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BATCH - B3 Hons.

COURSE- BTech CSE CCVT

DEVOPS OVERVIEW LAB EXPERIMENTS

LAB EXPERIMENT 1-2

Setup Environment for DevOps

Objective-

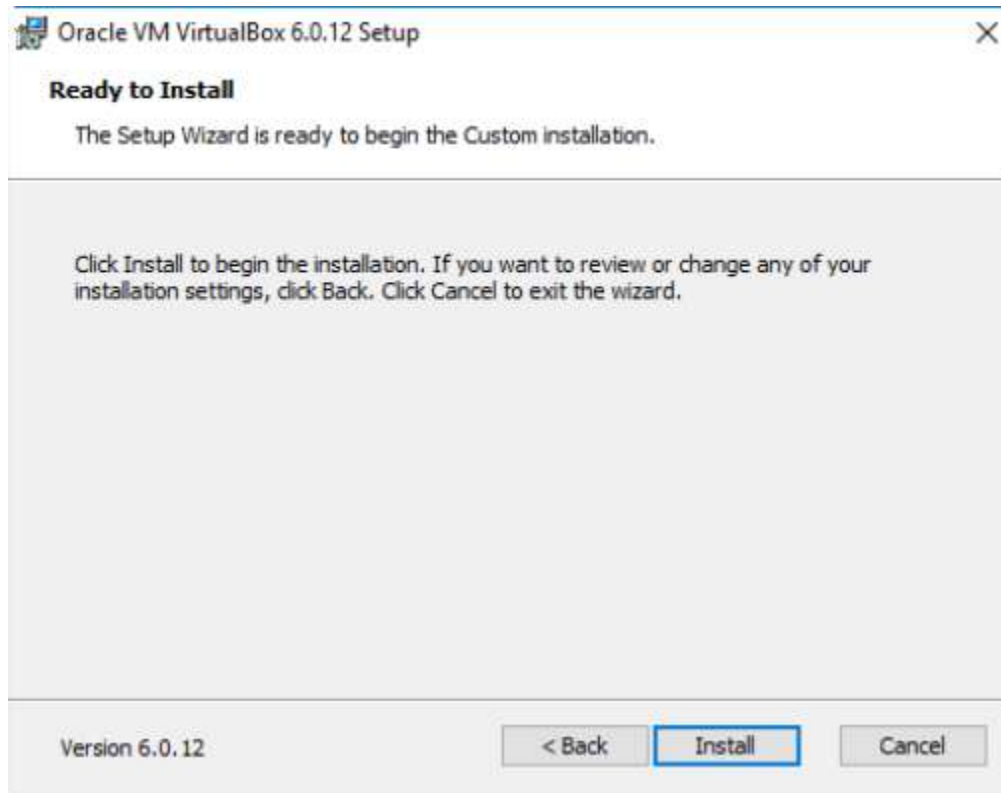
To explore the installation process and primary setup for DevOps operation.

Download & Installation of Oracle Virtual Machine

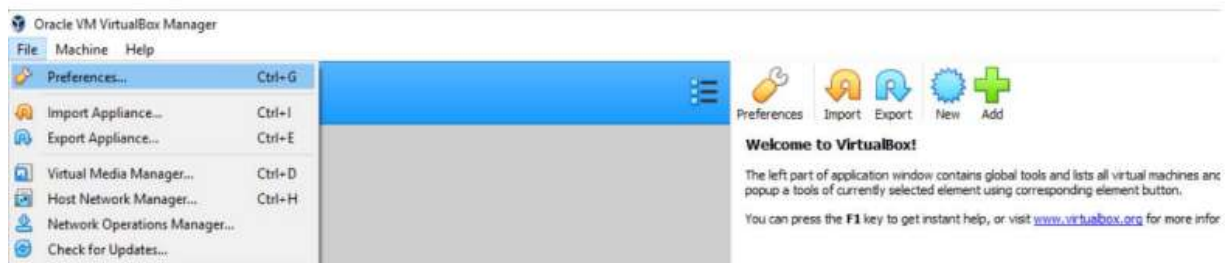
1. Download the installer from this website to get an Oracle VM VirtualBox:
<https://www.virtualbox.org/wiki/Downloads>
2. Use the Windows Explorer to launch the VirtualBox installer. If prompted, give the installer permission to modify your computer.
3. Click the Next button when the VirtualBox installation wizard opens.



4. Click the Install button to load VirtualBox to your development system.

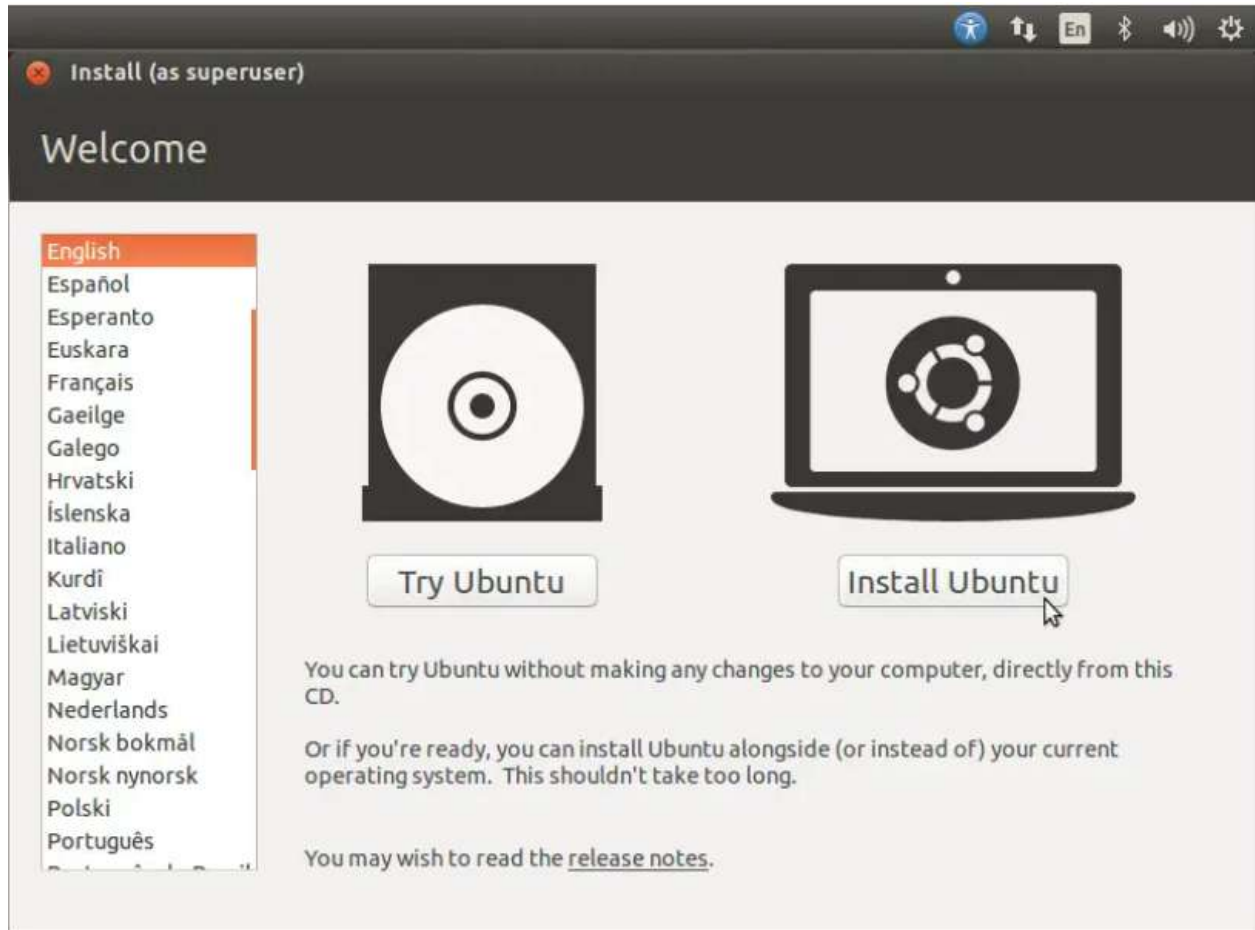


5. To finish the installation, click the Finish button. Keep the checkbox enabled so that VirtualBox will launch following installation.

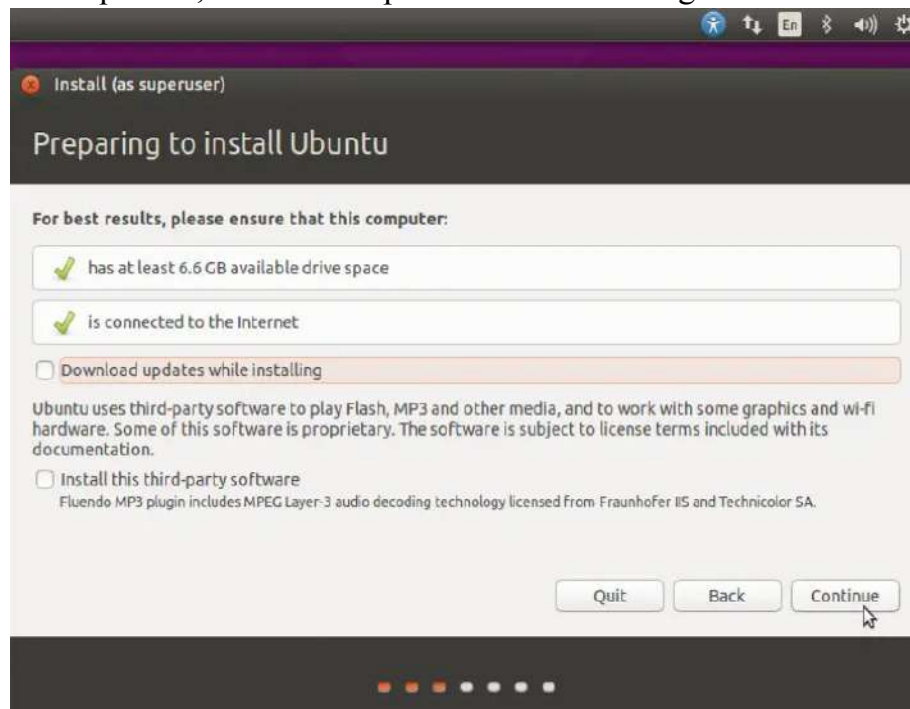


Installation of ISO file

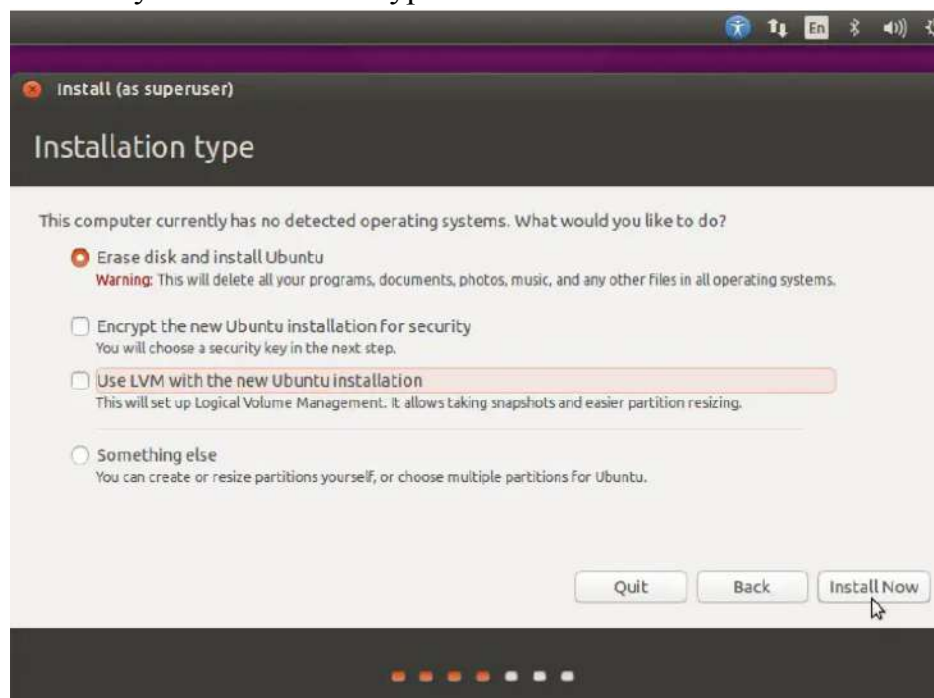
1. Download the most recent ISO image for Ubuntu.
2. After downloading the ISO file, burn it to a USB drive to make it bootable.
3. Click "Install Ubuntu" to begin the installation.



4. Check all Prerequisites, Download updates while installing

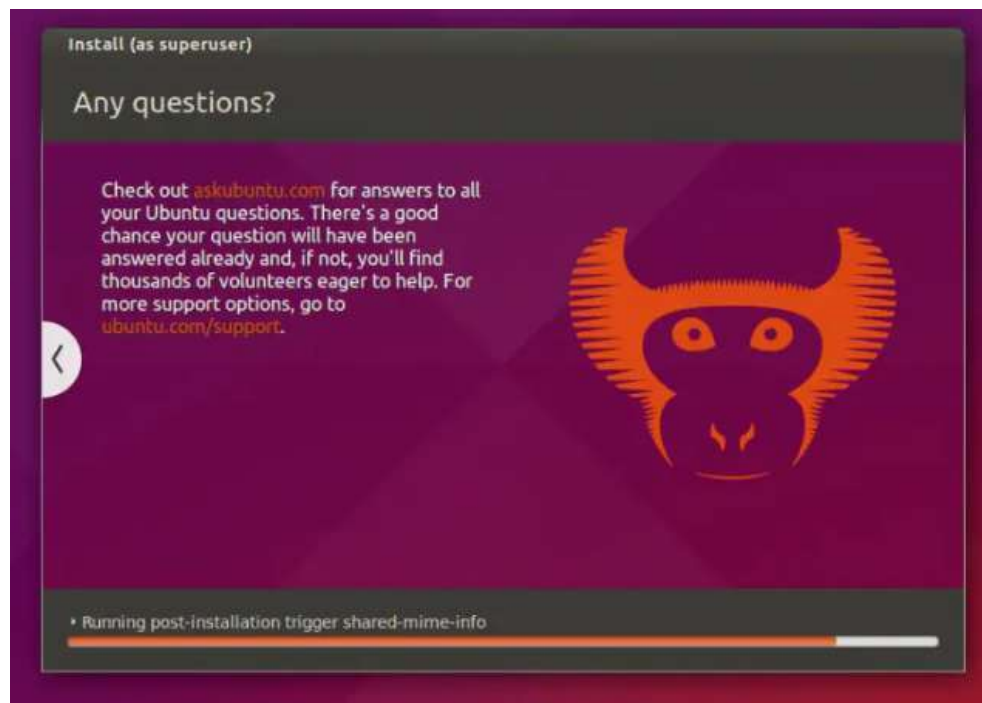


5. Select your Installation Type.

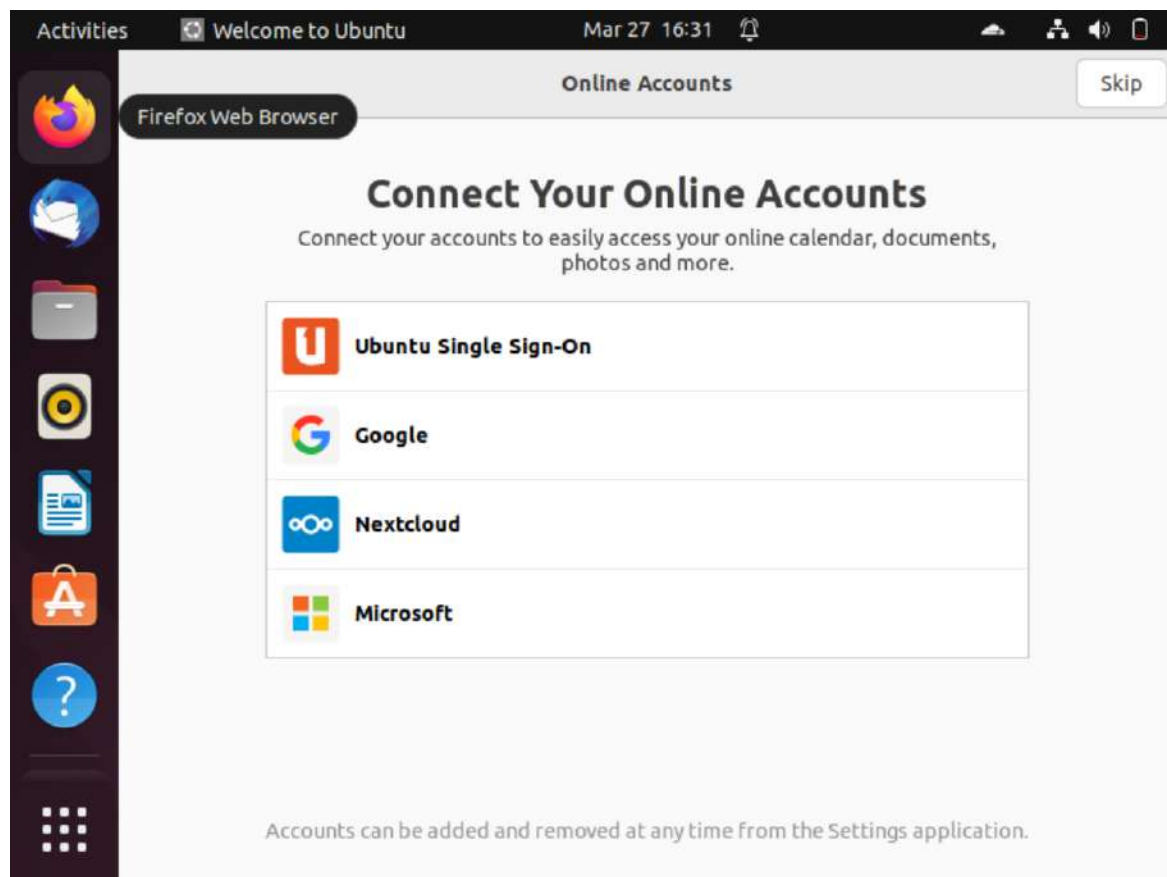
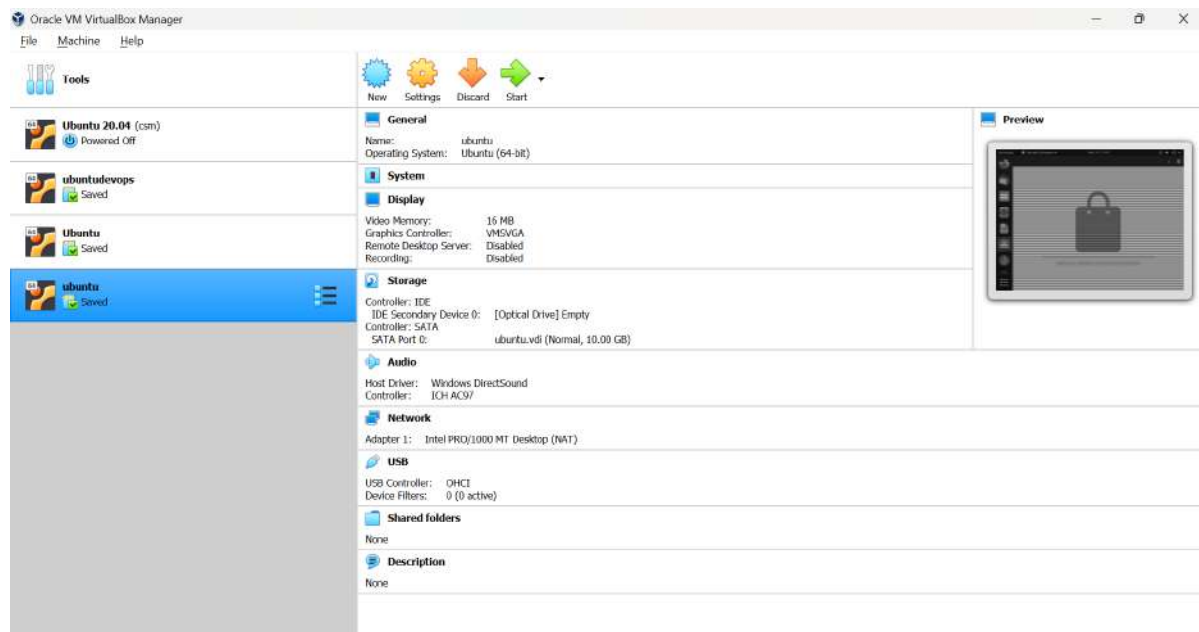


6. Set the Hostname of your system and User credentials that will be used after installation.

7. Continue and installation starts.



8. When Installation gets completed, login screen after reboot



9. Hence installation of ubuntu has been successfully done.

Setup Environment for Docker

Objective:

To explore the installation process and primary setup for Docker operation.

Docker:

Docker is a popular platform for building, shipping, and running distributed applications. It provides an efficient way to package and deploy applications and their dependencies into containers that can run consistently across different environments.

With Docker, developers can build and test their applications in a local environment, and then package them into lightweight, portable containers that can be deployed to production servers or cloud environments. Docker containers are isolated from the underlying system and have their own file system, network interfaces, and resource allocation, making them highly portable and easy to move between different environments.

Docker uses a client-server architecture, where the Docker client communicates with the Docker daemon (server) to build, run, and manage containers. Docker also provides a registry service called Docker Hub, which allows users to store, share, and download container images.

Steps for installing Docker

1. Open the terminal on ubuntu.
2. Remove any docker file running in the system using the following command:
`$ sudo apt-get remove docker docker-engine docker.io`


```

bhoomika@bhoomika-VirtualBox:~$ sudo apt-get remove docker docker-engine docker
.io containerd runc
[sudo] password for bhoomika:
Reading package lists... Done
Building dependency tree
Reading state information... Done
Package 'docker-engine' is not installed, so not removed
Package 'docker' is not installed, so not removed
Package 'containerd' is not installed, so not removed
Package 'runc' is not installed, so not removed
Package 'docker.io' is not installed, so not removed
0 upgraded, 0 newly installed, 0 to remove and 501 not upgraded.

```

After entering the above command, you will need to enter the password of the root and press enter:

\$ sudo apt-get update & \$sudo apt-get install \

```

s Terminal Jan 22 13:32
bhoomika@bhoomika-VirtualBox: ~
P Files e 'docker-engine' is not installed, so not removed
Package 'docker' is not installed, so not removed
Package 'containerd' is not installed, so not removed
Package 'runc' is not installed, so not removed
Package 'docker.io' is not installed, so not removed
0 upgraded, 0 newly installed, 0 to remove and 501 not upgraded.
bhoomika@bhoomika-VirtualBox:~$ sudo apt-get update
Hit:1 https://download.docker.com/linux/ubuntu focal InRelease
Get:2 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Hit:3 http://us.archive.ubuntu.com/ubuntu focal InRelease
Hit:4 http://us.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:5 http://us.archive.ubuntu.com/ubuntu focal-backports InRelease
Fetched 114 kB in 2s (45.6 kB/s)
Reading package lists... Done
bhoomika@bhoomika-VirtualBox:~$ sudo apt-get install \
> ca-certificates \
> curl \
> gnupg \
> lsb-release
Reading package lists... Done
Building dependency tree
Reading state information... Done
lsb-release is already the newest version (11.1.0ubuntu2).
ca-certificates is already the newest version (20211016ubuntu0.20.04.1).
ca-certificates set to manually installed.
curl is already the newest version (7.68.0-1ubuntu2.15).
gnupg is already the newest version (2.2.19-3ubuntu2.2).
0 upgraded, 0 newly installed, 0 to remove and 501 not upgraded.
bhoomika@bhoomika-VirtualBox:~$

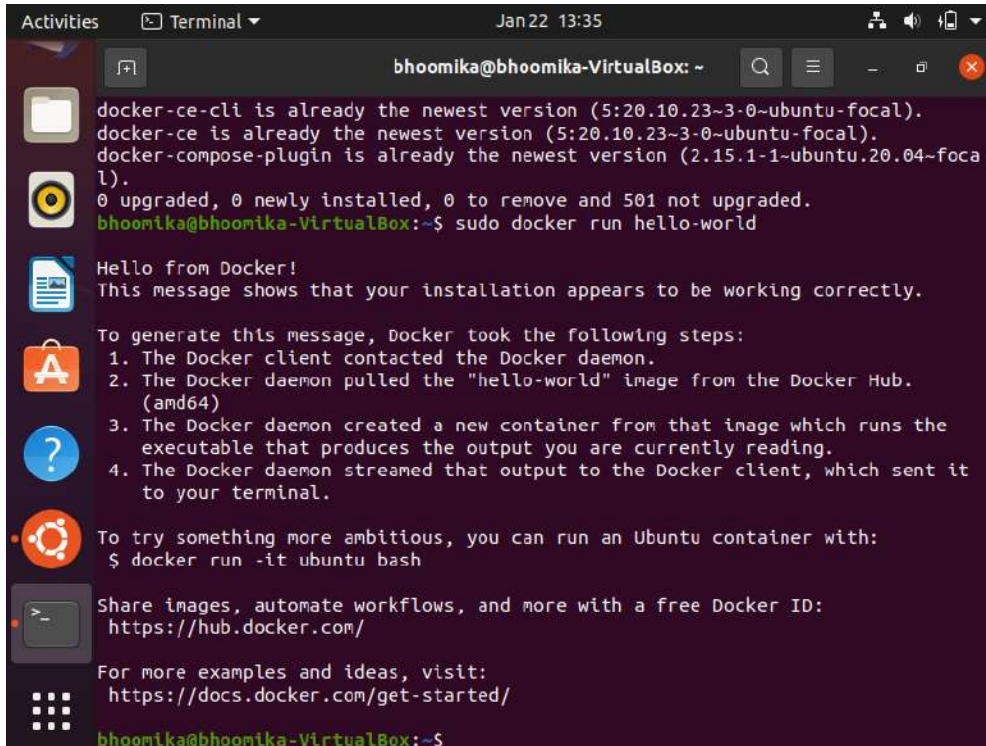
```

3. Install Docker using the following command: \$ sudo apt install docker.io

```
Activities Terminal Jan 22 12:39
bhoomika@bhoomika-VirtualBox: ~
ssing?
bhoomika@bhoomika-VirtualBox:~$ sudo apt install docker.io
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd git git-man liberror-perl pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools btrfs-progs cgroupfs-mount | cgroup-lite debootstrap
  docker-doc rinse zfs-fuse | zfsutils git-daemon-run | git-daemon-sysvinit
  git-doc git-el git-email git-gui gitk gitweb git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  bridge-utils containerd docker.io git git-man liberror-perl pigz runc
  ubuntu-fan
0 upgraded, 9 newly installed, 0 to remove and 350 not upgraded.
Need to get 79.6 MB of archives.
After this operation, 398 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://us.archive.ubuntu.com/ubuntu focal/universe amd64 pigz amd64 2.4-1
[57.4 kB]
Get:2 http://security.ubuntu.com/ubuntu focal-security/main amd64 runc amd64 1.
0.0-rc95-0ubuntu1~20.04.2 [4,087 kB]
Get:3 http://us.archive.ubuntu.com/ubuntu focal/main amd64 bridge-utils amd64 1
.6-2ubuntu1 [30.5 kB]
Get:4 http://us.archive.ubuntu.com/ubuntu focal/main amd64 liberror-perl all 0.
17029-1 [26.5 kB]
Get:5 http://us.archive.ubuntu.com/ubuntu focal/main amd64 ubuntu-fan all 0.12.
13 [34.5 kB]
11% [2 runc 2,331 kB/4,087 kB 57%] 48.7 kB/s 26min 23s
```

```
Activities Terminal Jan 22 13:35
bhoomika@bhoomika-VirtualBox: ~
b Files ka@bhoomika-VirtualBox:~$ sudo apt-get update
Hit:1 https://download.docker.com/linux/ubuntu focal InRelease
Hit:2 http://us.archive.ubuntu.com/ubuntu focal InRelease
Hit:3 http://us.archive.ubuntu.com/ubuntu focal-updates InRelease
Get:4 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Hit:5 http://us.archive.ubuntu.com/ubuntu focal-backports InRelease
Fetched 114 kB in 2s (53.0 kB/s)
Reading package lists... Done
bhoomika@bhoomika-VirtualBox:~$ sudo chmod a+r /etc/apt/keyrings/docker.gpg
bhoomika@bhoomika-VirtualBox:~$ sudo apt-get update
Hit:1 https://download.docker.com/linux/ubuntu focal InRelease
Get:2 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Hit:3 http://us.archive.ubuntu.com/ubuntu focal InRelease
Hit:4 http://us.archive.ubuntu.com/ubuntu focal-updates InRelease
Hit:5 http://us.archive.ubuntu.com/ubuntu focal-backports InRelease
Fetched 114 kB in 2s (73.5 kB/s)
Reading package lists... Done
bhoomika@bhoomika-VirtualBox:~$ sudo apt-get install docker-ce docker-ce-cli co
ntainerd.io docker-compose-plugin
Reading package lists... Done
Building dependency tree
Reading state information... Done
containerd.io is already the newest version (1.6.15-1).
docker-ce-cli is already the newest version (5:20.10.23~3-0~ubuntu-focal).
docker-ce is already the newest version (5:20.10.23~3-0~ubuntu-focal).
docker-compose-plugin is already the newest version (2.15.1-1~ubuntu.20.04~foca
l).
0 upgraded, 0 newly installed, 0 to remove and 501 not upgraded.
bhoomika@bhoomika-VirtualBox:~$
```


4. Pull an image from the Docker hub using the following command:
\$ sudo docker run hello-world



```
Activities Terminal Jan22 13:35
bhoomika@bhoomika-VirtualBox: ~
docker-ce-cli is already the newest version (5:20.10.23~3-0~ubuntu-focal).
docker-ce is already the newest version (5:20.10.23~3-0~ubuntu-focal).
docker-compose-plugin is already the newest version (2.15.1-1~ubuntu.20.04~focal).
0 upgraded, 0 newly installed, 0 to remove and 501 not upgraded.
bhoomika@bhoomika-VirtualBox:~$ sudo docker run hello-world

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
1. The Docker client contacted the Docker daemon.
2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
   (amd64)
3. The Docker daemon created a new container from that image which runs the
   executable that produces the output you are currently reading.
4. The Docker daemon streamed that output to the Docker client, which sent it
   to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
$ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
https://hub.docker.com/

For more examples and ideas, visit:
https://docs.docker.com/get-started/
bhoomika@bhoomika-VirtualBox:~$
```

Download Docker Images:

Run the following commands to download the necessary images

```
docker pull Jenkins
docker pull sonarqube
docker pull artifactory
docker pull tomcat
docker pull alpine
```

```
bhoomika@bhoomika-VirtualBox:~$ sudo docker pull jenkins/jenkins
Using default tag: latest
latest: Pulling from jenkins/jenkins
bbee03cda1f: Pull complete
a61ea04afc1d: Pull complete
6990a46c7b5c: Pull complete
e3d7c760cf41: Pull complete
cdb544bd23d8: Pull complete
4a1dc474877f: Pull complete
ab679c9157da: Pull complete
209b2c8639fb: Pull complete
42542409622a: Pull complete
4001cfe35ad4: Pull complete
1ddd2f03d6b8: Pull complete
c74adb4c5237: Pull complete
941a19fa743a: Pull complete
Digest: sha256:e36d66e72b00fb74b2025124cc5865d96cfd76bb443d8c6f8e19978fad85e1b5
Status: Downloaded newer image for jenkins/jenkins:latest
docker.io/jenkins/jenkins:latest
bhoomika@bhoomika-VirtualBox:~$
```

```
bhoomika@bhoomika-VirtualBox:~$ sudo docker pull sonarqube
Using default tag: latest
latest: Pulling from library/sonarqube
9621f1afde84: Pull complete
4c884cb0d3d1: Pull complete
cb4d01bc5fb2: Pull complete
Digest: sha256:d01fc01edd48c0fcdd8841255cfc30eb05b43e160b4c1b9056ca0c75d32ac285
Status: Downloaded newer image for sonarqube:latest
docker.io/library/sonarqube:latest
bhoomika@bhoomika-VirtualBox:~$
```

```
bhoomika@bhoomika-VirtualBox:~$ sudo docker pull tomcat
[sudo] password for bhoomika:
Using default tag: latest
latest: Pulling from library/tomcat
6e3729cf69e0: Already exists
4d8d923227d8: Pull complete
eda8241fd25f: Pull complete
35dccabde73d: Pull complete
978c906bcdda: Pull complete
08704f8dfd0f: Pull complete
ebe8c94df885: Pull complete
Digest: sha256:c44757f6f0838ad3a4bb3788d9eddaabadf3476e99058320ab5b3beb2f223315
Status: Downloaded newer image for tomcat:latest
docker.io/library/tomcat:latest
bhoomika@bhoomika-VirtualBox:~$
```

```

bhoomika@bhoomika-VirtualBox:~$ sudo docker pull mattgruter/artifactory
[sudo] password for bhoomika:
Using default tag: latest
latest: Pulling from mattgruter/artifactory
f2b6b4884fc8: Pull complete
4fb899b4df21: Pull complete
9837675e6940: Pull complete
d602d78cf335: Pull complete
0f0d228baacb: Pull complete
171ed19f6416: Pull complete
70f4101f261c: Pull complete
dd40686a1f5d: Pull complete
ff1231208b5e: Pull complete
7219fbe81a71: Pull complete
ac6015a2a0f7: Pull complete
a0ad062c54ac: Pull complete
ae0875201a59: Pull complete
46b5bf075aa0: Pull complete
b6a51644fe2d: Pull complete
0b6dd3fdae72: Pull complete
bad89fa5f526: Pull complete
314c6fbce538: Pull complete
Digest: sha256:a7945509188ad0ead4969ab75a5051f9b7c26afc2b48629513521f77c8b86acf
Status: Downloaded newer image for mattgruter/artifactory:latest
docker.io/mattgruter/artifactory:latest
bhoomika@bhoomika-VirtualBox:~$

```

```

bhoomika@bhoomika-VirtualBox:~$ sudo docker pull alpine
Using default tag: latest
latest: Pulling from library/alpine
8921db27df28: Pull complete
Digest: sha256:f271e74b17ced29b915d351685fd4644785c6d1559dd1f2d4189a5e851ef753a
Status: Downloaded newer image for alpine:latest
docker.io/library/alpine:latest
bhoomika@bhoomika-VirtualBox:~$

```

Validate Images are available

If you see images in in the list, you are all set up for docker operations.

```

bhoomika@bhoomika-VirtualBox:~$ sudo docker images

```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
jenkins/jenkins	latest	682e28744673	5 days ago	469MB
tomcat	latest	ad4994520144	8 days ago	475MB
alpine	latest	042a816809aa	13 days ago	7.05MB
sonarqube	latest	db451e99d133	4 weeks ago	563MB
ubuntu	latest	6b7dfa7e8fdb	6 weeks ago	77.8MB
hello-world	latest	feb5d9fea6a5	16 months ago	13.3kB
mattgruter/artifactory	latest	e54b24b9d7b9	4 years ago	497MB

```

bhoomika@bhoomika-VirtualBox:~$

```

Dockerfile for the applications

#This is a container made by user-defined docker image that contains
#VS code, PuTTY, Git, sonarqube, and tomcat.

Start with a base image
FROM ubuntu:20.04

Install dependencies
RUN apt-get update && apt-get install -y \
 curl \
 wget \
 unzip

Install PuTTY
RUN apt-get update && apt-get install -y putty

Install Git
RUN apt-get update && apt-get install -y git

RUN apt-get update && apt-get install -y gnupg wget unzip openjdk-11-jdk
RUN wget https://binaries.sonarsource.com/Distribution/sonarqube/sonarqube-8.9.2.46101.zip && \
 unzip sonarqube-8.9.2.46101.zip && \
 mv sonarqube-8.9.2.46101 /opt/sonarqube
EXPOSE 9090

Install Tomcat
RUN apt-get -y update
RUN apt-get -y install openjdk-8-jdk wget
RUN apt-get -y install curl
RUN mkdir /usr/local/tomcat
RUN wget https://archive.apache.org/dist/tomcat/tomcat-9/v9.0.52/bin/apache-tomcat-9.0.52.tar.gz
RUN tar xvfz apache-tomcat-9.0.52.tar.gz
RUN mv apache-tomcat-9.0.52/* /usr/local/tomcat
EXPOSE 8080

#VSCODE
RUN apt-get update \
 && apt-get install -y curl \
 && curl -fsSL https://code-server.dev/install.sh | sh

EXPOSE 10000

Set the command to run when the container starts
CMD ["/usr/local/tomcat/bin/catalina.sh", "run"]
CMD /opt/sonarqube/bin/linux-x86-64/sonar.sh start && code-server --bind-addr 0.0.0.0:10000 . &&
/usr/local/tomcat/bin/catalina.sh run
CMD ["/bin/bash", "-c", "code-server --bind-addr 0.0.0.0:10000 . & /usr/local/tomcat/bin/catalina.sh run"]
CMD ["/bin/bash", "-c", "/opt/sonarqube/bin/linux-x86-64/sonar.sh start && code-server --bind-addr
0.0.0.0:10000 . && /usr/local/tomcat/bin/catalina.sh run"]
Copy shell script
COPY start_services.sh /start_services.sh

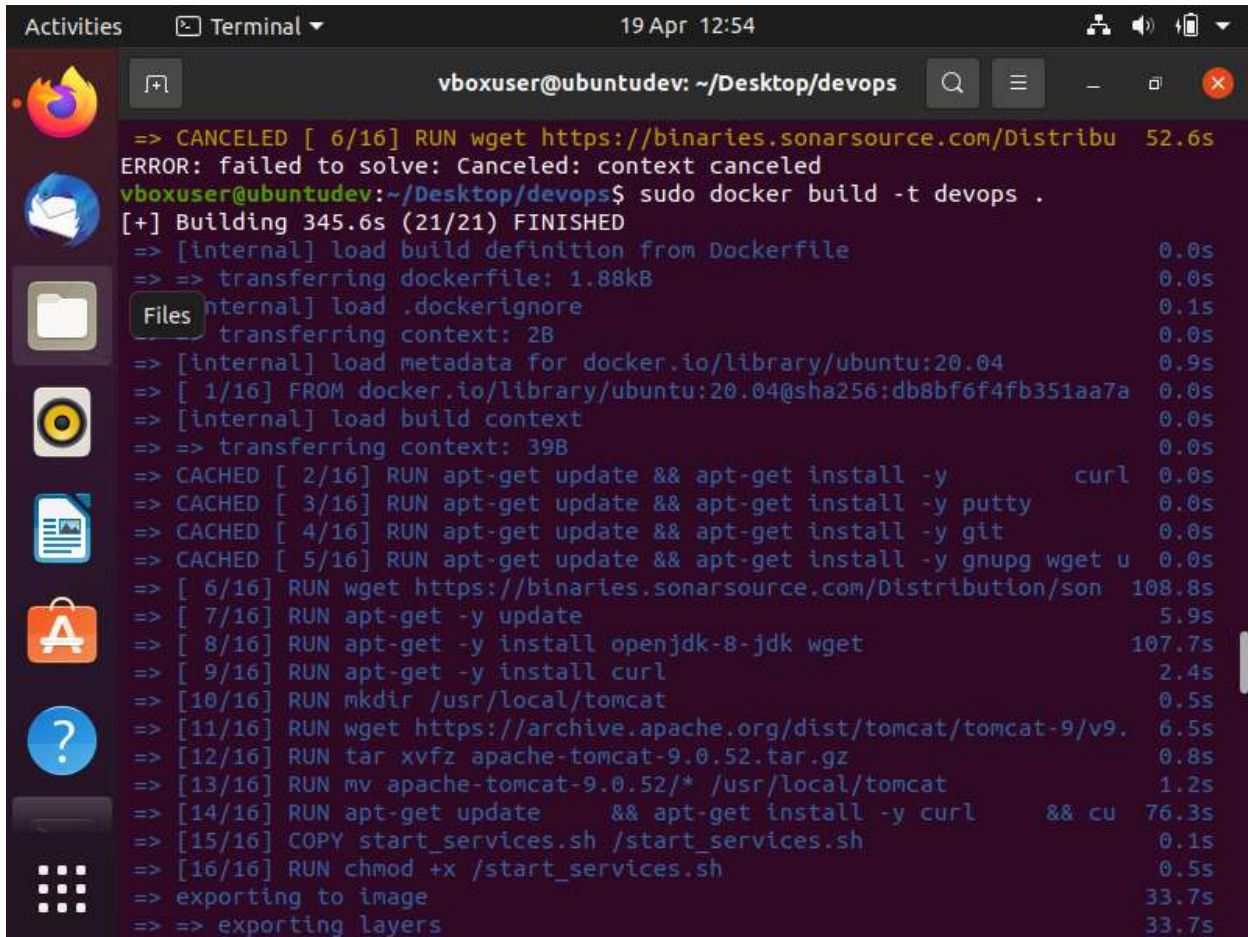
Make shell script executable


```
RUN chmod +x /start_services.sh
# Run shell script as CMD
CMD ["/bin/bash", "-c", "/start_services.sh"]
```

```
#!/bin/bash
```

```
/opt/sonarqube/bin/linux-x86-64/sonar.sh start &
code-server --bind-addr 0.0.0.0:10000 . &
/usr/local/tomcat/bin/catalina.sh run
```

Building Dockerfile



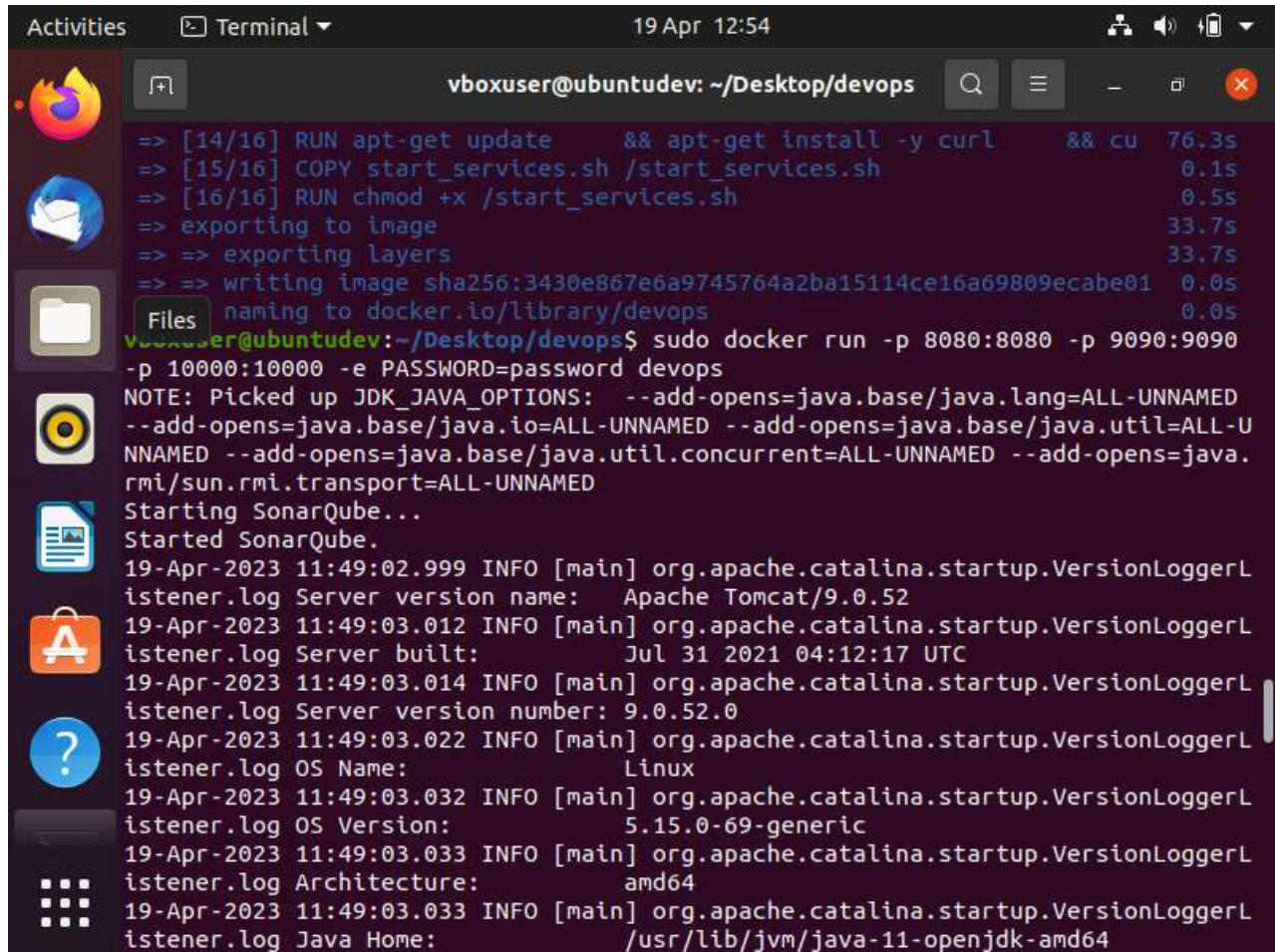
The screenshot shows a terminal window titled 'vboxuser@ubuntu: ~/Desktop/devops' with a search bar and window controls. The terminal output shows the execution of 'sudo docker build -t devops .' and the subsequent build steps. The build process includes loading the Dockerfile, transferring the context, loading metadata for the base image 'ubuntu:20.04', and installing various dependencies like 'curl', 'putty', 'git', 'gnupg', 'wget', 'openjdk-8-jdk', and 'tomcat-9.0.52'. The final step is exporting the image and layers, which completes successfully.

```
=> CANCELED [ 6/16] RUN wget https://binaries.sonarsource.com/Distribu 52.6s
ERROR: failed to solve: Canceled: context canceled
vboxuser@ubuntu: ~/Desktop/devops$ sudo docker build -t devops .
[+] Building 345.6s (21/21) FINISHED
=> [internal] load build definition from Dockerfile 0.0s
=> => transferring dockerfile: 1.88kB 0.0s
=> [internal] load .dockerignore 0.1s
=> transferring context: 2B 0.0s
=> [internal] load metadata for docker.io/library/ubuntu:20.04 0.9s
=> [ 1/16] FROM docker.io/library/ubuntu:20.04@sha256:db8bf6f4fb351aa7a 0.0s
=> [internal] load build context 0.0s
=> => transferring context: 39B 0.0s
=> CACHED [ 2/16] RUN apt-get update && apt-get install -y curl 0.0s
=> CACHED [ 3/16] RUN apt-get update && apt-get install -y putty 0.0s
=> CACHED [ 4/16] RUN apt-get update && apt-get install -y git 0.0s
=> CACHED [ 5/16] RUN apt-get update && apt-get install -y gnupg wget u 0.0s
=> [ 6/16] RUN wget https://binaries.sonarsource.com/Distribution/son 108.8s
=> [ 7/16] RUN apt-get -y update 5.9s
=> [ 8/16] RUN apt-get -y install openjdk-8-jdk wget 107.7s
=> [ 9/16] RUN apt-get -y install curl 2.4s
=> [10/16] RUN mkdir /usr/local/tomcat 0.5s
=> [11/16] RUN wget https://archive.apache.org/dist/tomcat/tomcat-9/v9. 6.5s
=> [12/16] RUN tar xvfz apache-tomcat-9.0.52.tar.gz 0.8s
=> [13/16] RUN mv apache-tomcat-9.0.52/* /usr/local/tomcat 1.2s
=> [14/16] RUN apt-get update && apt-get install -y curl && cu 76.3s
=> [15/16] COPY start_services.sh /start_services.sh 0.1s
=> [16/16] RUN chmod +x /start_services.sh 0.5s
=> exporting to image 33.7s
=> => exporting layers 33.7s
```

Dockerfile is build successfully

A Dockerfile is a text file that contains a set of instructions for building a Docker image. The Dockerfile provides a way to automate the process of creating a Docker image by defining the application and its dependencies, which can then be used to run containers in a consistent and reproducible way across different environments.

Run the container

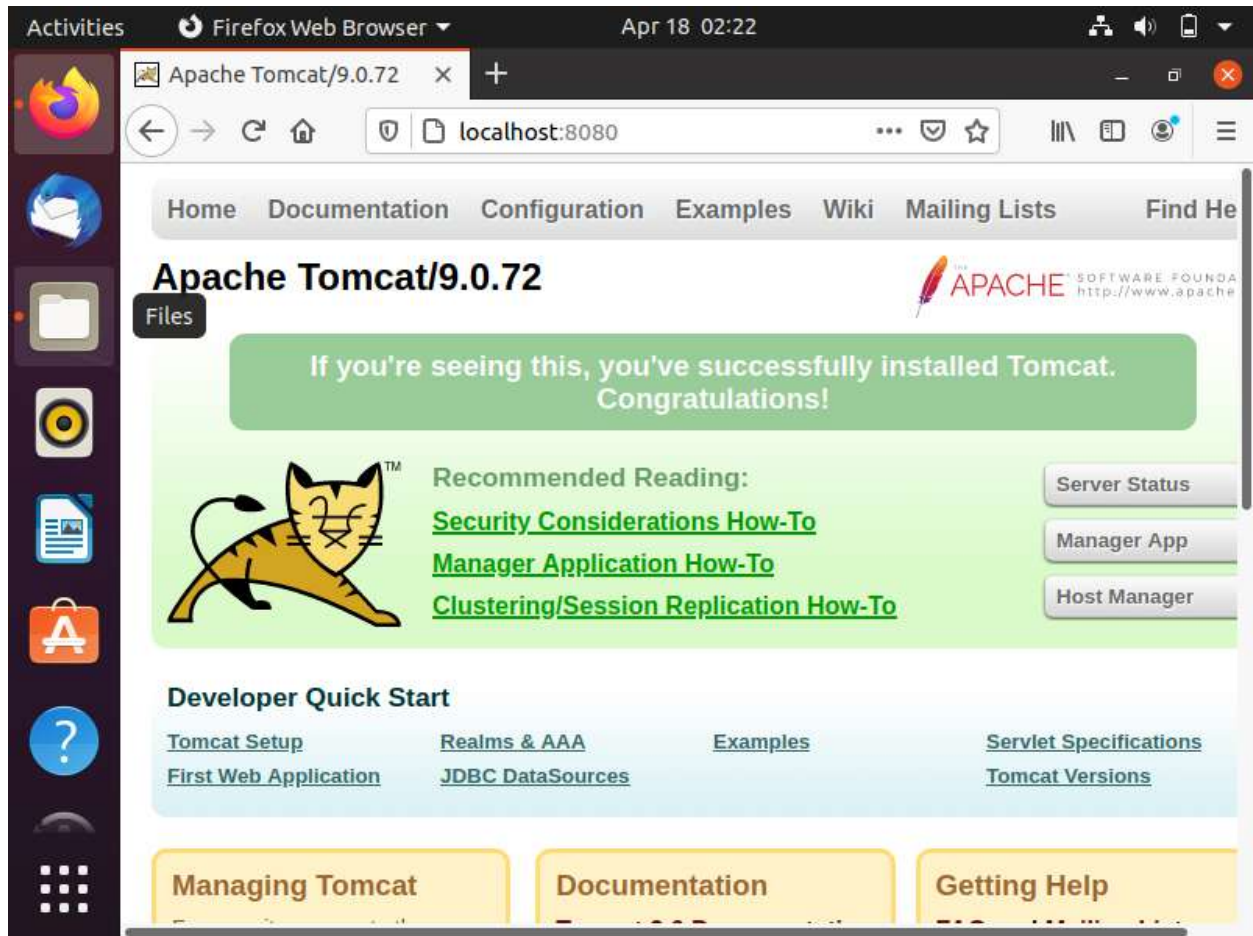
A terminal window titled 'vboxuser@ubuntu: ~/Desktop/devops' showing the process of building and running a Docker container. The terminal output includes progress bars for apt-get update, installing curl, copying start_services.sh, and exporting the image. The container is named 'devops' and is run with specific port mappings and environment variables. The SonarQube service is then started, and its logs are displayed, showing the server version (9.0.52) and system information.

```
vboxuser@ubuntu: ~/Desktop/devops
=> [14/16] RUN apt-get update      && apt-get install -y curl      && cu 76.3s
=> [15/16] COPY start_services.sh /start_services.sh              0.1s
=> [16/16] RUN chmod +x /start_services.sh                        0.5s
=> exporting to image                                              33.7s
=> => exporting layers                                             33.7s
=> => writing image sha256:3430e867e6a9745764a2ba15114ce16a69809ecabe01 0.0s
      naming to docker.io/library/devops                          0.0s
vboxuser@ubuntu: ~/Desktop/devops$ sudo docker run -p 8080:8080 -p 9090:9090
-p 10000:10000 -e PASSWORD=password devops
NOTE: Picked up JDK_JAVA_OPTIONS:  --add-opens=java.base/java.lang=ALL-UNNAMED
--add-opens=java.base/java.io=ALL-UNNAMED --add-opens=java.base/java.util=ALL-UNNAMED
--add-opens=java.base/java.util.concurrent=ALL-UNNAMED --add-opens=java.
rmi/sun.rmi.transport=ALL-UNNAMED
Starting SonarQube...
Started SonarQube.
19-Apr-2023 11:49:02.999 INFO [main] org.apache.catalina.startup.VersionLoggerL
istener.log Server version name:   Apache Tomcat/9.0.52
19-Apr-2023 11:49:03.012 INFO [main] org.apache.catalina.startup.VersionLoggerL
istener.log Server built:         Jul 31 2021 04:12:17 UTC
19-Apr-2023 11:49:03.014 INFO [main] org.apache.catalina.startup.VersionLoggerL
istener.log Server version number: 9.0.52.0
19-Apr-2023 11:49:03.022 INFO [main] org.apache.catalina.startup.VersionLoggerL
istener.log OS Name:              Linux
19-Apr-2023 11:49:03.032 INFO [main] org.apache.catalina.startup.VersionLoggerL
istener.log OS Version:           5.15.0-69-generic
19-Apr-2023 11:49:03.033 INFO [main] org.apache.catalina.startup.VersionLoggerL
istener.log Architecture:         amd64
19-Apr-2023 11:49:03.033 INFO [main] org.apache.catalina.startup.VersionLoggerL
istener.log Java Home:            /usr/lib/jvm/java-11-openjdk-amd64
```

SonarQube has been started in the above screenshot.

SonarQube is an open-source platform for continuous code quality inspection, code analysis, and reporting. It helps developers and teams to detect and fix code quality issues early in the development process and maintain high code quality standards. SonarQube can be used to analyze code in various programming languages such as Java, C#, JavaScript, Python, and many more. SonarQube offers a wide range of features, including: Code analysis, Integration with SCM tools, Integration with popular build tools.

SonarQube can be deployed in various ways, including running it locally, using Docker, or deploying it to a cloud-based service like Amazon Web Services or Microsoft Azure. SonarQube has both a free and paid version, with the paid version offering additional features and support options.



Apache Tomcat Server has been started.

Apache Tomcat is an open-source web server and servlet container that is used to serve Java-based web applications. It is developed by the Apache Software Foundation and is designed to be lightweight, portable, and easy to configure. Tomcat is widely used in enterprise environments for hosting web applications written in Java.

Tomcat supports the Java Servlet and JavaServer Pages (JSP) specifications, which are used to build dynamic web applications. It provides a runtime environment for Java web applications and is responsible for handling incoming HTTP requests, managing sessions, and serving static and dynamic content.

Some of the key features of Apache Tomcat include:

Cross-platform support: Tomcat is written in Java and is designed to run on a variety of platforms, including Windows, Linux, and macOS.

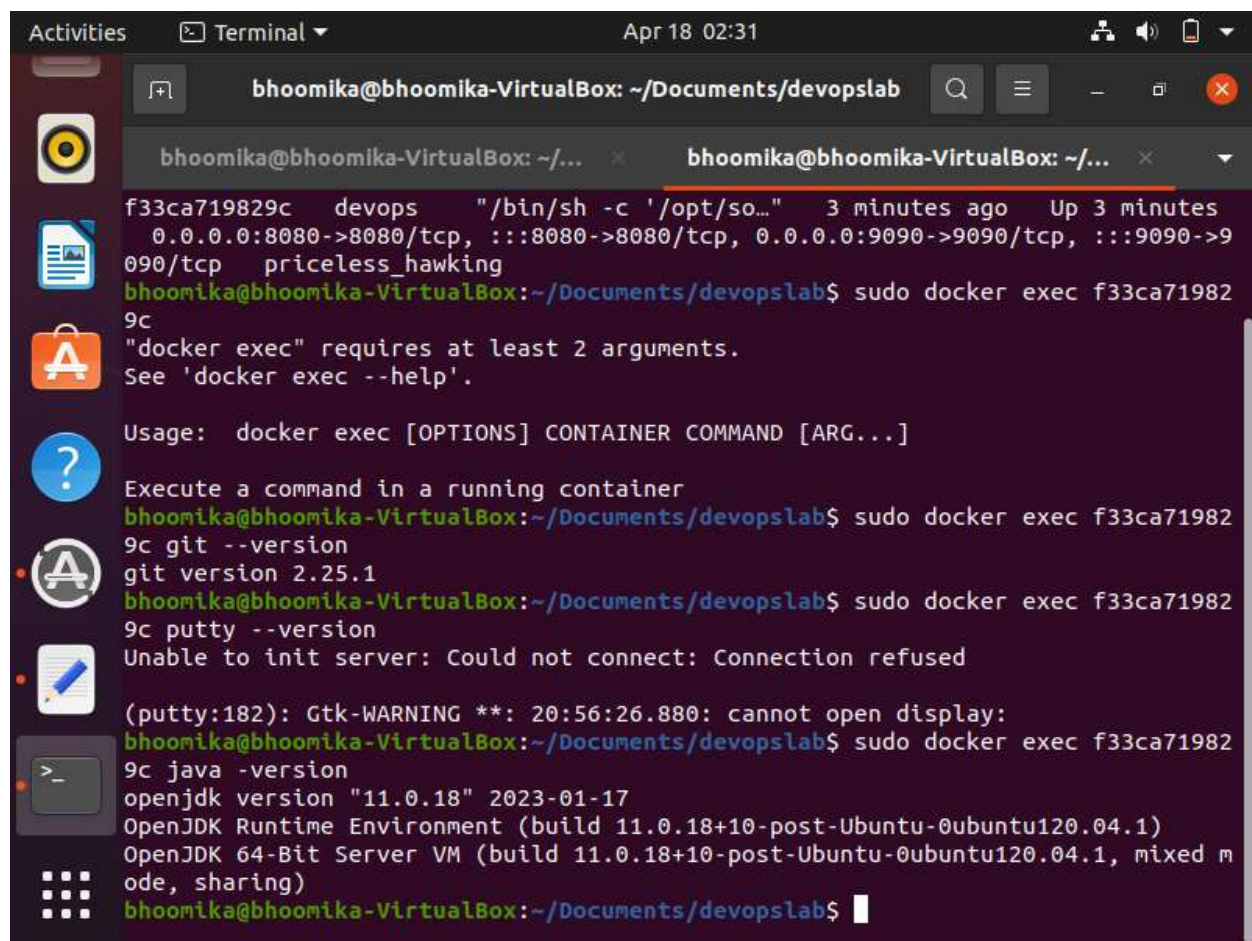
Lightweight: Tomcat is a lightweight web server and servlet container, which makes it easy to install and configure.

Configurable: Tomcat is highly configurable and can be customized to meet the specific requirements of a web application.

Security: Tomcat provides built-in security features such as SSL/TLS encryption, authentication, and authorization.

Integration with other Apache projects: Tomcat integrates well with other Apache projects, such as Apache HTTP Server and Apache Maven.

Tomcat can be downloaded from the Apache Tomcat website and can be installed on a server or a local machine. Once installed, Tomcat can be configured using its configuration files and can be managed using the Tomcat Manager web application.



```
Activities Terminal Apr 18 02:31
bhoomika@bhoomika-VirtualBox: ~/Documents/devopslab
bhoomika@bhoomika-VirtualBox: ~/... x bhoomika@bhoomika-VirtualBox: ~/... x
f33ca719829c devops "/bin/sh -c '/opt/so..." 3 minutes ago Up 3 minutes
0.0.0.0:8080->8080/tcp, :::8080->8080/tcp, 0.0.0.0:9090->9090/tcp, :::9090->9
090/tcp priceless_hawking
bhoomika@bhoomika-VirtualBox:~/Documents/devopslab$ sudo docker exec f33ca71982
9c
"docker exec" requires at least 2 arguments.
See 'docker exec --help'.

Usage: docker exec [OPTIONS] CONTAINER COMMAND [ARG...]

Execute a command in a running container
bhoomika@bhoomika-VirtualBox:~/Documents/devopslab$ sudo docker exec f33ca71982
9c git --version
git version 2.25.1
bhoomika@bhoomika-VirtualBox:~/Documents/devopslab$ sudo docker exec f33ca71982
9c putty --version
Unable to init server: Could not connect: Connection refused

(putty:182): Gtk-WARNING **: 20:56:26.880: cannot open display:
bhoomika@bhoomika-VirtualBox:~/Documents/devopslab$ sudo docker exec f33ca71982
9c java -version
openjdk version "11.0.18" 2023-01-17
OpenJDK Runtime Environment (build 11.0.18+10-post-Ubuntu-0ubuntu120.04.1)
OpenJDK 64-Bit Server VM (build 11.0.18+10-post-Ubuntu-0ubuntu120.04.1, mixed m
ode, sharing)
bhoomika@bhoomika-VirtualBox:~/Documents/devopslab$
```

Git, Putty & Java has been installed.

Git, Putty, Java, and VS Code are all tools commonly used by developers, but they serve different purposes and can be used together in different ways depending on the requirements of a project.

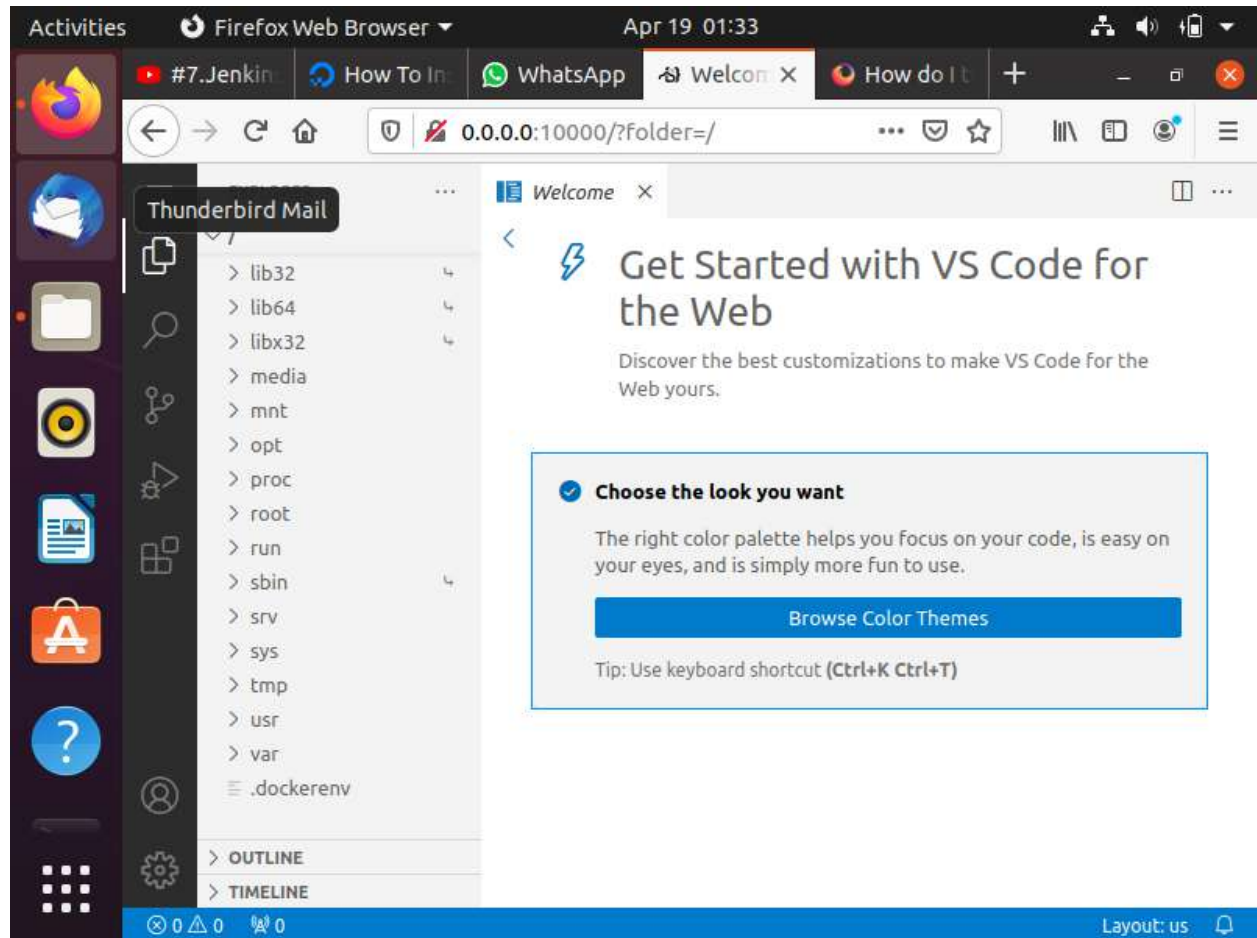
Git is a distributed version control system used for tracking changes in source code during software development. It allows developers to work on the same codebase simultaneously and manage code changes more effectively.

Putty is a terminal emulator and SSH client used to remotely access servers or systems over a network. It is commonly used by developers to access remote servers for deployment, maintenance, and troubleshooting.

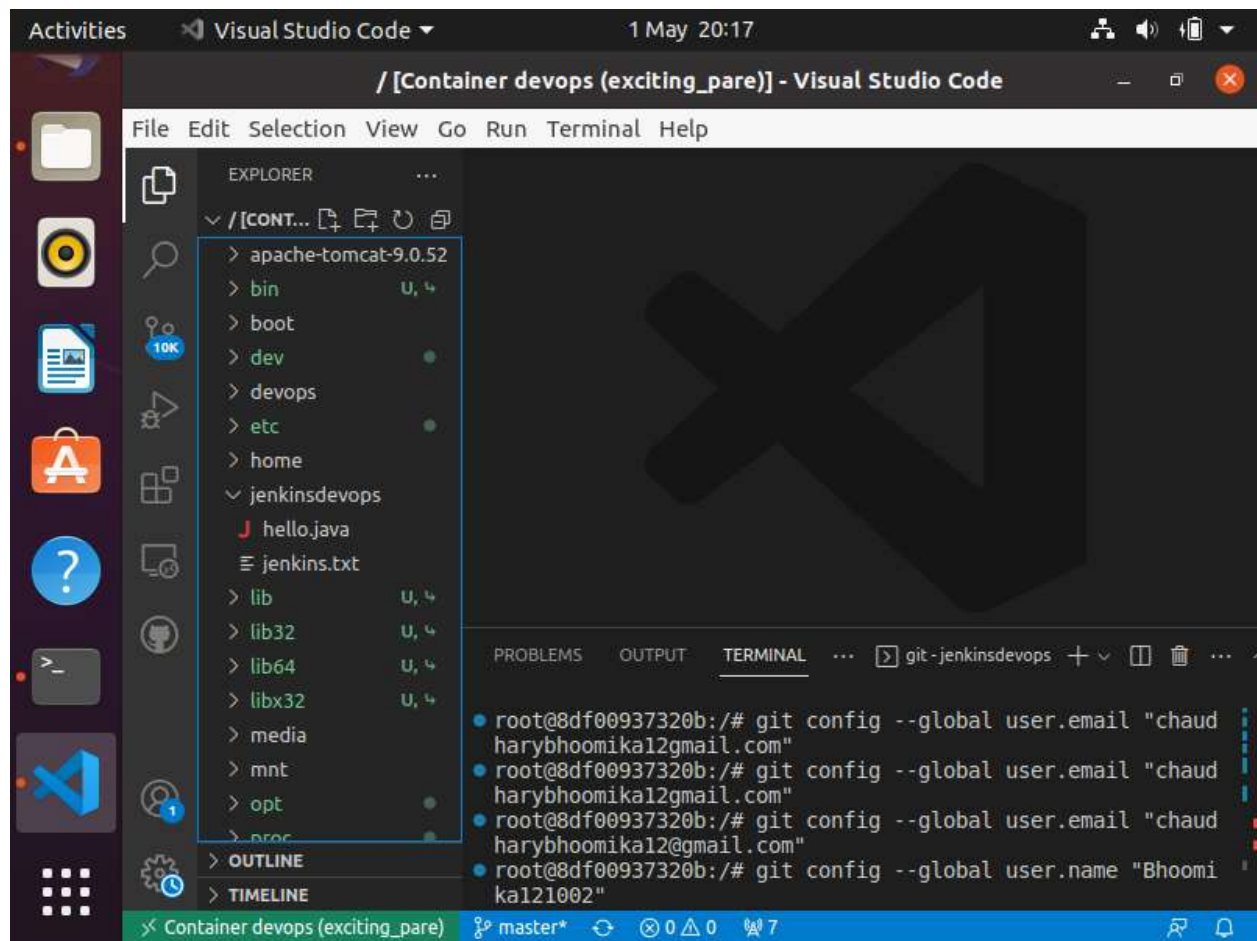
Java is a popular programming language used for developing a wide range of applications, including web applications, mobile applications, and desktop applications. It provides a platform-independent runtime environment, which means that Java applications can run on different operating systems without the need for recompiling the code.

VS Code is an integrated development environment (IDE) developed by Microsoft. It provides a comprehensive set of tools for coding, debugging, and building applications.

Depending on the requirements of a project, developers can use Git and Putty to manage source code changes and remotely access servers, while using Java and VS Code to develop, debug, and build applications. For example, a developer might use Git to manage the source code of a Java application, Putty to remotely access a server running the application, and VS Code to write and debug the application code.



Vs code has been started



The VS CODE Application has been installed and linked to VS code server and VS Studio has been linked to my github account.

Activities Firefox Web Browser 1 May 20:43

hello.java - / - code-server

0.0.0.0:10000/?folder=/

EXPLORER

- /
- apache-tomcat-9.0.52
- bin
- boot
- dev
- devops
- etc
- home
- jenkinsdevops
 - hello.java
 - jenkins.txt
- lib
- lib32
- lib64
- libx32
- media
- mnt
- opt
- OUTLINE
- TIMELINE

jenkinsdevops > J hello.java

```
1 public class hello{
2     public static void main(String[] args){
3         system.out.println("Hello World");
4     }
5 }
```

TERMINAL

bash - jenkinsdevops

```
e.
Total 9 (delta 2), reused 0 (delta 0)
remote: Resolving deltas: 100% (2/2), done.
To https://github.com/Bhoomika121002/devops-jenkins.git
 * [new branch]      main -> main
root@8df00937320b:/jenkinsdevops# git add .
root@8df00937320b:/jenkinsdevops# git commit -m "first"
[main aea7378] first
2 files changed, 5 insertions(+)
delete mode 100644 jenkinsdevops.txt
root@8df00937320b:/jenkinsdevops# git push origin main
```

Ln 5, Col 2 Spaces: 4 UTF-8 LF Java Layout: us

Activities Firefox Web Browser 1 May 18:40

hello.java x Device Acc New Pers Device Acc Bhoomika

0.0.0.0:10000/?folder=/

EXPLORER

- /
- apache-tomcat-9.0.52
- bin
- boot
- dev
- devops
- etc
- home
- jenkinsdevops
 - hello.java
 - jenkins.txt
- lib
- lib32
- lib64
- libx32
- media
- mnt
- opt
- OUTLINE
- TIMELINE

jenkinsdevops > J hello.java

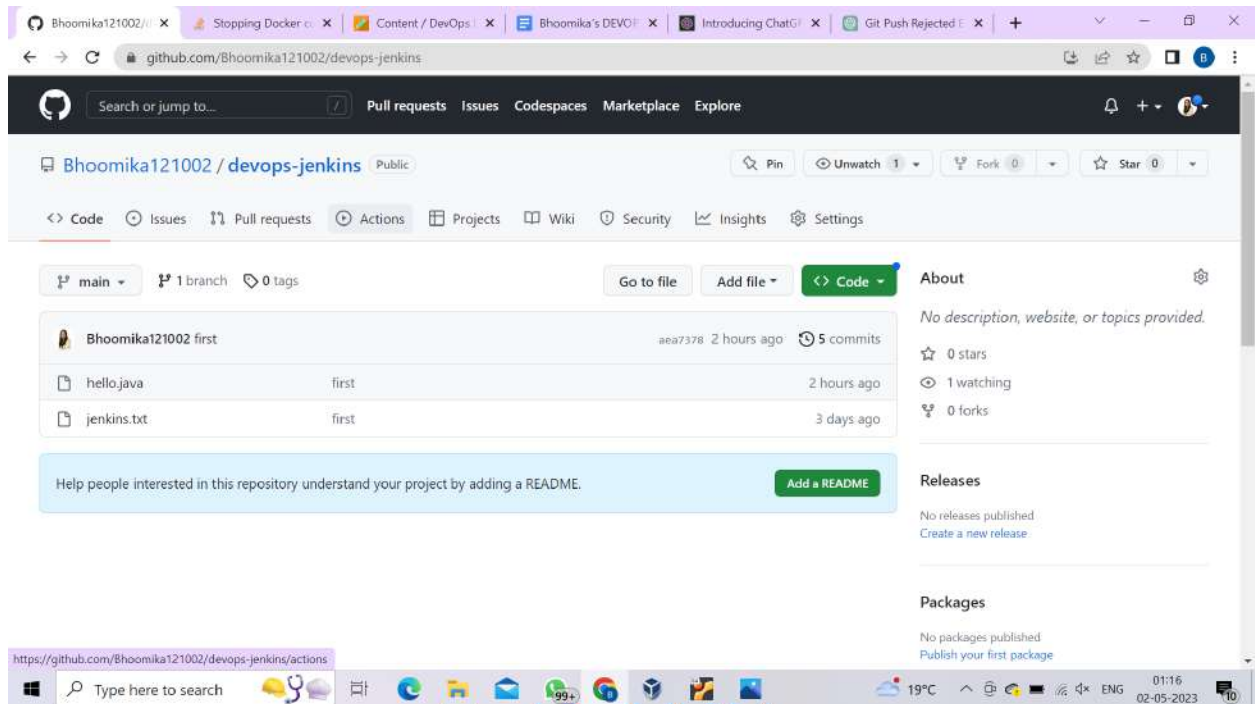
```
1 public class hello{
2     public static void main(String[] args){
3         system.out.println("Hello World");
4     }
5 }
```

TERMINAL

bash - jenkinsdevops

```
Counting objects: 100% (5/5), done.
Compressing objects: 100% (3/3), done.
Writing objects: 100% (3/3), 377 bytes | 188.00 KiB/s, done.
Total 3 (delta 0), reused 0 (delta 0)
To https://github.com/Bhoomika121002/devops-jenkins.git
 3ba4a49..aea7378 main -> main
root@8df00937320b:/jenkinsdevops#
```

Ln 5, Col 2 Spaces: 4 UTF-8 LF Java Layout: us



CI/CD PIPELINE

Install Jenkins Server on another VM

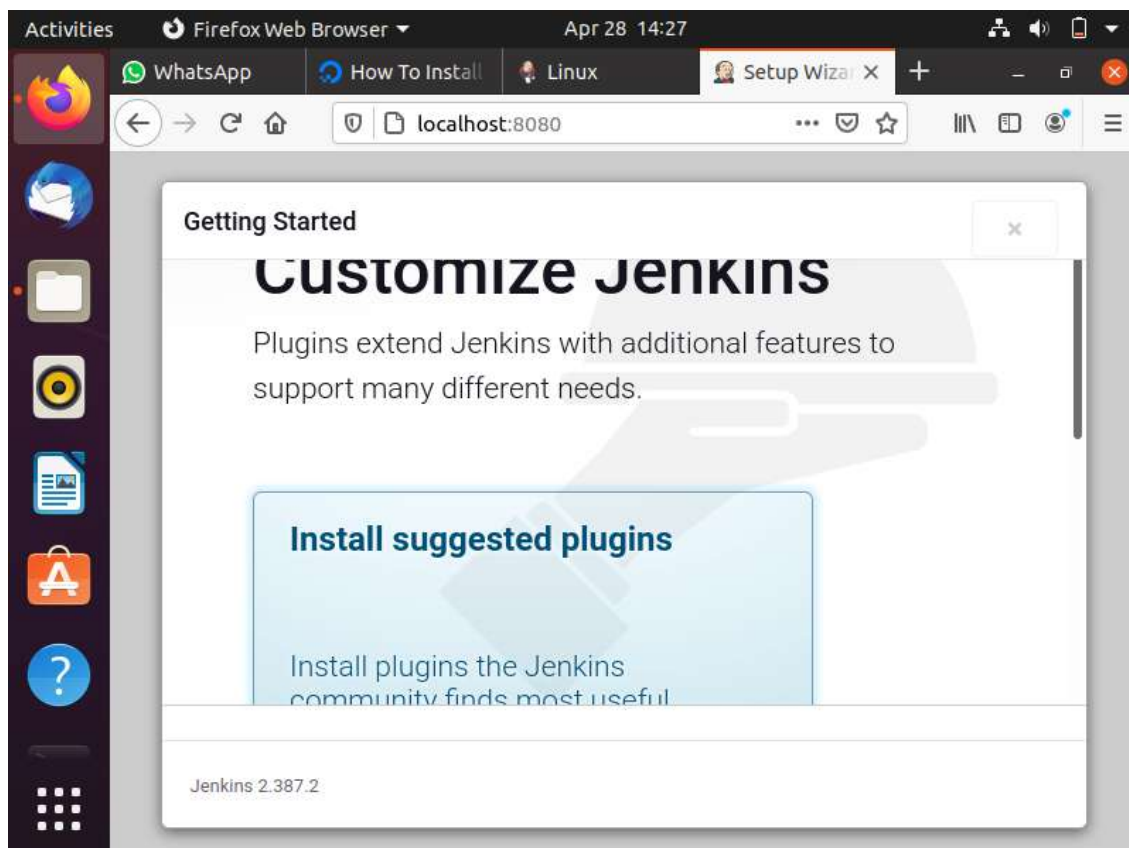
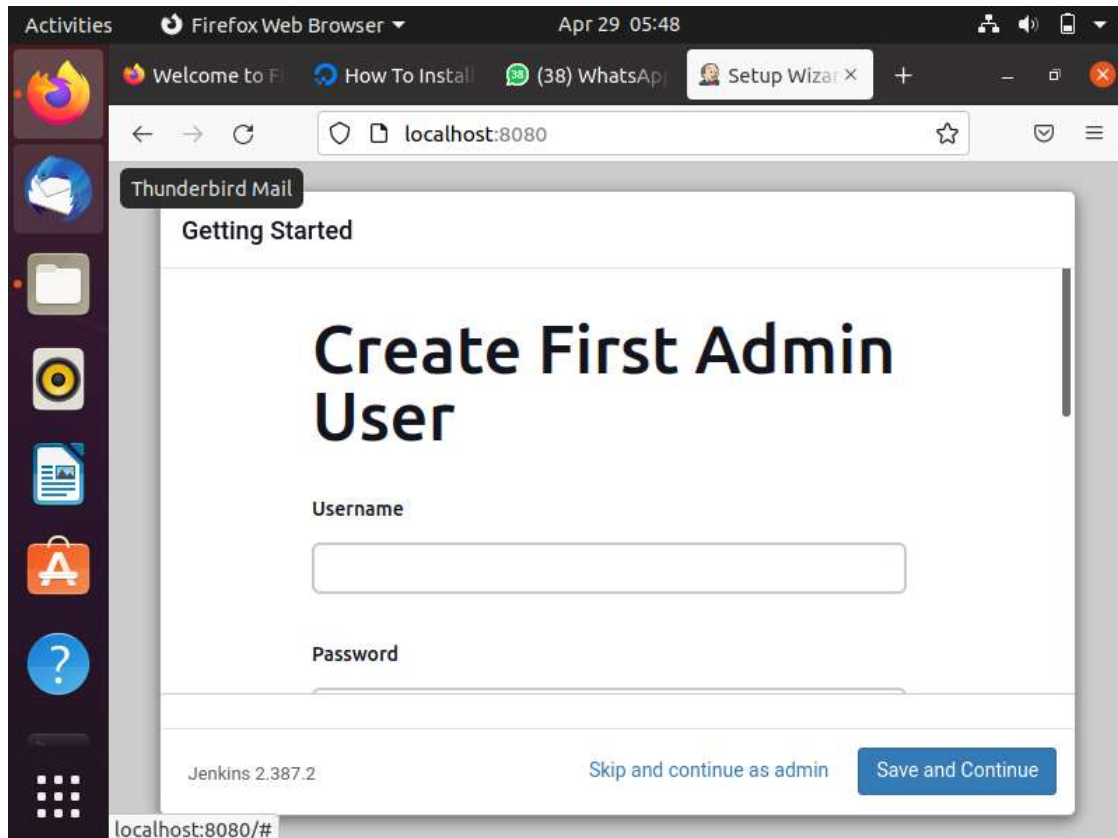
CI/CD pipeline is a series of automated steps that are used to build, test, and deploy software applications. The purpose of a CI/CD pipeline is to automate the process of building and deploying software applications, which helps to reduce the time and effort required for software development and improve the quality of the application.

The CI/CD pipeline typically consists of the following stages:

- **Continuous Integration (CI):** In this stage, the code changes are regularly integrated into a shared repository, and automated build and testing processes are run to identify and resolve any issues as early as possible in the development process.
- **Continuous Testing:** Once the code is built, automated testing processes are run to validate the functionality and ensure that the code meets the expected quality standards.
- **Continuous Deployment:** Once the code is tested, it is deployed to a staging environment for further testing and validation. Once it has been verified to be working correctly, it is deployed to the production environment.
- **Continuous Monitoring:** In this stage, the application is monitored in production to identify and resolve any issues that may arise. This may include logging, performance monitoring, and error reporting.


```
Activities Terminal May 2 01:36
bhoomika@virtualubuntu: ~/Desktop
b Files ka@virtualubuntu:~/Desktop$ vi dockerfile
bhoomika@virtualubuntu:~/Desktop$ sudo docker build -t devops .
[sudo] password for bhoomika:
[+] Building 78.8s (5/5) FINISHED
=> [internal] load .dockerignore 0.1s
=> => transferring context: 2B 0.0s
=> [internal] load build definition from dockerfile 0.1s
=> => transferring dockerfile: 350B 0.0s
=> [internal] load metadata for docker.io/jenkins/jenkins:lts 6.2s
=> [1/1] FROM docker.io/jenkins/jenkins:lts@sha256:aacbb5797dd210cc048 72.3s
=> => resolve docker.io/jenkins/jenkins:lts@sha256:aacbb5797dd210cc048 0.0s
=> => sha256:056e9a39e8bef08a38912f2b430d0c6d7c807d35 13.12kB / 13.12kB 0.0s
=> => sha256:4e7ee60831ad66a40f2afcf93fe65764c6c7eb 51.63MB / 51.63MB 54.9s
=> => sha256:8f7043722b3bb576fde60fa4ab59465a4b77e677c9 2.77kB / 2.77kB 0.0s
=> => sha256:3e440a7045683e27f8e2fa04000e0e078d8dfac 55.05MB / 55.05MB 35.7s
=> => sha256:aacbb5797dd210cc048038d9d3e5ab5795ea018fad 2.36kB / 2.36kB 0.0s
=> => sha256:897b6f9134796b72699d31bb290a98ceda1793cfe3 8.93MB / 8.93MB 8.1s
=> => sha256:e1b841305de5e7905620986bf650af4c3c5755cecb 1.24kB / 1.24kB 8.8s
=> => sha256:df967cd9dca859e1d7aa000775ba1c31a9894399e3ee1 375B / 375B 9.5s
=> => sha256:c2f8d7079cd5f94cc6ecf1729c12a46ba945ed7 98.14MB / 98.14MB 42.3s
=> => sha256:0670d11b904adc37446ce79b41934fbf409d3f947c421 194B / 194B 37.4s
=> => extracting sha256:3e440a7045683e27f8e2fa04000e0e078d8dfac0c971358 4.9s
=> => sha256:688bd7a7b8f99fd37596d174242f156d38b9e8c36 5.84MB / 5.84MB 41.2s
=> => sha256:d81b0ac1dd8f776491a62b3c6baaedee09ace7e 76.93MB / 76.93MB 69.6s
=> => sha256:aa4d217f8f454da3f2b0e9e170a0ce56918802b11 1.93kB / 1.93kB 43.0s
=> => sha256:328c85129d49f06a2e7bd6fc4920ccf4b68e162ed 1.17kB / 1.17kB 43.8s
=> => sha256:df967cd9dca859e1d7aa000775ba1c31a9894399e3ee1 375B / 375B 44.4s
=> => sha256:159cf70711c2e06647aa2a62f75ed9f7ac9d4d715500b 269B / 269B 45.1s
=> => extracting sha256:4e7ee60831ad66a40f2afcf93fe65764c6c7eb4a84eb0c 3.4s
```

```
Activities Terminal May 2 01:48
bhoomika@virtualubuntu: ~/Desktop
=> => writing image sha256:44f971cbd67936dd158888f9362f15cc48e220931a2f 0.0s
=> => naming to docker.io/library/devops 0.0s
bhoomika@virtualubuntu:~/Desktop$ sudo docker run -p 8080:8080 devops
Running from: /usr/share/jenkins/jenkins.war
webroot: /var/jenkins_home/war
2023-04-29 00:10:34.720+0000 [id=1] INFO winstone.Logger#logInternal: Be
ginning extraction from war file
2023-04-29 00:10:37.245+0000 [id=1] WARNING o.e.j.s.handler.ContextHandler#
s LibreOffice Writer Empty contextPath
2023-04-29 00:10:37.524+0000 [id=1] INFO org.eclipse.jetty.server.Server
#doStart: jetty-10.0.13; built: 2022-12-07T20:13:20.134Z; git: 1c2636ea05c0ca8d
e1ffd6ca7f3a98ac084c766d; jvm 11.0.18+10
2023-04-29 00:10:38.645+0000 [id=1] INFO o.e.j.w.StandardDescriptorProce
ssor#visitServlet: NO JSP Support for /, did not find org.eclipse.jetty.jsp.Jet
tyJspServlet
2023-04-29 00:10:38.821+0000 [id=1] INFO o.e.j.s.s.DefaultSessionIdManag
er#doStart: Session workerName=node0
2023-04-29 00:10:40.023+0000 [id=1] INFO hudson.WebAppMain#contextInitia
lized: Jenkins home directory: /var/jenkins_home found at: EnvVars.masterEnvVar
s.get("JENKINS_HOME")
2023-04-29 00:10:40.424+0000 [id=1] INFO o.e.j.s.handler.ContextHandler#
doStart: Started w.@39c385d6{Jenkins v2.387.2,/file:///var/jenkins_home/war/,A
VAILABLE}/{/var/jenkins_home/war}
2023-04-29 00:10:40.528+0000 [id=1] INFO o.e.j.server.AbstractConnector#
doStart: Started ServerConnector@74a6a609{HTTP/1.1,(http/1.1)}{0.0.0.0:8080}
2023-04-29 00:10:40.650+0000 [id=1] INFO org.eclipse.jetty.server.Server
#doStart: Started Server@3543df7d{STARTING}[10.0.13,sto=0] @7493ms
2023-04-29 00:10:40.670+0000 [id=23] INFO winstone.Logger#logInternal: Wi
nstone Servlet Engine running: controlPort=disabled
```



Activities Firefox Web Browser Apr 29 05:47

Welcome to F How To Install (38) WhatsApp Setup Wizard

localhost:8080

Getting Started

✓ Folders	✓ OWASP Markup Formatter	✓ Build Timeout	✓ Credentials Binding
✓ Timestampers	✓ Workspace Cleanup	✓ Ant	✓ Gradle
✓ Pipeline	✓ GitHub Branch Source	✓ Pipeline: GitHub Groovy Libraries	✓ Pipeline: Stage View

Pipeline: GitHub Groovy Libraries

** Pipeline Graph Analysis

** Pipeline: REST API

Pipeline: Stage View

Git

SSH Build Agents

** - required dependency

Jenkins 2.387.2

localhost:8080/#

Activities Firefox Web Browser Apr 29 05:49

Firefox Web Browser How To Install (38) WhatsApp Available plix

localhost:8080/manage/pluginManager/available

Dashboard > Manage Jenkins > Plugin Manager

ssh agent

Install	Name ↓	Released
<input checked="" type="checkbox"/>	SSH Agent 333.v878b_53c89511 This plugin allows you to provide SSH credentials to builds via a ssh-agent in Jenkins.	12 hr ago

Install without restart

Download now and install after restart

Update information obtained: 8 min 40 sec ago

Check now

Jenkins 2.387.2

Activities Firefox Web Browser Apr 29 05:50

Firefox Web Browser How To Install (38) WhatsApp Download p x

localhost:8080/manage/pluginManager/updates/

SSH Build Agents Success
Matrix Authorization Strategy Success

Dashboard > Manage Jenkins > Plugin Manager

PAM Authentication	Success
LDAP	Success
Email Extension	Success
Mailer	Success
Loading plugin extensions	Success
SSH Agent	Success
Loading plugin extensions	Success

→ [Go back to the top page](#)
(you can start using the installed plugins right away)

→ ☐ Restart Jenkins when installation is complete and no jobs are running

Jenkins 2.387.2

Activities Firefox Web Browser Apr 29 05:50

Welcome to F How To Install (38) WhatsApp New Item [x]

localhost:8080/view/all/newJob

Thunderbird Mail


Jenkins

Dashboard > All >

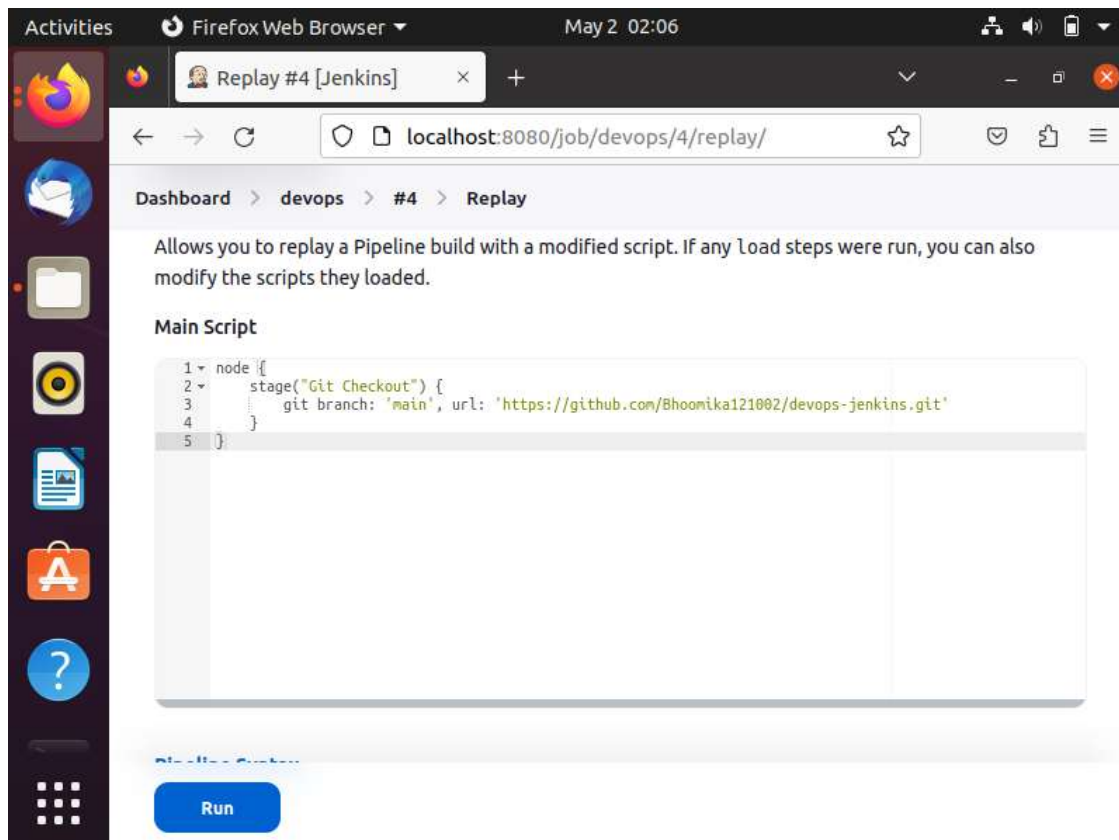
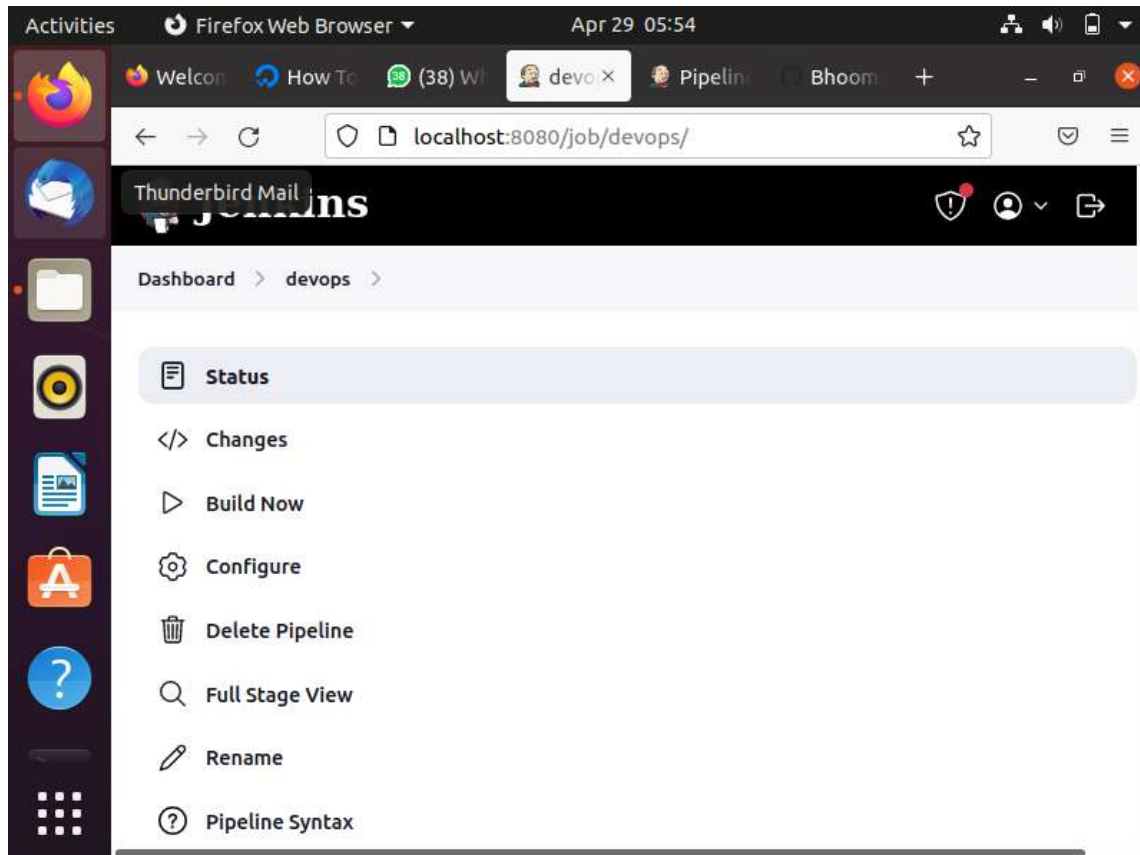
Enter an item name

devops

» Required field

 **Freestyle project**
This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.

OK



Activities Firefox Web Browser May 2 02:02

Firefox Web Browser [devops Jenkins]

localhost:8080/job/devops/

Dashboard > devops >

Average stage times:
(Average full run time: ~8s)

Build	Time	Status	Stage Times
#4	May 01 23:30	No Changes	6s
#3	May 01 23:27	No Changes	2s
#2	Apr 29 10:25	No Changes	9s
#1	Apr 29 05:54	No Changes	10s failed
			2s failed

Summary

Activities Firefox Web Browser May 2 00:00

(2) WhatsApp devops #4 [Jenkins] All [Jenkins]

localhost:8080/view/all/builds

Thunderbird Mail > Build History

Timeline © SIME

S	Build	Time Since	Status
✓	devops #4	29 min	stable
✓	devops #3	32 min	back to normal
✗	devops #2	2 days 13 hr	broken for a long time
✗	devops #1	2 days 18 hr	broken since this build


Icon: S M L Icon Legend Atom feed for all Atom feed for failures AI


Activities Firefox Web Browser May 1 23:59


(2) WhatsApp devops #4 [Jenkins] Dashboard [Jenkins]

localhost:8080/job/devops/4/


Dashboard > devops > #4

 **Build #4 (May 1, 2023, 6:00:22 PM)** [Keep this build forever](#)

 Add description Started 1 min 16 sec ago
Took **2.9 sec**

 Started by user [Bhoomika](#)

Replayed [#3](#) ([diff](#))

 **git** **Revision:** aea73782e79bb38cfaec3cacc699b793abffb52d
Repository: <https://github.com/Bhoomika121002/devops-jenkins.git>

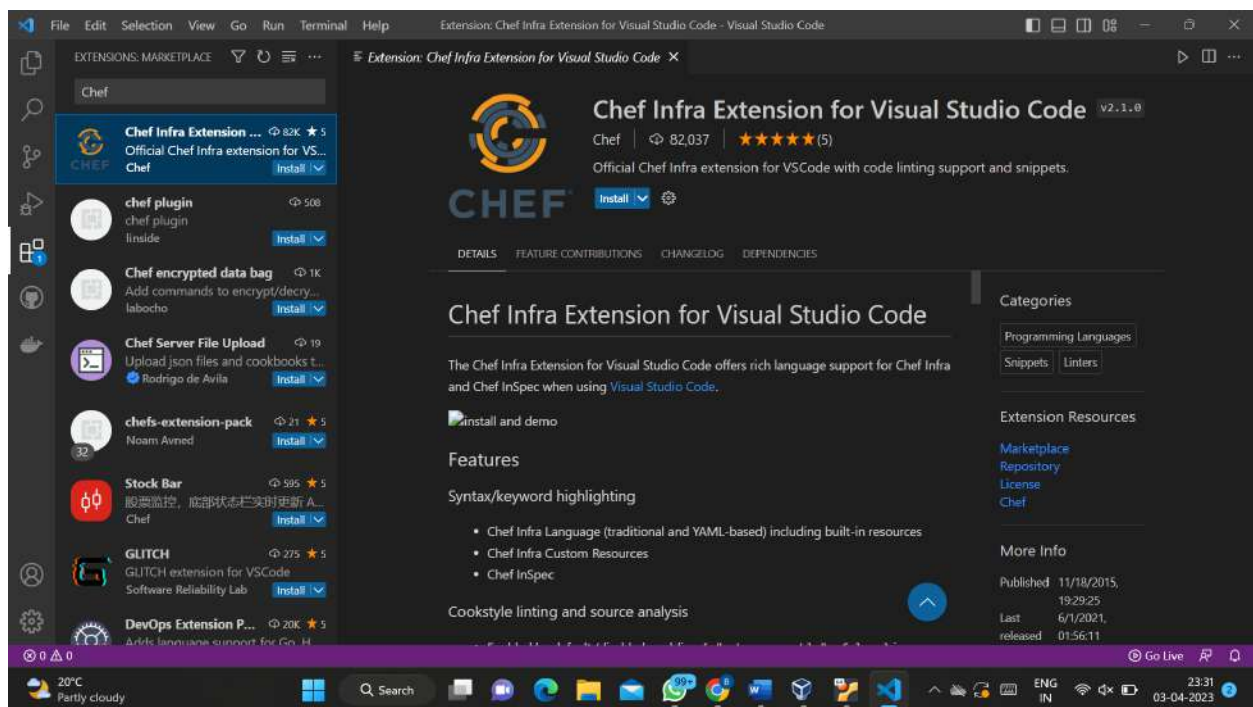
- refs/remotes/origin/main

Jenkins 2.387.2

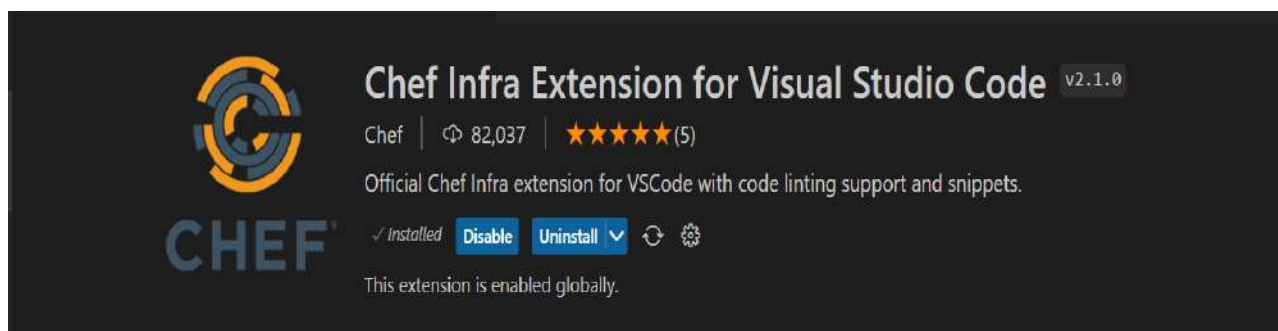
Lab:3 & 4

Setup Environment for Chef & Puppet fundamentals

To install the plugin in the VS code we need to first start the VScode after that left most side Go to extensions-> search box -> chef (Official chef infrastructure plugin)-> install

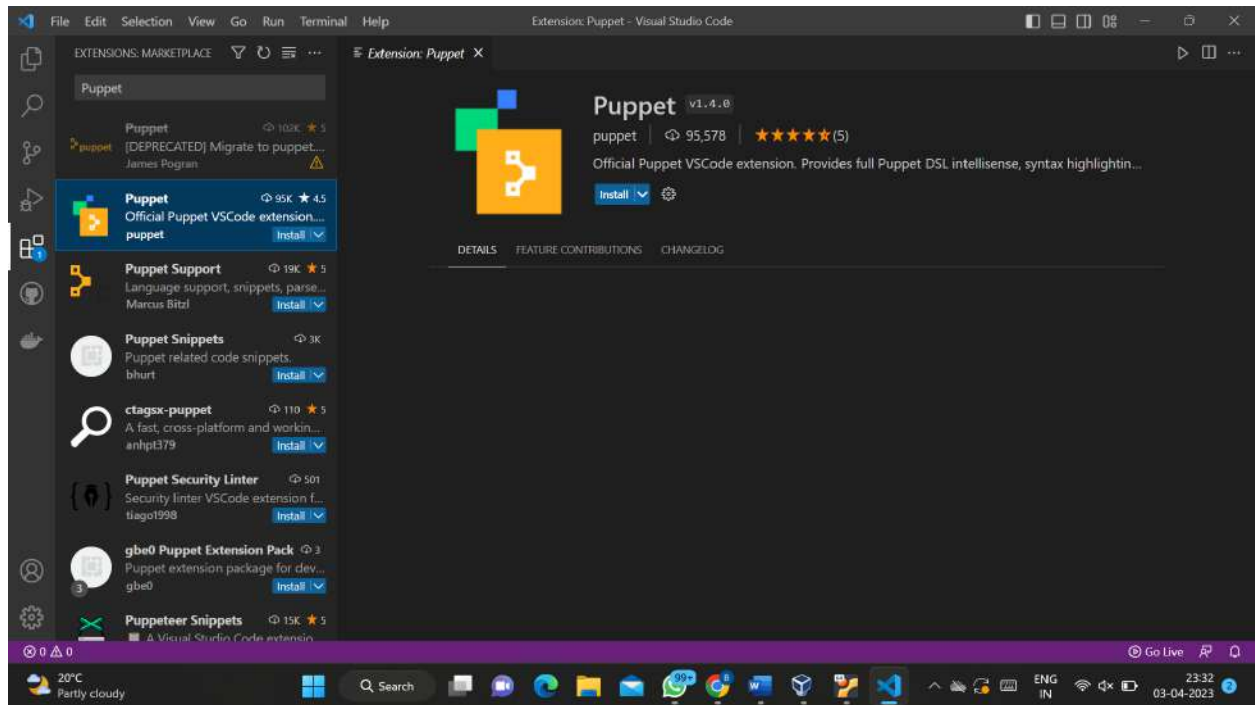


Then reboot the VScode and go for extensions we can see chef is downloaded there

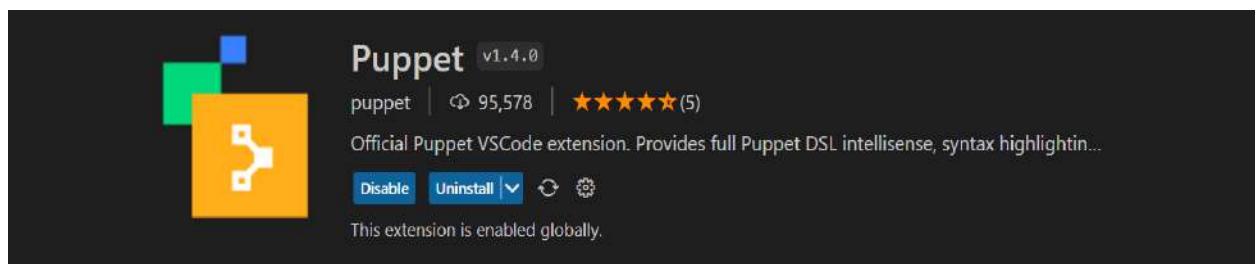


For Puppet same process will be applied

Go to extensions-> search box-> Puppet (Official puppet plugin)-> install



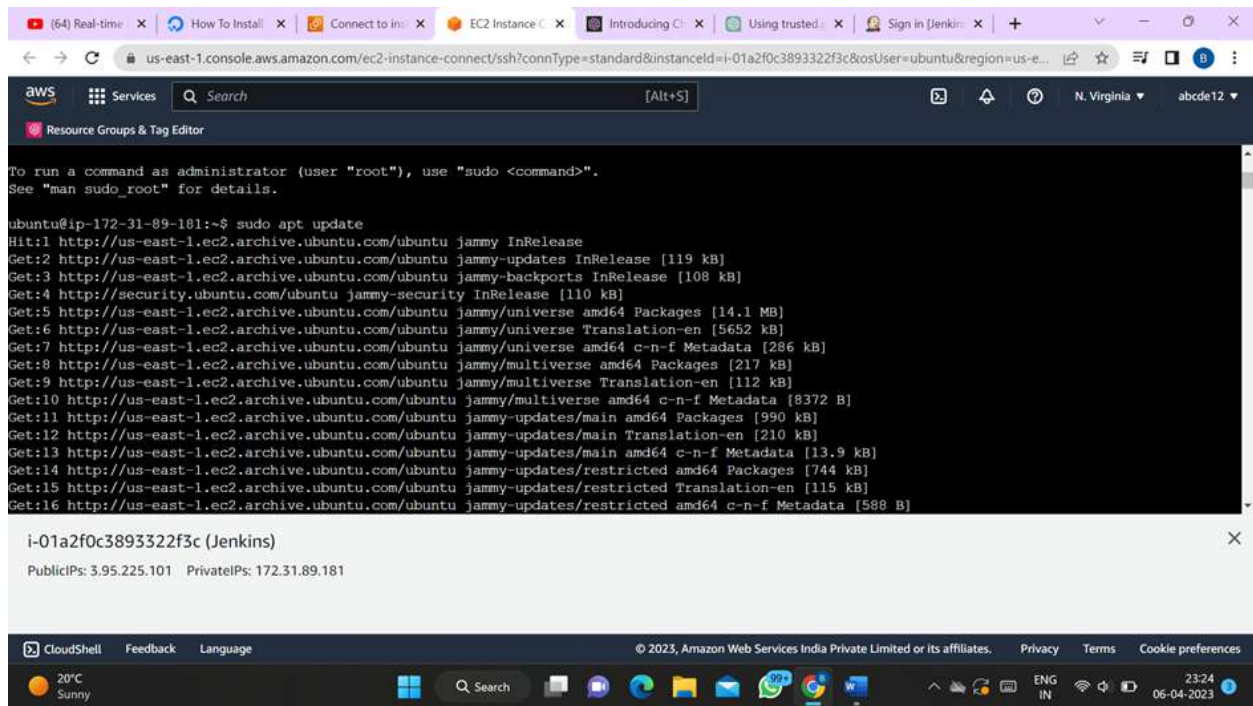
Then again reboot and check for Puppet in extension



Lab:5

Setting up Learning Environment for Jenkins

- Jenkins is an open-source automation server that provides a platform for continuous integration and continuous delivery (CI/CD) of software.
- Jenkins allows developers to build, test, and deploy software automatically, and to integrate their workflows with other tools and technologies.
- Jenkins is highly extensible and has a large ecosystem of plugins and integrations with popular development tools, including Git, Docker, SonarQube, and many others.
- Jenkins can be used to automate a wide variety of tasks, including building and testing code, deploying applications to different environments, and running scripts and jobs on remote machines.



```
aws
Services
Search
[Alt+S]
N. Virginia
abcde12

Resource Groups & Tag Editor

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-89-181:~$ sudo apt update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [108 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [990 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [210 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [13.9 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [744 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [115 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [588 B]

i-01a2f0c3893322f3c (Jenkins)
PublicIPs: 3.95.225.101 PrivateIPs: 172.31.89.181

CloudShell
Feedback
Language
© 2023, Amazon Web Services India Private Limited or its affiliates. Privacy Terms Cookie preferences
20°C Sunny
23:24 06-04-2023
```

us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-01a2f0c3893322f3c&osUser=ubuntu®ion=us-e...

aws Services Search [Alt+S]

Resource Groups & Tag Editor

```
Get:37 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [715 kB]
Get:38 http://security.ubuntu.com/ubuntu jammy-security/universe Translation-en [118 kB]
Get:39 http://security.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [14.1 kB]
Get:40 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [19.4 kB]
Get:41 http://security.ubuntu.com/ubuntu jammy-security/multiverse Translation-en [4068 B]
Get:42 http://security.ubuntu.com/ubuntu jammy-security/multiverse amd64 c-n-f Metadata [228 B]
Fetched 26.6 MB in 5s (5604 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
12 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-172-31-89-181:~$ sudo apt install default-jdk
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  alsa-topology-conf alsa-ucm-conf at-spi2-core ca-certificates-java dconf-gsettings-backend dconf-service default-jdk-headless default-jre
  default-jre-headless fontconfig-config fonts-dejavu-core fonts-dejavu-extra gsettings-desktop-schemas java-common libasound2 libasound2-data
  libatk-bridge2.0-0 libatk-wrapper-java libatk-wrapper-java-jni libatk1.0-0 libatk1.0-data libatspi2.0-0 libavahi-client3 libavahi-common-data
  libavahi-common3 libcups2 libdconf1 libdrm-amdgpu libdrm-intel1 libdrm-nouveau2 libdrm-radeon1 libfontconfig1 libfontenc1 libgif7 libgl1
  libgl1-amd-glx libgl1-mesa-dri libglapi-mesa libglvnd0 libglx-mesa0 libglx0 libgraphite2-3 libharfbuzz0b libice-dev libice6 libjpeg-turbo8
```

i-01a2f0c3893322f3c (Jenkins)

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us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-01a2f0c3893322f3c&osUser=ubuntu®ion=us-e...

aws Services Search [Alt+S]

Resource Groups & Tag Editor

```
libice-dev libice6 libjpeg-turbo8 libjpeg8 liblcms2-2 liblvm2 liblvm2-clients libpcsc-lite libpthread-stubs0-dev libsensors-config libsensors5
libsm-dev libsm6 libx11-dev libx11-xcb1 libxau-dev libxaw7 libxcb-dri2-0 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-shape0 libxcb-shm0
libxcb-sync1 libxcb-xfixes0 libxcbl-dev libxcomposite1 libxdmcp-dev libxfixes3 libxft2 libxi6 libxinerama1 libxkbfile1 libxmu6 libxpm4
libxrandr2 libxrender1 libxshmfence1 libxt-dev libxt6 libxtst6 libxv1 libxxf86dga1 libxxf86vml openjdk-11-jdk openjdk-11-jdk-headless
openjdk-11-jre openjdk-11-jre-headless session-migration x11-common x11-utils x11proto-dev xorg-sgml-doctools xtrans-dev
0 upgraded, 98 newly installed, 0 to remove and 12 not upgraded.
Need to get 304 MB of archives.
After this operation, 590 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 alsa-topology-conf all 1.2.5.1-2 [15.5 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libasound2-data all 1.2.6.1-1ubuntu1 [19.1 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libasound2 amd64 1.2.6.1-1ubuntu1 [390 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 alsa-ucm-conf all 1.2.6.3-1ubuntu1.5 [41.7 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libxi6 amd64 2:1.8-1build1 [32.6 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libatspi2.0-0 amd64 2.44.0-3 [80.9 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 x11-common all 1:7.7+23ubuntu2 [23.4 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libxtst6 amd64 2:1.2.3-1build4 [13.4 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libdconf1 amd64 0.40.0-3 [40.5 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 dconf-service amd64 0.40.0-3 [28.5 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 dconf-gsettings-backend amd64 0.40.0-3 [22.8 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 session-migration amd64 0.3.6 [9774 B]
```

i-01a2f0c3893322f3c (Jenkins)

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us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-01a2f0c3893322f3c&osUser=ubuntu®ion=us-e...

aws Services Search [Alt+S]

Resource Groups & Tag Editor

Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.

ubuntu@ip-172-31-89-181:~\$ java -version

openjdk version "11.0.18" 2023-01-17

OpenJDK Runtime Environment (build 11.0.18+10-post-Ubuntu-0ubuntu122.04)

OpenJDK 64-Bit Server VM (build 11.0.18+10-post-Ubuntu-0ubuntu122.04, mixed mode, sharing)

ubuntu@ip-172-31-89-181:~\$ wget -q -O - https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo apt-key add -

Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8)).

OK

ubuntu@ip-172-31-89-181:~\$ sudo sh -c 'echo deb http://pkg.jenkins.io/debian-stable binary/ > /etc/apt/sources.list.d/jenkins.list'

ubuntu@ip-172-31-89-181:~\$ sudo apt update

Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease

i-01a2f0c3893322f3c (Jenkins)

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Search

ENG IN 23:26 06-04-2023

us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-01a2f0c3893322f3c&osUser=ubuntu®ion=us-e...

aws Services Search [Alt+S]

Resource Groups & Tag Editor

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.

ubuntu@ip-172-31-89-181:~\$ java -version

openjdk version "11.0.18" 2023-01-17

OpenJDK Runtime Environment (build 11.0.18+10-post-Ubuntu-0ubuntu122.04)

OpenJDK 64-Bit Server VM (build 11.0.18+10-post-Ubuntu-0ubuntu122.04, mixed mode, sharing)

ubuntu@ip-172-31-89-181:~\$ wget -q -O - https://pkg.jenkins.io/debian-stable/jenkins.io.key | sudo apt-key add -

Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8)).

OK

ubuntu@ip-172-31-89-181:~\$ sudo sh -c 'echo deb http://pkg.jenkins.io/debian-stable binary/ > /etc/apt/sources.list.d/jenkins.list'

ubuntu@ip-172-31-89-181:~\$ sudo apt update

Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease

Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease

Hit:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease

Hit:5 http://security.ubuntu.com/ubuntu jammy-security InRelease

Ign:1 https://pkg.jenkins.io/debian-stable binary/ InRelease

Get:6 https://pkg.jenkins.io/debian-stable binary/ Release [2044 B]

Get:7 https://pkg.jenkins.io/debian-stable binary/ Release.gpg [833 B]

Ign:7 https://pkg.jenkins.io/debian-stable binary/ Release.gpg

i-01a2f0c3893322f3c (Jenkins)

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Search

ENG IN 23:26 06-04-2023

us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-01a2f0c3893322f3c&osUser=ubuntu®ion=us-e...

aws Services Search [Alt+S] N. Virginia abcde12

Resource Groups & Tag Editor

```
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:5 http://security.ubuntu.com/ubuntu jammy-security InRelease
Ign:1 https://pkg.jenkins.io/debian-stable binary/ InRelease
Get:6 https://pkg.jenkins.io/debian-stable binary/ Release [2044 B]
Get:7 https://pkg.jenkins.io/debian-stable binary/ Release.gpg [833 B]
Ign:7 https://pkg.jenkins.io/debian-stable binary/ Release.gpg
Reading package lists... Done
W: GPG error: https://pkg.jenkins.io/debian-stable binary/ Release: The following signatures couldn't be verified because the public key is not available: NO_PUBKEY 5BA31D57EF5975CA
E: The repository 'https://pkg.jenkins.io/debian-stable binary/ Release' is not signed.
N: Updating from such a repository can't be done securely, and is therefore disabled by default.
N: See apt-secure(8) manpage for repository creation and user configuration details.
ubuntu@ip-172-31-89-181:~$ sudo apt-key adv --keyserver keyserver.ubuntu.com --recv-keys 5BA31D57EF5975CA
Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8)).
Executing: /tmp/apt-key-gpghome.STvWlwoT5f/gpg.1.sh --keyserver keyserver.ubuntu.com --recv-keys 5BA31D57EF5975CA
gpg: key 5BA31D57EF5975CA: public key "Jenkins Project <jenkinsci-board@googlegroups.com>" imported
gpg: Total number processed: 1
gpg: imported: 1
ubuntu@ip-172-31-89-181:~$ sudo apt-get update
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
```

i-01a2f0c3893322f3c (Jenkins)

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us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-01a2f0c3893322f3c&osUser=ubuntu®ion=us-e...

aws Services Search [Alt+S] N. Virginia abcde12

Resource Groups & Tag Editor

```
Executing: /tmp/apt-key-gpghome.STvWlwoT5f/gpg.1.sh --keyserver keyserver.ubuntu.com --recv-keys 5BA31D57EF5975CA
gpg: key 5BA31D57EF5975CA: public key "Jenkins Project <jenkinsci-board@googlegroups.com>" imported
gpg: Total number processed: 1
gpg: imported: 1
ubuntu@ip-172-31-89-181:~$ sudo apt-get update
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease
Ign:1 https://pkg.jenkins.io/debian-stable binary/ InRelease
Get:5 https://pkg.jenkins.io/debian-stable binary/ Release [2044 B]
Get:6 https://pkg.jenkins.io/debian-stable binary/ Release.gpg [833 B]
Hit:7 http://security.ubuntu.com/ubuntu jammy-security InRelease
Get:8 https://pkg.jenkins.io/debian-stable binary/ Packages [24.6 kB]
Fetched 27.4 kB in 1s (34.9 kB/s)
Reading package lists... Done
W: http://pkg.jenkins.io/debian-stable/binary/Release.gpg: Key is stored in legacy trusted.gpg keyring (/etc/apt/trusted.gpg), see the DEPRECATION
section in apt-key(8) for details.
ubuntu@ip-172-31-89-181:~$ sudo apt-get install jenkins
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

i-01a2f0c3893322f3c (Jenkins)

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us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-01a2f0c3893322f3c&osUser=ubuntu®ion=us-e...

aws Services Search [Alt+S]

Resource Groups & Tag Editor

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.

```
ubuntu@ip-172-31-89-181:~$ sudo systemctl start jenkins
ubuntu@ip-172-31-89-181:~$ sudo systemctl status jenkins
jenkins.service - Jenkins Continuous Integration Server
  Loaded: loaded (/lib/systemd/system/jenkins.service; enabled; vendor preset: enabled)
  Active: active (running) since Thu 2023-04-06 17:49:27 UTC; 35s ago
    Main PID: 6076 (java)
      Tasks: 40 (limit: 1141)
     Memory: 302.5M
        CPU: 43.671s
    CGroup: /system.slice/jenkins.service
            └─6076 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080
```

Apr 06 17:48:54 ip-172-31-89-181 jenkins[6076]: 2f0122df13444828964f727515dfb983

Apr 06 17:48:54 ip-172-31-89-181 jenkins[6076]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword

Apr 06 17:48:54 ip-172-31-89-181 jenkins[6076]: *****

Apr 06 17:48:54 ip-172-31-89-181 jenkins[6076]: *****

i-01a2f0c3893322f3c (Jenkins)

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23:27 06-04-2023

us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh?connType=standard&instanceId=i-01a2f0c3893322f3c&osUser=ubuntu®ion=us-e...

aws Services Search [Alt+S]

Resource Groups & Tag Editor

```
jenkins.service - Jenkins Continuous Integration Server
  Loaded: loaded (/lib/systemd/system/jenkins.service; enabled; vendor preset: enabled)
  Active: active (running) since Thu 2023-04-06 17:49:27 UTC; 35s ago
    Main PID: 6076 (java)
      Tasks: 40 (limit: 1141)
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        CPU: 43.671s
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            └─6076 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080
```

Apr 06 17:48:54 ip-172-31-89-181 jenkins[6076]: 2f0122df13444828964f727515dfb983

Apr 06 17:48:54 ip-172-31-89-181 jenkins[6076]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword

Apr 06 17:48:54 ip-172-31-89-181 jenkins[6076]: *****

Apr 06 17:48:54 ip-172-31-89-181 jenkins[6076]: *****

Apr 06 17:48:54 ip-172-31-89-181 jenkins[6076]: *****

Apr 06 17:49:27 ip-172-31-89-181 jenkins[6076]: 2023-04-06 17:49:27.463+0000 [id=28] INFO jenkins.InitReactorRunner\$1\$onAttained: C

Apr 06 17:49:27 ip-172-31-89-181 jenkins[6076]: 2023-04-06 17:49:27.493+0000 [id=22] INFO hudson.lifecycle.Lifecycle\$onReady: Jenki

Apr 06 17:49:27 ip-172-31-89-181 systemd[1]: Started Jenkins Continuous Integration Server.

Apr 06 17:49:27 ip-172-31-89-181 jenkins[6076]: 2023-04-06 17:49:27.651+0000 [id=44] INFO h.m.DownloadService\$Downloadable\$load: Ob

Apr 06 17:49:27 ip-172-31-89-181 jenkins[6076]: 2023-04-06 17:49:27.652+0000 [id=44] INFO hudson.util.Retrier\$start: Performed the

lines 1~20

i-01a2f0c3893322f3c (Jenkins)

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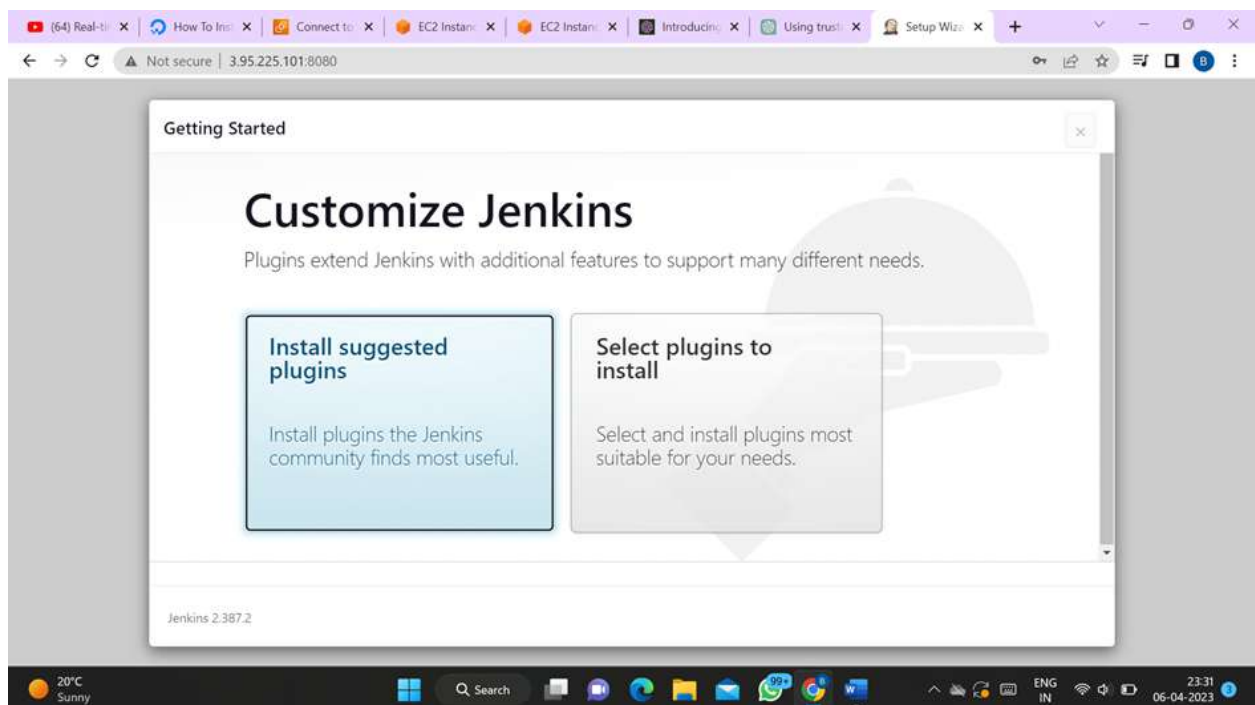
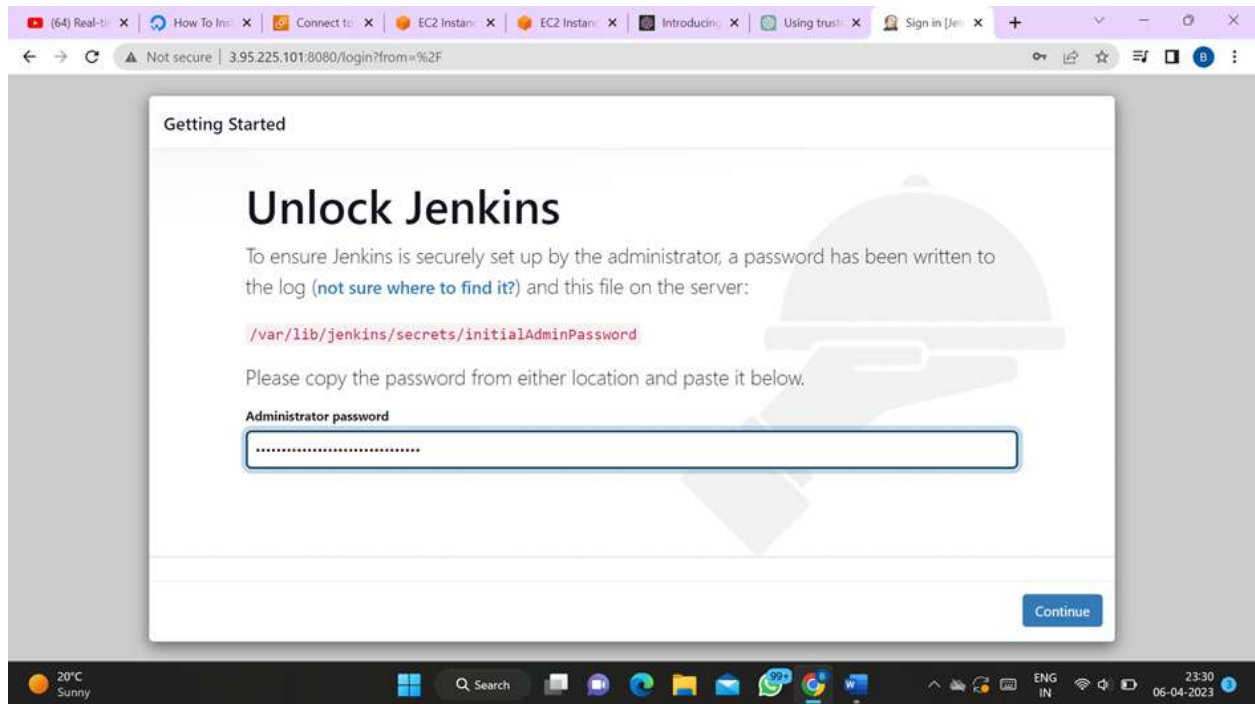
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Search

23:27 06-04-2023



Getting Started

Create First Admin User

Username

Password

Confirm password

Jenkins 2.387.2

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

20°C Sunny


Search

ENG IN

23:38 06-04-2023

Dashboard [Jenkins]

Not secure | 3.95.225.101:8080



Welcome to Jenkins!

Bhoomika

☒ Keep me signed in

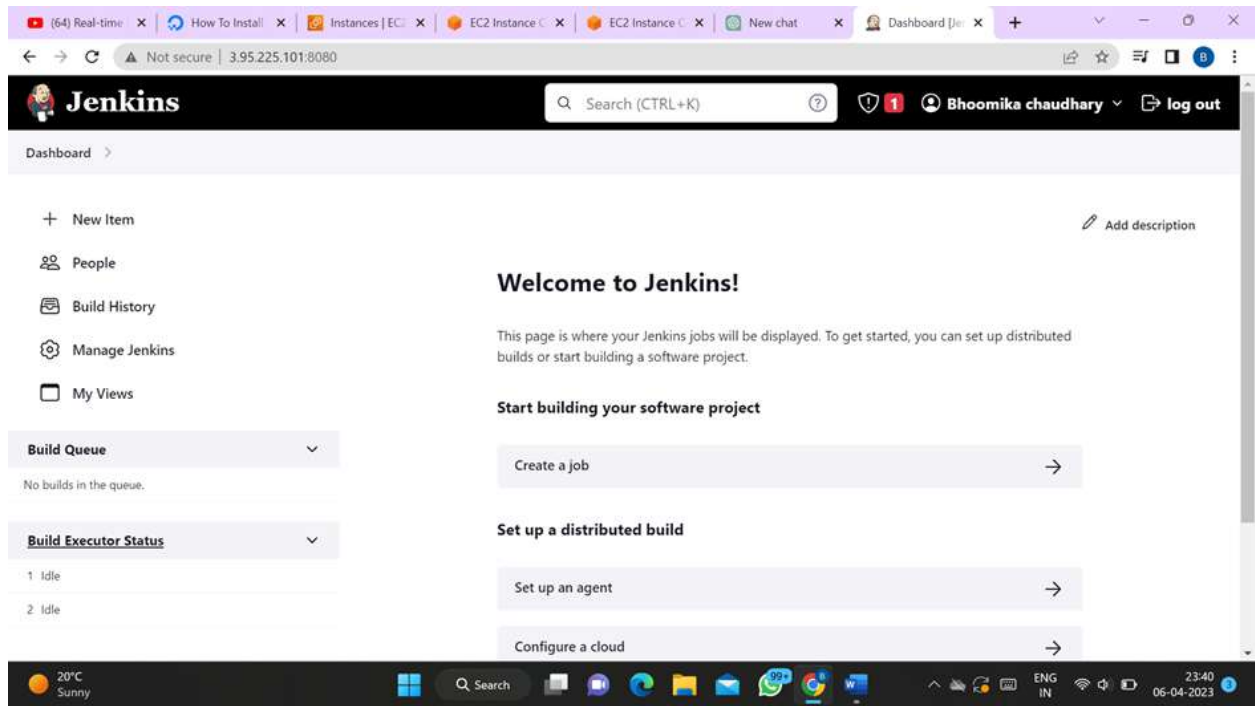
[Sign in](#)

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Search

ENG IN

23:40 06-04-2023



Jenkins Environment has been set up successfully.

