

1 - Creating the first EC2 for the Project on AWS



The screenshot shows the AWS Management Console with the EC2 service selected. The main view is titled "Instances (1/1)" and displays a single instance. The instance details are as follows:

Name	Instance ID	Status
rafael_vale_purdue_edureka_final_project	i-0a537e42652b6296d	Running

2 – Setting Up the hostname

```
root@ip-172-31-24-252: ~
root@ip-172-31-24-252:~# hostnamectl set-hostname rafael_vale_edureka_project

vim /etc/hosts

127.0.0.1 localhost
127.0.0.1 rafael-vale-edureka-project
```

3 – Updating the system

```
root@rafael-vale-edureka-project:~# apt update -y
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 [128 kB]
```

```
root@rafael-vale-edureka-project:~# apt upgrade -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following NEW packages will be installed:
  linux-aws-6.8-headers-6.8.0-1043 linux-aws-6.8-tools-6.8.0-1043
The following packages will be upgraded:
  bind9-dnsutils bind9-host bind9-libs binutils binutils-common b
  libpython3.10-stdlib libdash-4 libhwloc12 linux-aws linux-headers-6.8.0-1043
```

4 – Installing Git

```
root@rafael-vale-edureka-project:~# apt install -y git
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1lubuntu1.15).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@rafael-vale-edureka-project:~# █
```

```
root@rafael-vale-edureka-project:~# git --version  
git version 2.34.1  
root@rafael-vale-edureka-project:~#
```

5 – Installing Openjdk

```
root@rafael-vale-edureka-project:~# apt install -y openjdk-11-jdk
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  alsatopology-conf alsau-cumc-conf at-spi2-core ca-certificates-java dconf-gsettings-backend dconf-service fontconfig-config fonts-dejavu-core fonts-dejavu-extra gsettings-desktop-schemas java-common
  libasound2 libasound2-data libatk-wrapper-java libatk-wrapper-jni libatk1.0-0 libatk1.0-data libatspi2.0-0 libavahi-client3 libavahi-common-data libavahi-common3 libcups2 libdbconf1
  libdrm-amdgpu1 libdrm-intel1 libdrm-nouveau2 libdrm-radeon1 libfontconfig1 libfontenc1 libgif7 libgl1 libgl1-amber-dri libglapi-mesa libglvnd0 libglx-mesa0 libglx0 libgraphite2-3
  libharfbuzz0b libice-dev libice6 libjpeg-turbo8 libjpeg8 liblcms2-2 libl1vm15 libpciaccess0 libpcsselite1 libpthread-stubs0-dev libsensors-config libsensors5 libsm-dev libsm6
  libxaw7 libxcb-dri2-0 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-randr0 libxcb-shape0 libxcb-sync1 libxcb-xfixes0 libxcb1-dev libxcomposite1 libxdmcp-dev libxfixed3 libxft2 libxi6
  libxinerama1 libxkbfile1 libxmu6 libxpm4 libxrands2 libxrender1 libxshmfence1 libxt-dev libxt6 libxtst6 libxv1 libxxf86dga1 libxxf86vml openjdk-11-jdk-headless openjdk-11-jre openjdk-11-xcb1 libxau-dev
  session-migration x11-common x11-utils xilproto-dev xorg-sgml-doctools xtrans-dev
Suggested packages:
  default-jre libasound2-plugins alsau-utils cups-common libice-doc liblcms2-utils pcscd lm-sensors libsm-doc libx11-doc libxcb-doc libxt-doc openjdk-11-demo openjdk-11-source visualvm libnss-mdns
  fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-microhei | fonts-wqy-zenhei fonts-indic mesa-utils
The following NEW packages will be installed:
  alsatopology-conf alsau-cumc-conf at-spi2-core ca-certificates-java dconf-gsettings-backend dconf-service fontconfig-config fonts-dejavu-core fonts-dejavu-extra gsettings-desktop-schemas java-common
  libasound2 libasound2-data libatk-wrapper-java libatk-wrapper-jni libatk1.0-data libatspi2.0-0 libavahi-client3 libavahi-common-data libavahi-common3 libcups2 libdbconf1
  libdrm-amdgpu1 libdrm-intel1 libdrm-nouveau2 libdrm-radeon1 libfontconfig1 libfontenc1 libglif7 libgl1 libgl1-amber-dri libglapi-mesa libglvnd0 libglx-mesa0 libglx0 libgraphite2-3
  libharfbuzz0b libice-dev libice6 libjpeg-turbo8 libjpeg8 liblcms2-2 libl1vm15 libpciaccess0 libpcsselite1 libpthread-stubs0-dev libsensors-config libsensors5 libsm-dev libsm6
  libxaw7 libxcb-dri2-0 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-randr0 libxcb-shape0 libxcb-sync1 libxcb-xfixes0 libxcb1-dev libxcomposite1 libxdmcp-dev libxfixed3 libxft2 libxi6
  libxinerama1 libxkbfile1 libxmu6 libxpm4 libxrands2 libxrender1 libxshmfence1 libxt-dev libxt6 libxtst6 libxv1 libxxf86dga1 libxxf86vml openjdk-11-jdk openjdk-11-jre openjdk-11-xcb1 libxau-dev
  session-migration x11-common x11-utils xilproto-dev xorg-sgml-doctools xtrans-dev
```

```
root@rafael-vale-edureka-project:~# java --version
openjdk 11.0.29 2025-10-21
OpenJDK Runtime Environment (build 11.0.29+7-post-Ubuntu-1ubuntu122.04)
OpenJDK 64-Bit Server VM (build 11.0.29+7-post-Ubuntu-1ubuntu122.04, mixed mode, sharing)
root@rafael-vale-edureka-project:~#
```

6- Installing Maven

```
root@rafael-vale-edureka-project:~# apt install -y maven
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
libaopalliance-java libapache-pom-java libatinject-jsr330-api-java libcdi-api-java libcommons-cli-java libcommons-io-java libcommons-lang3-java libcommons-parent-java libgeronimo-annotation-1.3-spec-java
libgeronimo-interceptor-3.0-spec-java libguava-java libguice-java libhawtjni-runtime-java libjansi-java libjansi-native-java libjsr305-java libmaven-parent-java libmaven-resolver-java
libmaven-shared-utils-java libmaven3-core-java libplexus-cipher-java libplexus-classworlds-java libplexus-component-annotations-java libplexus-interpolation-java libplexus-sec-dispatcher-java
libplexus-utils2-java libsisu-inject-java libsisu-plexus-java libslf4j-java libwagon-file-java libwagon-http-shaded-java libwagon-provider-api-java
Suggested packages:
libaopalliance-java-doc libatinject-jsr330-api-java-doc libel-api-java libcommons-io-java-doc libcommons-lang3-java-doc libasm-java libcglib-java libjsr305-java-doc libmaven-shared-utils-java-doc
liblogback-java libplexus-classworlds-java-doc libplexus-sec-dispatcher-java-doc libplexus-utils2-java-doc junit4 testing libcommons-logging-java liblog4j1.2-java
The following NEW packages will be installed:
libaopalliance-java libapache-pom-java libatinject-jer330-api-java libcdi-api-java libcommons-cli-java libcommons-lang3-java libcommons-parent-java libgeronimo-annotation-1.3-spec-java
libgeronimo-interceptor-3.0-spec-java libguava-java libguice-java libhawtjni-runtime-java libjansi-java libjansi-native-java libjsr305-java libmaven-parent-java libmaven-resolver-java
libmaven-shared-utils-java libmaven3-core-java libplexus-cipher-java libplexus-classworlds-java libplexus-component-annotations-java libplexus-interpolation-java libplexus-sec-dispatcher-java
libplexus-utils2-java libsisu-inject-java libsisu-plexus-java libslf4j-java libwagon-file-java libwagon-http-shaded-java libwagon-provider-api-java maven
0 upgraded, 33 newly installed, 0 to remove and 0 not upgraded.
Need to get 10.2 MB of archives.
After this operation, 13.3 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libapache-pom-java all 18-1 [4720 B]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libatinject-jsr330-api-java all 1.0+ds1-5 [5348 B]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libgeronimo-interceptor-3.0-spec-java all 1.0.1-4fakesync [8616 B]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libcdi-api-java all 1.2-3 [54.3 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libcommons-cli-java all 1.4-2 [55.8 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libcommons-parent-java all 43-1 [10.8 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libcommons-io-java all 2.11.0-2 [297 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libcommons-lang3-java all 3.11-1 [526 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libgeronimo-annotation-1.3-spec-java all 1.3-1 [11.2 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libjsr305-java all 0.1-+svn49-11 [27.0 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libguava-java all 29.0-6 [2418 kB]
```

7 – Compiling with Maven

```
root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1# mvn compile
[INFO] Scanning for projects...
[INFO] 
[INFO] --- < com.abc:ABCtechnologies > ---
[INFO] Building RetailModule 1.0
[INFO] --- [ war ] ---
Downloading from central: https://repo.maven.apache.org/maven2/org/jacoco/jacoco-maven-plugin/0.8.6/jacoco-maven-plugin-0.8.6.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/jacoco/jacoco-maven-plugin-0.8.6.pom (4.4 kB at 7.2 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/jacoco/org.jacoco.build/0.8.6/org.jacoco.build-0.8.6.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/jacoco/org.jacoco.build/0.8.6/org.jacoco.build-0.8.6.pom (42 kB at 424 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/jacoco/jacoco-maven-plugin/0.8.6/jacoco-maven-plugin-0.8.6.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/jacoco/jacoco-maven-plugin/0.8.6/jacoco-maven-plugin-0.8.6.jar (53 kB at 478 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-resources-plugin/2.6/maven-resources-plugin-2.6.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-resources-plugin/2.6/maven-resources-plugin-2.6.pom (8.1 kB at 108 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-plugins/23/maven-plugins-23.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-plugins/23/maven-plugins-23.pom (9.2 kB at 137 kB/s)
Downloading from central: https://repo.maven.apache.org/maven-parent/22/maven-parent-22.pom
Downloaded from central: https://repo.maven.apache.org/maven-parent/22/maven-parent-22.pom (30 kB at 354 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/apache/11/apache-11.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/apache/11/apache-11.pom (15 kB at 145 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-resources-plugin/2.6/maven-resources-plugin-2.6.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-resources-plugin/2.6/maven-resources-plugin-2.6.jar (30 kB at 356 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-compiler-plugin/3.1/maven-compiler-plugin-3.1.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-compiler-plugin/3.1/maven-compiler-plugin-3.1.pom (10 kB at 150 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-plugins/24/maven-plugins-24.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-plugins/24/maven-plugins-24.pom (11 kB at 148 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-parent/23/maven-parent-23.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-parent/23/maven-parent-23.pom (33 kB at 208 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/apache/13/apache-13.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/apache/13/apache-13.pom (14 kB at 162 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-compiler-plugin/3.1/maven-compiler-plugin-3.1.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-compiler-plugin/3.1/maven-compiler-plugin-3.1.jar (43 kB at 443 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/junit/junit/4.4/junit-4.4.pom
Downloaded from central: https://repo.maven.apache.org/maven2/junit/junit/4.4/junit-4.4.pom (1.2 kB at 10 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-plugin-api/3.0/maven-plugin-api-3.0.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-plugin-api/3.0/maven-plugin-api-3.0.pom (2.3 kB at 19 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven/3.0/maven-3.0.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven/3.0/maven-3.0.pom (22 kB at 249 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-parent/15/maven-parent-15.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-parent/15/maven-parent-15.pom (24 kB at 255 kB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/apache/6/apache-6.pom
```

```
Downloaded from central: https://repo.maven.apache.org/maven2/junit/junit/3.8.2/junit-3.8.2.jar (121 kB)
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 3 source files to /root/projects/Industry-Grade-Project-I-1/target/classes
[INFO] 
[INFO] --- BUILD SUCCESS ---
[INFO] 
[INFO] Total time: 27.754 s
[INFO] Finished at: 2025-12-06T18:59:36Z
[INFO] 
root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1#
```

```
oot@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1# mvn test
[INFO] Scanning for projects...
[INFO]
[INFO] ----- < com.abc:ABCtechnologies > -----
[INFO] Building RetailModule 1.0
[INFO] ----- [ war ] -----
[INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-surefire-plugin/2.12.4/maven-surefire-plugin-2.12.4.pom
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-surefire-plugin/2.12.4/maven-surefire-plugin-2.12.4.pom (10 kB at 22 kB/s)
[INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/surefire/surefire/2.12.4/surefire-2.12.4.pom
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/surefire/surefire/2.12.4/surefire-2.12.4.pom (14 kB at 170 kB/s)
[INFO] Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-surefire-plugin/2.12.4/maven-surefire-plugin-2.12.4.jar
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/plugins/maven-surefire-plugin/2.12.4/maven-surefire-plugin-2.12.4.jar (30 kB at 308 kB/s)
[INFO] Downloading from central: https://repo.maven.apache.org/maven2/junit/junit/4.4/junit-4.4.jar
[INFO] Downloaded from central: https://repo.maven.apache.org/maven2/junit/junit/4.4/junit-4.4.jar (161 kB at 878 kB/s)
[INFO]
[INFO] --- jacoco-maven-plugin:0.8.6:prepare-agent (jacoco-initialize) @ ABCtechnologies ---
[INFO] argLine set to -javaagent:/root/.m2/repository/org/jacoco/org.jacoco.agent/0.8.6/org.jacoco.agent-0.8.6-runtime.jar=destfile=/root/projects/Industry-Grade-Project-I-1/target/jacoco.exec
[INFO]
[INFO] --- maven-resources-plugin:2.6:resources (default-resources) @ ABCtechnologies ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory /root/projects/Industry-Grade-Project-I-1/src/main/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.1:compile (default-compile) @ ABCtechnologies ---
[INFO] Nothing to compile - all classes are up to date
[INFO]
[INFO] --- maven-resources-plugin:2.6:testResources (default-testResources) @ ABCtechnologies ---
[INFO] Using 'UTF-8' encoding to copy filtered resources.
[INFO] skip non existing resourceDirectory /root/projects/Industry-Grade-Project-I-1/src/test/resources
[INFO]
[INFO] --- maven-compiler-plugin:3.1:testCompile (default-testCompile) @ ABCtechnologies ---
[INFO] Changes detected - recompiling the module!
[INFO] Compiling 1 source file to /root/projects/Industry-Grade-Project-I-1/target/test-classes
[INFO]
```

```
-----
T E S T S
-----
Running com.abc.dataAccessObject.ProductImpTest
Tests run: 4, Failures: 0, Errors: 0, Skipped: 0, Time elapsed: 0.135 sec

Results :

Tests run: 4, Failures: 0, Errors: 0, Skipped: 0

[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time:  7.983 s
[INFO] Finished at: 2025-12-06T19:00:06Z
[INFO] -----
root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1# █
```

8 – Setting up for Git and Github

```
root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1# git remote add origin https://github.com/rafarvale/industry-grade-project-1.git
root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1# git branch -M main
root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1# git push -u origin main
Username for 'https://github.com': rafarvale
Password for 'https://rafarvale@github.com':
remote: Invalid username or token. Password authentication is not supported for Git operations.
fatal: Authentication failed for 'https://github.com/rafarvale/industry-grade-project-1.git/'
root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1# git push -u origin main
Username for 'https://github.com': rafarvale
Password for 'https://rafarvale@github.com':
remote: Invalid username or token. Password authentication is not supported for Git operations.
fatal: Authentication failed for 'https://github.com/rafarvale/industry-grade-project-1.git'
root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1# git push -u origin main
Username for 'https://github.com': rafarvale
Password for 'https://rafarvale@github.com':
Enumerating objects: 26, done.
Counting objects: 100% (26/26), done.
Compressing objects: 100% (16/16), done.
Writing objects: 100% (26/26), 4.51 KiB | 4.51 MiB/s, done.
Total 26 (delta 1), reused 26 (delta 1), pack-reused 0
remote: Resolving deltas: 100% (1/1), done.
To https://github.com/rafarvale/industry-grade-project-1.git
 * [new branch]      main -> main
Branch 'main' set up to track remote branch 'main' from 'origin'.
root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1#
```

9 – Installing Jenkins

```
root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1# wget -O /etc/apt/keyrings/jenkins-keyring.asc https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
```

```
root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1# wget -O /etc/apt/keyrings/jenkins-keyring.asc https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
--2023-12-06 19:33:48-- https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
Resolving pkg.jenkins.io (pkg.jenkins.io)... 146.75.34.133, 2a04:4e42:78::645
Connecting to pkg.jenkins.io (pkg.jenkins.io)|146.75.34.133|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3175 (3.1K) [application/pgp-keys]
Saving to: '/etc/apt/keyrings/jenkins-keyring.asc'

/etc/apt/keyrings/jenkins-keyring.asc          100%[=====] 3.10K --.-KB/s   in 0s

2025-12-06 19:33:48 (45.4 MB/s) - '/etc/apt/keyrings/jenkins-keyring.asc' saved [3175/3175]

root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1#
```

```
root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1# apt install -y jenkins
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  net-tools
The following NEW packages will be installed:
  jenkins net-tools
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 95.2 MB of archives.
After this operation, 96.3 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 net-tools amd64 1.60+git20181103.0eebece-lubuntu5.4 [204 ]
Get:2 https://pkg.jenkins.io/debian-stable binary/ jenkins 2.528.2 [95.0 MB]
Fetched 95.2 MB in 2s (44.0 MB/s)
Selecting previously unselected package net-tools.
(Reading database ... 114262 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20181103.0eebece-lubuntu5.4_amd64.deb ...
Unpacking net-tools (1.60+git20181103.0eebece-lubuntu5.4) ...
Selecting previously unselected package jenkins.
Preparing to unpack .../jenkins_2.528.2_all.deb ...
Unpacking jenkins (2.528.2) ...
Setting up net-tools (1.60+git20181103.0eebece-lubuntu5.4) ...
Setting up jenkins (2.528.2) ...
Created symlink /etc/systemd/system/multi-user.target.wants/jenkins.service → /lib/systemd/system/jenkins.service.
```

```
root@rafael-vale-edureka-project:/projects/Industry-Grade-Project-I-1# systemctl enable --now jenkins
Synchronizing state of jenkins.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable jenkins
root@rafael-vale-edureka-project:/projects/Industry-Grade-Project-I-1# systemctl status jenkins --no-pager
● jenkins.service - Jenkins Continuous Integration Server
   Loaded: loaded (/lib/systemd/system/jenkins.service; enabled; vendor preset: enabled)
     Active: active (running) since Sat 2023-12-06 19:35:48 UTC; 43s ago
       Main PID: 2581 (java)
          Tasks: 45 (limit: 1125)
         Memory: 15.676s
            CPU: 15.676s
           CGroup: /system.slice/jenkins.service
                  └─2581 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

Dec 06 19:35:42 rafael-vale-edureka-project jenkins[2581]: [LF] > This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Dec 06 19:35:42 rafael-vale-edureka-project jenkins[2581]: [LF] ****
Dec 06 19:35:48 rafael-vale-edureka-project jenkins[2581]: 2023-12-06 19:35:48.819+0000 [id=30] INFO jenkins.InitReactorRunner$1@onAttained: Completed initialization
Dec 06 19:35:48 rafael-vale-edureka-project jenkins[2581]: 2023-12-06 19:35:48.855+0000 [id=23] INFO hudson.lifecycle.Lifecycle@onReady: Jenkins is fully up and running
Dec 06 19:35:48 rafael-vale-edureka-project system[1] Started Jenkins Continuous Integration Server.
Dec 06 19:35:48 rafael-vale-edureka-project jenkins[2581]: [LF] ****
Dec 06 19:35:49 rafael-vale-edureka-project jenkins[2581]: 2023-12-06 19:35:49.093+0000 [id=47] INFO hudson.DownloadService$Downloadable@load: Obtained the updated data file for Hudson...@MavenInstall
Dec 06 19:35:49 rafael-vale-edureka-project jenkins[2581]: 2023-12-06 19:35:49.094+0000 [id=47] INFO hudson.util.Retrier@start: Performed the action check updates server successfully, the attempt
Hint: Some lines were ellipsized, use -l to show in full.
root@rafael-vale-edureka-project:/projects/Industry-Grade-Project-I-1#
```

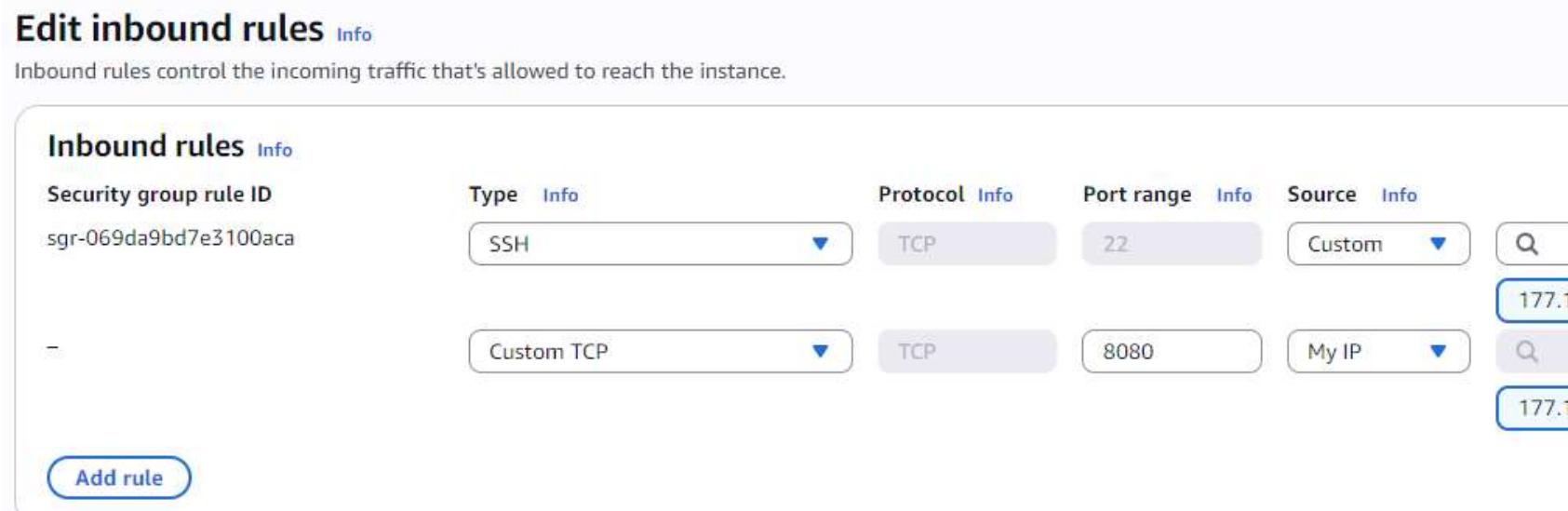
10 – Setting up Security group for Jenkins on 8080 port

Edit inbound rules Info

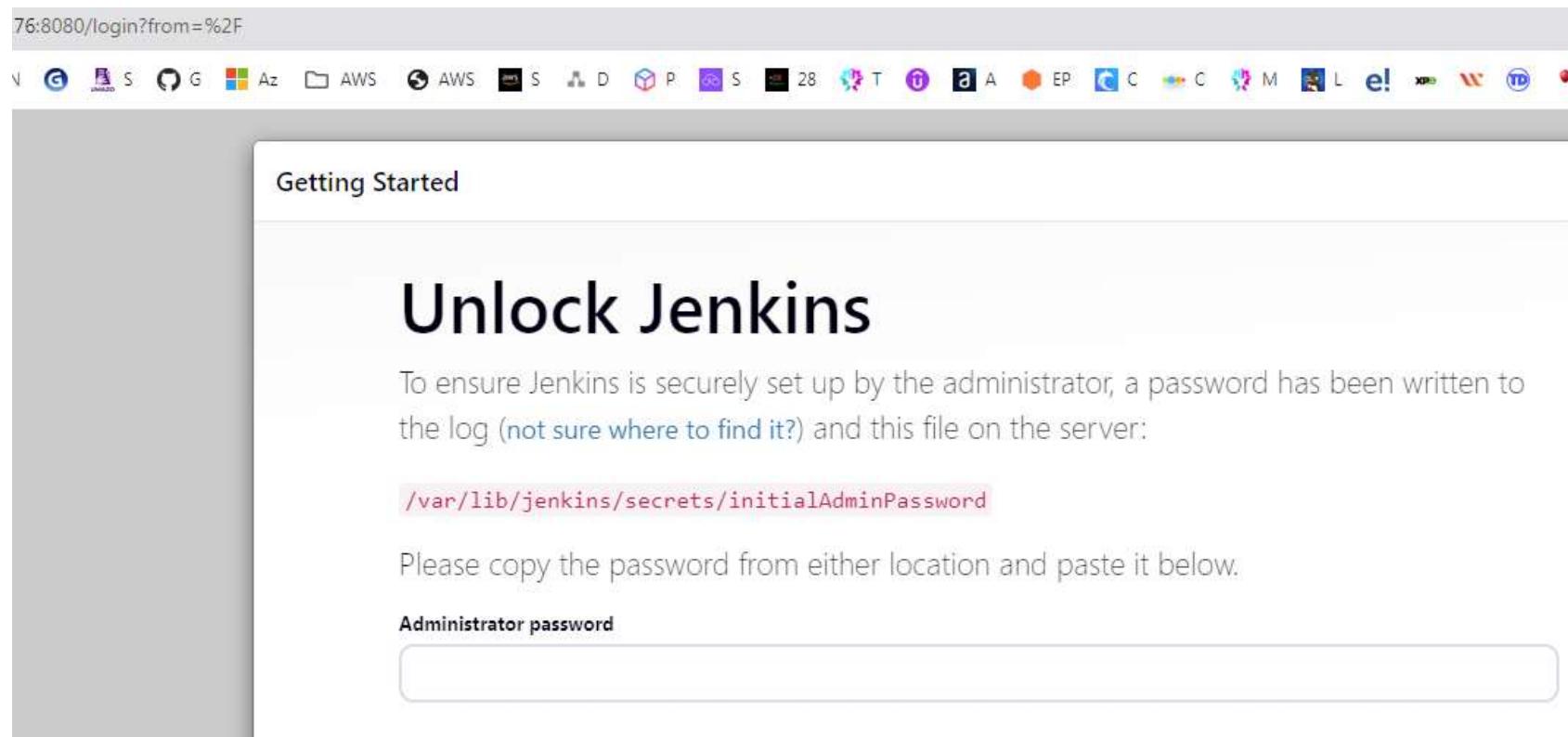
Inbound rules control the incoming traffic that's allowed to reach the instance.

Security group rule ID	Type	Protocol	Port range	Source
sgr-069da9bd7e3100aca	SSH	TCP	22	Custom
-	Custom TCP	TCP	8080	My IP

[Add rule](#)



11 – Setting up Jenkins



The screenshot shows a web browser window with the URL `76:8080/login?from=%2F` in the address bar. The browser's toolbar is visible at the top, showing various icons for different applications like AWS, Google Sheets, and Microsoft Word. The main content area is titled "Getting Started" and features a large heading "Unlock Jenkins". Below the heading, a text block explains that a password has been written to the log and on the server, and provides the file path `/var/lib/jenkins/secrets/initialAdminPassword`. It instructs the user to copy the password from either location and paste it into a text input field labeled "Administrator password".

Getting Started

Unlock Jenkins

To ensure Jenkins is securely set up by the administrator, a password has been written to the log ([not sure where to find it?](#)) and this file on the server:

`/var/lib/jenkins/secrets/initialAdminPassword`

Please copy the password from either location and paste it below.

Administrator password

```
root@rafael-vale-edureka-project:~/projects/Industry-Grade-Project-I-1# cat /var/lib/jenkins/secrets/initialAdminPassword
```

76:8080



Getting Started

Getting Started

✓ Folders	✓ OWASP Markup Formatter	✓ Build Timeout	✓ Credentials Binding	** commons-lang3 v3.x Jenkins API ** Ionicons API Folders OWASP Markup Formatter ** ASM API ** JSON Path API ** Structs ** Pipeline: Step API ** commons-text API ** Token Macro Build Timeout ** bouncycastle API ** Credentials ** Plain Credentials ** Variant ** SSH Credentials Credentials Binding ** SCM API ** Pipeline: API Timestampper ** Caffeine API ** Script Security ** JavaBeans Activation Framework (JAF) API ** JAXB ** SnakeYAML API ** Jakarta Activation API ** Jakarta XML Binding API
✓ Timestampper	⌚ Workspace Cleanup	⌚ Ant	⌚ Gradle	
⌚ Pipeline	⌚ GitHub Branch Source	⌚ Pipeline: GitHub Groovy Libraries	⌚ Pipeline Graph View	
⌚ Git	⌚ SSH Build Agents	⌚ Matrix Authorization Strategy	⌚ LDAP	
⌚ Email Extension	⌚ Mailer	⌚ Dark Theme		

Create First Admin User

Username

Password

Confirm password

Full name

E-mail address



Jenkins / Manage Jenkins / Tools



Tools

Maven Configuration

Default settings provider

Use default maven settings



Default global settings provider

Use default maven global settings



JDK installations

+ Add JDK

Git installations

Git

Name

Default



Path to Git executable ?

git



Tools

Maven Configuration

Default settings provider

Use default maven settings

Default global settings provider

Use default maven global settings

JDK installations

+ Add JDK

≡ JDK

Name

JDK11

JAVA_HOME

/usr/lib/jvm/java-11-openjdk-amd64



Jenkins

/ Manage Jenkins ▾ / Tools

Git installations

≡ Git

Name

Default

Path to Git executable ?

/usr/bin/git



Install automatically ?

```
Apache Maven 3.6.3  
Maven home: /usr/share/maven
```



Ant installations

+ Add Ant

Maven installations

+ Add Maven

☰ Maven

Name

Maven3

MAVEN_HOME

/usr/share/maven



Jenkins

+ New Item



Jenkins

/ All ▾ / New Item

New Item

Enter an item name

1.Compile

Select an item type



Freestyle project

Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.



Advanced ▾

Configure

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

Source Code Management

Connect and manage your code repository to automatically pull the latest code for your builds.

 None Git ?

Repositories ?

Repository URL ?

`https://github.com/rafarvale/industry-grade-project-1.git`

Credentials ?

`- none -`

Advanced ▾

+ Add Repository

Branches to build ?

Branch Specifier (blank for 'any') ?

`*/main`



Configure

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

Environment

Configure settings and variables that define the context in which your build runs, like credentials, paths, and global parameters.

- Delete workspace before build starts
- Use secret text(s) or file(s) ?
- Add timestamps to the Console Output
- Inspect build log for published build scans
- Terminate a build if it's stuck
- With Ant ?

Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

+ Add build step

Filter

Execute Windows batch command

Execute shell

Invoke Ant

Invoke Gradle script

Invoke top-level Maven targets

sending notifications, archiving artifacts, or triggering other jobs.



Jenkins / 1.Compile / Configuration

Configure

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

Environment

Configure settings and variables that define the context in which your build runs, like credentials, paths, and global parameters.

- Delete workspace before build starts
- Use secret text(s) or file(s) ?
- Add timestamps to the Console Output
- Inspect build log for published build scans
- Terminate a build if it's stuck
- With Ant ?

Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

Invoke top-level Maven targets ?

Maven Version

Maven3

Goals

compile

**Jenkins**

/ 1.Compile

/ Build Time Trend

[Status](#)[Changes](#)[Workspace](#)[Build Now](#)[Configure](#)[Delete Project](#)[Rename](#)

Build Time Trend

S	Build #	Time Since	Duration	X
	#1	38 sec	31 sec	

Icon: S M L

Builds ...

Filter /

Today

#1 8:12 PM v



Jenkins / 1.Compile

Status

Changes

Workspace

Build Now

Configure

Delete Project

Rename

1.Compile

Permalinks

- [Last build \(#1\), 3 min 22 sec ago](#)
- [Last stable build \(#1\), 3 min 22 sec ago](#)
- [Last successful build \(#1\), 3 min 22 sec ago](#)
- [Last completed build \(#1\), 3 min 22 sec ago](#)

Builds

...

Filter /

Today

#1 8:12 PM



Jenkins / All / New Item

New Item

Enter an item name

2.Test

Select an item type



Freestyle project

Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.



Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.



Multi-configuration project

Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.



Folder

Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.



Multibranch Pipeline

Creates a set of Pipeline projects according to detected branches in one SCM repository.



Organization Folder

Creates a set of multibranch project subfolders by scanning for repositories.

If you want to create a new item from other existing, you can use this option:

OK



Configure

[Plain text](#) [Preview](#)

General

 Discard old builds [?](#)

Source Code Management

 GitHub project

Triggers

 This project is parameterized [?](#)

Environment

 Throttle builds [?](#)

Build Steps

 Execute concurrent builds if necessary [?](#)

Post-build Actions

[Advanced](#) ▾

Source Code Management

Connect and manage your code repository to automatically pull the latest code for your builds.

 None Git [?](#)Repositories [?](#)Repository URL [?](#)



Configure

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

Additional Behaviours

+ Add

Triggers

Set up automated actions that start your build based on specific events, like code changes or scheduled times.

Trigger builds remotely (e.g., from scripts) ?

Build after other projects are built ?

Projects to watch

1.Compile

Trigger only if build is stable

Trigger even if the build is unstable

Trigger even if the build fails

Always trigger, even if the build is aborted

Build periodically ?

GitHub hook trigger for GITScm polling ?

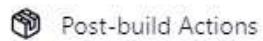
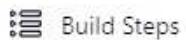
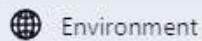
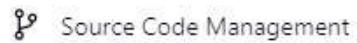
Poll SCM ?



Configure



General



- Add timestamps to the Console Output
- Inspect build log for published build scans
- Terminate a build if it's stuck
- With Ant ?

Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

☰ Invoke top-level Maven targets ?

Maven Version

Maven3

Goals

Test



Jenkins / 2.Test

Status

Changes

Workspace

Build Now

Configure

Delete Project

Rename

Builds

...



2.Test

Upstream Projects

1.Compile

Permalinks

- Last build (#4), 1 min 52 sec ago
- Last stable build (#4), 1 min 52 sec ago
- Last successful build (#4), 1 min 52 sec ago
- Last failed build (#3), 6 min 2 sec ago
- Last unsuccessful build (#3), 6 min 2 sec ago
- Last completed build (#4), 1 min 52 sec ago



New Item

Enter an item name

Select an item type



Freestyle project

Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.



Pipeline

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.



Multi-configuration project

Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.



Folder

Creates a container that stores nested items in it. Useful for grouping things together. Unlike view, which is just a filter, a folder creates a separate namespace, so you can have multiple things of the same name as long as they are in different folders.



Multibranch Pipeline

Creates a set of Pipeline projects according to detected branches in one SCM repository.



Organization Folder

Creates a set of multibranch project subfolders by scanning for repositories.



Configure



General



Source Code Management



Triggers



Environment



Build Steps



Post-build Actions

 GitHub project This project is parameterized ? Throttle builds ? Execute concurrent builds if necessary ?

Advanced ▾

Source Code Management

Connect and manage your code repository to automatically pull the latest code for your builds.

 None Git ?

Repositories ?

Repository URL ?

`https://github.com/rafarvale/industry-grade-project-1.git`



Configure

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

Branches to build ?

Branch Specifier (blank for 'any') ?

*/main

+ Add Branch

Repository browser ?

(Auto)

Triggers

Set up automated actions that start your build based on specific events, like code changes or scheduled times.

Trigger builds remotely (e.g., from scripts) [?](#)

Build after other projects are built [?](#)

Projects to watch

2.Test,

Trigger only if build is stable

Trigger even if the build is unstable

Trigger even if the build fails

Always trigger, even if the build is aborted

Build periodically [?](#)

GitHub hook trigger for GITScm polling [?](#)

Poll SCM [?](#)

Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

≡ Invoke top-level Maven targets ?

Maven Version

Maven3

Goals

package

Advanced ▾

+ Add build step



Plugins

Q Build Pipeli

Updates

Available plugins

Installed plugins

Advanced settings

Install

Name ↓



Build Pipeline 2.0.2

User Interface

Build Tools

Other Post-Build Actions

This plugin renders upstream and downstream connected jobs that typically form a build pipeline. In addition, it offers the ability to define manual



Install





Plugins

Updates

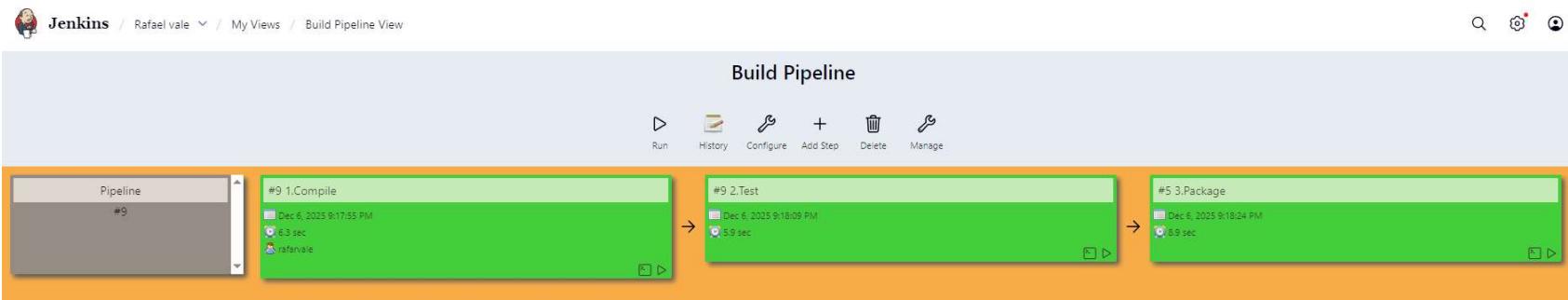
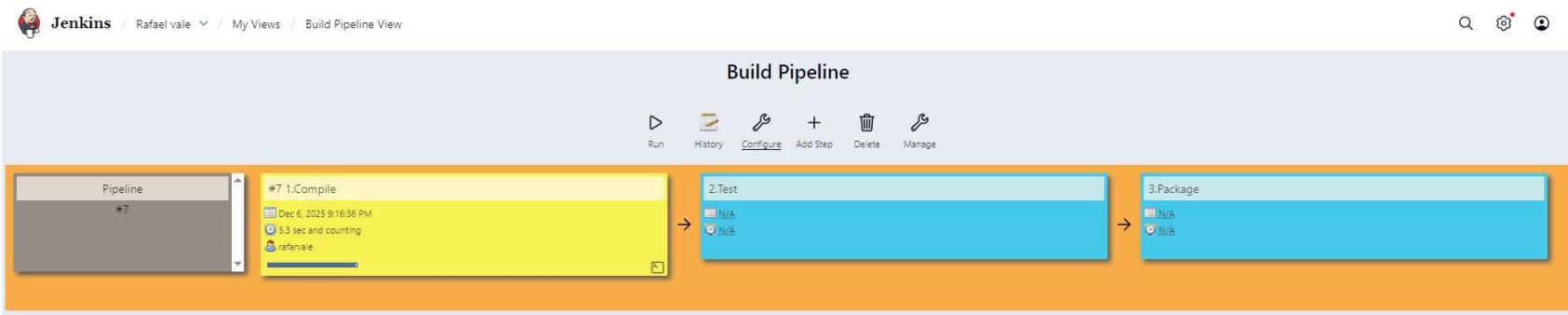
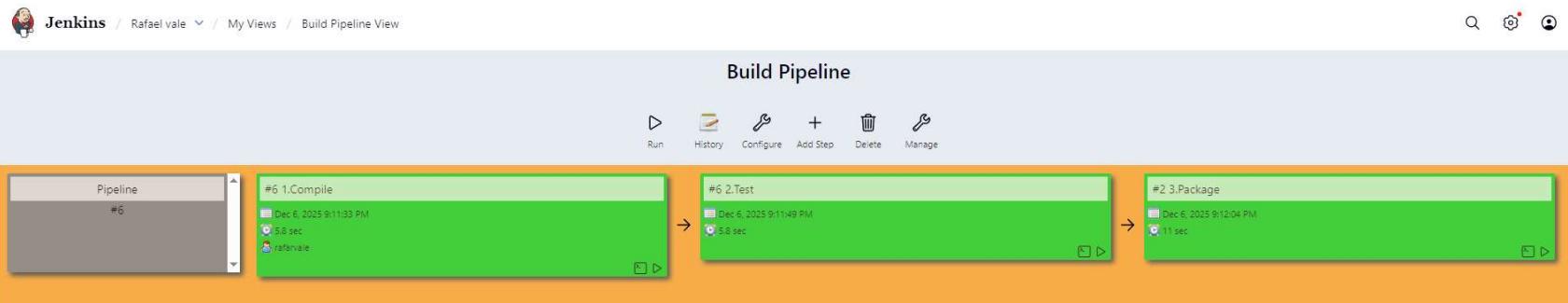
Available plugins

Installed plugins

Advanced settings

Download progress

Git	Success
GitHub	Success
GitHub Branch Source	Success
Pipeline: GitHub Groovy Libraries	Success
Metrics	Success
Pipeline Graph View	Success
Git	Success
EDDSA API	Success
Trilead API	Success
SSH Build Agents	Success
Matrix Authorization Strategy	Success
LDAP	Success
jsoup API	Success
Email Extension	Success
Mailer	Success
Theme Manager	Success
Dark Theme	Success
Loading plugin extensions	Success
Parameterized Trigger	Success
jQuery	Success
Build Pipeline	Success
Loading plugin extensions	Success



12 - Creating the second EC2 for the Project on AWS (Slave)

The screenshot shows the AWS Instances page with the following details:

Instances (1/2) [Info](#)

Last updated 1 minute ago [Connect](#) [Copy ARN](#)

Find Instance by attribute or tag (case-sensitive) [All states](#)

Instance state = running [X](#) [Clear filters](#)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability zone
rafael_vale_purdue_edureka_final_project	i-0a537e42652b6296d	Running View metrics Logs	t2.micro	2/2 checks passed View alarms +	us-east-1c	
<input checked="" type="checkbox"/> rafael_vale_purdue_edureka_slave	i-06895df10f194d5e1	Running View metrics Logs	t2.micro	2/2 checks passed View alarms +	us-east-1c	

i-06895df10f194d5e1 (rafael_vale_purdue_edureka_slave)

[Details](#) [Status and alarms](#) [Monitoring](#) [Security](#) [Networking](#) [Storage](#) [Tags](#)

13 – Setting Up the Security Group for the second EC2 on AWS

Basic details

Security group name [Info](#)

rafa_project_slave

Name cannot be edited after creation.

Description [Info](#)

Allows SSH access to developers

VPC [Info](#)

vpc-08423f9ba52f59bdd

Inbound rules [Info](#)

This security group has no inbound rules.

[Add rule](#)

Outbound rules [Info](#)

Type [Info](#)

SSH

Protocol [Info](#)

TCP

Port range [Info](#)

22

Destination [Info](#)

My IP



Description - optional [Info](#)

[Delete](#)

177.140.105.248/32 [X](#)

SSH

TCP

22

Custom

Q sg-0198fbf1537ddc60e [X](#)

[Delete](#)

sg-0198fbf1537ddc60e [X](#)

[Add rule](#)

14 – Setting Up the Second EC2 on AWS

ubuntu@ip-172-31-31-215: ~

```
ubuntu@ip-172-31-31-215:~$ hostnamectl set-hostname rafael-vale-edureka-slave
```

```
root@ip-172-31-31-215: ~
127.0.0.1 localhost
127.0.0.1 rafael-vale-edureka-slave

# The following lines are desirable for IPv6 capable hosts
::1 ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
ff02::3 ip6-allhosts
~
```

15 – Installing Git on the Second EC2

```
root@rafael-vale-edureka-slave:~# apt install git
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.15).
git set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@rafael-vale-edureka-slave:~#
```

16 – Installing Maven on the Second EC2

```
root@rafael-vale-edureka-slave:~# apt install maven
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  alsatopology-conf alsaucm-conf ca-certificates-java default-jre-headless fontconfig-config fonts-dejavu-core java-common
  libbatinjekt-jsr330-api-jar libavahi-client3 libavahi-common-data libavahi-common3 libcdi-api-jar libcommons-cli-jar libc
  libgeronimo-annotation-1.3-spec-jar libgeronimo-interceptor-3.0-spec-jar libgraphite2-3 libguava-jar libguice-jar libha
  libjpeg8 libjsr305-jar liblcms2-2 libmaven-parent-jar libmaven-resolver-jar libmaven-shared-utils-jar libmaven3-core-jar
  libplexus-component-annotations-jar libplexus-interpolation-jar libplexus-sec-dispatcher-jar libplexus-utils2-jar libsi
  libwagon-http-shaded-jar libwagon-provider-api-jar openjdk-11-jre-headless
Suggested packages:
  default-jre libappliance-jar-doc libasound2-plugins alsatopology-jsr330-api-jar-doc libel-api-jar libcommons
  libjsr305-jar-doc liblcms2-utils libmaven-shared-utils-jar-doc liblogback-jar pcscd libplexus-classworlds-jar-doc libpl
  libcommons-logging-jar liblog4j1.2-jar libnss-mdns fonts-dejavu-extra fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy
The following NEW packages will be installed:
  alsatopology-conf alsaucm-conf ca-certificates-jar default-jre-headless fontconfig-config fonts-dejavu-core java-common
  libbatinjekt-jsr330-api-jar libavahi-client3 libavahi-common-data libavahi-common3 libcdi-api-jar libcommons-cli-jar libc
  libgeronimo-annotation-1.3-spec-jar libgeronimo-interceptor-3.0-spec-jar libgraphite2-3 libguava-jar libguice-jar libha
  libjpeg8 libjsr305-jar liblcms2-2 libmaven-parent-jar libmaven-resolver-jar libmaven-shared-utils-jar libmaven3-core-jar
  libplexus-component-annotations-jar libplexus-interpolation-jar libplexus-sec-dispatcher-jar libplexus-utils2-jar libsi
  libwagon-http-shaded-jar libwagon-provider-api-jar maven openjdk-11-jre-headless
0 upgraded, 54 newly installed, 0 to remove and 0 not upgraded.
Need to get 55.6 MB of archives.
After this operation, 199 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 alsatopology-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 alsaucm-conf all 1.2.6.3-1ubuntu1.12 [43.5 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 java-common all 0.72build2 [6782 B]
```

17 – Installing openjdk on the Second EC2


```
root@rafael-vale-edureka-slave:~# git --version
git version 2.34.1
root@rafael-vale-edureka-slave:~# mvn --version
Apache Maven 3.6.3
Maven home: /usr/share/maven
Java version: 17.0.17, vendor: Ubuntu, runtime: /usr/lib/jvm/java-17-openjdk-amd64
Default locale: en, platform encoding: UTF-8
OS name: "linux", version: "6.8.0-1043-aws", arch: "amd64", family: "unix"
root@rafael-vale-edureka-slave:~# java --version
openjdk 17.0.17 2025-10-21
OpenJDK Runtime Environment (build 17.0.17+10-Ubuntu-122.04)
OpenJDK 64-Bit Server VM (build 17.0.17+10-Ubuntu-122.04, mixed mode, sharing)
root@rafael-vale-edureka-slave:~# update-alternatives --config java
There are 2 choices for the alternative java (providing /usr/bin/java).

      Selection    Path                                  Priority   Status
-----+
* 0            /usr/lib/jvm/java-17-openjdk-amd64/bin/java  1711      auto mode
  1            /usr/lib/jvm/java-11-openjdk-amd64/bin/java  1111      manual mode
  2            /usr/lib/jvm/java-17-openjdk-amd64/bin/java  1711      manual mode

Press <enter> to keep the current choice[*], or type selection number:
```

```
root@rafael-vale-edureka-project:~# mkdir -p /var/lib/jenkins/.ssh
root@rafael-vale-edureka-project:~# chown -R jenkins:jenkins /var/lib/jenkins/.ssh
root@rafael-vale-edureka-project:~# chmod 700 /var/lib/jenkins/.ssh
root@rafael-vale-edureka-project:~# sudo -u jenkins ssh-keygen -t ed25519 -f /var/lib/jenkins/.ssh/jenkins_agent -N ""
Generating public/private ed25519 key pair.
Your identification has been saved in /var/lib/jenkins/.ssh/jenkins_agent
Your public key has been saved in /var/lib/jenkins/.ssh/jenkins_agent.pub
The key fingerprint is:
SHA256:QylSoJo8U+Z6FaqImlSUIz3UI9haPRYzVygg/7ju4BQ jenkins@rafael-vale-edureka-project
The key's randomart image is:
+--[ED25519 256]--+
| . +.*.oo.          |
| O =.B. .          |
| + X O.. o          |
| %.* + o          |
| OE= .   s          |
| B++o   .          |
| *o.               |
| oo                |
| oo                |
+---[SHA256]---+
root@rafael-vale-edureka-project:~# cat /var/lib/jenkins/.ssh/jenkins_agent.pub
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAII246piAoPqWPFmHH/6TnsVKX+BdZVSEDqWR9ryammWj jenkins@rafael-vale-edureka-project
root@rafael-vale-edureka-project:~#
```

```
root@rafael-vale-edureka-project:~# cat /var/lib/jenkins/.ssh/jenkins_agent.pub
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAII246piAoPqWPFmHH/6TnsVKX+BdZVSEDqWR9ryammWj jenkins@rafael-vale-edureka-project
```

```
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAAQC48WysxBChoyYlsK8A6WOClhAtbTIKjyrgPwsKGMFuXLMUqpAP9Twzbrj2rIieRO2EOjHTDtolz2pdLsmzyiQRJua+BJ9xCJS8zdTYJJ9+vTR/U18gsPFz9FXLFiWC2YtWARf0bk2DmzBxIuw239YHPO+plegwDx77fhRmVmNJEy
QYMpbcm4tIYK1yDmgGMkNuJipPRA1LK/700gg8I0SHXqN5hGCXh62z1aYGYEl0mu32ujkVvFLCa+lDcgEfAkKkjg+qoL5q2hLM/uypmKNLP334ve3NU0RAWrMe9YHUzggQ4wPl6jOGeFFVylCtn5j75gC/8BT/eSMKT30hKCR edureka_project_key
```

```
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAAQC48WysxBChoyYlsK8A6WOClhAtbTIKjyrgPwsKGMFuXLMUqpAP9Twzbrj2rIieRO2EOjHTDtolz2pdLsmzyiQRJua+BJ9xCJS8zdTYJJ9+vTR/U18gsPFz9FXLFiWC2YtWARf0bk2DmzBxIuw239YHPO+plegwDx77fhRmVmNJEy
QYMpbcm4tIYK1yDmgGMkNuJipPRA1LK/700gg8I0SHXqN5hGCXh62z1aYGYEl0mu32ujkVvFLCa+lDcgEfAkKkjg+qoL5q2hLM/uypmKNLP334ve3NU0RAWrMe9YHUzggQ4wPl6jOGeFFVylCtn5j75gC/8BT/eSMKT30hKCR edureka_project_key
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAII246piAoPqWPFmHH/6TnsVKX+BdZVSEDqWR9ryammWj jenkins@rafael-vale-edureka-project
```

```
root@rafael-vale-edureka-slave:/tmp# su ubuntu
ubuntu@rafael-vale-edureka-slave:/tmp$ mkdir -p ~/.ssh
ubuntu@rafael-vale-edureka-slave:/tmp$ chmod 700 ~/.ssh
ubuntu@rafael-vale-edureka-slave:/tmp$ vim ~/.ssh/authorized_keys
ubuntu@rafael-vale-edureka-slave:/tmp$ chmod 600 ~/.ssh/authorized_keys
ubuntu@rafael-vale-edureka-slave:/tmp$
```

```
root@rafael-vale-edureka-project:~# sudo -u jenkins ssh -i /var/lib/jenkins/.ssh/jenkins_agent ubuntu@172.31.28.153 "echo OK"
The authenticity of host '172.31.28.153 (172.31.28.153)' can't be established.
ED25519 key fingerprint is SHA256:6PFZEN/P87p0H+3GGpDVw4X+xA8ps+M1S9VGGZDvp+E.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '172.31.28.153' (ED25519) to the list of known hosts.
OK
root@rafael-vale-edureka-project:~# sudo -u jenkins ssh -i /var/lib/jenkins/.ssh/jenkins_agent ubuntu@172.31.28.153 "echo OK"
OK
```

Jenkins / Manage Jenkins / Nodes

Nodes

S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
	Built-In Node	Linux (amd64)	In sync	10.79 GiB	0 B	10.79 GiB	0ms
	Data obtained	6 min 9 sec	6 min 9 sec	6 min 9 sec	6 min 9 sec	6 min 9 sec	6 min 9 sec

Icon: S M L

Legend



New node

Node name

Slave

Type

Permanent Agent

Adds a plain, permanent agent to Jenkins. This is called "permanent" because Jenkins doesn't provide higher level of integration with these agents, such as dynamic provisioning. Select this type if no other agent types apply — for example such as when you are adding a physical computer, virtual machines managed outside Jenkins, etc.

Create



Jenkins / Manage Jenkins ▾ / Nodes ▾

Name ?

Slave

Description ?

Plain text [Preview](#)

Number of executors ?

1

Remote root directory ?

/tmp/jenkinsdir

Labels ?

Usage ?

Use this node as much as possible

Launch method ?

Launch agents via SSH

Launch method ?

Launch agents via SSH

Host ?

172.31.28.153

Credentials ?

```
root@rafael-vale-edureka-project:~# cat /var/lib/jenkins/.ssh/jenkins_agent
-----BEGIN OPENSSH PRIVATE KEY-----
b3BlbnNzaC1rZXktdjEAAAAABG5vbmcUAAAAEbm9uZQAAAAAAAAABAAAAMwAAAAtzc2gtZW
QyNTUxOQAAACCNuOqYgKD61jxzhx/+k57Fs1/gXWVUhA6lkfa8mpplowAAAKeYn/UHmJ/
1AAAAAtzc2gtZWQyNTUxOQAAACCNuOqYgKD61jxzhx/+k57Fs1/gXWVUhA6lkfa8mpplow
AAAAEAcut+b6rzuHQMpOCs/KXM/BtWz0aK5nGJhqdNjnQziQI246piAoPqWPFFmHH/6TnsVK
X+BdZVSEDqWR9ryammWjAAAAI2plbmtpbnNAcmFmYWVsLXZhbgUTZWR1cmVrYS1wcm9qZW
N0AQI=
-----END OPENSSH PRIVATE KEY-----
root@rafael-vale-edureka-project:~#
```

Jenkins Credentials Provider: Jenkins

Add Credentials

Domain

Global credentials (unrestricted)

Kind

SSH Username with private key

Scope ?

Global (Jenkins, nodes, items, all child items, etc)

ID ?

Description ?

Username

ubuntu

Treat username as secret ?



Enter directly

Key

```
b3B1bnNzaC1rZXktdjEAAAAABG5vb  
QyNTUxOQAAACCNuOqYgKD6ljsxZhx/
```

```
root@rafael-vale-edureka-project:~# sudo -u jenkins ssh-keygen -t rsa -b 4096 -m PEM -f /var/lib/jenkins/.ssh/jenkins_agent_rsa -N ""  
Generating public/private rsa key pair.  
Your identification has been saved in /var/lib/jenkins/.ssh/jenkins_agent_rsa  
Your public key has been saved in /var/lib/jenkins/.ssh/jenkins_agent_rsa.pub  
The key fingerprint is:  
SHA256:nVWH4MTHvOb+2Q1dJTMWHa6ciBtx5++PGzdFTSk+zB4 jenkins@rafael-vale-edureka-project  
The key's randomart image is:  
+---[RSA 4096]---+  
|       .o=oo=|  
|       o.oB=.|  
|     . . *B.+o|  
|     .+o*EX. |  
|    Soo..Oo .|  
|     o ..o .|  
|     . +.o.|  
|      =+=|=|  
|     o*=|=|  
+---[SHA256]---+  
root@rafael-vale-edureka-project:~#
```

```
root@rafael-vale-edureka-project:~# sudo chown jenkins:jenkins /var/lib/jenkins/.ssh/jenkins_agent_rsa*  
root@rafael-vale-edureka-project:~# sudo chmod 600 /var/lib/jenkins/.ssh/jenkins_agent_rsa  
root@rafael-vale-edureka-project:~# sudo cat /var/lib/jenkins/.ssh/jenkins_agent_rsa.pub  
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQACQC3+D+epmBPvAnkYDB4jcaxyTl1tFG9/wTz30liH6xBuic5UlHRGd/vklFu9zYZswcLZqYkehWJVXBc0Mxm1Hncg3/18FucVKtg3H96VnmXdgIjw5EWdcndNIAG/0pD4aO2MU9frfq4/DD0SnF3u2abiUN3X50a+rrewr8LxYOUKA2PB  
+UGyos/C8vdy8cmuMcq2aWBrhgzURthqKJQ8TOyntauR+qwmzekeioMiw4d/s6NR1s5R+YhipUymG+ZyhDeBlH/yuSNXiAC0EzzKv156qhsbjV8C9B/ynPbBK0+Rx a7je9nNgsm448q07ehwGde0Trf15KMii0j7F1iG6Fz+a4jwKxIhi8WK2Mz39vzbndToj9FXHw9UtEqub3yy  
Y+tyR5H4wz2pGcmc9GyMgXa1NqzHJF3Hj7NjPf7t+dQJmu9iM9uEB97z2Gldzwcid0hVeBsf1650peFaccVg61oGCPXXHqRLSMSh+sOGVK1V1hiZL0qzo-k0LEWR+QraP8mivLitoCnHAQWU878V0yWptJopco8FHLDikj1kY:fu73Nh9WU8YNhiWHlOCo7hb76rr1+HFW+goJFAE9  
HvgkwSVER8ydr5ko4NMHG0Z1z5Et5G8gtaw8bNuHPat5H3jmNON50L44BzK1wMGef2WFXmgd4llr81mr1h/VMpw== jenkins@rafael-vale-edureka-project  
root@rafael-vale-edureka-project:~#
```

```
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQC48WysxBn oyYlSK8A6WOClh0AtbTIKjyrqPWsK  
QYMpbc m4tIYK1yDmgGMkNuJipPRA1LK/700gq8I0SHXqN5hGCXh62z1aYGYEl0mu32ujkVvFLCa+l  
ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAII246piAoPqWP FmHH/6TnsVKX+BdZVSEDqWR9ryam  
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAACAQC3+D+epmBPvAn kYDB4jcAxyTI1tPG9/wTz3O1iH  
+UGyos/C8vdySCmuMtq2aWBhgzuURthqKJQ8TOYmtaUR+qwmzekYoM1w4d7s6NR Ys5R+YhipUymG  
Y+tRY5H4wzSk2pGcmq9GyMgXa1NqzHJF3Hj7N JpPY7t+DQUmu9LM9uEB97zZGldzVcidUhVeBs fL6  
HvgKwSvER8VdYR5ko4NMHGOZl z5Et55GBgtaW8bNuHFat5H3jmNON50L44BrK1wMGeF2WPXmgd411
```

```
ubuntu@rafael-vale-edureka-slave:/tmp$ chmod 600 ~/.ssh/authorized_keys  
ubuntu@rafael-vale-edureka-slave:/tmp$
```

```
root@rafael-vale-edureka-project:~# sudo -u jenkins ssh -i /var/lib/jenkins/.ssh/jenkins_agent_rsa ubuntu@172.31.28.153 "echo OK"  
OK  
root@rafael-vale-edureka-project:~#
```

```
bot@rafael-vale-edureka-project:~# sudo -u jenkins ssh -i /var/lib/jenkins/.ssh/jenkins_agent_rsa ubuntu@172.31.28.153 "echo OK"  
OK  
bot@rafael-vale-edureka-project:~# sudo cat /var/lib/jenkins/.ssh/jenkins_agent_rsa.pub  
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAACAQC3+D+epmBPvAn kYDB4jcAxyTI1tPG9/wTz3O1iH6rBuic5U1HRGd/vklFu9zY2swcLZqYkehW  
+UGyos/C8vdySCmuMtq2aWBhgzuURthqKJQ8TOYmtaUR+qwmzekYoM1w4d7s6NR Ys5R+YhipUymG+ZyHDeB1H/yuSNX1AC0EzrKvY56qBhSjVSQ  
-tRY5H4wzSk2pGcmq9GyMgXa1NqzHJF3Hj7N JpPY7t+DQUmu9LM9uEB97zZGldzVcidUhVeBs fL650peFAccVg61CGCPkXHqRL5M5h+s0GVK1V1  
vqKwSvER8VdYR5ko4NMHGOZl z5Et55GBgtaW8bNuHFat5H3jmNON50L44BrK1wMGeF2WPXmgd411rS1mr1h/VMpw== jenkins@rafael-vale-  
project:~#
```

Credentials ?

ubuntu

+ Add

ubuntu

ubuntu

ubuntu

```
root@rafael-vale-edureka-project:~# sudo -u jenkins ssh -i /var/lib/jenkins/.ssh/jenkins_agent_rsa ubuntu@172.31.28.153 "echo OK"
OK
root@rafael-vale-edureka-project:~# sudo cat /var/lib/jenkins/.ssh/jenkins_agent_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAQABAAAQCAQC3+D+epmBPvAnkyDB4jAxY7I1tPG9/wTz3O1iHgrBuic5UlHRGd/vk1Fu9zYZswcLZqYkehWJVXB0eMXm1Hncg3/L8FucVKtg3H9GVnmXdgLjw5EWdcndNIAG/0pD4a02MU9frFq4/DD08nF3u2abiUN3X50a+rewr8LxVOUKA2PB+UGyos/C8vdy8CmuMtq2aWBxhrgzuUrthqKu8TOYntaUR+qmwzeKyOmIw4d7s6NRyx5R+YhipUymGZyhDeBLH/yuSNX1AC0EzrKv56qbhSjVS9B/ynPbBK0+Rxa7jE9nN9YgsIm448qO7eHwGde0Trl5KM1i1o;j7F1IG6Fz+a4jwkRih18WK2Mr39vzObnDTCj9PXHw9UtEqud3yyV+tRY5H4wzsK2pGcmg9GyMgx1NgzHJF3hj7NjPy7t+dQ0mu9LM9uEB97zzGldzciduhVeBsf1650peFaccVg61GCGCPKXHQrl5MSh+s0GVK1V1hiZL0qzoK0LEWRrQraP8mivLitoCnHAQWU878V0yWpTJopo8FRLDikj1kYifu73Nn9WUSYNhiWHL0Co7hb78rr1+HFw+goJFAE9hvqKw3vER8VdYR5ko4NMHG0z1z5Et55BgtaW8bNuHFat5H3jmNON50L44BrK1wMGeP2WPXmgd41lrSlmrh/VMpw== jenkins@rafael-vale-edureka-project
root@rafael-vale-edureka-project:~#
```



Jenkins / Manage Jenkins / Nodes

Nodes

+ New Node

Configure Monitors



S	Name ↓	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
1	Built-In Node	Linux (amd64)	In sync	10.79 GiB	0.8 GiB	10.79 GiB	0ms
2	Slave	Linux (amd64)	In sync	11.21 GiB	0.8 GiB	11.21 GiB	39ms
	Data obtained	19 sec	19 sec	19 sec	19 sec	19 sec	19 sec



Jenkins / 1.Compile

Status

</> Changes

Workspace

▷ Build Now

Configure

Delete Project

✓ 1.Compile

Downstream Projects

✓ 2.Test

Permalinks

- Last build (#9), 4 hr 28 min ago

19 – Restricting Jenkins to run only on slave as a part of the requirements

Compile

Jenkins / 1.Compile / Configuration

Configure

Description

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

Plain text [Preview](#)

Discard old builds [?](#)

GitHub project

This project is parameterized [?](#)

Throttle builds [?](#)

Execute concurrent builds if necessary [?](#)

Restrict where this project can be run [?](#)

Label Expression [?](#)

Slave |

Label Slave matches 1 node. Permissions or other restrictions provided by plugins may further reduce that list.

Test

Jenkins / 2.Test / Configuration

Configure

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

Plain text Preview

Discard old builds ?

GitHub project

This project is parameterized ?

Throttle builds ?

Execute concurrent builds if necessary ?

Restrict where this project can be run ?

Label Expression ?

Slave

Label Slave matches 1 node. Permissions or other restrictions provided by plugins may further reduce that list.

Package

Jenkins / 3.Package / Configuration

Configure

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

Plain text Preview

Discard old builds ?

GitHub project

This project is parameterized ?

Throttle builds ?

Execute concurrent builds if necessary ?

Restrict where this project can be run ?

Label Expression ?

Slave

Label Slave matches 1 node. Permissions or other restrictions provided by plugins may further reduce that list.

Testing on the Slave

 Jenkins / 1.Compile

[Status](#)  [1.Compile](#)

[Changes](#)

[Workspace](#)

 [Build Now](#)

 [Configure](#)

 [Delete Project](#)

 [Rename](#)

 [2.Test](#)

Downstream Projects

 [Permalinks](#)

- [Last build \(#9\), 4 hr 31 min ago](#)
- [Last stable build \(#9\), 4 hr 31 min ago](#)
- [Last successful build \(#9\), 4 hr 31 min ago](#)
- [Last completed build \(#9\), 4 hr 31 min ago](#)



Jenkins / 2.Test

Status

Changes

Workspace

Build Now

Configure

Delete Project

Rename

Builds

Filter /

Today

#10 1:49 AM ▼

2.Test

Upstream Projects

1.Compile

Downstream Projects

3.Package

Permalinks

- Last build (#10), 2 min 9 sec ago
- Last stable build (#10), 2 min 9 sec ago
- Last successful build (#10), 2 min 9 sec ago
- Last failed build (#3), 5 hr 11 min ago
- Last unsuccessful build (#3), 5 hr 11 min ago
- Last completed build (#10), 2 min 9 sec ago



Jenkins

/ 3.Package



Status



</>

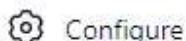
Changes



Workspace



Build Now



Configure



Delete Project



Rename



3.Package

Upstream Projects



2.Test

Permalinks

- [Last build \(#6\), 1 min 58 sec ago](#)
- [Last stable build \(#6\), 1 min 58 sec ago](#)
- [Last successful build \(#6\), 1 min 58 sec ago](#)
- [Last completed build \(#6\), 1 min 58 sec ago](#)

Builds

... ⌂

Filter /

Today

✓ #6 1:50 AM ▾

20 – Installing Docker

```
root@rafael-vale-edureka-slave:~# apt-get install -y docker.io
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base pigz runc ubuntu-fan
Suggested packages:
  ifupdown aufs-tools cgroupfs-mount | cgroup-lite debootstrap docker-buildx docker-compose-v2 docker-doc rinse zfs-fuse | zfsut
The following NEW packages will be installed:
  bridge-utils containerd dns-root-data dnsmasq-base docker.io pigz runc ubuntu-fan
0 upgraded, 8 newly installed, 0 to remove and 0 not upgraded.
Need to get 76.3 MB of archives.
After this operation, 289 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bridge-utils amd64 1.7-1ubuntu3 [34.4 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 runc amd64 1.3.3-0ubuntu1~22.04.3 [8857 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 containerd amd64 1.7.28-0ubuntu1~22.04.1 [38.5 MB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dns-root-data all 2024071801~ubuntu0.22.04.1 [6132 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dnsmasq-base amd64 2.90-0ubuntu0.22.04.1 [374 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 docker.io amd64 28.2.2-0ubuntu1~22.04.1 [28.4 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 ubuntu-fan all 0.12.16 [35.2 kB]
Fetched 76.3 MB in 1s (83.3 MB/s)
Preconfiguring packages ...
Selecting previously unselected package pigz.
(Reading database ... 114409 files and directories currently installed.)
Preparing to unpack .../0-pigz_2.6-1_amd64.deb ...
Unpacking pigz (2.6-1) ...
Selecting previously unselected package bridge-utils.
Preparing to unpack .../1-bridge-utils_1.7-1ubuntu3_amd64.deb ...
Unpacking bridge-utils (1.7-1ubuntu3) ...
Selecting previously unselected package runc.
Preparing to unpack .../2-runc_1.3.3-0ubuntu1~22.04.3_amd64.deb ...
Unpacking runc (1.3.3-0ubuntu1~22.04.3) ...
Selecting previously unselected package containerd.
Preparing to unpack .../3-containerd_1.7.28-0ubuntu1~22.04.1_amd64.deb ...
Unpacking containerd (1.7.28-0ubuntu1~22.04.1) ...
Selecting previously unselected package dns-root-data.
Preparing to unpack .../4-dns-root-data_2024071801~ubuntu0.22.04.1_all.deb ...
Unpacking dns-root-data (2024071801~ubuntu0.22.04.1) ...
Selecting previously unselected package dnsmasq-base.
Preparing to unpack .../5-dnsmasq-base_2.90-0ubuntu0.22.04.1_amd64.deb ...
Unpacking dnsmasq-base (2.90-0ubuntu0.22.04.1) ...
Selecting previously unselected package docker.io.
Preparing to unpack .../6-docker.io_28.2.2-0ubuntu1~22.04.1_amd64.deb ...
Unpacking docker.io (28.2.2-0ubuntu1~22.04.1) ...
Selecting previously unselected package ubuntu-fan.
Preparing to unpack .../7-ubuntu-fan_0.12.16_all.deb ...
Unpacking ubuntu-fan (0.12.16) ...
Setting up dnsmasq-base (2.90-0ubuntu0.22.04.1) ...
Setting up runc (1.3.3-0ubuntu1~22.04.3) ...
```

```
root@rafael-vale-edureka-slave:~# systemctl enable --now docker
root@rafael-vale-edureka-slave:~# docker --version
Docker version 28.2.2, build 28.2.2-0ubuntu1~22.04.1
root@rafael-vale-edureka-slave:~# sudo usermod -aG docker ubuntu
root@rafael-vale-edureka-slave:~#
```

Setting Up The Security Group

Security Groups > sg-0095b7b1d494dcf0a - rafa_project_slave_sg > Edit inbound rules

Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules <small>Info</small>	Type <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Source <small>Info</small>
sgr-019e6b8875f812265	SSH	TCP	22	Custom 177.140.105.248/32
sgr-08854afaa59a4cea8	SSH	TCP	22	Custom sg-0198fbf1537ddc60e
sgr-017feec7e7fd80580	Custom TCP	TCP	8081	Custom 177.140.105.248/32

[Add rule](#)



Jenkins

/ 3.Package

/ Configuration

Configure

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

Build Steps

Automate your build process with ordered tasks like

Invoke top-level Maven targets ?

Maven Version

Maven3

Goals

package

Advanced

Add build step

Filter

Execute Windows batch command

Execute shell



Configure

 With Ant ?

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

Invoke top-level Maven targets ?

Maven Version

Maven3

Goals

package

Advanced ▾

Execute shell ?

Command

See the list of available environment variables

```
set -eux

echo "== Onde estou? =="
pwd
echo "WORKSPACE=$WORKSPACE"
```

21 – Getting the Slave IP for Tests

Find Instance by attribute or tag (case-sensitive)

All states ▾

Name	Instance ID	Instance state	Instance type
<input checked="" type="checkbox"/> rafael-vale-purdue_edureka-slave	i-0241d4139d7dd3c99	Running	t2.micro
<input type="checkbox"/> rafael_vale_purdue_edureka_final_project	i-0a537e42652b6296d	Running	t2.micro

i-0241d4139d7dd3c99 (rafael-vale-purdue_edureka-slave)

Details Status and alarms Monitoring Security Networking Storage Tags

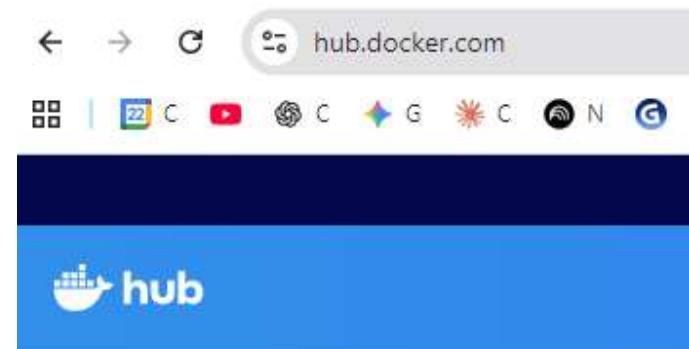
▼ Instance summary Info

Instance ID	i-0241d4139d7dd3c99	Public IPv4 address	18.215.145.66 open address ↗
Public IPv4 address	18.215.145.66 open address ↗		

22 – Testing



23 – Setting Up the Docker Hub





Create your account

Work **Personal**

Email

Email is required.

Username

Use 4 to 30 letters & digits only.

Password



Send me occasional product updates and announcements.

Sign up

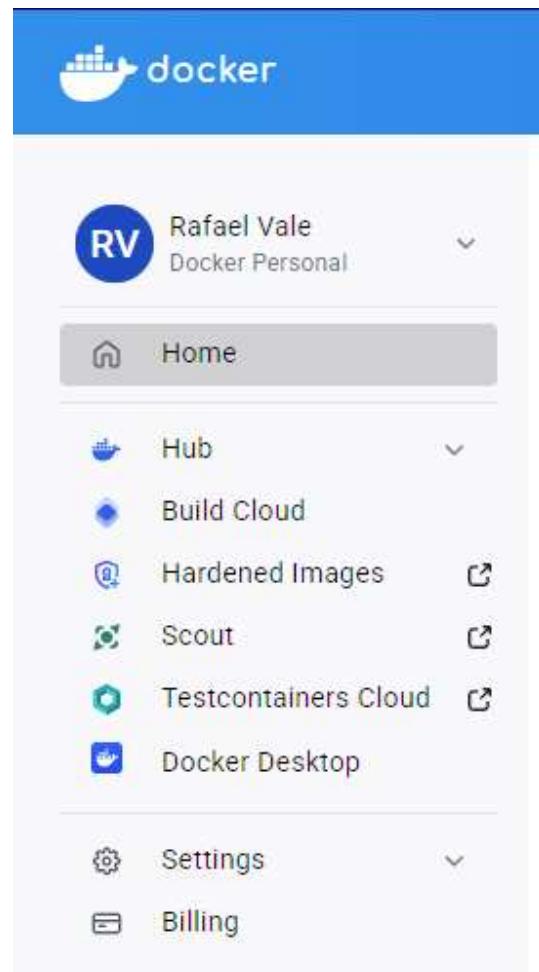
OR



Continue with Google



Continue with GitHub



```
root@rafael-vale-edureka-slave:~# docker images
REPOSITORY      TAG          IMAGE ID      CREATED        SIZE
abcapp          latest       9acc3dc2ba3e   26 minutes ago  429MB
tomcat          9-jdk11-temurin 566ba963d2ce   12 days ago    422MB
root@rafael-vale-edureka-slave:~# docker login -u "xxxxxxxxxxxxxxxxxxxx"
```

```
root@rafael-vale-edureka-slave:~# docker images
REPOSITORY      TAG          IMAGE ID      CREATED        SIZE
abcapp          latest       9acc3dc2ba3e   26 minutes ago  429MB
tomcat          9-jdk11-temurin 566ba963d2ce   12 days ago    422MB
root@rafael-vale-edureka-slave:~# docker login -u rafavale

[ Info → A Personal Access Token (PAT) can be used instead.  
To create a PAT, visit https://app.docker.com/settings
```

Password:

```
WARNING! Your credentials are stored unencrypted in '/root/.docker/config.json'.  
Configure a credential helper to remove this warning. See  
https://docs.docker.com/go/credential-store/
```

Login Succeeded

```
root@rafael-vale-edureka-slave:~#
```

```
Login Succeeded
root@rafael-vale-edureka-slave:~#
```

```
Login Succeeded
root@rafael-vale-edureka-slave:~# docker tag abcapp:latest rafavale/abcapp:1.0
root@rafael-vale-edureka-slave:~# docker push rafavale/abcapp:1.0
The push refers to repository [docker.io/rafavale/abcapp]
06905ea916fc: Pushed
5f70bf18a086: Mounted from library/tomcat
61f70b0ae495: Mounted from library/tomcat
215eb351fb2: Mounted from library/tomcat
4865d8838cb6: Mounted from library/tomcat
f82910c59909: Mounted from library/tomcat
5921f2293b6c: Mounted from library/tomcat
c28f92c4e5da: Mounted from library/tomcat
e8bce0aab68: Mounted from library/tomcat
1.0: digest: sha256:77eae6147152f19198475c0570da883709f015e338a5486cca85518fe2e2d857 size: 2412
root@rafael-vale-edureka-slave:~#
```

The screenshot shows the Docker Hub 'My Hub' interface. At the top, there is a blue header bar with the 'hub' logo, 'Explore', and 'My Hub' tabs. Below the header, on the left, is a sidebar for the user 'rafavale' (Docker Personal). The sidebar includes links for 'Repositories' (which is selected and highlighted in grey), 'Hardened Images', 'Collaborations', 'Settings', 'Default privacy', and 'Notifications'. On the right, under the heading 'Repositories', it says 'All repositories within the rafavale namespace.' Below this, there is a search bar with the placeholder 'Search by repository name' and a dropdown menu set to 'All content'. A table lists one repository: 'Name' rafavale/abcapp.

Name
rafavale/abcapp

23 – Installing and Setting up Ansible

```
root@rafael-vale-edureka-project:~# apt install -y ansible
```

```
root@rafael-vale-edureka-project:~# apt install -y ansible
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ieee-data python3-argcomplete python3-dnspython python3-jmespath python3-kerberos python3-libcloud python3-lockfile python3-netaddr python3-ntlm
  python3-requests-ntlm python3-requests-toolbelt python3-selinux python3-simplejson python3-winrm python3-xmltodict
Suggested packages:
  cowsay sshpass python3-sniffio python3-trio python-lockfile-doc ipython3 python-netaddr-docs
The following NEW packages will be installed:
  ansible ieee-data python3-argcomplete python3-dnspython python3-jmespath python3-kerberos python3-libcloud python3-lockfile python3-netaddr python3-ntlm
  python3-requests-ntlm python3-requests-toolbelt python3-selinux python3-simplejson python3-winrm python3-xmltodict
0 upgraded, 18 newly installed, 0 to remove and 19 not upgraded.
Need to get 22.8 MB of archives.
After this operation, 243 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 python3-pycryptodome amd64 3.11.0+dfsg1-3ubuntu0.1 [1029 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-dnspython all 2.1.0-1ubuntu1 [123 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 ieee-data all 20210605.1 [1887 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-netaddr all 0.8.0-2 [309 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 ansible all 2.10.7+merged+base+2.10.8+dfsg-1 [17.5 MB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-argcomplete all 1.8.1-1.5 [27.2 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-jmespath all 0.10.0-1 [21.7 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-kerberos amd64 1.1.14-3.1build5 [23.0 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-lockfile all 1:0.12.2-2.2 [14.6 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-simplejson amd64 3.17.6-1build1 [54.7 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-libcloud all 3.2.0-2 [1554 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-ntlm-auth all 1.4.0-1 [20.4 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-requests-kerberos all 0.12.0-2 [11.9 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 python3-requests-ntlm all 1.1.0-1.1 [6160 B]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 python3-requests-toolbelt all 0.9.1-1 [38.0 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu universe amd64 3.2.1-1.1build2 [159 kB]
```

```
root@rafael-vale-edureka-project:~# ansible --version
ansible 2.10.8
  config file = None
  configured module search path = ['/root/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']
  ansible python module location = /usr/lib/python3/dist-packages/ansible
  executable location = /usr/bin/ansible
  python version = 3.10.12 (main, Nov  4 2025, 08:48:33) [GCC 11.4.0]
root@rafael-vale-edureka-project:~#
```

```
ubuntu@rafael-vale-edureka-project:/root$ whoami
ubuntu
ubuntu@rafael-vale-edureka-project:/root$ pwd
/root
ubuntu@rafael-vale-edureka-project:/root$ mkdir -p ~/.ssh
ubuntu@rafael-vale-edureka-project:/root$ chmod 700 ~/.ssh
ubuntu@rafael-vale-edureka-project:/root$ ssh-keygen -t ed25519 -f ~/.ssh/ansible_key -N ""
Generating public/private ed25519 key pair.
/home/ubuntu/.ssh/ansible_key already exists.
Overwrite (y/n)? y
Your identification has been saved in /home/ubuntu/.ssh/ansible_key
Your public key has been saved in /home/ubuntu/.ssh/ansible_key.pub
The key fingerprint is:
SHA256:KYlCGqdiOSUJBFMWjH2c1WebCTbXX4o1mc+VAgz66Js ubuntu@rafael-vale-edureka-project
The key's randomart image is:
+--[ED25519 256]--+
|**+o...o+.o.   |
|oo+ + ...++ +. |
|.ooo . . ++ o |
| *+ . + .= o + |
|++.. . + So = + |
|o .. . . . o   |
|               |
|               |
|               |
|               |
+----[SHA256]----+
ubuntu@rafael-vale-edureka-project:/root$ ls -la ~/.ssh/ansible_key ~/.ssh/ansible_key.pub
-rw----- 1 ubuntu ubuntu 432 Dec 21 19:47 /home/ubuntu/.ssh/ansible_key
-rw-r--r-- 1 ubuntu ubuntu 116 Dec 21 19:47 /home/ubuntu/.ssh/ansible_key.pub
ubuntu@rafael-vale-edureka-project:/root$ █
```

```
root@rafael-vale-edureka-project:~# PUBKEY=$(cat /home/ubuntu/.ssh/ansible_key.pub)"  
sudo -u jenkins ssh -i /var/lib/jenkins/.ssh/jenkins_agent_rsa ubuntu@172.31.28.153 "mkdir -p ~/.ssh && chmod 700 ~/.ssh && echo '$PUBKEY' >> ~/.ssh/authorized_keys && chmod 600 ~/.ssh/authorized_keys"  
root@rafael-vale-edureka-project:~# su ubuntu  
ubuntu@rafael-vale-edureka-project:/root$ ssh -i ~/ssh/ansible_key ubuntu@172.31.28.153 "echo OK-ANSIBLE && whoami"  
OK-ANSIBLE  
ubuntu  
ubuntu@rafael-vale-edureka-project:/root$
```

```
ubuntu@rafael-vale-edureka-project:~$ vim ~/ansible/inventory.ini
```

```
[dockerhost]  
172.31.28.153 ansible_user=ubuntu ansible_ssh_private_key_file=/home/ubuntu/.ssh/ansible_key
```

```
ubuntu@rafael-vale-edureka-project:~$ ansible --version  
ansible 2.10.8  
  config file = None  
  configured module search path = ['/home/ubuntu/.ansible/plugins/modules', '/usr/share/ansible/plugins/modules']  
  ansible python module location = /usr/lib/python3/dist-packages/ansible  
  executable location = /usr/bin/ansible  
  python version = 3.10.12 (main, Nov  4 2025, 08:48:33) [GCC 11.4.0]  
ubuntu@rafael-vale-edureka-project:~$ ansible -i ~/ansible/inventory.ini dockerhost -m ping  
172.31.28.153 | SUCCESS => {  
    "ansible_facts": {  
        "discovered_interpreter_python": "/usr/bin/python3"  
    },  
    "changed": false,  
    "ping": "pong"  
}  
ubuntu@rafael-vale-edureka-project:~$
```

```
ubuntu@rafael-vale-edureka-project:~$ ls -l ~/.ssh/ansible_key ~/.ssh/ansible_key.pub
-rw----- 1 ubuntu ubuntu 432 Dec 21 19:47 /home/ubuntu/.ssh/ansible_key
-rw-r--r-- 1 ubuntu ubuntu 116 Dec 21 19:47 /home/ubuntu/.ssh/ansible_key.pub
ubuntu@rafael-vale-edureka-project:~$ chmod 600 ~/.ssh/ansible_key
ubuntu@rafael-vale-edureka-project:~$ ssh -i ~/.ssh/ansible_key ubuntu@172.31.28.153 "echo OK-ANSIBLE && whoami"
OK-ANSIBLE
ubuntu
ubuntu@rafael-vale-edureka-project:~$ vim ~/.ssh/config
```

```
Host slave
  HostName 172.31.28.153
  User ubuntu
  IdentityFile ~/.ssh/ansible_key
  IdentitiesOnly yes
```

```
ubuntu@rafael-vale-edureka-project:~$ ssh slave
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1043-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

System information as of Sun Dec 21 20:08:43 UTC 2025

System load:  0.08          Processes:           111
Usage of /:   29.7% of 14.36GB  Users logged in:    0
Memory usage: 52%           IPv4 address for eth0: 172.31.28.153
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

3 additional security updates can be applied with ESM Apps.
Learn more about enabling ESM Apps service at https://ubuntu.com/esm

The list of available updates is more than a week old.
To check for new updates run: sudo apt update
New release '24.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Sun Dec 21 20:00:16 2025 from 172.31.24.252
ubuntu@rafael-vale-edureka-slave:~$ █
```

```
ubuntu@rafael-vale-edureka-project:~$ ssh -i ~/.ssh/ansible_key ubuntu@172.31.28.153
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1043-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

System information as of Sun Dec 21 20:11:25 UTC 2025

System load: 0.0          Processes:           112
Usage of /:   29.7% of 14.36GB  Users logged in:      0
Memory usage: 52%          IPv4 address for eth0: 172.31.28.153
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

3 additional security updates can be applied with ESM Apps.
Learn more about enabling ESM Apps service at https://ubuntu.com/esm

The list of available updates is more than a week old.
To check for new updates run: sudo apt update
New release '24.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Sun Dec 21 20:09:06 2025 from 172.31.24.252
ubuntu@rafael-vale-edureka-slave:~$ █
```



```
ubuntu@rafael-vale-edureka-slave:~$ sudo pip3 install docker
Collecting docker
  Downloading docker-7.1.0-py3-none-any.whl (147 kB)
    147.8/147.8 kB 3.4 MB/s eta 0:00:00
Collecting requests>=2.26.0
  Downloading requests-2.32.5-py3-none-any.whl (64 kB)
    64.7/64.7 kB 14.4 MB/s eta 0:00:00
Requirement already satisfied: urllib3>=1.26.0 in /usr/lib/python3/dist-packages (from docker) (1.26.5)
Requirement already satisfied: certifi>=2017.4.17 in /usr/lib/python3/dist-packages (from requests>=2.26.0->docker) (2020.6.20)
Requirement already satisfied: idna<4,>=2.5 in /usr/lib/python3/dist-packages (from requests>=2.26.0->docker) (3.3)
Collecting charset_normalizer<4,>=2
  Downloading charset_normalizer-3.4.4-cp310-cp310-manylinux2014_x86_64.manylinux_2_17_x86_64.manylinux_2_28_x86_64.whl (153 kB)
    153.6/153.6 kB 30.7 MB/s eta 0:00:00
Installing collected packages: charset_normalizer, requests, docker
  Attempting uninstall: requests
    Found existing installation: requests 2.25.1
    Not uninstalling requests at /usr/lib/python3/dist-packages, outside environment /usr
      Can't uninstall 'requests'. No files were found to uninstall.
Successfully installed charset_normalizer-3.4.4 docker-7.1.0 requests-2.32.5
```

```
ubuntu@rafael-vale-edureka-slave:~$ docker images | head
REPOSITORY      TAG          IMAGE ID      CREATED       SIZE
abcapp          latest        9acc3dc2ba3e  2 hours ago  429MB
rafavale/abcapp 1.0          9acc3dc2ba3e  2 hours ago  429MB
tomcat          9-jdk11-temurin 566ba963d2ce  13 days ago  422MB
ubuntu@rafael-vale-edureka-slave:~$ docker login

USING WEB-BASED LOGIN

i Info → To sign in with credentials on the command line, use 'docker login -u <username>'

Your one-time device confirmation code is: FVNW-ZTNB
Press ENTER to open your browser or submit your device code here: https://login.docker.com/activate

Waiting for authentication in the browser...
^Clogin canceled
ubuntu@rafael-vale-edureka-slave:~$ docker login -u rafavale

i Info → A Personal Access Token (PAT) can be used instead.
      To create a PAT, visit https://app.docker.com/settings

Password:

WARNING! Your credentials are stored unencrypted in '/home/ubuntu/.docker/config.json'.
Configure a credential helper to remove this warning. See
https://docs.docker.com/go/credential-store/

Login Succeeded
ubuntu@rafael-vale-edureka-slave:~$ docker tag abcapp:latest rafavale/abcapp:1.0
ubuntu@rafael-vale-edureka-slave:~$ docker push rafavale/abcapp:1.0
The push refers to repository [docker.io/rafavale/abcapp]
06905ea916fc: Layer already exists
5f70bf18a086: Layer already exists
61f70b0ae495: Layer already exists
215eb351fbfd2: Layer already exists
4865d8838cb6: Layer already exists
f82910c59909: Layer already exists
5921f2293b6c: Layer already exists
c28f92c4e5da: Layer already exists
e8bce0aabbd68: Layer already exists
1.0: digest: sha256:77eae6147152f19198475c0570da883709f015e338a5486cca85518fe2e2d857 size: 2412
ubuntu@rafael-vale-edureka-slave:~$ █
```

```
ubuntu@rafael-vale-edureka-project:~$ vim ~/ansible/deploy_docker.yml
```

```
- name: Deploy app container from Docker Hub
  hosts: dockerhost
  become: true

  tasks:
    - name: Pull image from Docker Hub
      community.docker.docker_image:
        name: "rafvale/abcapp"
        tag: "1.0"
        source: pull

    - name: Remove old container if exists
      community.docker.docker_container:
        name: abcapp
        state: absent
        force_kill: true

    - name: Run container
      community.docker.docker_container:
        name: abcapp
        image: "rafvale/abcapp:1.0"
        ports:
          - "8081:8080"
        restart_policy: always
        state: started
```

```
ubuntu@rafael-vale-edureka-project:~$ ansible-playbook -i ~/ansible/inventory.ini ~/ansible/deploy_docker.yml
```

```
ubuntu@rafael-vale-edureka-project:~$ ansible-playbook -i ~/ansible/inventory.ini ~/ansible/deploy_docker.yml
[WARNING]: Collection community.docker does not support Ansible version 2.10.8

PLAY [Deploy app container from Docker Hub] ****
TASK [Gathering Facts] ****
ok: [172.31.28.153]

TASK [Pull image from Docker Hub] ****
fatal: [172.31.28.153]: FAILED! => {"msg": "Could not find imported module support code for ansible_collections.community.docker.plugins.modules.docker_image. Looked for ('ansible.module_utils.compat.version.LooseVersion', 'ansible.module_utils.compat.version')"} 

PLAY RECAP ****
172.31.28.153 : ok=1    changed=0    unreachable=0    failed=1    skipped=0    rescued=0    ignored=0

ubuntu@rafael-vale-edureka-project:~$
```

```
ubuntu@rafael-vale-edureka-project:~$ vim ~/ansible/deploy_docker.yml
```

```
- name: Deploy app container from Docker Hub (docker CLI)
hosts: dockerhost
become: true

vars:
  image: "rafvale/abcapp:1.0"
  container_name: "abcapp"

tasks:
  - name: Check Docker is installed
    ansible.builtin.command: docker --version
    register: docker_version
    changed_when: false

  - name: Pull image from Docker Hub
    ansible.builtin.command: "docker pull {{ image }}"

  - name: Remove old container if exists
    ansible.builtin.shell: "docker rm -f {{ container_name }} || true"

  - name: Run container
    ansible.builtin.command: >
      docker run -d --name {{ container_name }}
      -p 8081:8080
      --restart unless-stopped
      {{ image }}

  - name: Show container status
    ansible.builtin.command: "docker ps --filter name={{ container_name }}"
    register: ps
    changed_when: false

  - name: Print container status
    ansible.builtin.debug:
      var: ps.stdout_lines
```

```
ubuntu@rafael-vale-edureka-project:~$ ansible-playbook -i ~/ansible/inventory.ini ~/ansible/deploy_docker.yml

PLAY [Deploy app container from Docker Hub (docker CLI)] ****
TASK [Gathering Facts] ****
ok: [172.31.28.153]

TASK [Check Docker is installed] ****
ok: [172.31.28.153]

TASK [Pull image from Docker Hub] ****
changed: [172.31.28.153]

TASK [Remove old container if exists] ****
changed: [172.31.28.153]

TASK [Run container] ****
changed: [172.31.28.153]

TASK [Show container status] ****
ok: [172.31.28.153]

TASK [Print container status] ****
ok: [172.31.28.153] => {
  "ps.stdout_lines": [
    "CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES",
    "e6d2ed7065eb rafavale/abcapp:1.0 \\"catalina.sh run\\" 1 second ago Up Less than a second 0.0.0.0:8081->8080/tcp, [::]:8081->8080/tcp abcapp"
  ]
}

PLAY RECAP ****
172.31.28.153 : ok=7    changed=3    unreachable=0   failed=0    skipped=0    rescued=0   ignored=0

ubuntu@rafael-vale-edureka-project:~$
```

```
ubuntu@rafael-vale-edureka-slave:~$ docker login -u rafavale

i  Info → A Personal Access Token (PAT) can be used instead.
    To create a PAT, visit https://app.docker.com/settings

Password:
```

```
ubuntu@rafael-vale-edureka-slave:~$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS              PORTS
e6d2ed7065eb        rafavale/abcapp:1.0   "catalina.sh run"   2 minutes ago     Up 2 minutes      0.0.0.0:8081->8080/tcp, [::]:8081->8080/tcp
NAMES
abcapp
ubuntu@rafael-vale-edureka-slave:~$
```

```
ubuntu@rafael-vale-edureka-slave:~$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED             STATUS              PORTS
e6d2ed7065eb        rafavale/abcapp:1.0   "catalina.sh run"   2 minutes ago     Up 2 minutes      0.0.0.0:8081->8080/tcp, [::]:8081->8080/tcp
NAMES
abcapp
ubuntu@rafael-vale-edureka-slave:~$ curl -I http://localhost:8081/ | head -n 1
% Total    % Received % Xferd  Average Speed   Time      Time     Current
          Dload  Upload Total   Spent    Left Speed
  0   519     0     0   0     0  --:--:--  0:00:02  --:--:--   0
HTTP/1.1 200
ubuntu@rafael-vale-edureka-slave:~$
```

The screenshot shows the AWS Lambda console interface. It displays two Lambda functions:

- rafael-vale-purdue_edureka-slave**: Status: Running, Memory: t2.micro. This function has a checkmark next to its name.
- rafael_vale_purdue_edureka_final_p...**: Status: Running, Memory: t2.micro. This function does not have a checkmark next to its name.

i-0241d4139d7dd3c99 (rafael-vale-purdue_edureka-slave)

Details Status and alarms Monitoring Security Networking Storage Tags

▼ Instance summary Info

Instance ID

i-0241d4139d7dd3c99

Public IPv4 address

18.215.145.66 | [open address](#) ↗

Public IPv4 address

 18.215.145.66 | open address 



Welcome to ABC technologies

This is retail portal

[Add Product](#) [View Product](#)



i-0a537e42652b6296d (rafael_vale_purdue_edureka_final_project)

[Details](#) | [Status and alarms](#) | [Monitoring](#) | [Security](#) | [Networking](#) | [Storage](#) | [Tags](#)

▼ Instance summary [Info](#)

Instance ID

i-0a537e42652b6296d

Public IPv4 address

54.167.14.238 | [open address](#) ↗

Public IPv4 address

54.167.14.238 | [open address](#) ↗

Public IPv4 address

54.167.14.238 | [open address](#) ↗

← → ⌂ Not secure 54.167.14.238:8080

grid C YouTube C G N S AWS G Az AWS S A

Jenkins

+ New Item

Build History All +

Build Queue ^

Build Executor Status ^
built-in node + 1 agent (0 of 1 executors busy)

S	W	Name ↓
✓	☀	1.Compile
✓	☀	2.Test
✓	☀	3.Package



Jenkins / All ↻ / New Item

New Item

Enter an item name

4.Deploy_Ansible

Select an item type



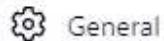
Freestyle project

Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.

**Jenkins**

/ 4.Deploy_Ansible ▾ / Configuration

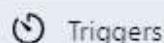
Configure



General



Source Code Management



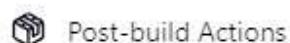
Triggers



Environment



Build Steps



Post-build Actions

Triggers

Set up automated actions that start your build based on specific triggers.

Trigger builds remotely (e.g., from scripts) ?

Build after other projects are built ?

Projects to watch

3.Package,

Trigger only if build is stable

Trigger even if the build is unstable

Trigger even if the build fails

Always trigger, even if the build is aborted

Build periodically ?

GitHub hook trigger for GITScm polling ?

Poll SCM ?



Configure

Environment

General

Configure settings and variables that define the context in which your build runs, like credentials, paths, and global parameters

Source Code Management

Delete workspace before build starts

Use secret text(s) or file(s) ?

Add timestamps to the Console Output

Inspect build log for published build scans

Terminate a build if it's stuck

With Ant ?

Environment

Build Steps

Post-build Actions

Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

Execute shell ?

Command

See the list of available environment variables

```
set -eux  
ansible-playbook -i /home/ubuntu/ansible/inventory.ini /home/ubuntu/ansible/deploy_docker.yml
```



Jenkins

/ 4.Deploy_Ansible / Configuration

Configure

[Plain text](#) [Preview](#)

General

 Source Code Management Triggers Environment Build Steps Post-build Actions Discard old builds ? GitHub project This project is parameterized ? Throttle builds ? Execute concurrent builds if necessary ? Restrict where this project can be run ?

Label Expression ?

built-in

Label built-in matches 1 node. Permissions or other restrictions provided by plugins may further reduce that list.

Advanced ▾



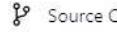
Configure

Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.



General



Source Code Management



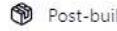
Triggers



Environment



Build Steps



Post-build Actions

Execute shell ?

Command

[See the list of available environment variables](#)

```
set -eux  
/usr/bin/ansible-playbook -i /var/lib/jenkins/ansible/inventory.ini /var/lib/jenkins/ansible/deploy_docker.yml
```

```
root@rafael-vale-edureka-project:~# sudo ls -la /var/lib/jenkins/ansible/
sudo ls -la /var/lib/jenkins/ansible/deploy_docker.yml
sudo ls -la /var/lib/jenkins/ansible/inventory.ini
ls: cannot access '/var/lib/jenkins/ansible/': No such file or directory
ls: cannot access '/var/lib/jenkins/ansible/deploy_docker.yml': No such file or directory
ls: cannot access '/var/lib/jenkins/ansible/inventory.ini': No such file or directory
root@rafael-vale-edureka-project:~# sudo mkdir -p /var/lib/jenkins/ansible
sudo cp /home/ubuntu/ansible/inventory.ini /var/lib/jenkins/ansible/inventory.ini
sudo cp /home/ubuntu/ansible/deploy_docker.yml /var/lib/jenkins/ansible/deploy_docker.yml
sudo chown -R jenkins:jenkins /var/lib/jenkins/ansible
root@rafael-vale-edureka-project:~#
```

```
[dockerhost]
172.31.28.153 ansible_user=ubuntu ansible_ssh_private_key_file=/home/ubuntu/.ssh/ansible_key
root@rafael-vale-edureka-project:~#
```

Name ↓	Last Success
1.Compile	1 min 58 sec #14
2.Test	1 min 48 sec #14
3.Package	1 min 33 sec #10
4.Deploy_Ansible	1 min 18 sec #4

24 – Installing and Setting up Kubernetes

```
ubuntu@rafael-vale-edureka-slave:~$ sudo mkdir -p /etc/containerd
ubuntu@rafael-vale-edureka-slave:~$ containerd config default | sudo tee /etc/containerd/config.toml >/dev/null
ubuntu@rafael-vale-edureka-slave:~$ sudo sed -i 's/SystemdCgroup = false/SystemdCgroup = true/' /etc/containerd/conf
sed: can't read /etc/containerd/conf: No such file or directory
ubuntu@rafael-vale-edureka-slave:~$ sudo sed -i 's/SystemdCgroup = false/SystemdCgroup = true/' /etc/containerd/config.toml
ubuntu@rafael-vale-edureka-slave:~$ sudo systemctl restart containerd
ubuntu@rafael-vale-edureka-slave:~$
```

```
ubuntu@rafael-vale-edureka-slave:~$ sudo apt install -y kubelet kubeadm kubectl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  conntrack cri-tools kubernetes-cni
The following NEW packages will be installed:
  conntrack cri-tools kubeadm kubectl kubelet kubernetes-cni
0 upgraded, 6 newly installed, 0 to remove and 18 not upgraded.
Need to get 93.8 MB of archives.
After this operation, 343 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 conntrack amd64 1:1.4.6-2build2 [33.5 kB]
Get:2 https://prod-cdn.packages.k8s.io/repositories/isv:/kubernetes:/core:/stable:/v1.30/deb cri-tools 1.30.1-1.1 [21.3 MB]
Get:3 https://prod-cdn.packages.k8s.io/repositories/isv:/kubernetes:/core:/stable:/v1.30/deb kubeadm 1.30.14-1.1 [10.5 MB]
Get:4 https://prod-cdn.packages.k8s.io/repositories/isv:/kubernetes:/core:/stable:/v1.30/deb kubectl 1.30.14-1.1 [10.9 MB]
Get:5 https://prod-cdn.packages.k8s.io/repositories/isv:/kubernetes:/core:/stable:/v1.30/deb kubernetes-cni 1.4.0-1.1 [32.9 MB]
Get:6 https://prod-cdn.packages.k8s.io/repositories/isv:/kubernetes:/core:/stable:/v1.30/deb kubelet 1.30.14-1.1 [18.2 MB]
Fetched 93.8 MB in 1s (83.1 MB/s)
Selecting previously unselected package conntrack.
(Reading database ... 121417 files and directories currently installed.)
```

```
ubuntu@rafael-vale-edureka-project:~$ sudo apt-mark hold kubelet kubeadm kubectl
kubelet set on hold.
kubeadm set on hold.
kubectl set on hold.
ubuntu@rafael-vale-edureka-project:~$
```

```
ubuntu@rafael-vale-edureka-project:~$ sudo kubeadm init --pod-network-cidr=10.244.0.0/16
[1221 23:12:59.868172    1051 version.go:256] remote version is much newer: v1.35.0; falling back to: stable-1.30
[init] Using Kubernetes version: v1.30.14
[preflight] Running pre-flight checks
[preflight] Pulling images required for setting up a Kubernetes cluster
[preflight] This might take a minute or two, depending on the speed of your internet connection
[preflight] You can also perform this action in beforehand using 'kubeadm config images pull'
[1221 23:13:00.432927    1051 checks.go:844] detected that the sandbox image "registry.k8s.io/pause:3.8" of the container image "registry.k8s.io/pause:3.9" as the CRI sandbox image.
[certs] Using certificateDir folder "/etc/kubernetes/pki"
```

```
ubuntu@rafael-vale-edureka-project:~$ mkdir -p $HOME/.kube
ubuntu@rafael-vale-edureka-project:~$ sudo cp -i /etc/kubernetes/admin.conf $HOME/.kube/config
ubuntu@rafael-vale-edureka-project:~$ sudo chown $(id -u):$(id -g) $HOME/.kube/config
ubuntu@rafael-vale-edureka-project:~$ kubectl apply -f https://raw.githubusercontent.com/flannel-io/flannel/master/Documentation/kube-flannel.yml
namespace/kube-flannel created
clusterrole.rbac.authorization.k8s.io/flannel created
clusterrolebinding.rbac.authorization.k8s.io/flannel created
serviceaccount/flannel created
configmap/kube-flannel-cfg created
daemonset.apps/kube-flannel-ds created
ubuntu@rafael-vale-edureka-project:~$ kubectl apply -f https://raw.githubusercontent.com/flannel-io/flannel/master/Documentation/kube-flannel.yml
namespace/kube-flannel unchanged
clusterrole.rbac.authorization.k8s.io/flannel unchanged
clusterrolebinding.rbac.authorization.k8s.io/flannel unchanged
serviceaccount/flannel unchanged
configmap/kube-flannel-cfg unchanged
daemonset.apps/kube-flannel-ds unchanged
ubuntu@rafael-vale-edureka-project:~$ kubeadm token create --print-join-command
kubeadm join 172.31.24.252:6443 --token en6myu.zvzcbwztxu7p2qco --discovery-token-ca-cert-hash sha256:3bea458a8c5a0571602f4ce6399de8a617d3d47afffc47b2743e630a70de4c6f4
ubuntu@rafael-vale-edureka-project:~$
```

```
ubuntu@rafael-vale-edureka-project:~$ kubeadm token create --print-join-command
kubeadm join 172.31.24.252:6443 --token en6myu.zvzcbwztxu7p2qco --discovery-token-ca-cert-hash sha256:3bea458a8c5a0571602f4ce6399de8a617d3d47afffc47b2743e630a70de4c6f4
```

```
ubuntu@rafael-vale-edureka-slave:~$ sudo kubeadm join 172.31.24.252:6443 --token en6myu.zvzcbwztxu7p2qco --discovery-token-ca-cert-hash sha256:3bea458a8c5a0571602f4ce6399de8a617d3d47afffc47b2743e630a70de4c6f4
```

```
ubuntu@rafael-vale-edureka-slave:~$ sudo kubeadm join 172.31.24.252:6443 --token en6myu.zvzcbwztxu7p2qco --discovery-token-ca-cert-hash sha256:3bea458a8c5a0571602f4ce6399de8a617d3d47affc47b2743e630a70de4c6f4
[preflight] Running pre-flight checks
[preflight] Reading configuration from the cluster...
[preflight] FYI: You can look at this config file with 'kubectl -n kube-system get cm kubeadm-config -o yaml'
[kubelet-start] Writing kubelet configuration to file "/var/lib/kubelet/config.yaml"
[kubelet-start] Writing kubelet environment file with flags to file "/var/lib/kubelet/kubeadm-flags.env"
[kubelet-start] Starting the kubelet
[kubelet-check] Waiting for a healthy kubelet at http://127.0.0.1:10248/healthz. This can take up to 4m0s
[kubelet-check] The kubelet is healthy after 514.585624ms
[kubelet-start] Waiting for the kubelet to perform the 'TLS Bootstrap'

This node has joined the cluster:
* Certificate signing request was sent to apiserver and a response was received.
* The Kubelet was informed of the new secure connection details.

Run 'kubectl get nodes' on the control-plane to see this node join the cluster.

ubuntu@rafael-vale-edureka-slave:~$
```

```
ubuntu@rafael-vale-edureka-project:~$ kubectl get nodes -o wide
NAME           STATUS   ROLES      AGE    VERSION   INTERNAL-IP     EXTERNAL-IP   OS-IMAGE          KERNEL-VERSION   CONTAINER-RUNTIME
rafael-vale-edureka-project   Ready    control-plane   14m    v1.30.14  172.31.24.252   <none>        Ubuntu 22.04.5 LTS   6.8.0-1043-aws   containerd://1.7.28
rafael-vale-edureka-slave     Ready    <none>      2m57s   v1.30.14  172.31.28.153   <none>        Ubuntu 22.04.5 LTS   6.8.0-1043-aws   containerd://1.7.28
ubuntu@rafael-vale-edureka-project:~$
```

```
ubuntu@rafael-vale-edureka-project:~$ kubectl get nodes -o wide
NAME           STATUS   ROLES      AGE    VERSION   INTERNAL-IP     EXTERNAL-IP   OS-IMAGE          KERNEL-VERSION   CONTAINER-RUNTIME
rafael-vale-edureka-project   Ready    control-plane   14m    v1.30.14  172.31.24.252   <none>        Ubuntu 22.04.5 LTS   6.8.0-1043-aws   containerd://1.7.28
rafael-vale-edureka-slave     Ready    <none>      2m57s   v1.30.14  172.31.28.153   <none>        Ubuntu 22.04.5 LTS   6.8.0-1043-aws   containerd://1.7.28
ubuntu@rafael-vale-edureka-project:~$ mkdir -p ~/k8s
ubuntu@rafael-vale-edureka-project:~$ vim ~/k8s/deployment.yml
```

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: abcapp
spec:
  replicas: 3
  selector:
    matchLabels:
      app: abcapp
  template:
    metadata:
      labels:
        app: abcapp
    spec:
      containers:
        - name: abcapp
          image: rafavale/abcapp:1.0
          ports:
            - containerPort: 8080
```

```
ubuntu@rafael-vale-edureka-project:~$ vim ~/k8s/service.yml
```

```
apiVersion: v1
kind: Service
metadata:
  name: abcapp-svc
spec:
  type: NodePort
  selector:
    app: abcapp
  ports:
    - port: 8080
      targetPort: 8080
      nodePort: 30081
```

```
ubuntu@rafael-vale-edureka-project:~$ vim ~/k8s/service.yml
ubuntu@rafael-vale-edureka-project:~$ kubectl apply -f ~/k8s/deployment.yml
deployment.apps/abcapp created
ubuntu@rafael-vale-edureka-project:~$ kubectl apply -f ~/k8s/service.yml
service/abcapp-svc created
ubuntu@rafael-vale-edureka-project:~$ kubectl get deploy,pods,svc -o wide
NAME                  READY   UP-TO-DATE   AVAILABLE   AGE     CONTAINERS   IMAGES          SELECTOR
deployment.apps/abcapp 3/3     3           3           32s    abcapp       rafavale/abcapp:1.0   app=abcapp

NAME                READY   STATUS    RESTARTS   AGE     IP           NODE          NOMINATED NODE   READINESS GATES
pod/abcapp-89bdc8ddb-qrmkz 1/1     Running   0          32s    10.244.1.2  rafael-vale-edureka-slave  <none>        <none>
pod/abcapp-89bdc8ddb-pfhcj 1/1     Running   0          32s    10.244.1.3  rafael-vale-edureka-slave  <none>        <none>
pod/abcapp-89bdc8ddb-plrv7 1/1     Running   0          32s    10.244.1.4  rafael-vale-edureka-slave  <none>        <none>

NAME            TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)        AGE   SELECTOR
service/abcapp-svc  NodePort   10.102.160.162  <none>        8080:30081/TCP  15s  app=abcapp
service/kubernetes  ClusterIP  10.96.0.1    <none>        443/TCP       19m  <none>
ubuntu@rafael-vale-edureka-project:~$
```

rafael-vale-purdue_edureka-slave i-0241d4139d7dd3c99 Running Q Q t3.small

i-0241d4139d7dd3c99 (rafael-vale-purdue_edureka-slave)

[Details](#) | [Status and alarms](#) | [Monitoring](#) | [Security](#) | [Networking](#) | [Storage](#) | [Tags](#)

▼ Instance summary [Info](#)

Instance ID

i-0241d4139d7dd3c99

Public IPv4 address

54.242.138.141 | [open address ↗](#)

sgr-0453cd5ad7b4580de Custom TCP ▾ TCP 30081 Custom ▾ 177.140.105.248/32 X

← → C △ Not secure 54.242.138.141:30081



Welcome to ABC technologies

This is retail portal

[Add Product](#) [View Product](#)

```
ubuntu@rafael-vale-edureka-project:~$ kubectl get nodes -o wide
NAME           STATUS   ROLES      AGE    VERSION   INTERNAL-IP     EXTERNAL-IP   OS-IMAGE        KERNEL-VERSION   CONTAINER-RUNTIME
rafael-vale-edureka-project   Ready    control-plane   96m   v1.30.14  172.31.24.252   <none>       Ubuntu 22.04.5 LTS  6.8.0-1043-aws  containerd://1.7.28
rafael-vale-edureka-slave     Ready    <none>      84m   v1.30.14  172.31.28.153   <none>       Ubuntu 22.04.5 LTS  6.8.0-1043-aws  containerd://1.7.28
ubuntu@rafael-vale-edureka-project:~$ kubectl get nodes -o wide
NAME           STATUS   ROLES      AGE    VERSION   INTERNAL-IP     EXTERNAL-IP   OS-IMAGE        KERNEL-VERSION   CONTAINER-RUNTIME
rafael-vale-edureka-project   Ready    control-plane   96m   v1.30.14  172.31.24.252   <none>       Ubuntu 22.04.5 LTS  6.8.0-1043-aws  containerd://1.7.28
rafael-vale-edureka-slave     Ready    <none>      85m   v1.30.14  172.31.28.153   <none>       Ubuntu 22.04.5 LTS  6.8.0-1043-aws  containerd://1.7.28
ubuntu@rafael-vale-edureka-project:~$ kubectl get svc -o wide
NAME        TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)          AGE    SELECTOR
abcapp-svc  NodePort   10.102.160.162  <none>        8080:30081/TCP  77m    app=abcapp
kubernetes  ClusterIP  10.96.0.1    <none>        443/TCP         97m    <none>
ubuntu@rafael-vale-edureka-project:~$
```

```
ubuntu@rafael-vale-edureka-project:~$ sudo mkdir -p /var/lib/jenkins/.kube
ubuntu@rafael-vale-edureka-project:~$ sudo cp -i /home/ubuntu/.kube/config /var/lib/jenkins/.kube/config
ubuntu@rafael-vale-edureka-project:~$ sudo chown -R jenkins:jenkins /var/lib/jenkins/.kube
ubuntu@rafael-vale-edureka-project:~$ sudo chmod 600 /var/lib/jenkins/.kube/config
ubuntu@rafael-vale-edureka-project:~$ sudo -u jenkins kubectl get nodes -o wide
NAME           STATUS   ROLES      AGE    VERSION   INTERNAL-IP     EXTERNAL-IP   OS-IMAGE        KERNEL-VERSION   CONTAINER-RUNTIME
rafael-vale-edureka-project   Ready    control-plane   98m   v1.30.14  172.31.24.252   <none>       Ubuntu 22.04.5 LTS  6.8.0-1043-aws  containerd://1.7.28
rafael-vale-edureka-slave     Ready    <none>      86m   v1.30.14  172.31.28.153   <none>       Ubuntu 22.04.5 LTS  6.8.0-1043-aws  containerd://1.7.28
ubuntu@rafael-vale-edureka-project:~$
```

25 – Setting Up Ansible/Kubernetes

```
ubuntu@rafael-vale-edureka-project:~$ vim ~/ansible/deploy_k8s.yml
```

```
- name: Deploy ABC app to Kubernetes
  hosts: localhost
  connection: local

  tasks:
    - name: Apply deployment
      ansible.builtin.command: kubectl apply -f /home/ubuntu/k8s/deployment.yml

    - name: Apply service
      ansible.builtin.command: kubectl apply -f /home/ubuntu/k8s/service.yml

    - name: Show status
      ansible.builtin.command: kubectl get deploy,pods,svc -o wide
      register: out
      changed_when: false

    - name: Print status
      ansible.builtin.debug:
        var: out.stdout_lines
```

```

ubuntu@rafael-vale-edureka-project:~$ ansible-playbook ~/ansible/deploy_k8s.yml
[WARNING]: No inventory was parsed, only implicit localhost is available
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit localhost does not match 'all'

PLAY [Deploy ABC app to Kubernetes] ****
TASK [Gathering Facts] ****
ok: [localhost]

TASK [Apply deployment] ****
changed: [localhost]

TASK [Apply service] ****
changed: [localhost]

TASK [Show status] ****
ok: [localhost]

TASK [Print status] ****
ok: [localhost] => {
    "out.stdout_lines": [
        "NAME          READY  UP-TO-DATE  AVAILABLE   AGE  CONTAINERS  IMAGES           SELECTOR",
        "deployment.apps/abcapp  3/3     3           3           81m  abcapp      rafavale/abcapp:1.0  app=abcapp",
        "",
        "NAME          READY  STATUS    RESTARTS  AGE   IP           NODE           NOMINATED NODE  READINESS GATES",
        "pod/abcapp-89bdc8ddb-grmkz  1/1   Running   0          81m  10.244.1.2  rafael-vale-edureka-slave  <none>          <none>",
        "pod/abcapp-89bdc8ddb-pfhej  1/1   Running   0          81m  10.244.1.3  rafael-vale-edureka-slave  <none>          <none>",
        "pod/abcapp-89bdc8ddb-plrvj  1/1   Running   0          81m  10.244.1.4  rafael-vale-edureka-slave  <none>          <none>",
        "",
        "NAME          TYPE      CLUSTER-IP      EXTERNAL-IP  PORT(S)        AGE  SELECTOR",
        "service/abcapp-svc  NodePort  10.102.160.162  <none>       8080:30081/TCP  81m  app=abcapp",
        "service/kubernetes  ClusterIP  10.96.0.1      <none>       443/TCP       100m <none>"
    ]
}

PLAY RECAP ****
localhost          : ok=5   changed=2   unreachable=0   failed=0   skipped=0   rescued=0   ignored=0

ubuntu@rafael-vale-edureka-project:~$ 

```

```

root@rafael-vale-edureka-project:~# sudo mkdir -p /var/lib/jenkins/ansible
root@rafael-vale-edureka-project:~# sudo cp /home/ubuntu/ansible/deploy_k8s.yml /var/lib/jenkins/ansible/deploy_k8s.yml
root@rafael-vale-edureka-project:~# sudo chown -R jenkins:jenkins /var/lib/jenkins/ansible
root@rafael-vale-edureka-project:~# sudo -u jenkins ansible-playbook /var/lib/jenkins/ansible/deploy_k8s.yml

```

```
root@rafael-vale-edureka-project:~# sudo mkdir -p /var/lib/jenkins/k8s
root@rafael-vale-edureka-project:~# sudo cp /home/ubuntu/k8s/deployment.yml /var/lib/jenkins/k8s/deployment.yml
root@rafael-vale-edureka-project:~# sudo cp /home/ubuntu/k8s/service.yml      /var/lib/jenkins/k8s/service.yml
root@rafael-vale-edureka-project:~# sudo chown -R jenkins:jenkins /var/lib/jenkins/k8s
root@rafael-vale-edureka-project:~# sudo chmod 755 /var/lib/jenkins/k8s
root@rafael-vale-edureka-project:~# sudo chmod 644 /var/lib/jenkins/k8s/*.yml
```

```
root@rafael-vale-edureka-project:~# sudo mkdir -p /var/lib/jenkins/k8s
root@rafael-vale-edureka-project:~# sudo cp /home/ubuntu/k8s/deployment.yml /var/lib/jenkins/k8s/deployment.yml
root@rafael-vale-edureka-project:~# sudo cp /home/ubuntu/k8s/service.yml      /var/lib/jenkins/k8s/service.yml
root@rafael-vale-edureka-project:~# sudo chown -R jenkins:jenkins /var/lib/jenkins/k8s
root@rafael-vale-edureka-project:~# sudo chmod 755 /var/lib/jenkins/k8s
root@rafael-vale-edureka-project:~# sudo chmod 644 /var/lib/jenkins/k8s/*.yml
root@rafael-vale-edureka-project:~# sudo -u jenkins /usr/bin/kubectl --kubeconfig=/var/lib/jenkins/.kube/config get nodes -o wide
NAME           STATUS   ROLES      AGE     VERSION   INTERNAL-IP    EXTERNAL-IP   OS-IMAGE          KERNEL-VERSION   CONTAINER-RUNTIME
rafael-vale-edureka-project   Ready    control-plane   106m   v1.30.14   172.31.24.252  <none>        Ubuntu 22.04.5 LTS   6.8.0-1043-aws   containerd://1.7.28
rafael-vale-edureka-slave     Ready    <none>       94m    v1.30.14   172.31.28.153  <none>        Ubuntu 22.04.5 LTS   6.8.0-1043-aws   containerd://1.7.28
```

```
name: Deploy ABC app to Kubernetes
hosts: localhost
connection: local
gather_facts: false

tasks:
  - name: Apply deployment
    ansible.builtin.command: /usr/bin/kubectl apply -f /var/lib/jenkins/k8s/deployment.yml
    environment:
      KUBECONFIG: /var/lib/jenkins/.kube/config

  - name: Apply service
    ansible.builtin.command: /usr/bin/kubectl apply -f /var/lib/jenkins/k8s/service.yml
    environment:
      KUBECONFIG: /var/lib/jenkins/.kube/config

  - name: Show status
    ansible.builtin.command: /usr/bin/kubectl get deploy,pods,svc -o wide
    environment:
      KUBECONFIG: /var/lib/jenkins/.kube/config
    register: out
    changed_when: false

  - ansible.builtin.debug:
      var: out.stdout_lines
```

```
root@rafael-vale-edureka-project:~# sudo -u jenkins ansible-playbook /var/lib/jenkins/ansible/deploy_k8s.yml
[WARNING]: No inventory was parsed, only implicit localhost is available
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit localhost does not match 'all'

PLAY [Deploy ABC app to Kubernetes] ****
TASK [Apply deployment] ****
changed: [localhost]

TASK [Apply service] ****
changed: [localhost]

TASK [Show status] ****
ok: [localhost]

TASK [ansible.builtin.debug] ****
ok: [localhost] => {
    "out.stdout_lines": [
        "NAME          READY  UP-TO-DATE  AVAILABLE  AGE  CONTAINERS  IMAGES           SELECTOR",
        "deployment.apps/abcapp  3/3     3           3          90m  abcapp      rafavale/abcapp:1.0  app=abcapp",
        "",
        "NAME          READY  STATUS   RESTARTS  AGE  IP           NODE           NOMINATED NODE  READINESS GATES",
        "pod/abcapp-89bdc8ddb-grmkz  1/1   Running  0          90m  10.244.1.2  rafael-vale-edureka-slave  <none>          <none>",
        "pod/abcapp-89bdc8ddb-pfhcj  1/1   Running  0          90m  10.244.1.3  rafael-vale-edureka-slave  <none>          <none>",
        "pod/abcapp-89bdc8ddb-plrv7  1/1   Running  0          90m  10.244.1.4  rafael-vale-edureka-slave  <none>          <none>",
        "",
        "NAME          TYPE      CLUSTER-IP      EXTERNAL-IP  PORT(S)  AGE  SELECTOR",
        "service/abcapp-svc  NodePort  10.102.160.162  <none>      8080:30081/TCP  90m  app=abcapp",
        "service/kubernetes  ClusterIP  10.96.0.1       <none>      443/TCP    109m  <none>"
    ]
}

PLAY RECAP ****
localhost          : ok=4    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

root@rafael-vale-edureka-project:~#
```



Jenkins / All / New Item

New Item

Enter an item name

5.Deploy_K8s

Select an item type



Freestyle project

Classic, general-purpose job type that checks out from up to one SCM, executes build steps serially, followed by post-build steps like archiving artifacts and sending email notifications.



Jenkins / 5.Deploy_K8s / Configuration

Configure

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

None

Git ?

Triggers

Set up automated actions that start your build based on specific events, like code changes or scheduled times.

Trigger builds remotely (e.g., from scripts) ?

Build after other projects are built ?

Projects to watch

4.Deploy_Ansible,



Jenkins

/ 5.Deploy_K8s / Configuration

Configure

General

Source Code Management

Triggers

Environment

Build Steps

Post-build Actions

Build Steps

Automate your build process with ordered tasks like code compilation, testing, and deployment.

Execute shell

Command

[See the list of available environment variables](#)

```
set -eux  
/usr/bin/ansible-playbook /var/lib/jenkins/ansible/deploy_k8s.yml
```



Jenkins

/ 5.Deploy_K8s ▾ / Configuration

Configure

General

 General Source Code Management Triggers Environment Build Steps Post-build Actions

Description

[Plain text](#) [Preview](#) Discard old builds [?](#) GitHub project This project is parameterized [?](#) Throttle builds [?](#) Execute concurrent builds if necessary [?](#) Restrict where this project can be run [?](#)Label Expression [?](#)

built-in |

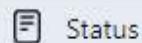
Label built-in matches 1 node. Permissions or

[Advanced](#) ▾



Jenkins

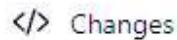
/ 5.Deploy_K8s / #1



Status



#1 (Dec 22, 2025, 1:17:59 AM)



</> Changes



Console Output



Edit Build Information



Delete build '#1'



Timings



Started by user Rafael vale



This run spent:

- 66 ms waiting;
- 3.9 sec build duration;
- 3.9 sec total from scheduled to completion.



</> No changes.

```
root@rafael-vale-edureka-project:~# sudo -u jenkins ansible-playbook /var/lib/jenkins/ansible/deploy_k8s.yml
[WARNING]: No inventory was parsed, only implicit localhost is available
[WARNING]: provided hosts list is empty, only localhost is available. Note that the implicit localhost does not match 'all'

PLAY [Deploy ABC app to Kubernetes] ****
TASK [Apply deployment] ****
changed: [localhost]

TASK [Apply service] ****
changed: [localhost]

TASK [Show status] ****
ok: [localhost]

TASK [ansible.builtin.debug]
ok: [localhost] => {
    "out.stdout_lines": [
        "NAME          READY  UP-TO-DATE  AVAILABLE   AGE   CONTAINERS   IMAGES           SELECTOR",
        "deployment.apps/abcapp  3/3     3           3           106m  abcapp       rafavale/abcapp:1.0  app=abcapp",
        "",
        "NAME          READY  STATUS      RESTARTS   AGE   IP           NODE           NOMINATED NODE  READINESS GATES",
        "pod/abcapp-89bdc8ddb-grmkz  1/1   Running     0           106m  10.244.1.2  rafael-vale-edureka-slave  <none>          <none>",
        "pod/abcapp-89bdc8ddb-pfhcj  1/1   Running     0           106m  10.244.1.3  rafael-vale-edureka-slave  <none>          <none>",
        "pod/abcapp-89bdc8ddb-plrv7  1/1   Running     0           106m  10.244.1.4  rafael-vale-edureka-slave  <none>          <none>",
        "",
        "NAME          TYPE      CLUSTER-IP      EXTERNAL-IP      PORT(S)      AGE   SELECTOR",
        "service/abcapp-svc  NodePort  10.102.160.162  <none>      8080:30081/TCP  106m  app=abcapp",
        "service/kubernetes  ClusterIP  10.96.0.1      <none>      443/TCP      125m  <none>"
    ]
}

PLAY RECAP ****
localhost                  : ok=4    changed=2    unreachable=0    failed=0    skipped=0    rescued=0    ignored=0

root@rafael-vale-edureka-project:~#
```



i-0a537e42652b6296d (rafael_vale_purdue_edureka_final_project)

Details Status and alarms Monitoring Security Networking Storage Tags

▼ Instance summary Info

Instance ID

i-0a537e42652b6296d

Public IPv4 address

3.88.2.189 | [open address](#) ↗

← → ⌂ Not secure 3.88.2.189:8080

Build History All +

S	W	Name ↓	Last Success
✓	☀️	1.Compile	5 min 1 sec #15
✓	☀️	2.Test	4 min 43 sec #15
✓	☀️	3.Package	4 min 28 sec #11
✓	☁️	4.Deploy_Ansible	4 min 8 sec #5
✓	☀️	5.Deploy_K8s	3 min 53 sec #2

26 – Setting Up Observability with Prometheus and Grafana



```
ubuntu@rafael-vale-edureka-project:~$ sudo apt install -y prometheus-node-exporter
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libio-pty-perl libipc-run-perl libtime-duration-perl libtimedate-perl moreutils promet
Suggested packages:
  gsmartcontrol smart-notifier mailx | mailutils
The following NEW packages will be installed:
  libio-pty-perl libipc-run-perl libtime-duration-perl libtimedate-perl moreutils promet
0 upgraded, 8 newly installed, 0 to remove and 19 not upgraded.
Need to get 4746 kB of archives.
After this operation, 14.6 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 promet
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libio-pty-perl amd64
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libipc-run-perl all
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libtime-duration-p
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libtimedate-perl a
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 moreutils amd64
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 prometheus-nod
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 smartmontools
Fetched 4746 kB in 0s (34.7 MB/s)
Selecting previously unselected package prometheus-node-exporter.
(Reading database ... 152889 files and directories currently installed.)
Preparing to unpack .../0-prometheus-node-exporter_1.3.1-1ubuntu0.22.04.3_amd64.deb ...
Unpacking prometheus-node-exporter (1.3.1-1ubuntu0.22.04.3) ...
Selecting previously unselected package libio-pty-perl.
Preparing to unpack .../1-libio-pty-perl_1%3a1.15-2build2_amd64.deb ...
Unpacking libio-pty-perl (1.1.15-2build2)
```

```
ubuntu@rafael-vale-edureka-project:~$ sudo systemctl enable --now prometheus-node-exporter
Synchronizing state of prometheus-node-exporter.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable prometheus-node-exporter
ubuntu@rafael-vale-edureka-project:~$ sudo systemctl status prometheus-node-exporter --no-pager
● prometheus-node-exporter.service - Prometheus exporter for machine metrics
   Loaded: loaded (/lib/systemd/system/prometheus-node-exporter.service; enabled; vendor preset: enabled)
   Active: active (running) since Mon 2025-12-22 23:27:47 UTC; 1min 15s ago
     Docs: https://github.com/prometheus/node_exporter
      Main PID: 5699 (prometheus-node)
        Tasks: 6 (limit: 2268)
       Memory: 2.7M
          CPU: 14ms
        CGroup: /system.slice/prometheus-node-exporter.service
                  └─5699 /usr/bin/prometheus-node-exporter

Dec 22 23:27:47 rafael-vale-edureka-project prometheus-node-exporter[5699]: ts=2025-12-22T23:27:47.989Z caller=node_expo
Dec 22 23:27:47 rafael-vale-edureka-project prometheus-node-exporter[5699]: ts=2025-12-22T23:27:47.989Z caller=tls_config
ubuntu@rafael-vale-edureka-project:~$ █
```

```
ubuntu@rafael-vale-edureka-project:~$ curl -s http://localhost:9100/metrics | head
# HELP apt_autoremove_pending Apt package pending autoremove.
# TYPE apt_autoremove_pending gauge
apt_autoremove_pending 0
# HELP apt_upgrades_pending Apt package pending updates by origin.
# TYPE apt_upgrades_pending gauge
apt_upgrades_pending{arch="all",origin="Ubuntu:22.04/jammy-updates"} 1
apt_upgrades_pending{arch="all",origin="Ubuntu:22.04/jammy-updates,Ubuntu:22.04/jammy-security"} 4
apt_upgrades_pending{arch="all",origin="binary"} 1
apt_upgrades_pending{arch="amd64",origin="Ubuntu:22.04/jammy-updates"} 3
apt_upgrades_pending{arch="amd64",origin="Ubuntu:22.04/jammy-updates,Ubuntu:22.04/jammy-security"} 16
ubuntu@rafael-vale-edureka-project:~$ █
```

```
ubuntu@rafael-vale-edureka-slave:~$ sudo systemctl enable --now prometheus-node-exporter
Synchronizing state of prometheus-node-exporter.service with SysV service script with /lib/systemd/syst
Executing: /lib/systemd/systemd-sysv-install enable prometheus-node-exporter
ubuntu@rafael-vale-edureka-slave:~$ sudo systemctl status prometheus-node-exporter --no-pager
● prometheus-node-exporter.service - Prometheus exporter for machine metrics
    Loaded: loaded (/lib/systemd/system/prometheus-node-exporter.service; enabled; vendor preset: enab
      Active: active (running) since Mon 2025-12-22 23:31:23 UTC; 36s ago
        Docs: https://github.com/prometheus/node_exporter
    Main PID: 6539 (prometheus-node)
       Tasks: 5 (limit: 2268)
      Memory: 2.6M
        CPU: 11ms
      CGroup: /system.slice/prometheus-node-exporter.service
              └─6539 /usr/bin/prometheus-node-exporter

Dec 22 23:31:23 rafael-vale-edureka-slave prometheus-node-exporter[6539]: ts=2025-12-22T23:31:23.994Z c
Dec 22 23:31:23 rafael-vale-edureka-slave prometheus-node-exporter[6539]: ts=2025-12-22T23:31:23.994Z c
Dec 22 23:31:23 rafael-vale-edureka-slave prometheus-node-exporter[6539]: ts=2025-12-22T23:31:23.994Z c
Dec 22 23:31:24 rafael-vale-edureka-slave prometheus-node-exporter[6539]: ts=2025-12-22T23:31:23.994Z c
ubuntu@rafael-vale-edureka-slave:~$ curl -s http://localhost:9100/metrics | head
# HELP apt_autoremove_pending Apt package pending autoremove.
# TYPE apt_autoremove_pending gauge
apt_autoremove_pending 0
# HELP apt_upgrades_pending Apt package pending updates by origin.
# TYPE apt_upgrades_pending gauge
apt_upgrades_pending{arch="all",origin="Ubuntu:22.04/jammy-updates"} 1
apt_upgrades_pending{arch="all",origin="Ubuntu:22.04/jammy-updates,Ubuntu:22.04/jammy-security"} 4
apt_upgrades_pending{arch="amd64",origin="Ubuntu:22.04/jammy-updates"} 3
apt_upgrades_pending{arch="amd64",origin="Ubuntu:22.04/jammy-updates,Ubuntu:22.04/jammy-security"} 16
# HELP go_gc_duration_seconds A summary of the pause duration of garbage collection cycles.
ubuntu@rafael-vale-edureka-slave:~$
```

```
ubuntu@rafael-vale-edureka-project:~$ curl -s http://172.31.28.153:9100/metrics | head
# HELP apt_autoremove_pending Apt package pending autoremove.
# TYPE apt_autoremove_pending gauge
apt_autoremove_pending 0
# HELP apt_upgrades_pending Apt package pending updates by origin.
# TYPE apt_upgrades_pending gauge
apt_upgrades_pending{arch="all",origin="Ubuntu:22.04/jammy-updates"} 1
apt_upgrades_pending{arch="all",origin="Ubuntu:22.04/jammy-updates,Ubuntu:22.04/jammy-security"} 4
apt_upgrades_pending{arch="amd64",origin="Ubuntu:22.04/jammy-updates"} 3
apt_upgrades_pending{arch="amd64",origin="Ubuntu:22.04/jammy-updates,Ubuntu:22.04/jammy-security"} 16
# HELP go_gc_duration_seconds A summary of the pause duration of garbage collection cycles.
ubuntu@rafael-vale-edureka-project:~$
```

```
ubuntu@rafael-vale-edureka-project:~$ sudo apt install -y prometheus
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  fonts-glyphicons-halflings javascript-common libjs-bootstrap libjs-bootstrap4 libjs-d3 libjs-eonasdan-bootstrap-datetimepicker libjs-jquery libjs-jquery-hotkeys libjs-mustache libjs-popper.js libjs-rickshaw libjs-sizzle node-jquery
Suggested packages:
  apache2 | lighttpd | httpd
The following NEW packages will be installed:
  fonts-glyphicons-halflings javascript-common libjs-bootstrap libjs-bootstrap4 libjs-d3 libjs-eonasdan-bootstrap-datetimepicker libjs-jquery libjs-jquery-hotkeys libjs-mustache libjs-popper.js libjs-rickshaw libjs-sizzle node-jquery prometheus
0 upgraded, 16 newly installed, 0 to remove and 19 not upgraded.
Need to get 21.4 MB of archives.
After this operation, 266 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libjs-jquery all 3.6.0+dfsg+~3.5.13-1 [321 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libjs-jquery-hotkeys all 0~20130707+git2d51e3a9+dfsg-2ubuntul [11.4 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 fonts-glyphicons-halflings all 1.009~3.4.1+dfsg-2+deb11u2build0.22.04.1 [122 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 javascript-common all 11+nmu1 [5936 B]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libjs-popper.js all 1.16.1+ds-5 [53.8 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libjs-bootstrap4 all 4.6.0+dfsg1-4 [534 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 libjs-bootstrap all 3.4.1+dfsg-2+deb11u2build0.22.04.1 [129 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 libjs-moment all 2.29.1+ds-3ubuntul.0.2 [146 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libjs-eonasdan-bootstrap-datetimepicker all 4.17.47-5 [28.4 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libjs-moment-timezone all 0.5.34+dfsg-1+2021e [759 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libjs-mustache all 2.3.2-2 [20.6 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libjs-d3 all 3.5.17-4 [132 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libjs-rickshaw all 1.5.1.dfsg-5 [646 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 prometheus amd64 2.31.2+ds1-1ubuntul.22.04.3 [18.3 MB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 libjs-sizzle all 2.3.6+ds+~2.3.3-1 [32.3 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 node-jquery all 3.6.0+dfsg+~3.5.13-1 [160 kB]
Fetched 21.4 MB in 0s (51.1 MB/s)
```

```
ubuntu@rafael-vale-edureka-project:~$ sudo systemctl enable --now prometheus
Synchronizing state of prometheus.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable prometheus
ubuntu@rafael-vale-edureka-project:~$ sudo systemctl status prometheus --no-pager
● prometheus.service - Monitoring system and time series database
    Loaded: loaded (/lib/systemd/system/prometheus.service; enabled; vendor preset: enabled)
    Active: active (running) since Mon 2025-12-22 23:49:09 UTC; 56s ago
      Docs: https://prometheus.io/docs/introduction/overview/
             man:prometheus(1)
   Main PID: 12380 (prometheus)
     Tasks: 8 (limit: 2268)
    Memory: 22.9M
       CPU: 393ms
      CGroup: /system.slice/prometheus.service
                 └─12380 /usr/bin/prometheus

Dec 22 23:49:09 rafael-vale-edureka-project prometheus[12380]: ts=2025-12-22T23:49:09.894Z caller=head.go:4
Dec 22 23:49:09 rafael-vale-edureka-project prometheus[12380]: ts=2025-12-22T23:49:09.894Z caller=head.go:5
Dec 22 23:49:09 rafael-vale-edureka-project prometheus[12380]: ts=2025-12-22T23:49:09.897Z caller=main.go:8
Dec 22 23:49:09 rafael-vale-edureka-project prometheus[12380]: ts=2025-12-22T23:49:09.897Z caller=main.go:8
Dec 22 23:49:09 rafael-vale-edureka-project prometheus[12380]: ts=2025-12-22T23:49:09.897Z caller=main.go:9
Dec 22 23:49:09 rafael-vale-edureka-project prometheus[12380]: ts=2025-12-22T23:49:09.900Z caller=main.go:1
Dec 22 23:49:09 rafael-vale-edureka-project prometheus[12380]: ts=2025-12-22T23:49:09.900Z caller=main.go:7
Hint: Some lines were ellipsized, use -l to show in full.
ubuntu@rafael-vale-edureka-project:~$ █
```

```
ubuntu@rafael-vale-edureka-project:~$ hostname -I | awk '{print $1}'
172.31.24.252
ubuntu@rafael-vale-edureka-project:~$
```

```
ubuntu@rafael-vale-edureka-project:~$ hostname -I | awk '{print $1}'  
172.31.24.252  
ubuntu@rafael-vale-edureka-project:~$ sudo cp /etc/prometheus/prometheus.yml /etc/prometheus/prometheus.yml.bak  
ubuntu@rafael-vale-edureka-project:~$ vim /etc/prometheus/prometheus.yml
```

```
# Sample config for Prometheus.

global:
  scrape_interval:      15s # Set the scrape interval to every 15 seconds. Default is every 1 minute.
  evaluation_interval: 15s # Evaluate rules every 15 seconds. The default is every 1 minute.
  # scrape_timeout is set to the global default (10s).

  # Attach these labels to any time series or alerts when communicating with
  # external systems (federation, remote storage, Alertmanager).
  external_labels:
    monitor: 'example'

# Alertmanager configuration
alerting:
  alertmanagers:
  - static_configs:
    - targets: ['localhost:9093']

# Load rules once and periodically evaluate them according to the global 'evaluation_interval'.
rule_files:
  # - "first_rules.yml"
  # - "second_rules.yml"

# A scrape configuration containing exactly one endpoint to scrape:
# Here it's Prometheus itself.
scrape_configs:
  # The job name is added as a label 'job=<job_name>' to any timeseries scraped from this config.
  - job_name: 'prometheus'

    # Override the global default and scrape targets from this job every 5 seconds.
    scrape_interval: 5s
    scrape_timeout: 5s

    # metrics_path defaults to '/metrics'
    # scheme defaults to 'http'.

    static_configs:
      - targets: ['localhost:9090']

  - job_name: 'node_exporters'
    # If prometheus-node-exporter is installed, grab stats about the local
    # machine by default.
    static_configs:
      # Target List: Localhost, Master and Slave
      - targets: ['localhost:9100', '172.31.28.153:9100', '172.31.24.252:9100']
```

```
ubuntu@rafael-vale-edureka-project:~$ sudo systemctl restart prometheus
ubuntu@rafael-vale-edureka-project:~$ sudo systemctl status prometheus --no-pager
● prometheus.service - Monitoring system and time series database
   Loaded: loaded (/lib/systemd/system/prometheus.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2025-12-23 00:09:59 UTC; 10s ago
     Docs: https://prometheus.io/docs/introduction/overview/
           man:prometheus(1)
   Main PID: 17913 (prometheus)
      Tasks: 8 (limit: 2268)
     Memory: 21.7M
        CPU: 263ms
      CGroup: /system.slice/prometheus.service
              └─17913 /usr/bin/prometheus

Dec 23 00:09:59 rafael-vale-edureka-project prometheus[17913]: ts=2025-12-23T00:09:59.344Z callid=1144
Dec 23 00:09:59 rafael-vale-edureka-project prometheus[17913]: ts=2025-12-23T00:09:59.344Z callid=1144
Dec 23 00:09:59 rafael-vale-edureka-project prometheus[17913]: ts=2025-12-23T00:09:59.370Z callid=1144
Dec 23 00:09:59 rafael-vale-edureka-project prometheus[17913]: ts=2025-12-23T00:09:59.371Z callid=1144
Dec 23 00:09:59 rafael-vale-edureka-project prometheus[17913]: ts=2025-12-23T00:09:59.371Z callid=1144
Dec 23 00:09:59 rafael-vale-edureka-project prometheus[17913]: ts=2025-12-23T00:09:59.374Z callid=1144
Dec 23 00:09:59 rafael-vale-edureka-project prometheus[17913]: ts=2025-12-23T00:09:59.374Z callid=1144
Dec 23 00:09:59 rafael-vale-edureka-project prometheus[17913]: ts=2025-12-23T00:09:59.374Z callid=1144
Dec 23 00:09:59 rafael-vale-edureka-project prometheus[17913]: ts=2025-12-23T00:09:59.375Z callid=1144
Dec 23 00:09:59 rafael-vale-edureka-project prometheus[17913]: ts=2025-12-23T00:09:59.375Z callid=1144
Hint: Some lines were ellipsized, use -l to show in full.
ubuntu@rafael-vale-edureka-project:~$
```



rafael_vale_purdue_edureka_final_project



i-0a537e42652b6296d (rafael_vale_purdue_edu)

Details

Status and alarms

Monitoring

VPC ID

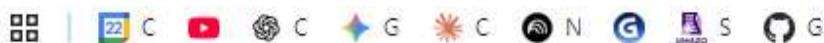
vpc-08423f9ba52f59bdd

Availability zone ID

Public IPv4 address copied

Public IPv4 address

98.93.216.246 | open address



Prometheus Alerts Graph Status Help

Enable query history

Expression (press Shift+Enter for newlines)

Execute

- insert metric at cursor - ▾

Graph

Console



Moment



Element

no data

Add Graph

← → ⌂ Not secure 98.93.216.246:9090/classic/targets

C C G C G S Az AWS AWS S D P S 28 T A A

Prometheus Alerts Graph Status Help

Targets

All Unhealthy Collapse All

[node_exporters \(3/3 up\)](#) show less

Endpoint	State	Labels
http://172.31.24.252:9100/metrics	UP	instance="172.31.24.252:9100" job="node_exporters"
http://172.31.28.153:9100/metrics	UP	instance="172.31.28.153:9100" job="node_exporters"
http://localhost:9100/metrics	UP	instance="localhost:9100" job="node_exporters"

[prometheus \(1/1 up\)](#) show less

Endpoint	State	Labels
http://localhost:9090/metrics	UP	instance="localhost:9090" job="prometheus"

```
ubuntu@rafael-vale-edureka-project:~$ sudo apt-get install -y apt-transport-https software-properties-common wget gpg
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
gpg is already the newest version (2.2.27-3ubuntu2.4).
software-properties-common is already the newest version (0.99.22.9).
software-properties-common set to manually installed.
wget is already the newest version (1.21.2-2ubuntu1.1).
wget set to manually installed.
apt-transport-https is already the newest version (2.4.14).
0 upgraded, 0 newly installed, 0 to remove and 19 not upgraded.
ubuntu@rafael-vale-edureka-project:~$ sudo mkdir -p /etc/apt/keyrings
ubuntu@rafael-vale-edureka-project:~$ wget -q -O- https://apt.grafana.com/gpg.key | sudo gpg --dearmor -o /etc/apt/keyrings/grafana.gpg
ubuntu@rafael-vale-edureka-project:~$ echo "deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com stable main" \
| sudo tee /etc/apt/sources.list.d/grafana.list
deb [signed-by=/etc/apt/keyrings/grafana.gpg] https://apt.grafana.com stable main
ubuntu@rafael-vale-edureka-project:~$
```

```
ubuntu@rafael-vale-edureka-project:~$ sudo apt install -y grafana
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  musl
The following NEW packages will be installed:
  grafana musl
0 upgraded, 2 newly installed, 0 to remove and 19 not upgraded.
Need to get 194 MB of archives.
After this operation, 710 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 musl amd64 1.2.2-4 [407 kB]
Get:2 https://apt.grafana.com stable/main amd64 grafana amd64 12.3.1 [194 MB]
Fetched 194 MB in 4s (54.9 MB/s)
Selecting previously unselected package musl:amd64.
(Reading database ... 154202 files and directories currently installed.)
Preparing to unpack .../musl_1.2.2-4_amd64.deb ...
Unpacking musl:amd64 (1.2.2-4) ...
Selecting previously unselected package grafana.
Preparing to unpack .../grafana_12.3.1_amd64.deb ...
Unpacking grafana (12.3.1) ...
Setting up musl:amd64 (1.2.2-4) ...
Setting up grafana (12.3.1) ...
Adding system user `grafana' (UID 117) ...
Adding new user `grafana' (UID 117) with group `grafana' ...
Not creating home directory `/usr/share/grafana'.
### NOT starting on installation, please execute the following statements to configure grafana to start
  sudo /bin/systemctl daemon-reload
  sudo /bin/systemctl enable grafana-server
### You can start grafana-server by executing
  sudo /bin/systemctl start grafana-server
Processing triggers for man-db (2.10.2-1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

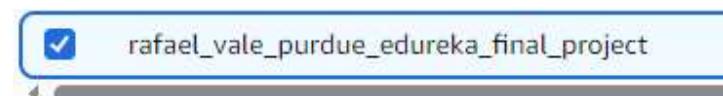
No services need to be restarted.

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@rafael-vale-edureka-project:~$
```

```
ubuntu@rafael-vale-edureka-project:~$ sudo systemctl enable --now grafana-server
Synchronizing state of grafana-server.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable grafana-server
Created symlink /etc/systemd/system/multi-user.target.wants/grafana-server.service → /lib/systemd/system/grafana-server.service.
ubuntu@rafael-vale-edureka-project:~$ sudo systemctl enable --now grafana-server
Synchronizing state of grafana-server.service with SysV service script with /lib/systemd/systemd-sysv-install.
Executing: /lib/systemd/systemd-sysv-install enable grafana-server
ubuntu@rafael-vale-edureka-project:~$
```



i-0a537e42652b6296d (rafael_vale_purdue_

Details | Status and alarms | Monitoring

VPC ID

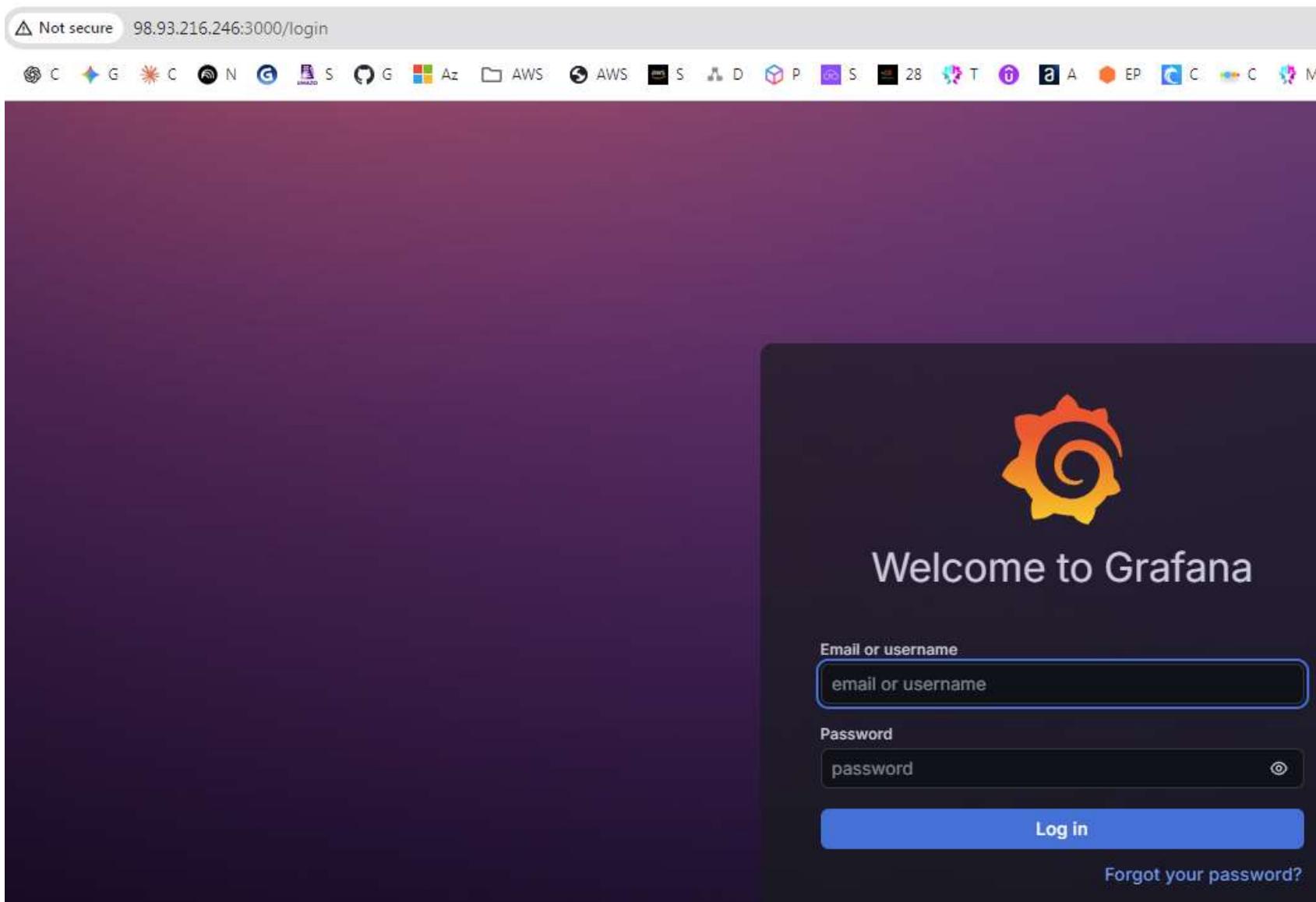
vpc-08423f9ba52f59bdd ↗

Availability zone ID

Public IPv4 address copied

Public IPv4 address

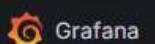
98.93.216.246 | open address ↗





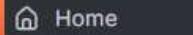
Not secure

98.93.216.246:3000/?orgId=1&from=now-6h&to=now&timezone=browser

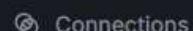
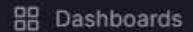
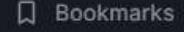


Grafana

Home > Dashboards > Home



Home



Welcome to Grafana

Basic

The steps below will guide you to quickly finish setting up your Grafana installation.

TUTORIAL

[DATA SOURCE AND DASHBOARDS](#)

Grafana fundamentals

Set up and understand Grafana if you have no prior experience. This tutorial guides you through the entire process and covers the "Data source" and "Dashboards" steps to the right.

Dashboards

Starred dashboards

Recently viewed dashboards

← → ⌛ Not secure 98.93.216.246:3000/connections/datasources

Home C YouTube C G C N G AWS S AWS S D P S 28 T A EP C C M L e! XPO TD

Grafana Home > Connections > Data sources

Data sources

View and manage your connected data source connections



No data sources defined

You can also define data sources through configuration files. [Learn more ↗](#)

Add new connection

Data sources

Add data source



Not secure

98.93.216.246:3000/connections/datasources/new



C



C



C



G



C



N



G



S



G



Az



AWS



AWS



S



D



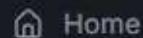
P



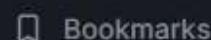
Grafana



Home > Connections > Data sources > Add data source



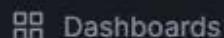
Home



Bookmarks



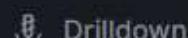
Starred



Dashboards



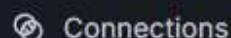
Explore



Drilldown



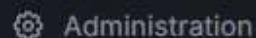
Alerting



Connections

Add new connection

Data sources



Administration

Add data source

Choose a data source type

Filter by name or type

Time series databases



Prometheus

Open source time series database & alerting

Core



Graphite

Open source time series database

Core

Grafana

Home > Connections > Data sources > prometheus

prometheus

Type: Prometheus

Settings Dashboards Permissions Insights Cache

Configure your Prometheus data source below
Or skip the effort and get Prometheus (and Loki) as fully-managed, scalable, and hosted data sources from Grafana Cloud.

Name: prometheus Default:

Before you can use the Prometheus data source, you must configure it below or in the config file. For detailed instructions, see the [Prometheus documentation](#).

*Fields marked with * are required*

Connection

Prometheus server URL *

✓ Successfully queried the Prometheus API.

Next, you can start to visualize data by [building a dashboard](#), or by querying data in the [Explore view](#).

Grafana

Home Bookmarks Starred Dashboards Explore Drilldown Alerting Connections Add new connection Data sources Administration

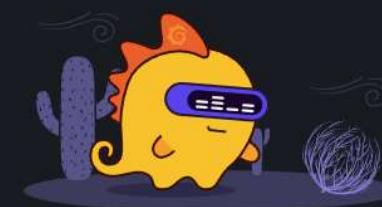
Home > Dashboards

Dashboards

Create and manage dashboards to visualize your data

Search for dashboards and folders

Filter by tag Starred



You haven't created any dashboards yet

+ Create dashboard

The screenshot shows the Grafana interface with a dark theme. On the left is a sidebar containing navigation links: Home, Bookmarks, Starred, Dashboards (which is selected and highlighted with a red border), Explore, Drilldown, Alerting, Connections (with sub-links for Add new connection and Data sources), and Administration.

The main content area has a breadcrumb navigation path: Home > Dashboards > New dashboard. At the top right is a search bar labeled "Search...".

The central part of the screen features a large callout box with the heading "Start your new dashboard by adding a visualization". Below this, a sub-instruction reads: "Select a data source and then query and visualize your data with charts, stats and tables or create lists, markdowns and other widgets." A prominent blue button at the bottom of this box is labeled "+ Add visualization".

Below this main area are two smaller callout boxes. The left one is titled "Import panel" and contains the text "Add visualizations that are shared with other dashboards." It has a blue button labeled "+ Add library panel". The right one is titled "Import a dashboard" and contains the text "Import dashboards from files or [grafana.com](#)". It has a blue button labeled "Import dashboard" with an upward arrow icon.

Grafana

Home > Dashboards > Import dashboard

Import dashboard

Import dashboard from file or Grafana.com

Upload dashboard JSON file
Drag and drop here or click to browse
Accepted file types: .json, .txt

Find and import dashboards for common applications at grafana.com/dashboards

1860 Load

Grafana

Home Bookmarks Starred Dashboards Explore Drilldown Alerting Connections Add new connection Data sources Administration

Import dashboard

Import dashboard from file or Grafana.com

Importing dashboard from [Grafana.com](#)

Published by rfmoz

Updated on 2025-09-27 14:15:03

Options

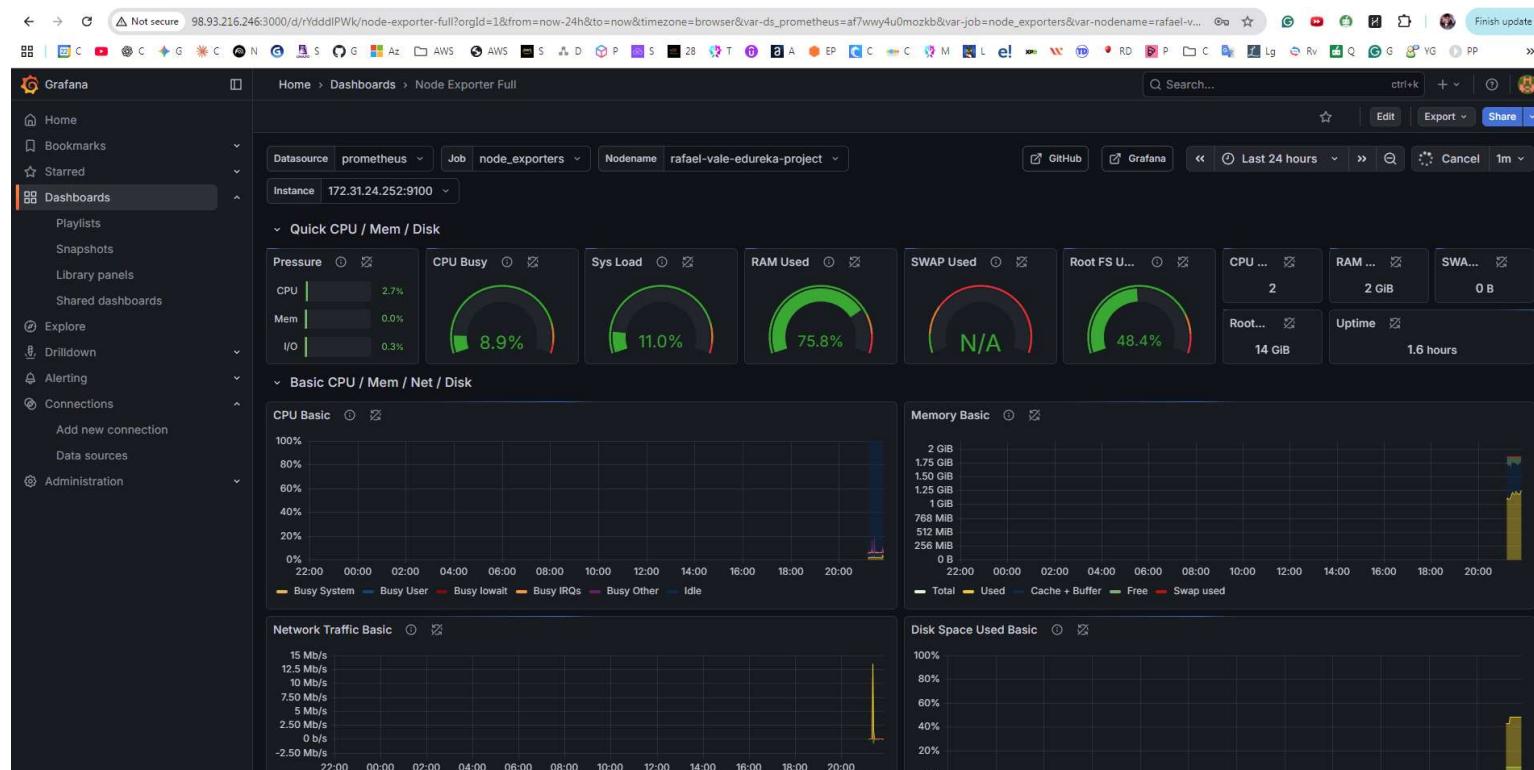
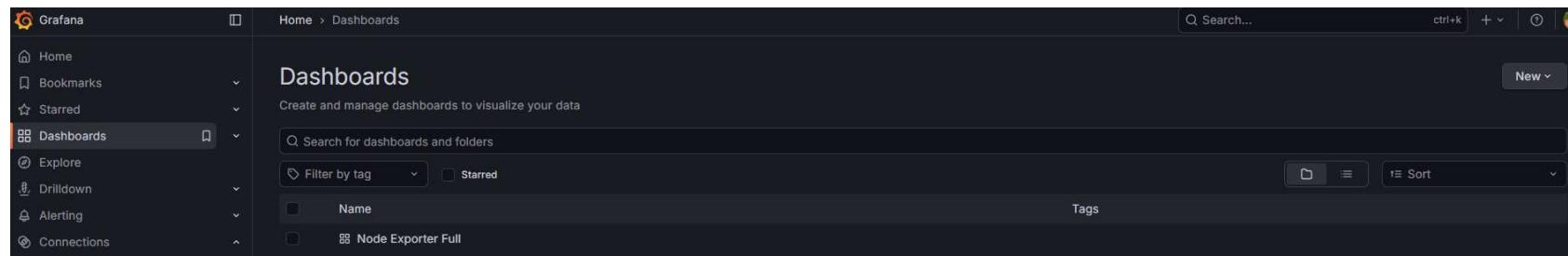
Name Node Exporter Full

Folder Dashboards

Unique identifier (UID)
The unique identifier (UID) of a dashboard can be used for uniquely identify a dashboard between multiple Grafana installs. The UID allows having consistent URLs for accessing dashboards so changing the title of a dashboard will not break any bookmarked links to that dashboard.

rYdddIPWk Change uid

Import Cancel



27 – Summary

Slave Instance

Instances (1/2) [Info](#)

<input type="text"/> Find Instance by attribute or tag (case-sensitive)		All states ▾			
‑	Name ⚖	Instance ID	Instance state	Instance type	Actions
<input checked="" type="checkbox"/>	rafael-vale-purdue_edureka-slave	i-0241d4139d7dd3c99	Running + ↗ -	t3.small	Edit Delete
<input type="checkbox"/>	rafael_vale_purdue_edureka_final_project	i-0a537e42652b6296d	Running + ↗ -	t3.small	Edit Delete

i-0241d4139d7dd3c99 (rafael-vale-purdue_edureka-slave)

[Details](#) | [Status and alarms](#) | [Monitoring](#) | [Security](#) | [Networking](#) | [Storage](#) | [Tags](#)

▼ Instance summary [Info](#)

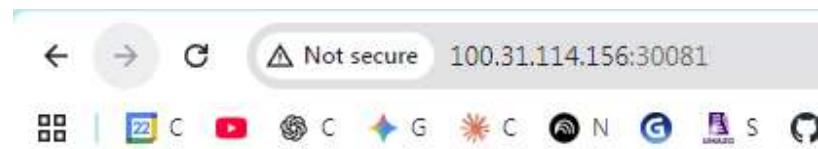
Instance ID

[i-0241d4139d7dd3c99](#)

Public IPv4 address

[100.31.114.156](#) | open address ↗

Application running



Welcome to ABC technologies

This is retail portal

[Add Product](#) [View Product](#)

Master Instance

Instances (1/2) Info

<input type="text"/> Find Instance by attribute or tag (case-sensitive)			All states ▾
-	Name	Instance ID	Instance state ▾
<input type="checkbox"/>	rafael-vale-purdue_edureka-slave	i-0241d4139d7dd3c99	Running
<input checked="" type="checkbox"/>	rafael_vale_purdue_edureka_final_project	i-0a537e42652b6296d	Running

i-0a537e42652b6296d (rafael_vale_purdue_edureka_final_project)

[Details](#) | [Status and alarms](#) | [Monitoring](#) | [Security](#) | [Networking](#) | [Storage](#) | [Tags](#)

▼ Instance summary Info

Instance ID

i-0a537e42652b6296d

Public IPv4 address

54.234.129.198 | [open address](#)

Not secure 54.234.129.198:3000

All the Pipeline Running

The screenshot shows a Jenkins dashboard with the following details:

Header: Not secure 54.234.129.198:8080

Toolbar: Includes links for various Jenkins instances and AWS services.

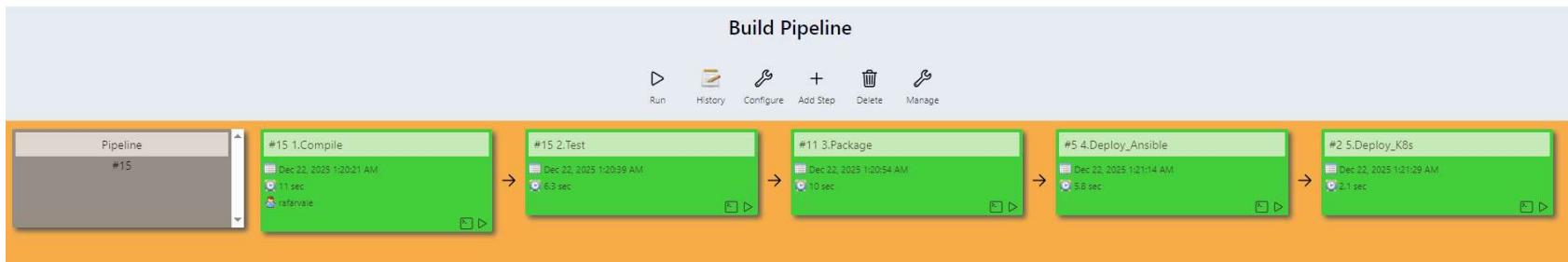
Left sidebar:

- Build Queue**: Shows no items in the queue.
- Build Executor Status**: Shows "built-in node + 1 agent (0 of 1 executors busy)".

Central area:

- Build History**: Filtered to "All".
- Pipeline Stages:**

S	W	Name ↓	Last Success
✓	☀️	1.Compile	3 days 17 hr #15
✓	☀️	2.Test	3 days 17 hr #15
✓	☀️	3.Package	3 days 17 hr #11
✓	☀️	4.Deploy_Ansible	3 days 17 hr #7
✓	☀️	5.Deploy_K8s	3 days 17 hr #4



Prometheus target on Master and Slave

Prometheus Alerts Graph Status ▾ Help

Targets

All Unhealthy Collapse All

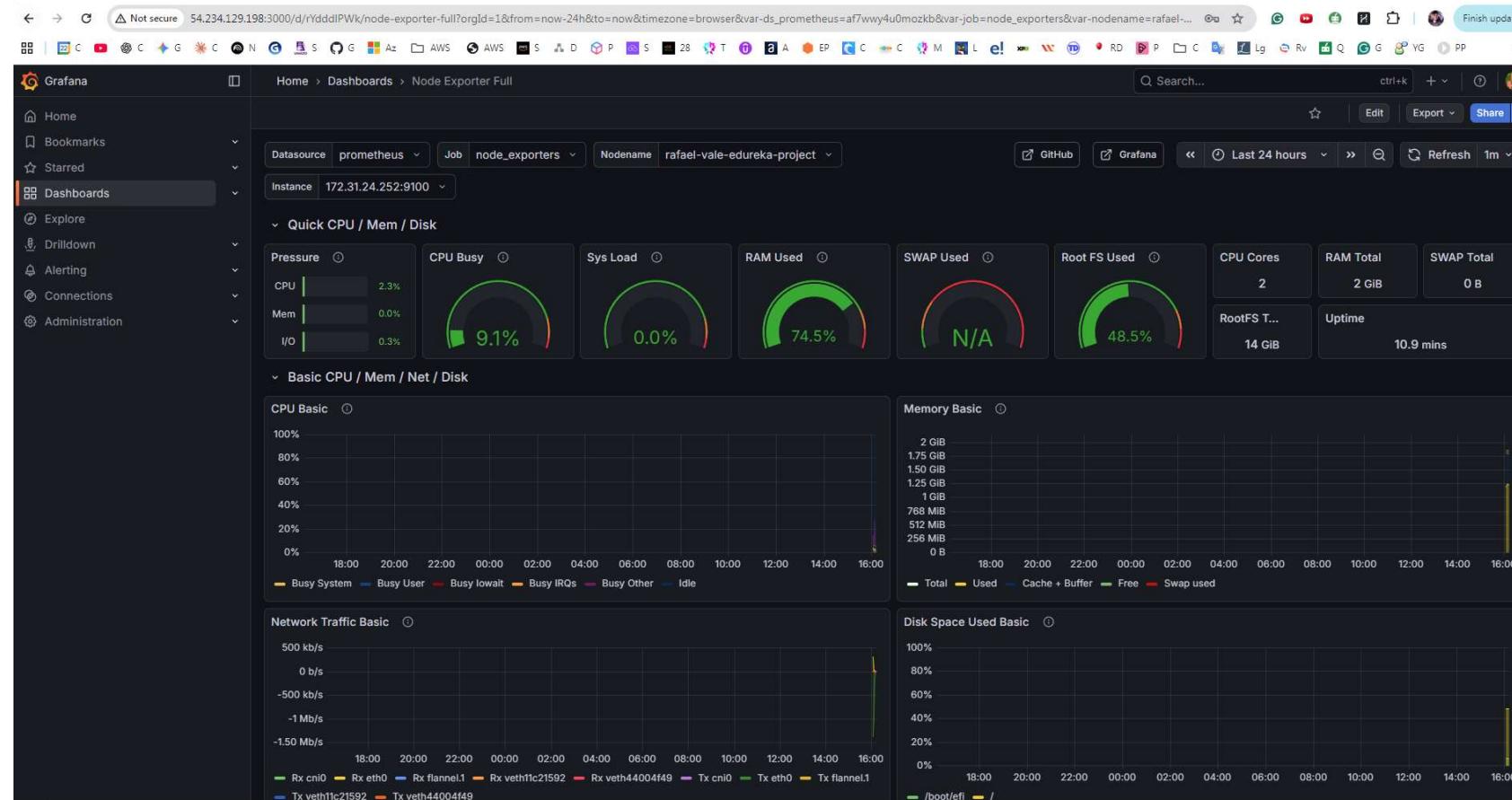
node_exporters (3/3 up) [show less](#)

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://172.31.24.252:9100/metrics	UP	instance="172.31.24.252:9100" job="node_exporters"	1.25s ago	83.46ms	
http://172.31.28.153:9100/metrics	UP	instance="172.31.28.153:9100" job="node_exporters"	13.967s ago	64.46ms	
http://localhost:9100/metrics	UP	instance="localhost:9100" job="node_exporters"	14.947s ago	67.63ms	

prometheus (1/1 up) [show less](#)

Endpoint	State	Labels	Last Scrape	Scrape Duration	Error
http://localhost:9090/metrics	UP	instance="localhost:9090" job="prometheus"	4.961s ago	3.504ms	

Grafana Master



Grafana Slave

