

Experiment No: 4

Roll Number 121A3008

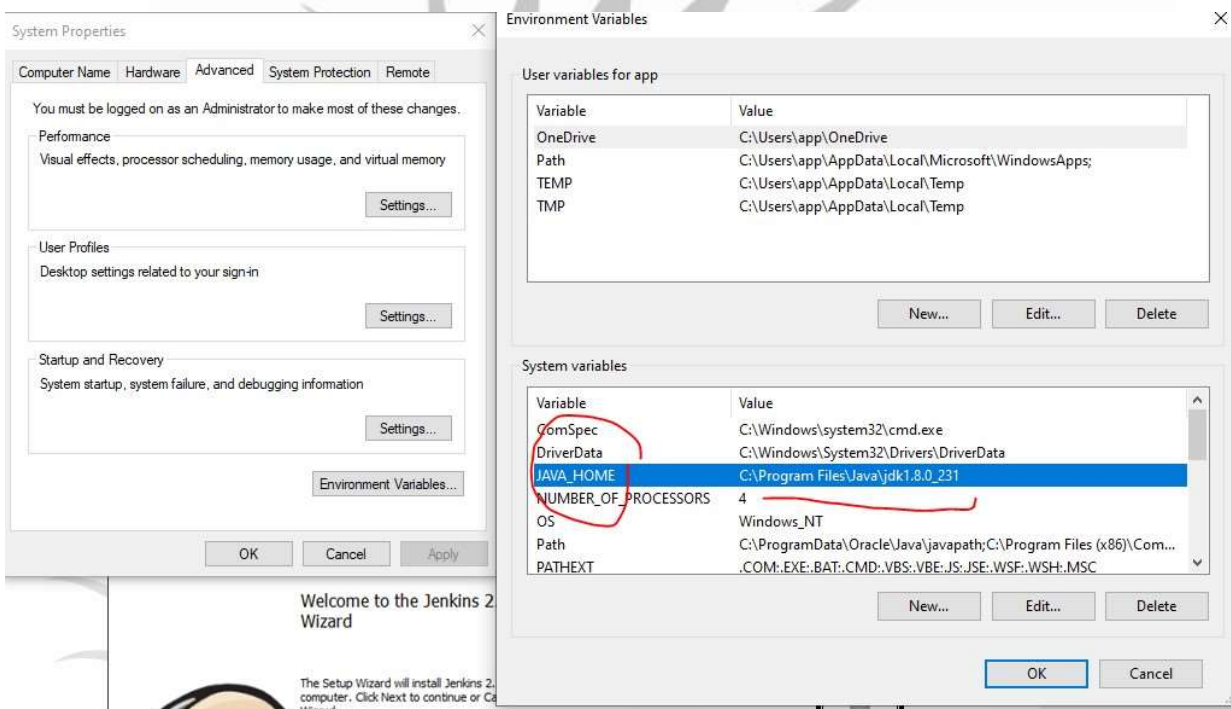
AIM: Installation of Jenkins with Maven/Ant/Gradle, GitHub and Python Plugins to setup a build Job.

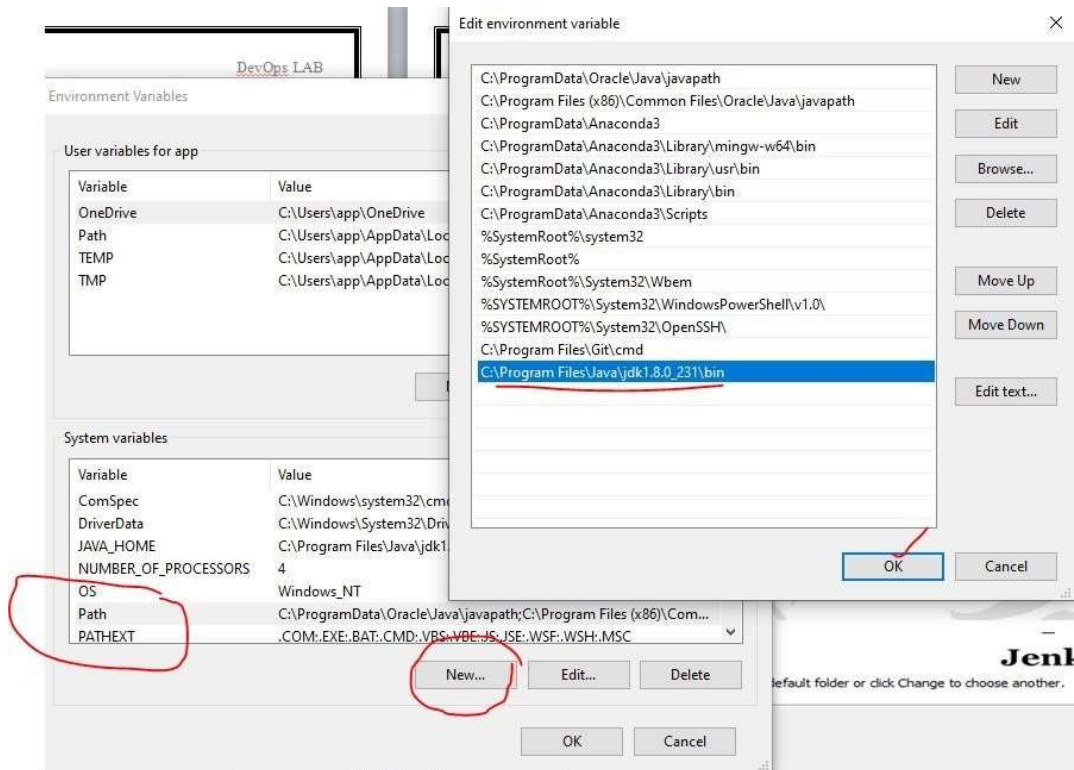
THEORY: Jenkins is a free and open source automation server. It helps automate the parts of software development related to building, testing, and deploying, facilitating continuous integration and continuous delivery. It is a server-based system that runs in servlet containers such as Apache Tomcat.

Installation process of Jenkins

Install Java : Jdk 1.8 or Java 11.

Set environment variable : path and JAVA_HOME





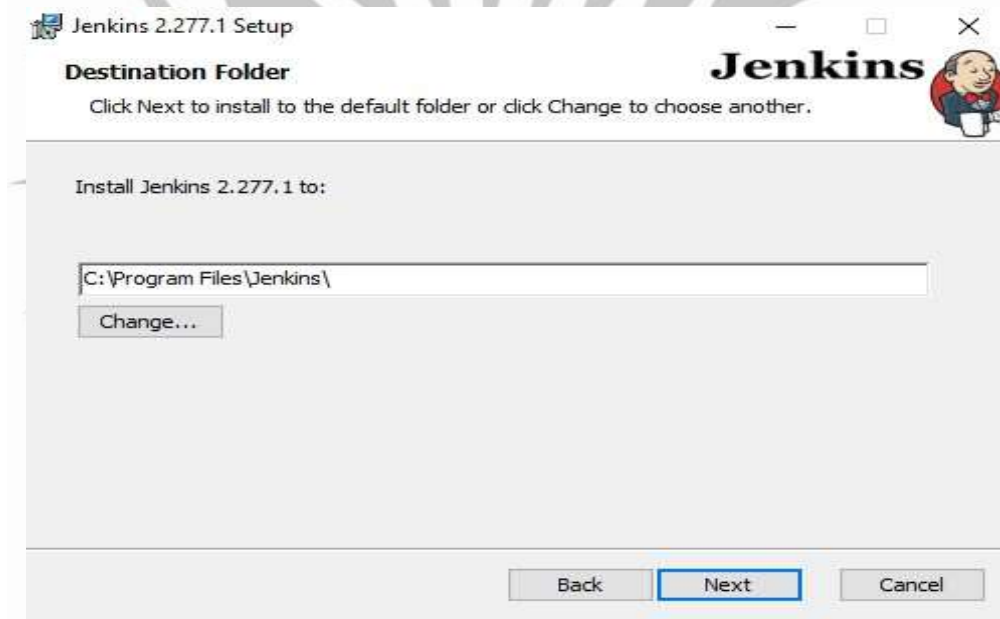
Step 1) Got to <https://www.jenkins.io/download/> and select the platform. In our case Windows

Step 2) Go to download location from local computer and unzip the downloaded package. Double-click on unzipped jenkins.msi. You can also Jenkins using a WAR (Web application ARchive) but that is not recommended.

Step 3) In the Jenkins Setup screen, click Next.



Step 4) Choose the location where you want to have the Jenkins instance installed (default location is C:\Program Files (x86)\Jenkins), then click on Next button.



Here, Select Logon type as 'Run service as LocalSystem(Windows equivalent root)



Jenkins 2.263.4 Setup

Service Logon Credentials

Enter service credentials for the service.

Jenkins 2.263.4 installs and runs as an independent Windows service. To operate in this manner, you must supply the user account credentials for Jenkins 2.263.4 to run successfully.

Logon Type:

☐ Run service as LocalSystem (not recommended)

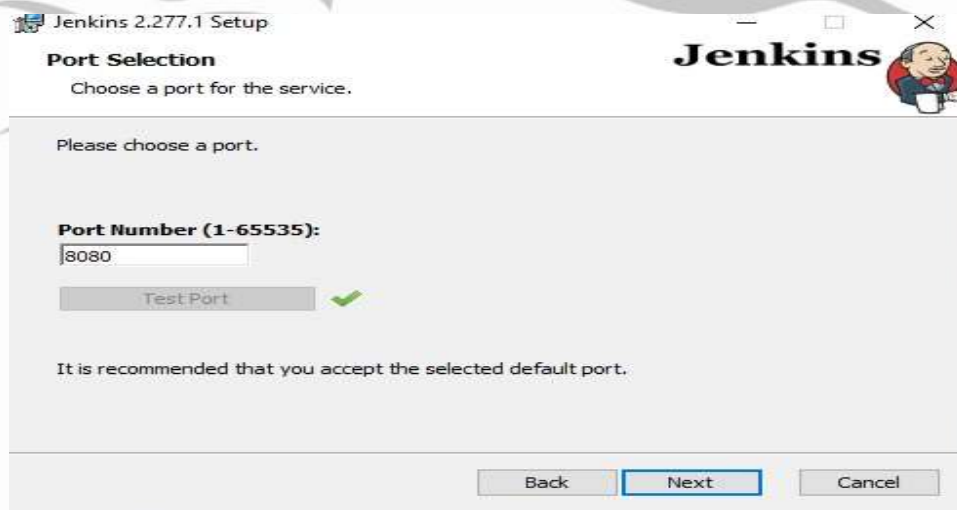
☒ Run service as local or domain user:

Account:

Password:

  Credentials must be tested to continue

Step 5) Click on the Install button.



Jenkins 2.277.1 Setup

Port Selection

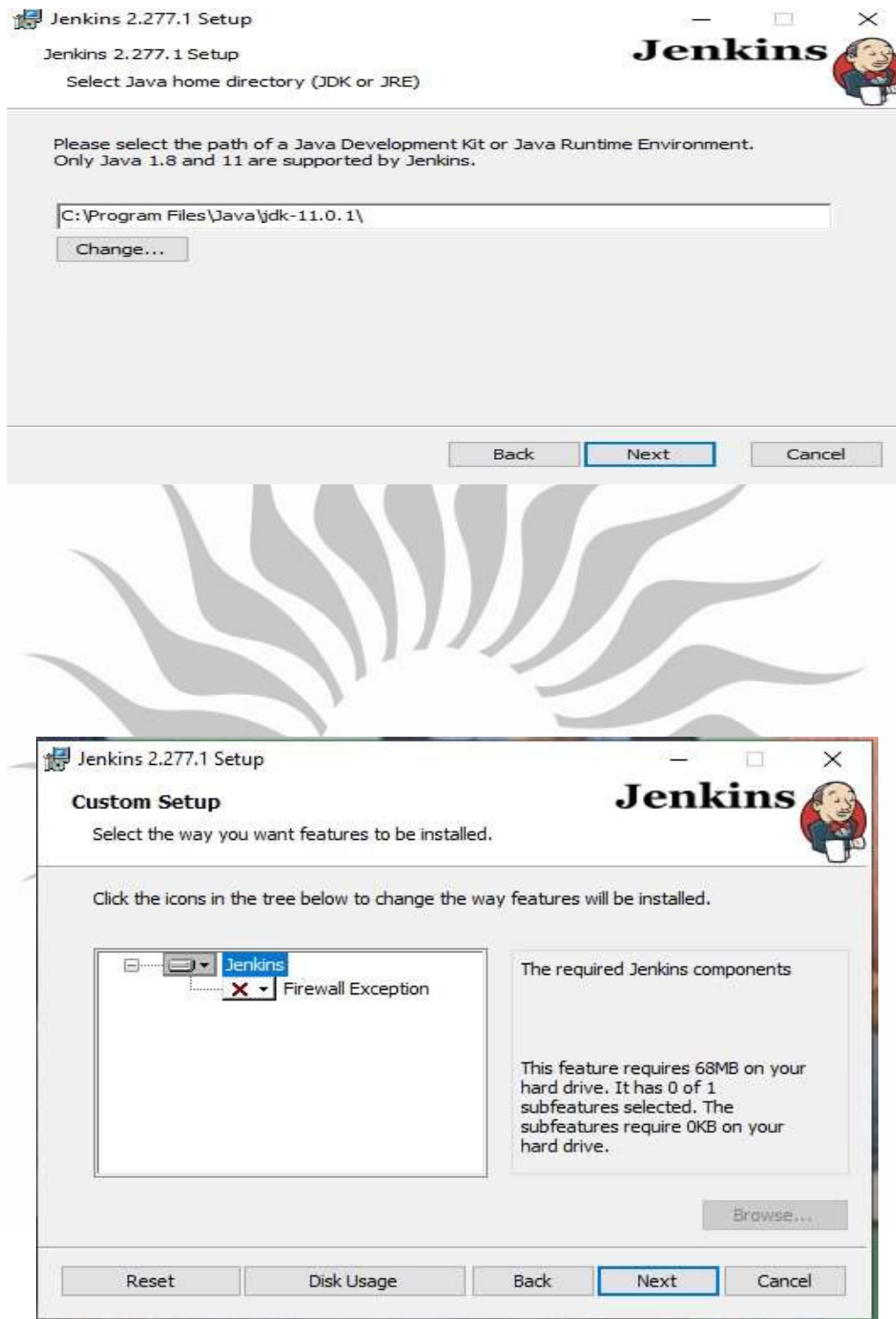
Choose a port for the service.

Please choose a port.

Port Number (1-65535):



It is recommended that you accept the selected default port.



Step 6) Once install is complete, click Finish.

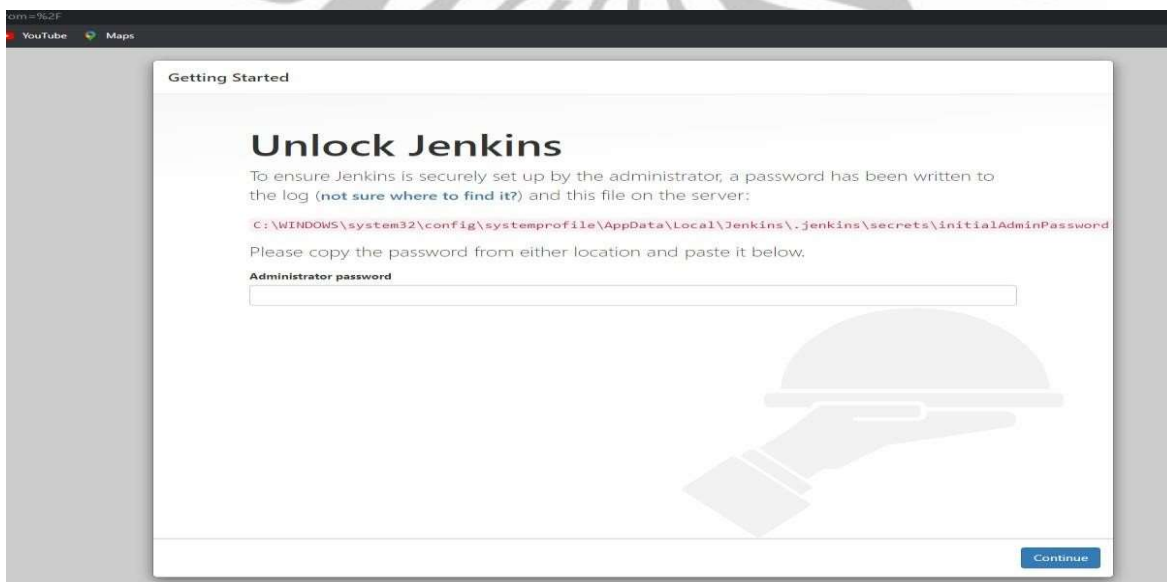


Step 7) During the installation process an info panel may pop-up to inform the user that for a complete setup, the system should be rebooted at the end of the current installation. Click on OK button when the Info panel is popping-up:

How to Unblock Jenkins?

After completing the Jenkins installation phase, you should proceed further and start its configuration. Next steps will guide you how you can unblock Jenkins application:

Step 1) After completing the Jenkins installation process, a browser tab will pop-up asking for the initial Administrator password. To access Jenkins, you need to go to browse the following path in your web browser.
<http://localhost:8080>

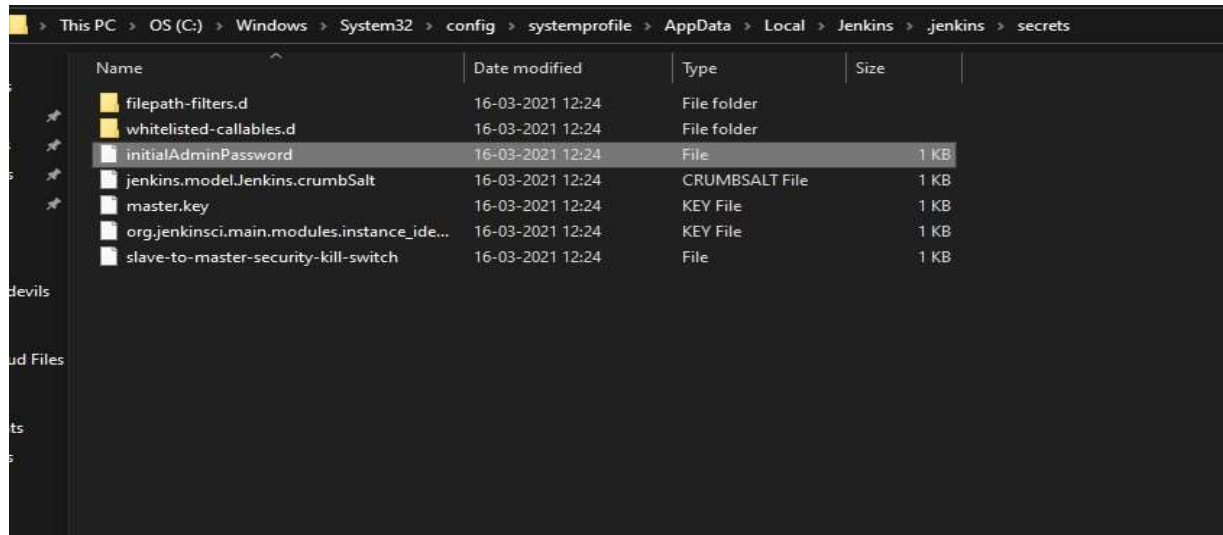


If you can access the above URL, then it confirms that Jenkins is successfully installed in your system.

Step 2) The initial Administrator password should be found under the Jenkins installation path (set at Step 4 in Jenkins Installation).

For default installation location to C:\Program Files (x86)\Jenkins, a file called initialAdminPassword can be found under C:\Program Files (x86)\Jenkins\secrets.

However, If a custom path for Jenkins installation was selected, then you should check that location for initialAdminPassword file.



Step 3) Open the highlighted file and copy the content of the initialAdminPassword file.

The screenshot shows a Notepad window titled "initialAdminPassword - Notepad". The menu bar includes File, Edit, Format, View, and Help. The text content of the file is a long alphanumeric string: f04255b2301d4f2fa987e13d910c1038.

Step 4) Paste the password it into browser's pop-up tab (<http://localhost:8080/login?form=%2F>) and click on Continue button.

Customize Jenkins

You can also customize your Jenkins environment by below-given steps:

Step 1) Click on the "Install suggested plugins button" so Jenkins will retrieve and install the essential plugins

Getting Started

Customize Jenkins

Plugins extend Jenkins with additional features to support many different needs.

Install suggested plugins

Install plugins the Jenkins community finds most useful.

Select plugins to install

Select and install plugins most suitable for your needs.

Getting Started

Getting Started

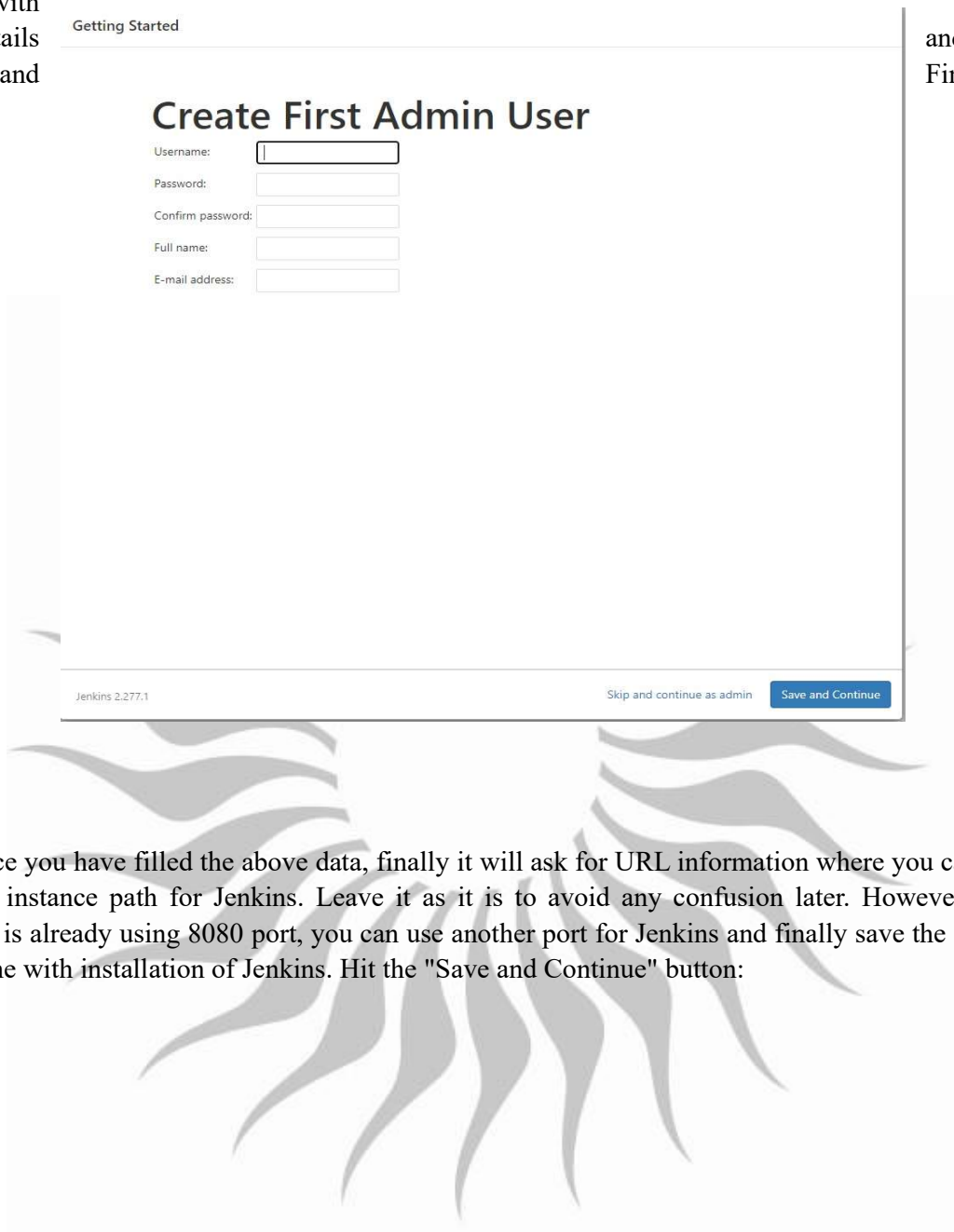
✓ Folders	✓ OWASP Markup Formatter	✓ Build Timeout	✓ Credentials Binding	Folders
✓ Timestampers	Workspace Cleanup	Ant	Gradle	** Trilead API
Pipeline	GitHub Branch Source	Pipeline: GitHub Groovy Libraries	Pipeline: Stage View	OWASP Markup Formatter
Git	SSH Build Agents	Matrix Authorization Strategy	RAM Authentication	** Structs
LDAP	Email Extension	Mailer		** Pipeline: Stop API
				** Token Macro
				Build Timeout
				** JAXB
				** Credentials
				** Plain Credentials
				** SSH Credentials
				Credentials Binding
				** SCM API
				** Pipeline: API
				Timestampers
				** Script Security
				** - required dependency

Jenkins 2.277.1

Jenkins will start to download and install all the necessary plugins needed to create new Jenkins Jobs.

Note: You can choose the Option "Select Plugins to Install" and select the plugins you want to install

Step 2) After all suggested plugins were installed, the "Create First Admin User" panel will show up. Fill all the fields with desired account details and hit the "Save and Continue" button.



Getting Started

Create First Admin User

Username:

Password:

Confirm password:

Full name:

E-mail address:

Jenkins 2.277.1

[Skip and continue as admin](#) [Save and Continue](#)

Step 3) Once you have filled the above data, finally it will ask for URL information where you can configure the default instance path for Jenkins. Leave it as it is to avoid any confusion later. However, if another application is already using 8080 port, you can use another port for Jenkins and finally save the settings, and you are done with installation of Jenkins. Hit the "Save and Continue" button:

Getting Started

Jenkins is ready!

Your Jenkins setup is complete.

[Start using Jenkins](#)

We have successfully installed a new Jenkins Server. Hit the "Start using Jenkins" button.

Below you can find the Jenkins instance up and run, ready to create first Jenkins jobs:

The screenshot displays the Jenkins web interface. At the top, the 'Jenkins' logo is on the left, and a search bar, help icon, user profile (Rohith Srinivas Raghavan), and 'log out' link are on the right. The main content area is titled 'Welcome to Jenkins!' and includes a sub-header 'Start building your software project' with a 'Create a job' button. Below this is a 'Set up a distributed build' section with buttons for 'Set up an agent', 'Configure a cloud', and a link to 'Learn more about distributed builds'. On the left sidebar, the 'Dashboard' menu is expanded, showing options like 'New Item', 'People', 'Build History', 'Manage Jenkins', 'My Views', 'Lockable Resources', and 'New View'. The 'Build Queue' section shows 'No builds in the queue.' and the 'Build Executor Status' section shows two idle executors.

Jenkins Rohith Srinivas Raghavan log out

Dashboard

- New Item
- People
- Build History
- Manage Jenkins
- My Views
- Lockable Resources
- New View

Build Queue ^

No builds in the queue.

Build Executor Status ^

1 Idle

2 Idle

Welcome to Jenkins!

This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.

Start building your software project

Create a job →

Set up a distributed build

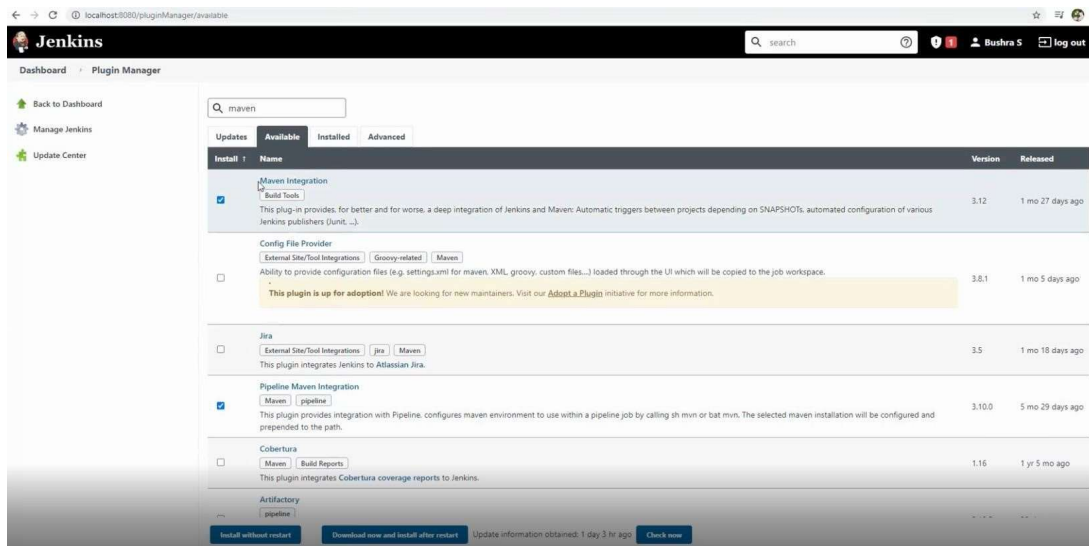
Set up an agent →

Configure a cloud →

Learn more about distributed builds ↗

REST API Jenkins 2.277.1

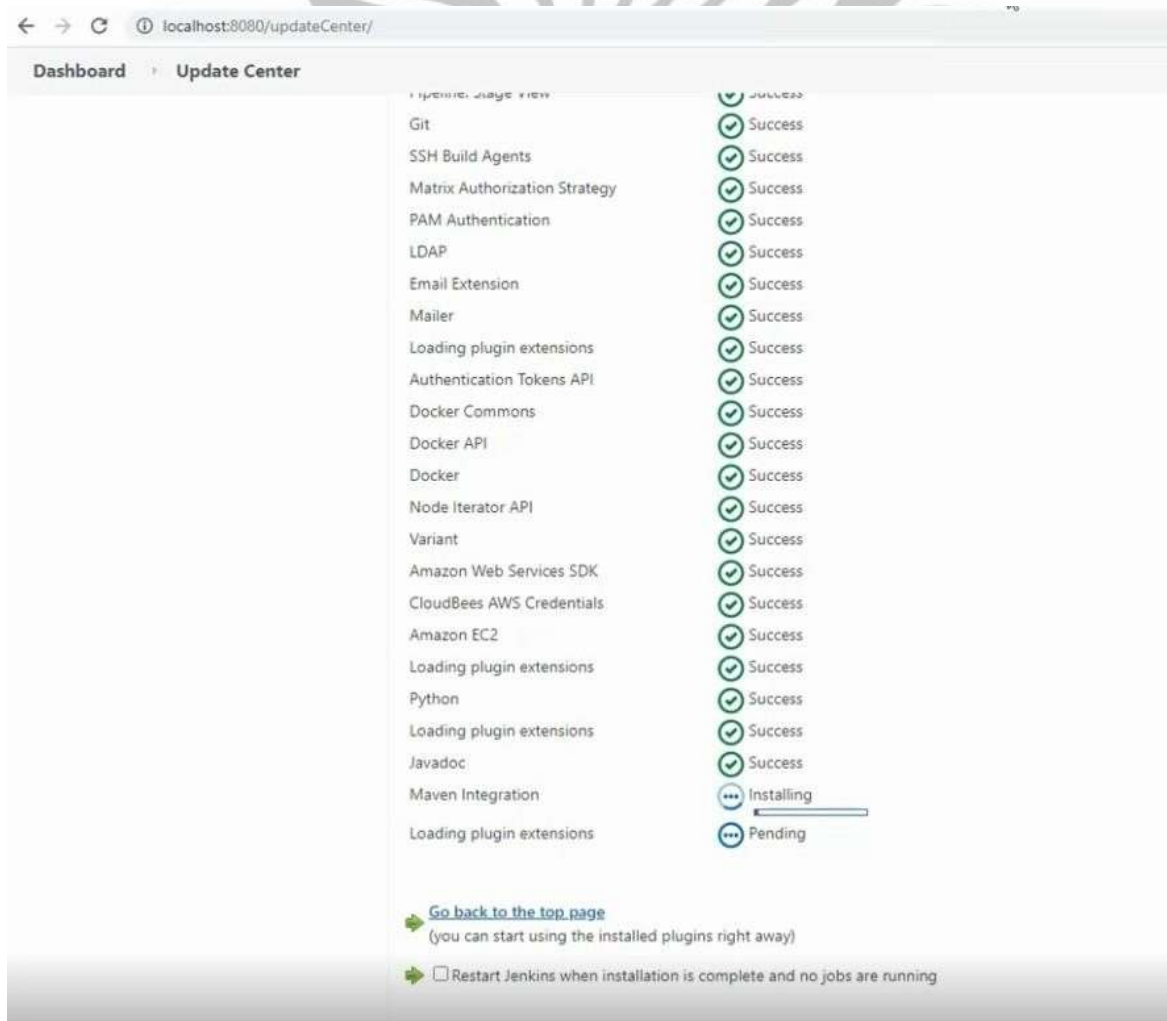




The screenshot shows the Jenkins Plugin Manager interface. The search bar contains 'maven'. The 'Available' tab is selected. A table lists available plugins with columns for 'Install', 'Name', 'Version', and 'Released'.

Install	Name	Version	Released
<input checked="" type="checkbox"/>	Maven Integration Build Tools This plugin provides, for better and for worse, a deep integration of Jenkins and Maven: Automatic triggers between projects depending on SNAPSHOTS, automated configuration of various Jenkins publishers (JUnit, ...)	3.12	1 mo 27 days ago
<input type="checkbox"/>	Config File Provider External Site/Tool Integrations Groovy-related Maven Ability to provide configuration files (e.g. settings.xml) for maven, XML, groovy, custom files... loaded through the UI which will be copied to the job workspace. This plugin is up for adoption! We are looking for new maintainers. Visit our adopt-a-plugin initiative for more information.	3.8.1	1 mo 5 days ago
<input type="checkbox"/>	Jira External Site/Tool Integrations jira Maven This plugin integrates Jenkins to Atlassian Jira.	3.5	1 mo 18 days ago
<input checked="" type="checkbox"/>	Pipeline Maven Integration Maven pipeline This plugin provides integration with Pipeline, configures maven environment to use within a pipeline job by calling sh mvn or bat mvn. The selected maven installation will be configured and prepended to the path.	3.10.0	5 mo 29 days ago
<input type="checkbox"/>	Cobertura Maven Build Reports This plugin integrates Cobertura coverage reports to Jenkins.	1.16	1 yr 5 mo ago
<input type="checkbox"/>	Artifactory pipeline		

Buttons at the bottom: [Install without restart](#), [Download now and install after restart](#), [Update information obtained: 1 day 3 hr ago](#), [Check now](#).



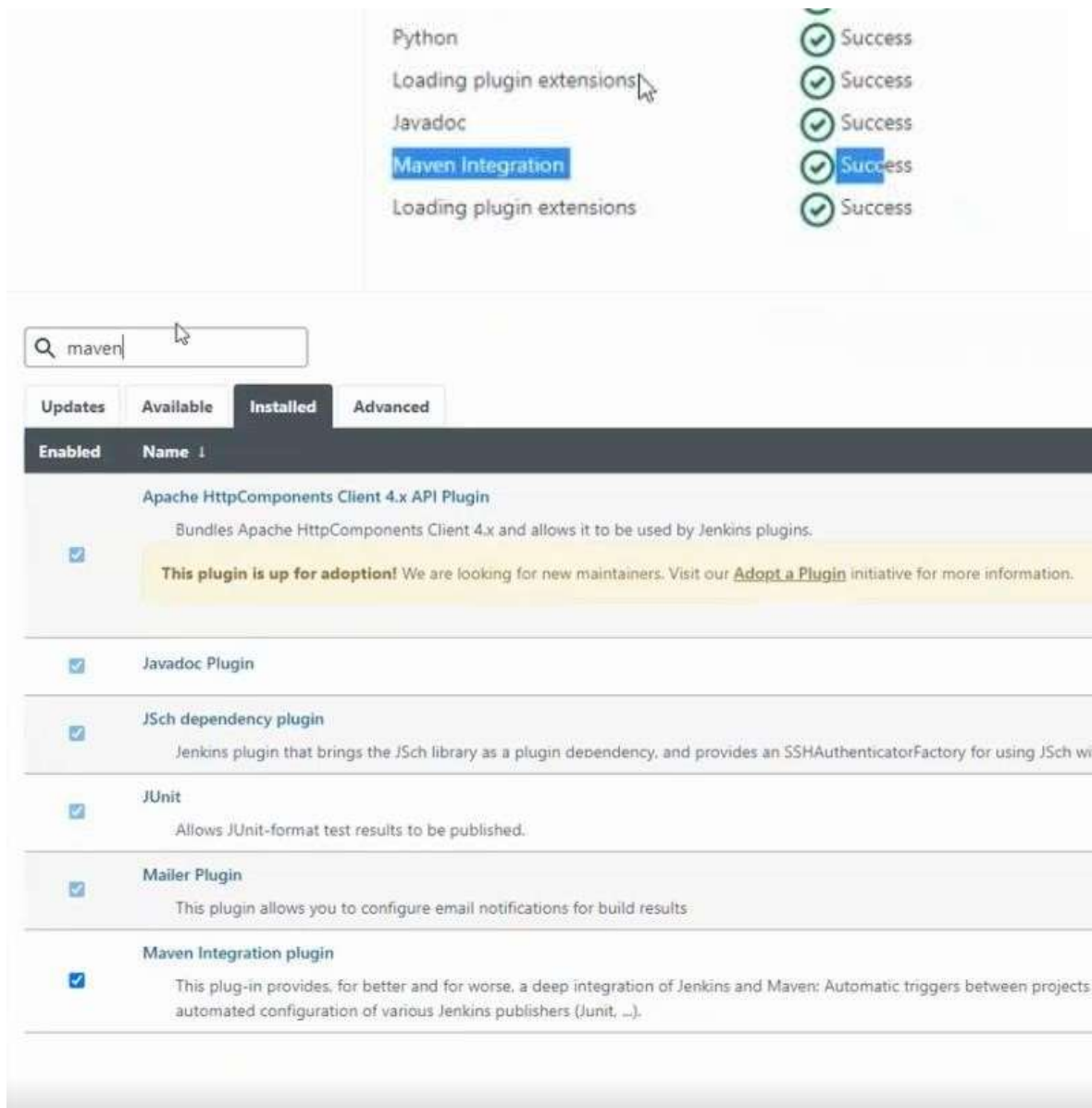
The screenshot shows the Jenkins Update Center interface. The 'Update Center' tab is selected. A list of plugins is shown with their update status.

Plugin Name	Status
Git	Success
SSH Build Agents	Success
Matrix Authorization Strategy	Success
PAM Authentication	Success
LDAP	Success
Email Extension	Success
Mailer	Success
Loading plugin extensions	Success
Authentication Tokens API	Success
Docker Commons	Success
Docker API	Success
Docker	Success
Node Iterator API	Success
Variant	Success
Amazon Web Services SDK	Success
CloudBees AWS Credentials	Success
Amazon EC2	Success
Loading plugin extensions	Success
Python	Success
Loading plugin extensions	Success
Javadoc	Success
Maven Integration	Installing
Loading plugin extensions	Pending

Buttons at the bottom: [Go back to the top page](#), [Restart Jenkins when installation is complete and no jobs are running](#).

Installation of Maven Integration Plugins:





Likewise, put the screenshot of other installed plugins mentioned in the aim.

Conclusion:- Hence we have successfully installed Jenkins