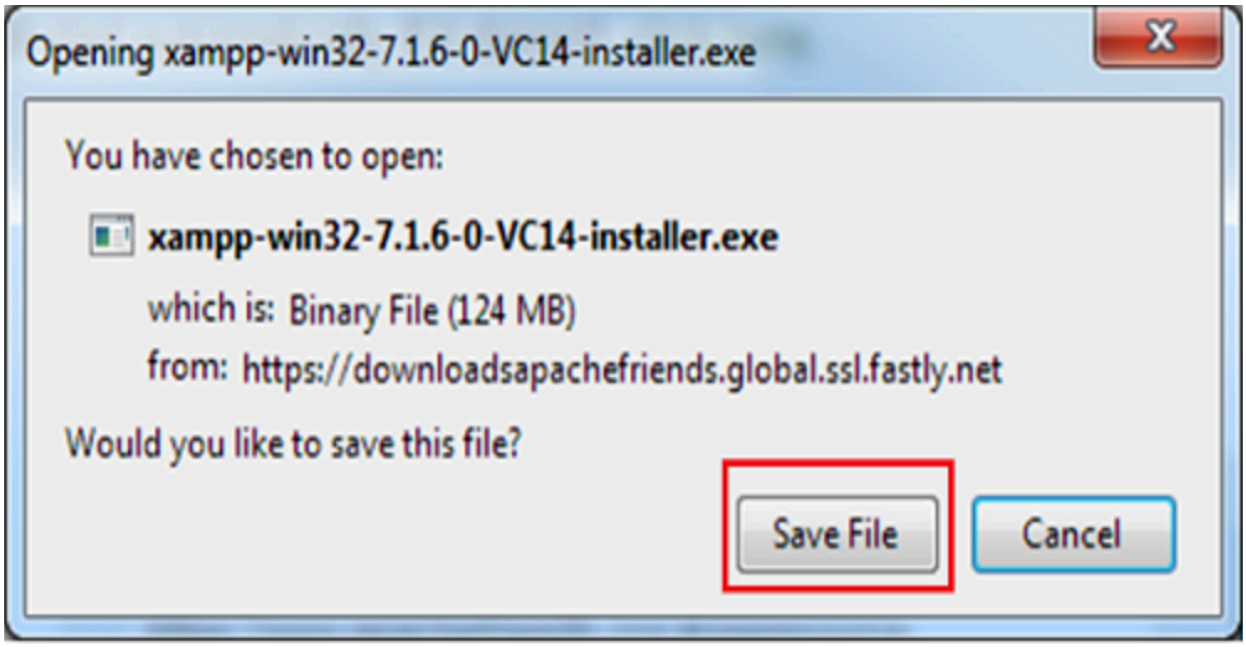
If a user has adequate knowledge about the installation process, all the requirements can be installed one by one separately before proceeding to Mantis.

Alternatively, there are many all-in-one packages available, having all the requirements and can be automatically installed in the system by exe file. Here, we will take the help of XAMPP to install prerequisites easily.

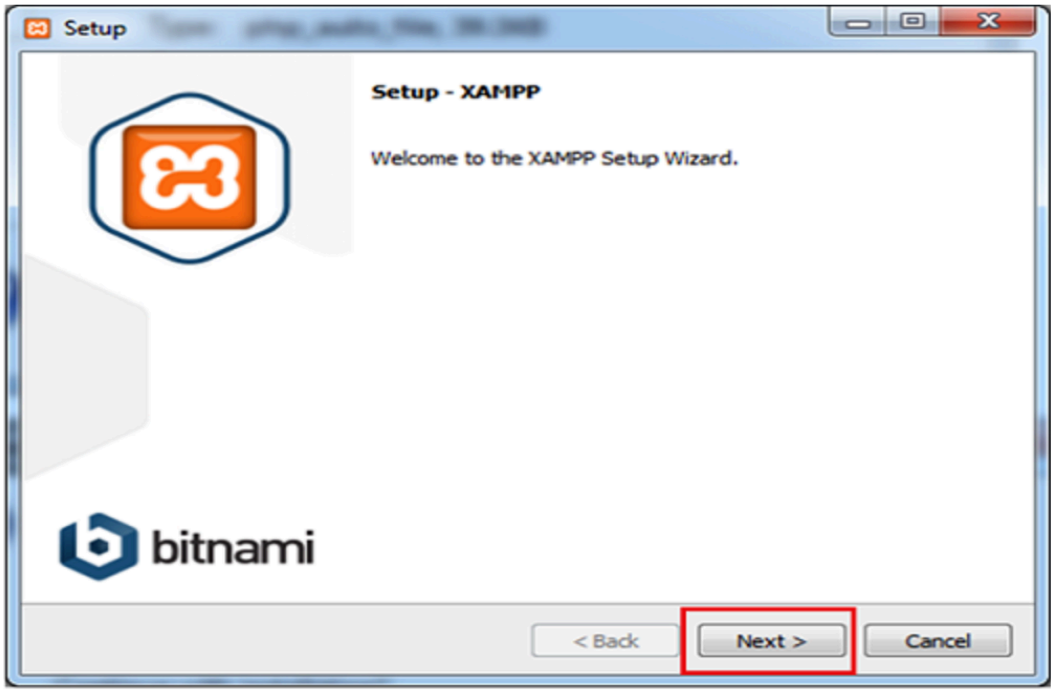
Step 1 – Go to https://www.apachefriends.org/index.html and click XAMPP for Windows as shown in the following screenshot.



Step 2 – A pop-up will display to save the file. Click Save File. It will start downloading the file.

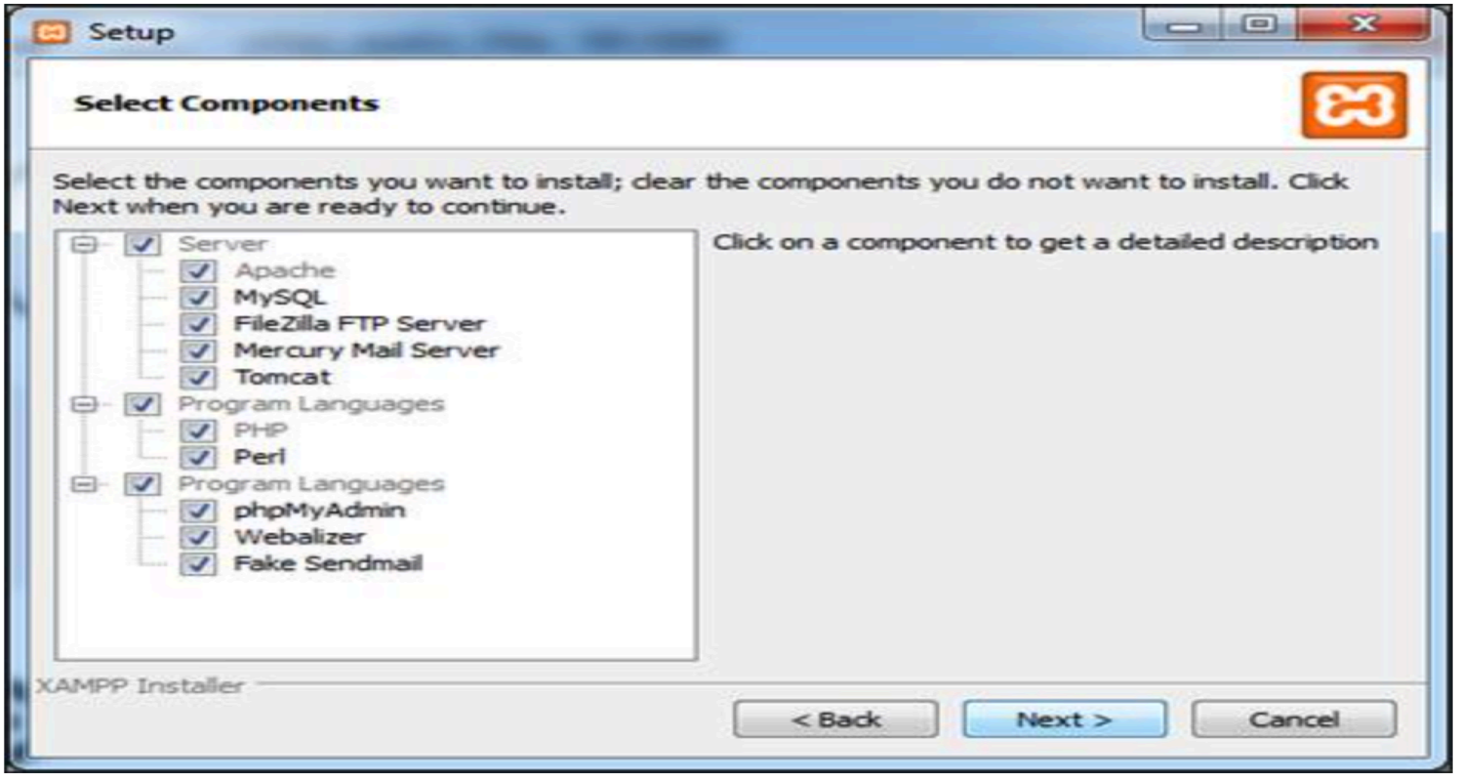


Step 3 – Run the **.exe** file to run the installation wizard. After clicking the **.exe** file, XAMPP Setup wizard displays. Click Next.

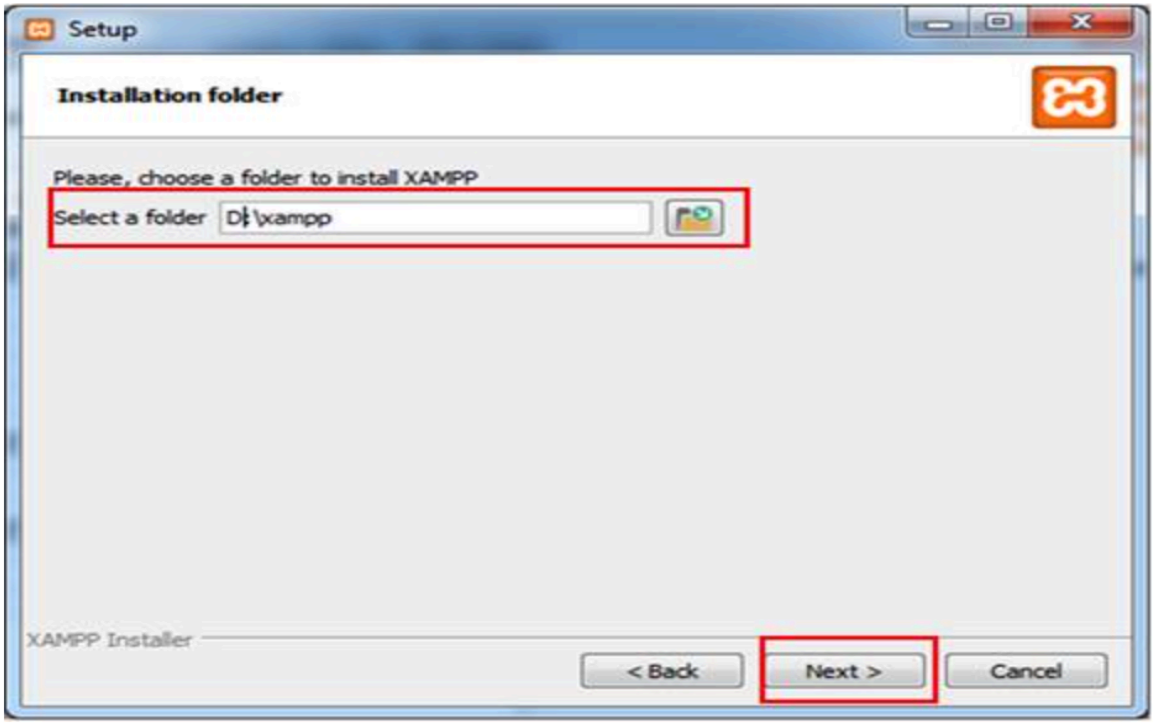


The following screenshot shows the XAMPP setup wizard.

Step 4 – The next wizard displays all the component files that will install as shown in the following screenshot. Click Next after making a selection of components.

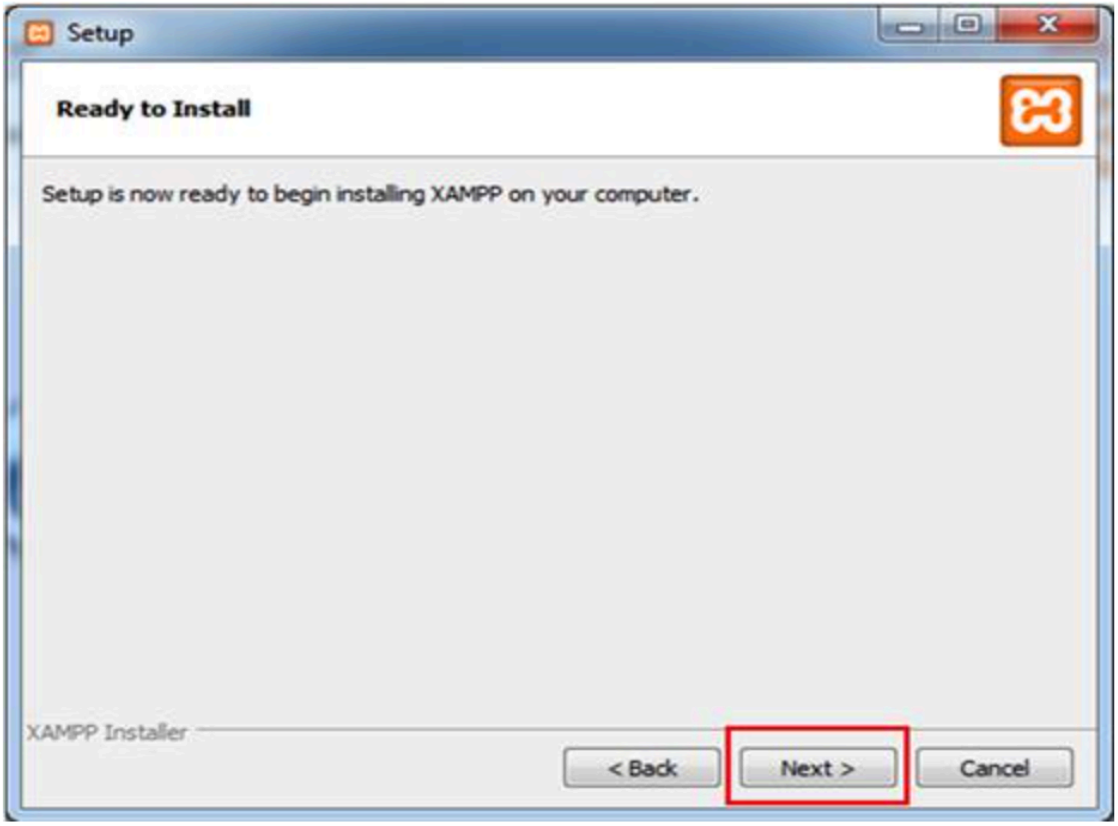


Step 5 – Provide a folder name where XAMPP will be installed and click Next.

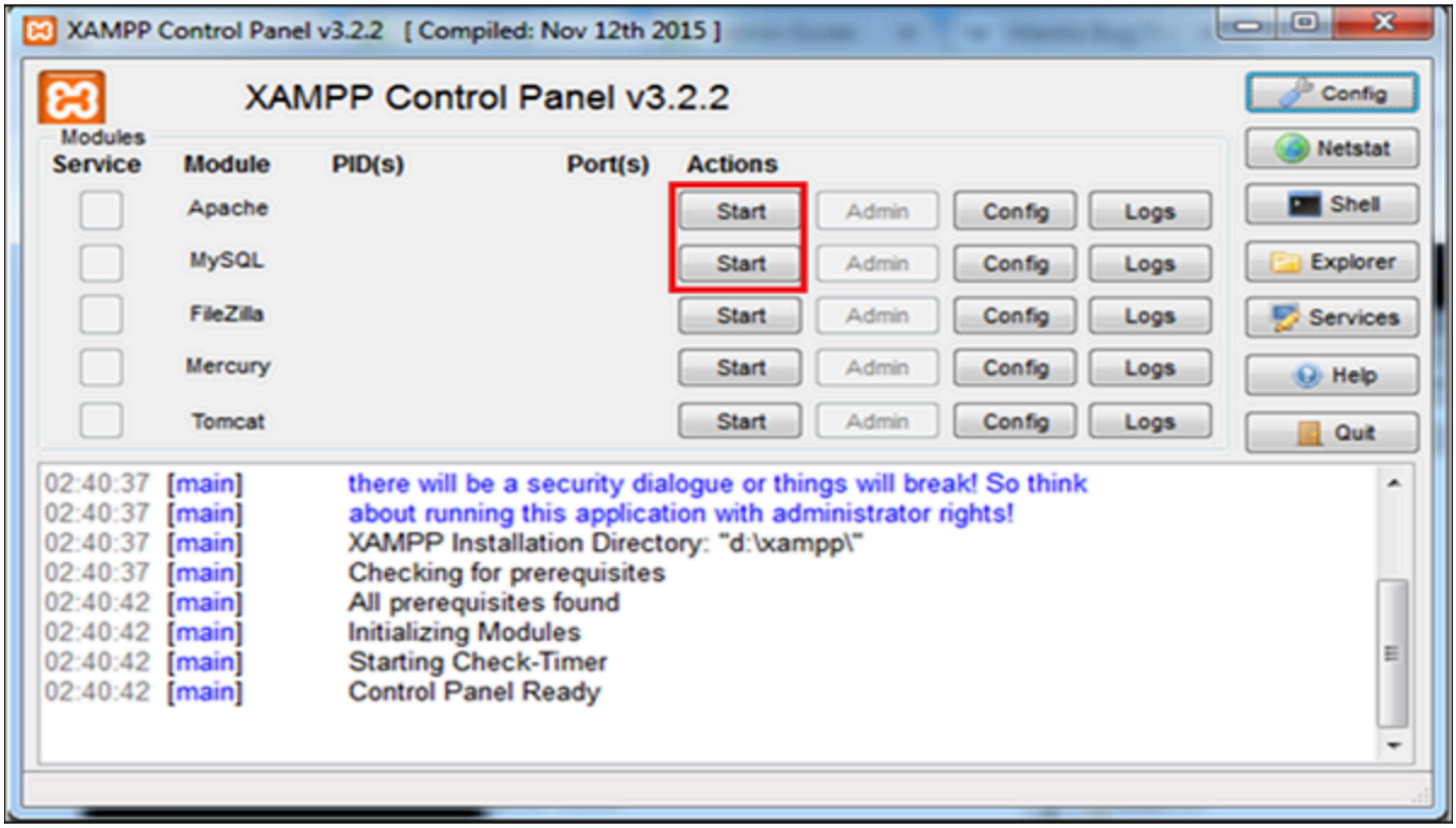


Ready to Install wizard is displayed.

Step 6 – Click Next to start the installation.



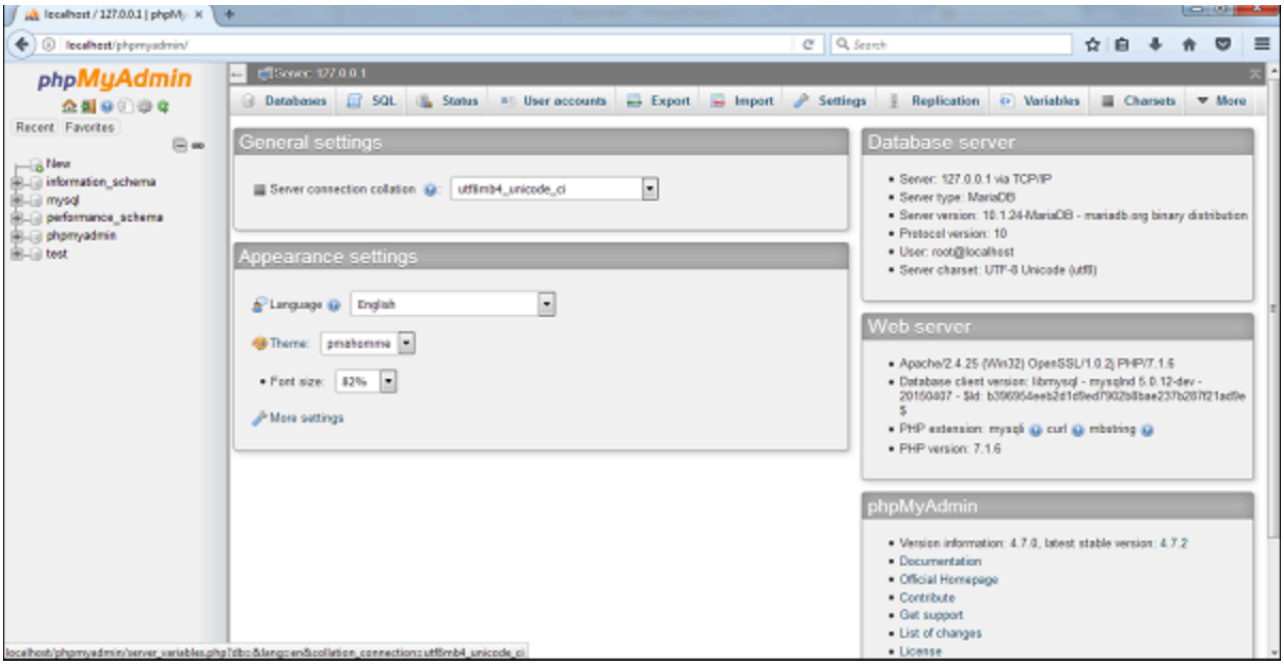
Step 7 – After successful installation, it will ask to start the control panel. Check the checkbox and click Finish. It will open the XAMPP control panel as displayed in the following screenshot.



Step 8 – Click the Start button for Apache and MySQL, required for Mantis as shown in the above screenshot.

Step 9 – To verify whether all the prerequisites such as Apache, PHP, and MySQL are installed properly, navigate to any of the browsers, type **http://localhost** and press Enter. It will display the dashboard of XAMPP. Click phpmyAdmin at the right top corner as shown in the following screenshot.

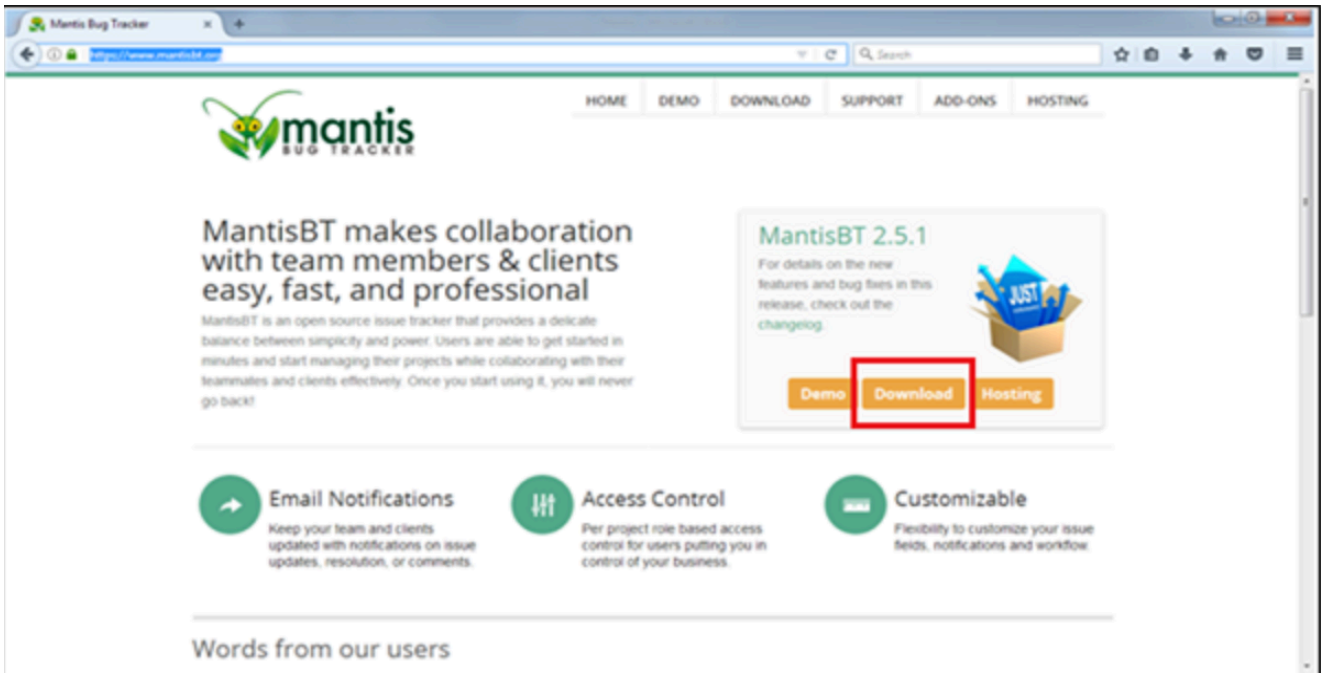
The next screenshot will display General Settings, Application Settings, Details of Database, Web Server, and phpMyAdmin.



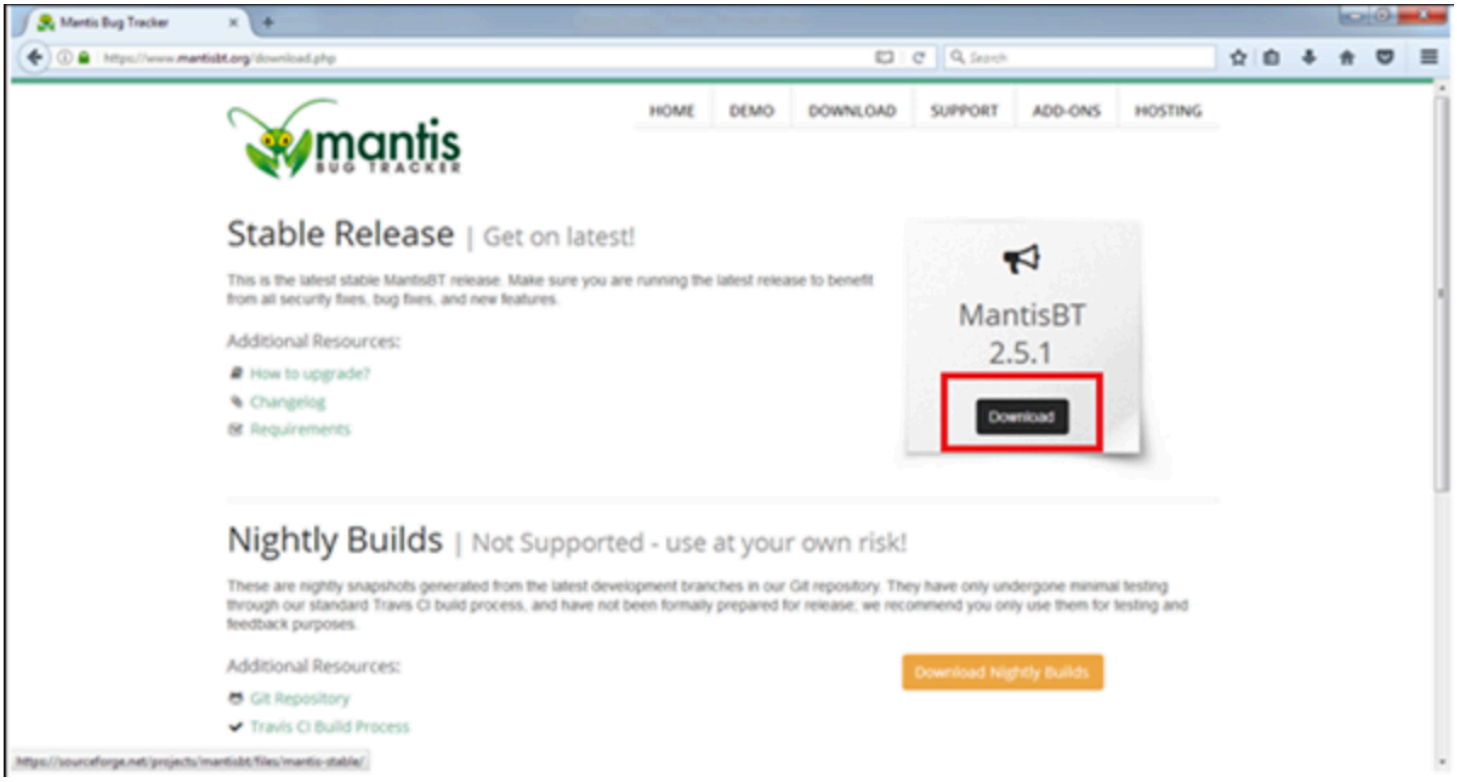
If the installation is not proper, this page won't be displayed. Till this point, all the prerequisites are successfully installed in the system.

➢Install and Launch Mantis :

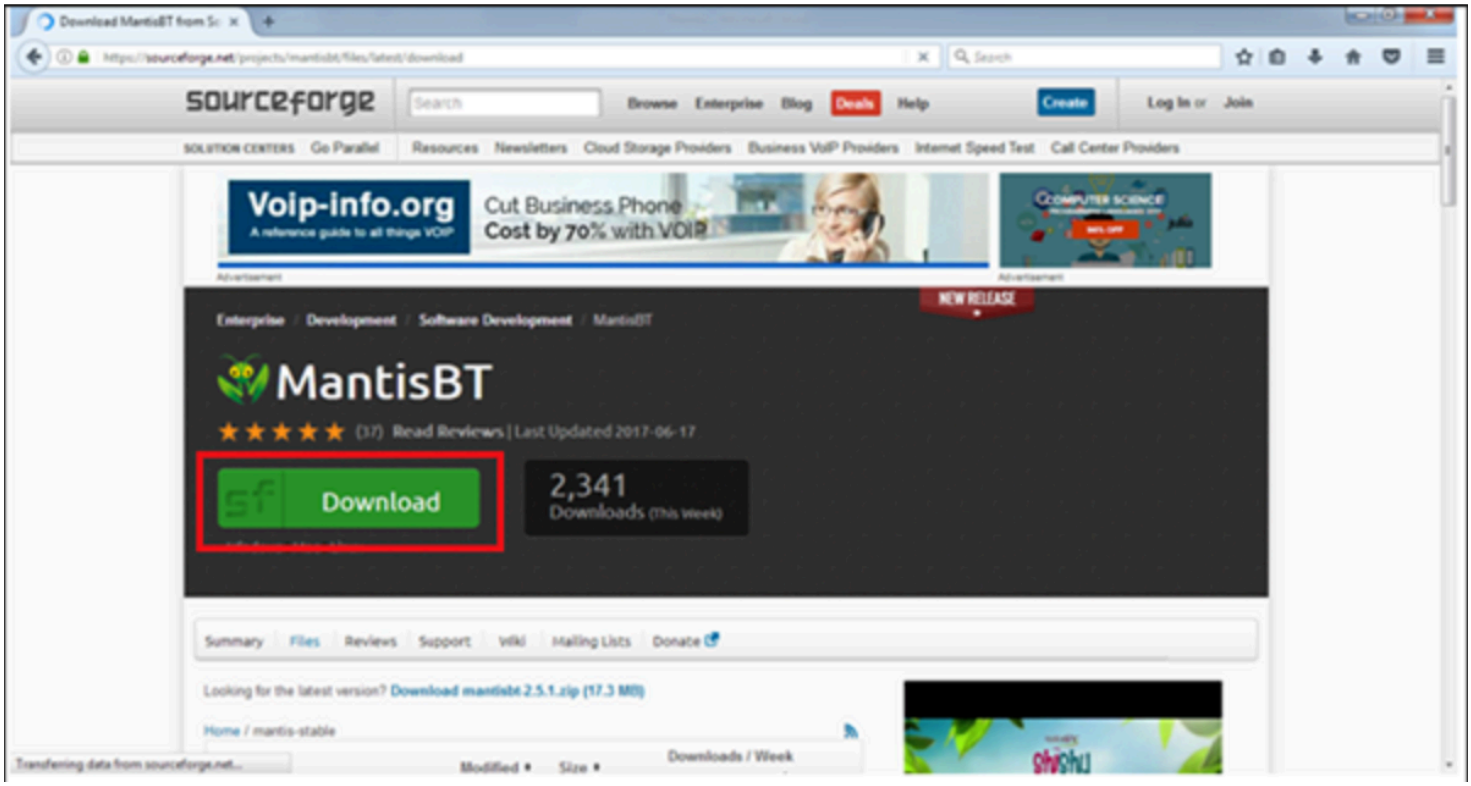
Step 1 – To download Mantis, go to https://www.mantisbt.org/ and click Download.



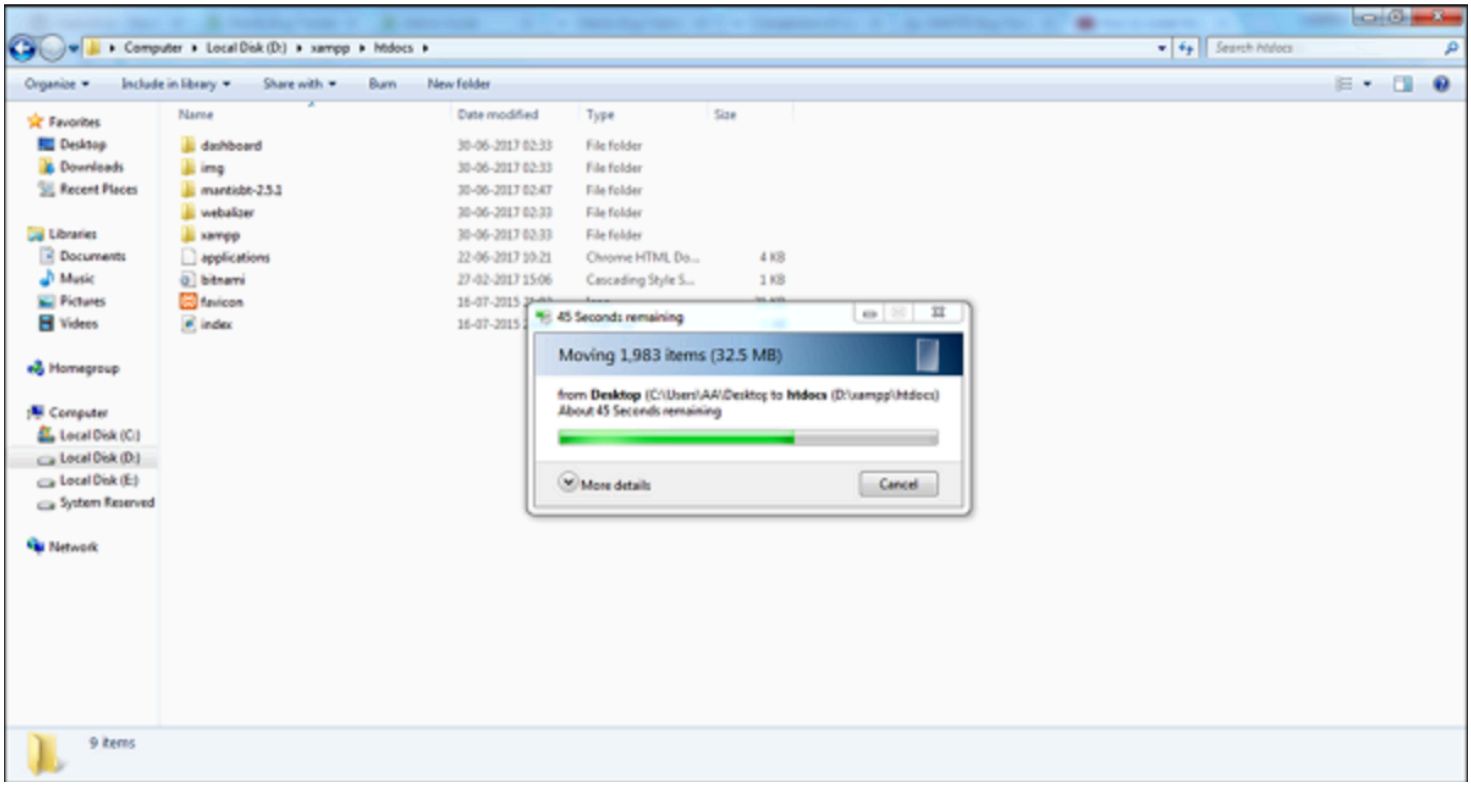
Step 2 – Click Download on the next page as shown in the following screenshot.



Step 3 – Again click Download as shown in the following screenshot and save the **.zip** file.

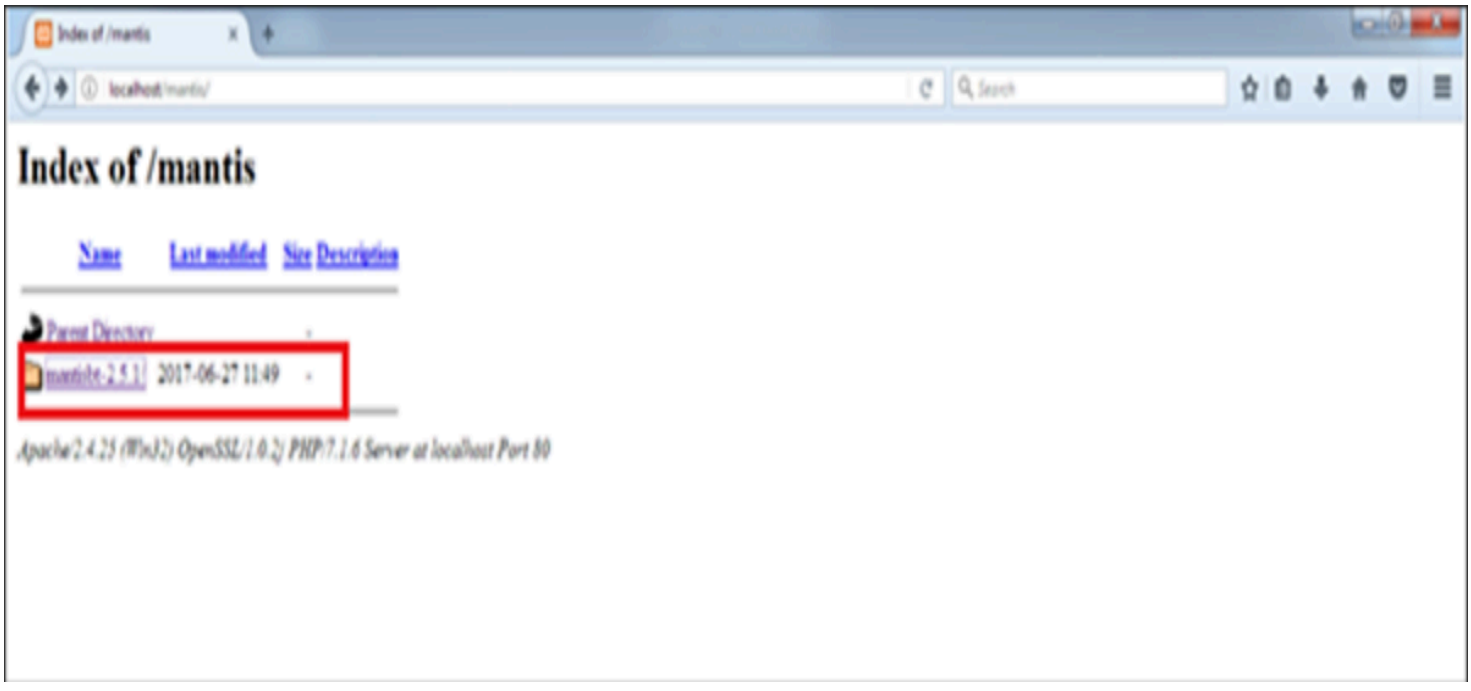


Step 4 – Go to the XAMPP folder where it is installed and navigate to the htdocs folder. Unzip the downloaded mantis and place it as shown in the following screenshot.

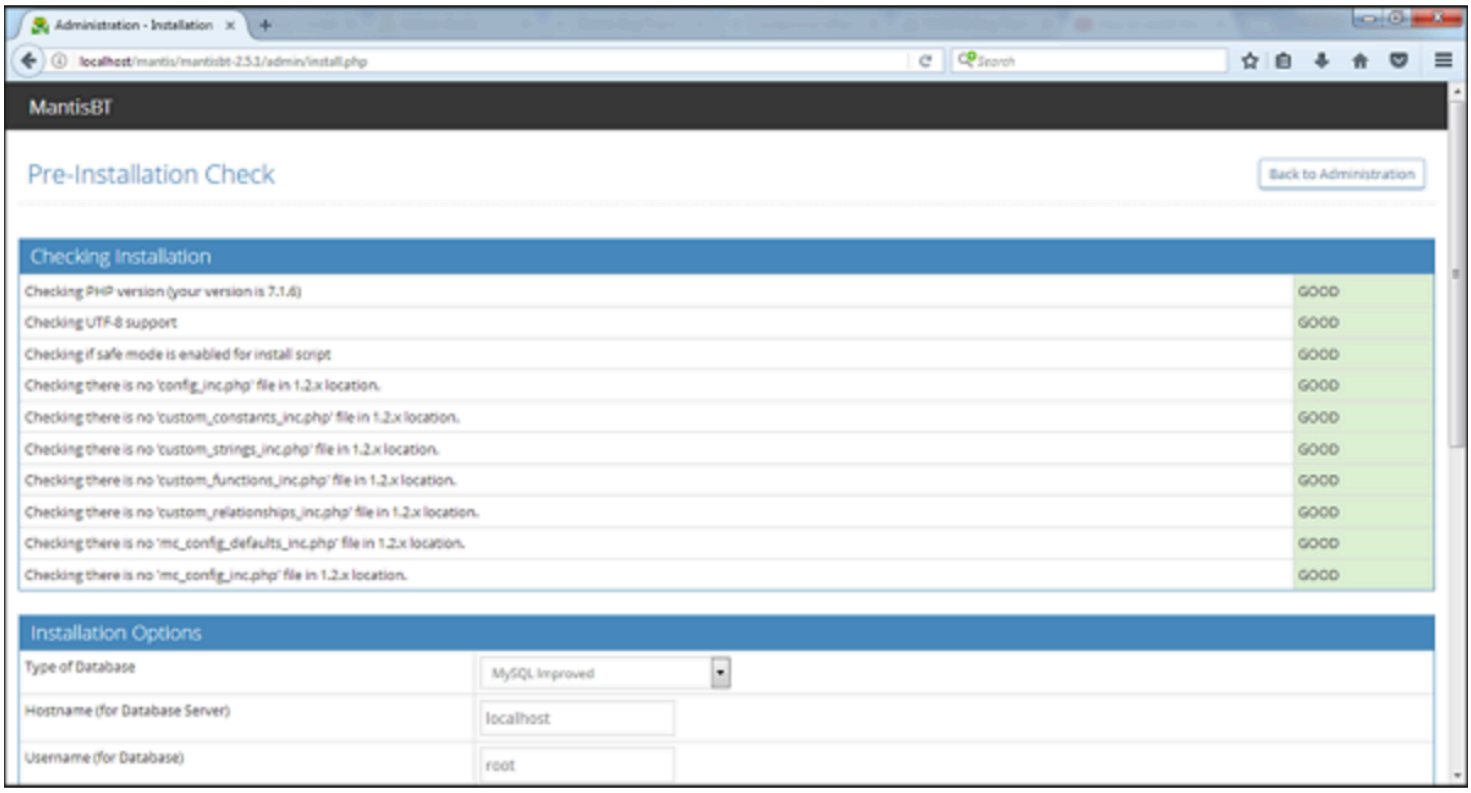


Step 5 – Rename the folder name mantis 2.5.1 as mantis for better URL.

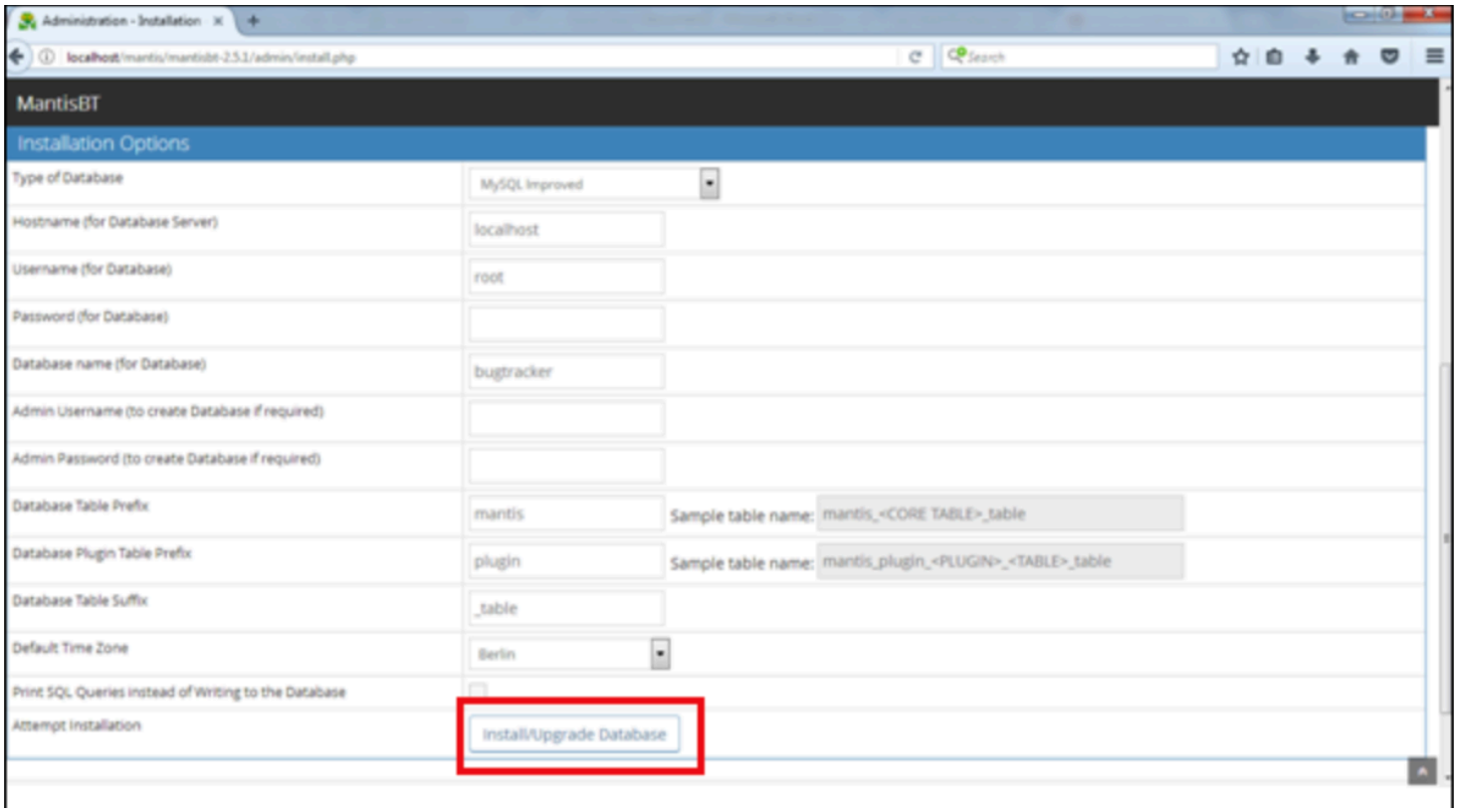
Step 6 – Now open a browser and type **http://localhost/mantis** in the navigation bar and press Enter. It will display the index of mantis as shown in the following screenshot. Click mantis-2.5.1.



It will display the Pre-Installation page as shown in the following screenshot.



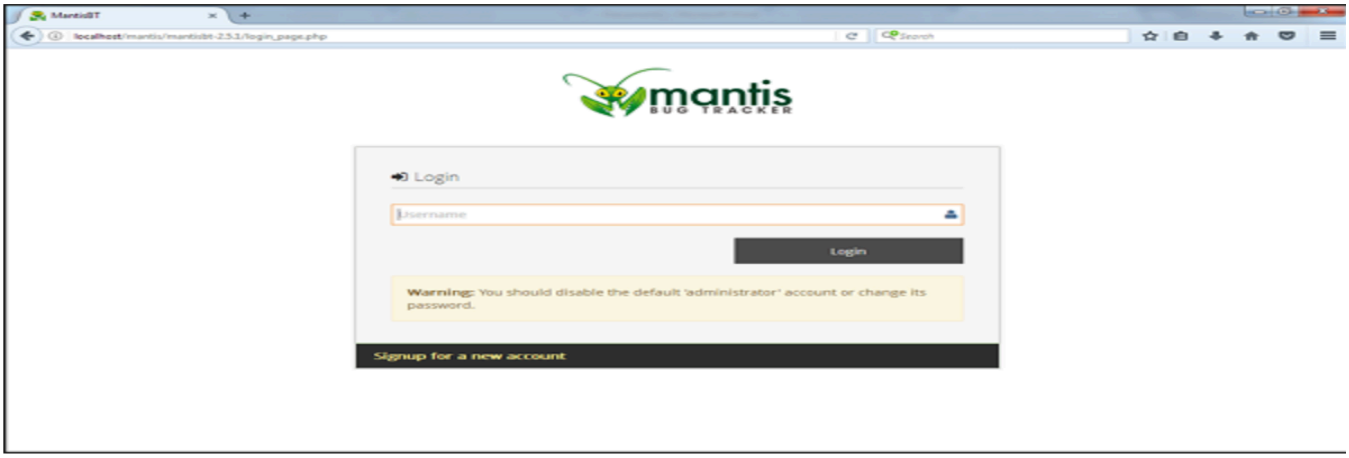
Step 7 – Go to the Installation section and make changes, if required. Then, click the Install/Upgrade Database button.



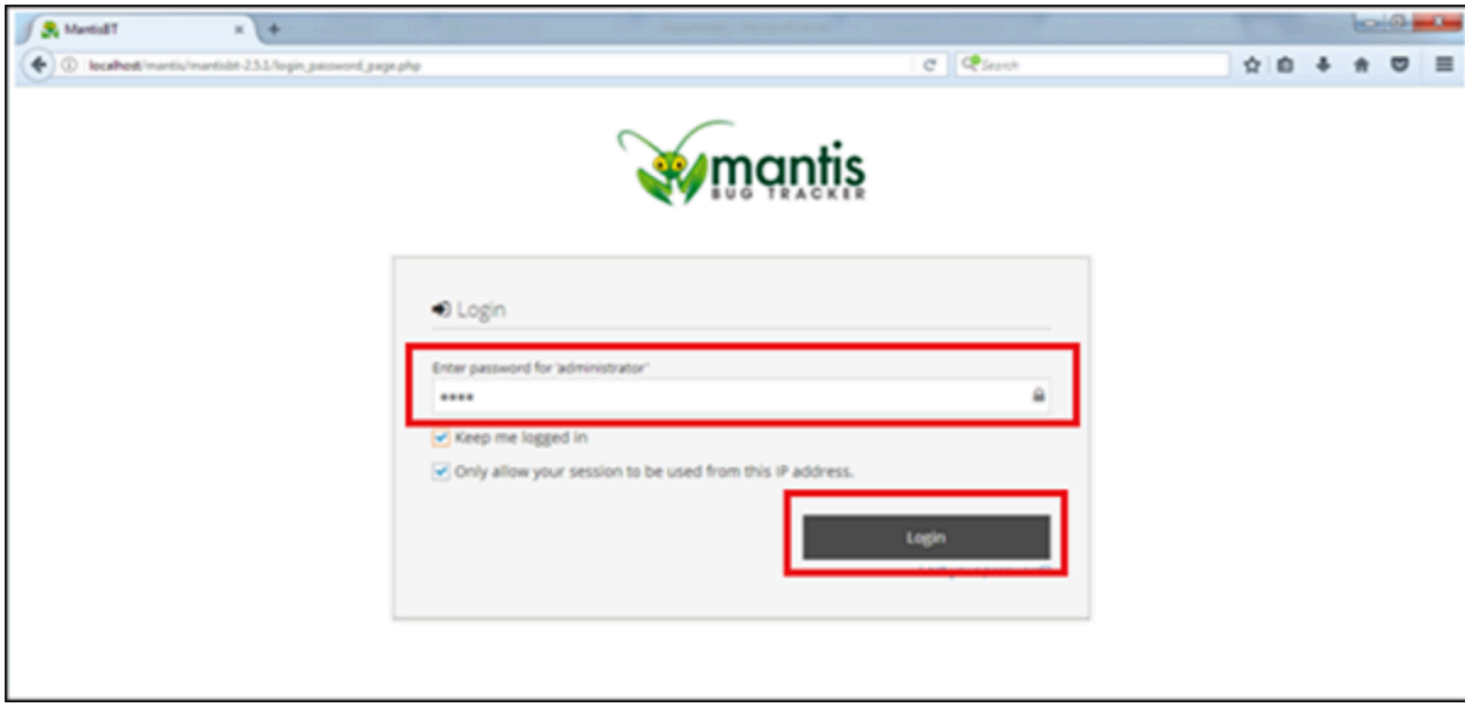
Once installation is complete, it will display the Check installation page and will be marked as Good, i.e. Mantis is installed properly.

Step 8 – To launch mantis, use the URL **http://localhost/mantis and click mantis-2.5.1**. It will display the Login page of Mantis as shown in the following screenshot.

Note – Make sure the Web server and the Database, both are running before using the URL, otherwise Problem Loading Page error will be displayed.



Step 9 – Provide the username as “Administrator” and click Login. It will ask to enter the password. Use “root” as password and click Login.



After successful Login, it will display the Dashboard of Mantis.

➢Commands to configure and run the tool:

Sr.No.	Core Feature & Description
1	**Collaboration and Hassle Free** It makes collaboration with team members and client easy, fast, and professional. As many users can use the same domain and same set of data. It is available only for Licensed products.
2	**Email Notification** All users or set of team members can get email notification whenever there are any changes, updates, or resolutions on an issue. Email will be triggered for any action taken by any one among a group of users. Voting and watching features to keep an eye on the progress for stakeholders. Use @mention to get the attention of a specific team member for Comments/Description.
3	**Access Control** Admin can grant access to the users based on individual role. It can be applicable differently for each project. Thus, one person can have different levels of access for two different projects.
4	**Customization** Mantis supports customization at each level. Users can customize fields for issue creation/view. Users can customize fields for issue workflow and notification as well.
5	**Dashboard** Dashboard displays assigned to me, unassigned, reported by me and many other standard filters to look at all the issues belonging to individual users. Timeline features allow us to keep an eye on what is happening across the project. It displays a live stream on the latest actions taken by any team member.
6	**Release Management** Mantis helps to manage different releases. It supports Project Versions to track releases. Users can create future releases and mark issues for respective releases as

	well. Issues and release information can also be summarized in a Roadmap page for better understanding.
7	**Time Tracking** Mantis supports its own in-built time tracking feature. Users can easily enter the time spent on a particular issue. It can help make a report on the spent hours for each issue as an individual or as a team.
8	**Integration/Plug-in** Mantis supports more than 100 add-ins to connect with different softwares to make the work easy. Wide range of add-ins make it universal across the globe - TestLodge, TestRail, TestCollab, Testuff, HipChat, Slack, etc. It also supports Eclipse IDE and JetBrains.
9	**Common Features** Using Slack and HipChat integration, the team can communicate with each other. Mantis provides SSO (single sign on) access to log into MantisHub using GitHub or BitBucket credentials.
10	**Customer Support** Mantis Helpdesk is a very popular feature. It allows integrating your support with your internal issue tracking. Using Grasshopper integration, users get direct voicemail line.

➢Case studies – the kind of experiments done using this tool:

❖ Case Study: Implementation of Mantis in a Software Development Firm

- **Background:**

A software development firm specializing in web application development for various industries faced challenges in managing their growing number of projects and handling bug reports efficiently. They decided to implement Mantis as their primary bug tracking tool to streamline their bug resolution process and improve overall project management.

- **Implementation:**

The implementation of Mantis began with thorough training sessions for the development team to familiarize them with the tool's features and functionalities. The administrators configured Mantis to align with the firm's project management workflow, including defining project categories, user roles, and customizing email notifications.

- **Bug Tracking and Resolution:**

With Mantis in place, developers were able to easily report bugs, assign them to specific team members, and track their resolution status in real-time. The customizable fields allowed developers to provide detailed information about each bug, including steps to reproduce, severity level, and target release version.

- **Improved Collaboration and Communication:**

Mantis facilitated better collaboration among team members by providing a centralized platform for communication and issue tracking. Developers could discuss bugs, share insights, and collaborate on solutions directly within the Mantis interface. Furthermore, email notifications ensured that team members were promptly informed about updates and changes to bug reports.

- **Project Progress Monitoring:**

The project managers utilized Mantis's reporting capabilities to monitor project progress and identify bottlenecks in the development process. Customizable reports provided insights into the number of open bugs, bug resolution time, and overall project health. This allowed the management team to make data-driven decisions and allocate resources effectively.

- **Results and Benefits:**

After implementing Mantis, the software development firm observed several significant benefits:

1. Reduced Bug Resolution Time: The streamlined bug tracking process and improved communication led to a significant reduction in the time taken to resolve bugs.

2. Enhanced Productivity: Developers spent less time managing bug reports and more time focusing on development tasks, leading to increased productivity.

3. Improved Client Satisfaction: The ability to track and resolve bugs efficiently resulted in higher-quality deliverables and improved client satisfaction.

4. Better Project Visibility: Mantis provided project managers with better visibility into project progress and allowed them to proactively address issues as they arose.

- **Conclusion:**

The successful implementation of Mantis as a bug tracking tool helped the software development firm overcome its challenges and improve its overall project management process. By leveraging Mantis's features for bug tracking, collaboration, and reporting, the firm was able to enhance productivity, reduce bug resolution time, and deliver higher-quality software to its clients. This case study exemplifies the effectiveness of Mantis in improving the efficiency and effectiveness of software development processes.

➢Drawback of the tool (if any):

Mantis Bug Tracker is a popular open-source bug tracking system used by many software development teams. While it offers numerous benefits, it also has some drawbacks:

1. Limited User Interface Customization: MantisBT's user interface can be considered somewhat dated and lacks extensive customization options compared to some other bug tracking tools. This can affect user experience and adaptability.

2. Complexity for Non-Technical Users: MantisBT might be overly complex for non-technical users or those unfamiliar with bug tracking systems. Its interface and features may require some learning curve for such users.

3. Scalability Issues: While MantisBT is suitable for small to medium-sized teams, it may encounter scalability issues when handling a large number of users, projects, or bugs. Performance could degrade significantly in such scenarios.

4. Limited Built-in Reporting and Analytics: MantisBT's reporting and analytics capabilities are relatively basic compared to some other bug tracking tools. Advanced reporting features may require third-party plugins or additional customization.

5. Integration Limitations: While MantisBT supports integration with various version control systems and other development tools, the integration options might be limited compared to more modern bug tracking solutions. This could hinder seamless workflow integration for some teams.

6. Community and Support Dependency: Since MantisBT is open-source software, support primarily relies on community forums, documentation, and user contributions. While the community is active, official support channels may be limited, and timely assistance for critical issues may not be guaranteed.

7. Security Concerns: As with any open-source software, security vulnerabilities may arise, and the timely release of patches and updates might vary. This could potentially expose MantisBT instances to security risks if not properly maintained and updated.

8. Customization Complexity: While MantisBT allows for customization through plugins and extensions, implementing complex customizations or integrations may require significant effort and expertise in PHP programming, which could be a challenge for some teams.

➢ **Any other aspects you would like to cover those are useful to the context of the tool:**

- ❖ **Other Aspects to Consider –**

In addition to bug tracking, Mantis also supports features such as issue categorization, workflow management, and integration with version control systems. Furthermore, the active community and extensive documentation surrounding Mantis make it a valuable resource for developers seeking support and guidance. Regular updates and contributions from the open-source community ensure that Mantis remains relevant and adaptable to evolving software development practices.

In conclusion, Mantis serves as a versatile and reliable bug tracking tool for software development teams of all sizes. By providing a user-friendly interface, flexible configuration options, and robust issue tracking capabilities, Mantis continues to be a preferred choice for organizations seeking to enhance the quality and efficiency of their software development processes.