Experiment 5

Launching Instance
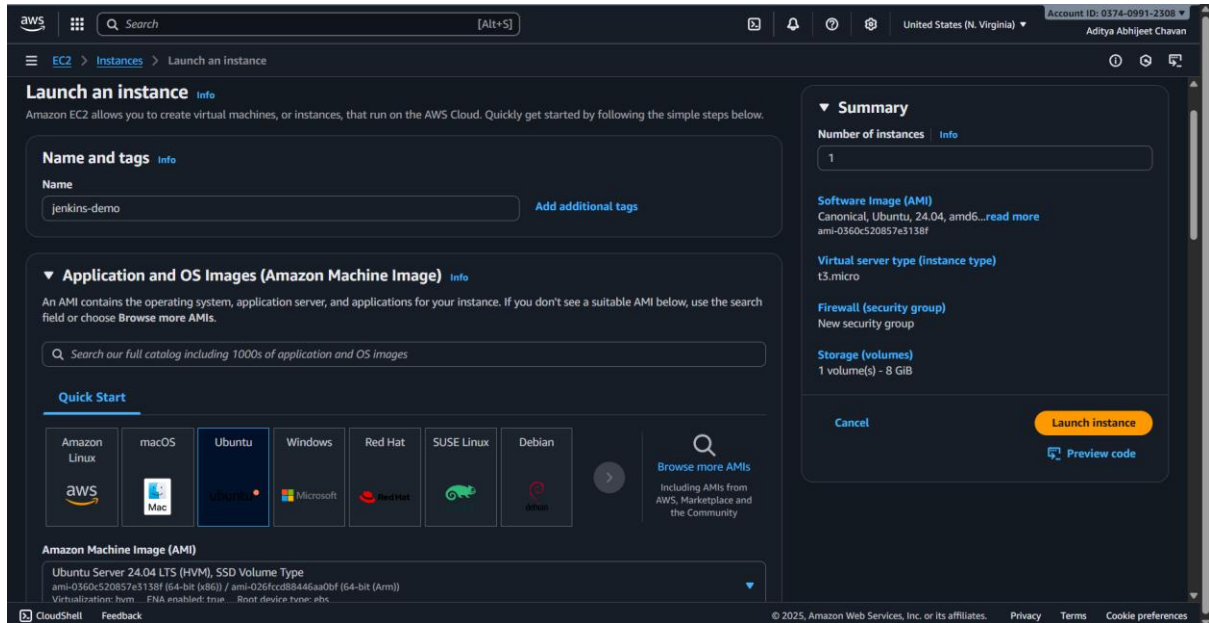
Instance Type

Network Settings

No changes in 'configure storage' and 'advanced details'.

EC2 instance is running

Select the checkbox of the instance and click on 'Connect'

EC2 Instance Connect
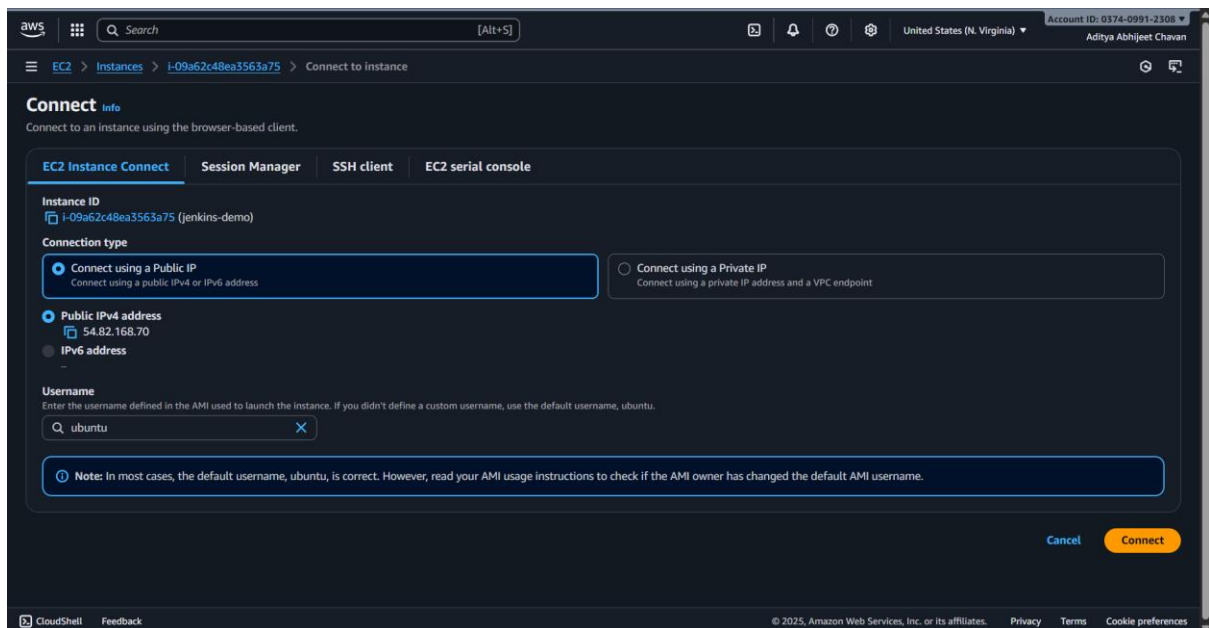
Ubuntu Terminal
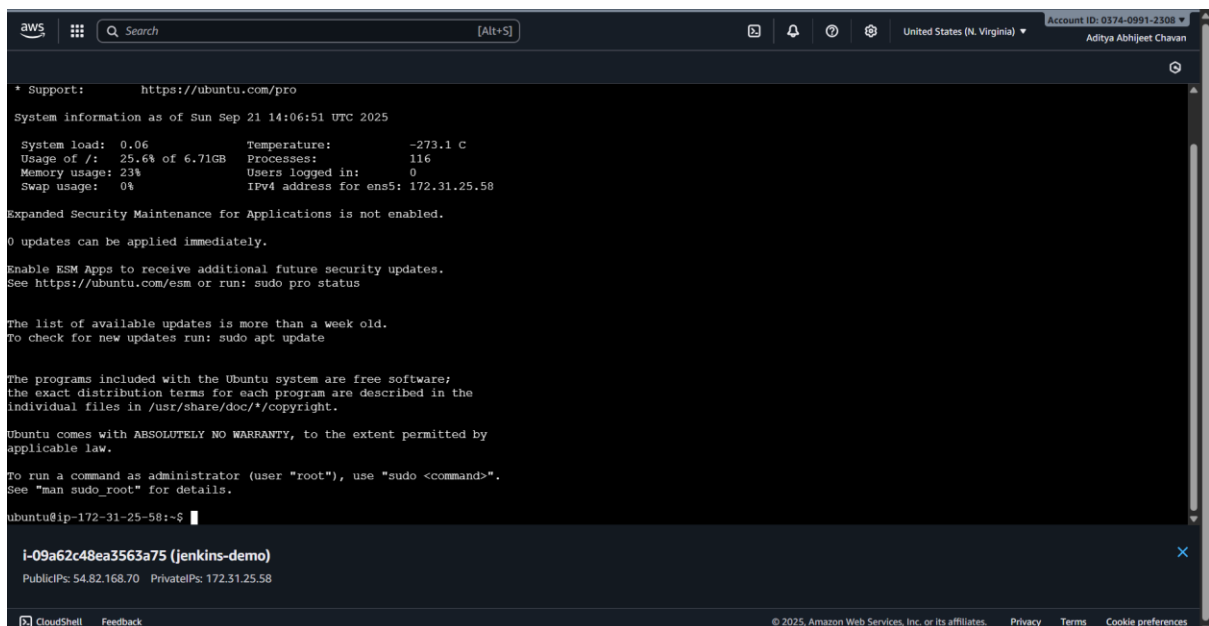
Run sudo apt update in the terminal and begin with Jenkins Installation

Install Java

```
ubuntu@ip-172-31-25-58:~$ sudo apt install openjdk-8-jdk -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  adwaita-icon-theme alsa-topology-conf alsa-ucm-conf at-spi2-common at-spi2-core ca-certificates-java dconf-gsettings-backend dconf-service fontconfig
  fontconfig-config fonts-dejavu-core fonts-dejavu-extra fonts-dejavu-mono gsettings-desktop-schemas gtk-update-icon-cache hicolor-icon-theme humanity-icon-theme
  java-common libasound2-data libasound2t64 libasyncns0 libatk-bridge2.0-0t64 libatk-wrapper-java libatk-wrapper-java-jni libatk1.0-0t64 libatspi2.0-0t64
  libavahi-client3 libavahi-common-data libavahi-common3 libcairo-gobject2 libcairo2 libcups2t64 libdatrie1 libdconf1 libdeflate0 libdrm-amdgpu1 libdrm-intel1
  libflac12t64 libfontconfig1 libgail-common libgail18t64 libgbm1 libgdk-pixbuf-2.0-0 libgdk-pixbuf2.0-bin libgdk-pixbuf2.0-common libgif7 libgl1 libgl1-mesa-dri
  libglvnd0 libglx-mesa0 libglx0 libgraphite2-3 libgtk2.0-0t64 libgtk2.0-bin libgtk2.0-common libharfbuzz0b libice-dev libice6 libjbig0 libjpeg-turbo8 libjpeg8
  liblcms2-2 liblerc4 libllvm20 libmp3lame0 libmpg123-0t64 libogg0 libopus0 libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpciaccess0 libpcsclite1
  libpixman-1-0 libpthread-stubs0-dev libpulse0 librsvg2-2 librsvg2-common libsharpyuv0 libsm-dev libsm6 libsndfile1 libthai-data libthai0 libtiff6 libvorbis0a
  libvorbisenc2 libvulkan1 libwayland-client0 libwayland-server0 libwebp7 libx11-dev libx11-xcb1 libxau-dev libxaw7 libxcb-dri3-0 libxcb-glx0 libxcb-present0
  libxcb-randr0 libxcb-render0 libxcb-shape0 libxcb-shm0 libxcb-sync1 libxcb-xfixes0 libxcb1-dev libxcomposite1 libxcursor1 libxdamage1 libxdmcp-dev libxfixes3
  libxft2 libxi6 libxinerama1 libxkbfile1 libxmu6 libxpm4 libxrandr2 libxrender1 libxshmfence1 libxt-dev libxt6t64 libxtst6 libxv1 libxxf86dga1 libxxf86vm1
  mesa-libgallium mesa-vulkan-drivers openjdk-8-jdk-headless openjdk-8-jre openjdk-8-jre-headless session-migration ubuntu-mono x11-common x11-utils x11proto-dev
  xorg-sgml-doctools xtrans-dev
Suggested packages:
  default-jre alsa-utils libasound2-plugins cups-common gvfs libice-doc liblcms2-utils opus-tools pcscd pulseaudio librsvg2-bin libsm-doc libx11-doc libxcb-doc
  libxt-doc openjdk-8-demo openjdk-8-source visualvm libnss-mdns fonts-nanum fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-microhei fonts-wqy-zenhei
  fonts-indic mesa-utils
Recommended packages:
  luit
The following NEW packages will be installed:
  adwaita-icon-theme alsa-topology-conf alsa-ucm-conf at-spi2-common at-spi2-core ca-certificates-java dconf-gsettings-backend dconf-service fontconfig
  fontconfig-config fonts-dejavu-core fonts-dejavu-extra fonts-dejavu-mono gsettings-desktop-schemas gtk-update-icon-cache hicolor-icon-theme humanity-icon-theme
  java-common libasound2-data libasound2t64 libasyncns0 libatk-bridge2.0-0t64 libatk-wrapper-java libatk-wrapper-java-jni libatk1.0-0t64 libatspi2.0-0t64
  libavahi-client3 libavahi-common-data libavahi-common3 libcairo-gobject2 libcairo2 libcups2t64 libdatrie1 libdconf1 libdeflate0 libdrm-amdgpu1 libdrm-intel1
  libflac12t64 libfontconfig1 libgail-common libgail18t64 libgbm1 libgdk-pixbuf-2.0-0 libgdk-pixbuf2.0-bin libgdk-pixbuf2.0-common libgif7 libgl1 libgl1-mesa-dri
  libglvnd0 libglx-mesa0 libglx0 libgraphite2-3 libgtk2.0-0t64 libgtk2.0-bin libgtk2.0-common libharfbuzz0b libice-dev libice6 libjbig0 libjpeg-turbo8 libjpeg8
  liblcms2-2 liblerc4 libllvm20 libmp3lame0 libmpg123-0t64 libogg0 libopus0 libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0 libpciaccess0 libpcsclite1
```

Jenkins Installation

Visit pkg.jenkins.io and select debian stable

Copy paste all the commands present in the document

```
ubuntu@ip-172-31-25-58:~$ sudo wget -O /etc/apt/keyrings/jenkins-keyring.asc \
    https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
--2025-09-21 14:16:15--  https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
Resolving pkg.jenkins.io (pkg.jenkins.io)... 146.75.34.133, 2a04:4e42:79::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

2025-09-21 14:16:15 (32.1 MB/s) - '/etc/apt/keyrings/jenkins-keyring.asc' saved [3175/3175]

ubuntu@ip-172-31-25-58:~$
```

```
ubuntu@ip-172-31-25-58:~$ echo "deb [signed-by=/etc/apt/keyrings/jenkins-keyring.asc]" \
    https://pkg.jenkins.io/debian-stable binary/ | sudo tee \
    /etc/apt/sources.list.d/jenkins.list > /dev/null
ubuntu@ip-172-31-25-58:~$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease
Ign:4 https://pkg.jenkins.io/debian-stable binary/ InRelease
Get:5 https://pkg.jenkins.io/debian-stable binary/ Release [2044 B]
Get:6 https://pkg.jenkins.io/debian-stable binary/ Release.gpg [833 B]
Hit:7 http://security.ubuntu.com/ubuntu noble-security InRelease
Get:8 https://pkg.jenkins.io/debian-stable binary/ Packages [29.7 kB]
Fetched 32.6 kB in 0s (99.6 kB/s)
Reading package lists... Done
ubuntu@ip-172-31-25-58:~$
```

```
ubuntu@ip-172-31-25-58:~$   sudo apt-get install fontconfig openjdk-17-jre
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
fontconfig is already the newest version (2.15.0-1.1ubuntu2).
fontconfig set to manually installed.
Suggested packages:
  libnss-mdns fonts-ipafont-gothic fonts-ipafont-mincho fonts-wqy-microhei | fonts-wqy-zenhei fonts-indic
The following NEW packages will be installed:
  openjdk-17-jre openjdk-17-jre-headless
0 upgraded, 2 newly installed, 0 to remove and 30 not upgraded.
```

```
ubuntu@ip-172-31-25-58:~$ sudo apt-get install 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 30 not upgraded.
Need to get 87.3 MB of archives.
After this operation, 88.4 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 noble-updates/main amd64 net-tools amd64 2.10-0.1ubuntu4.4 [204 kB]
Get:2 https://pkg.jenkins.io/debian-stable binary/ jenkins 2.516.3 [87.1 MB]
Fetched 87.3 MB in 20s (4307 kB/s)
```

Java Version

```
ubuntu@ip-172-31-25-58:~$ java --version
openjdk 17.0.16 2025-07-15
OpenJDK Runtime Environment (build 17.0.16+8-Ubuntu-0ubuntu124.04.1)
OpenJDK 64-Bit Server VM (build 17.0.16+8-Ubuntu-0ubuntu124.04.1, mixed mode, sharing)
ubuntu@ip-172-31-25-58:~$
```

Start and enable Jenkins

```
ubuntu@ip-172-31-25-58:~$ sudo systemctl start jenkins
ubuntu@ip-172-31-25-58:~$ sudo systemctl enable jenkins
Synchronizing state of jenkins.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable jenkins
ubuntu@ip-172-31-25-58:~$
```

Jenkins Status

```
ubuntu@ip-172-31-25-58:~$ sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
     Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: enabled)
     Active: active (running) since Sun 2025-09-21 14:19:46 UTC; 4min 14s ago
   Main PID: 4741 (java)
      Tasks: 38 (limit: 1008)
     Memory: 316.5M (peak: 347.1M)
        CPU: 21.113s
     CGroup: /system.slice/jenkins.service
             └─4741 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

Sep 21 14:19:40 ip-172-31-25-58 jenkins[4741]: [LF]> This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Sep 21 14:19:40 ip-172-31-25-58 jenkins[4741]: [LF]>
Sep 21 14:19:40 ip-172-31-25-58 jenkins[4741]: [LF]> *************************************************************
Sep 21 14:19:40 ip-172-31-25-58 jenkins[4741]: [LF]> *************************************************************
Sep 21 14:19:40 ip-172-31-25-58 jenkins[4741]: [LF]> *************************************************************
Sep 21 14:19:46 ip-172-31-25-58 jenkins[4741]: 2025-09-21 14:19:46.004+0000 [id=31]      INFO    jenkins.InitReactorRunner$1#onAttained: Completed initialization
Sep 21 14:19:46 ip-172-31-25-58 jenkins[4741]: 2025-09-21 14:19:46.033+0000 [id=23]      INFO    hudson.lifecycle.Lifecycle#onReady: Jenkins is fully up and run>
Sep 21 14:19:46 ip-172-31-25-58 systemd[1]: Started jenkins.service - Jenkins Continuous Integration Server.
Sep 21 14:19:46 ip-172-31-25-58 jenkins[4741]: 2025-09-21 14:19:46.305+0000 [id=49]      INFO    h.m.DownloadService$Downloadable#load: Obtained the updated dat>
Sep 21 14:19:46 ip-172-31-25-58 jenkins[4741]: 2025-09-21 14:19:46.305+0000 [id=49]      INFO    hudson.util.Retrier#start: Performed the action check updates s>
lines 1-20/20 (END)
```
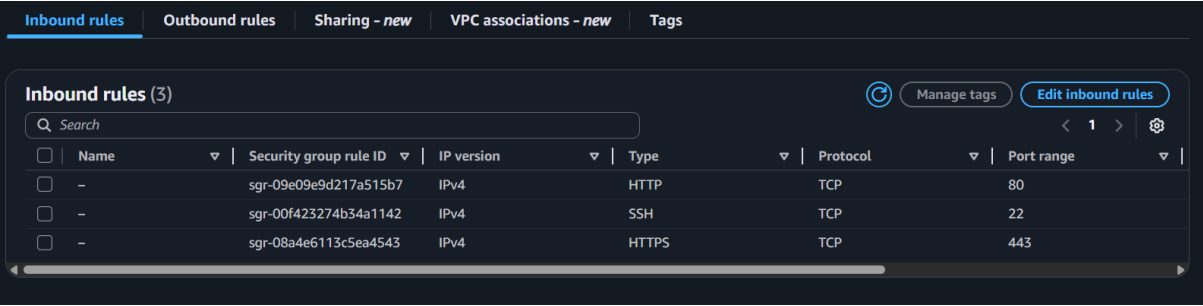
Go to Security Tab

Click on Security Groups

Click on edit inbound rules

Add rule and edit 'port range' to 8080 and add 0.0.0.0/0 next to 'source' and save
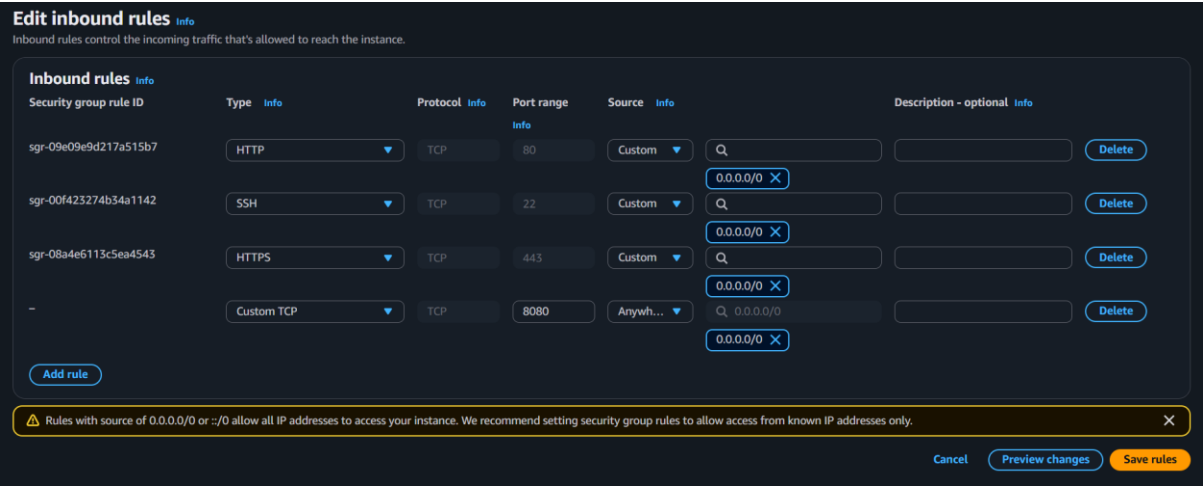
Open new tab, copy paste 'Public IPv4 address' from instance summary and append ':8080' at the end and run

Copy paste the red command with 'sudo cat' to get initial admin password

Install Suggested Plugins

Once installed, enter credentials

Getting Started

Create First Admin User

Username

admin

Password

•••••

Confirm password

•••••

Full name

admin

E-mail address

Skip and continue as admin   Save and Continue
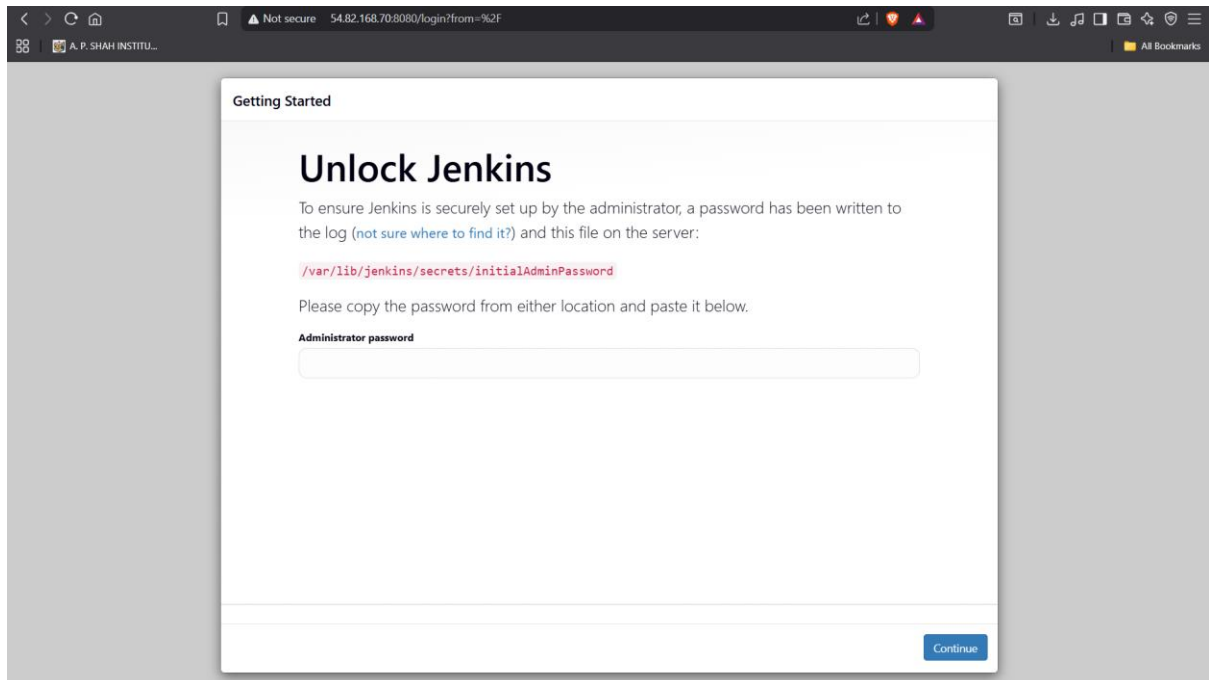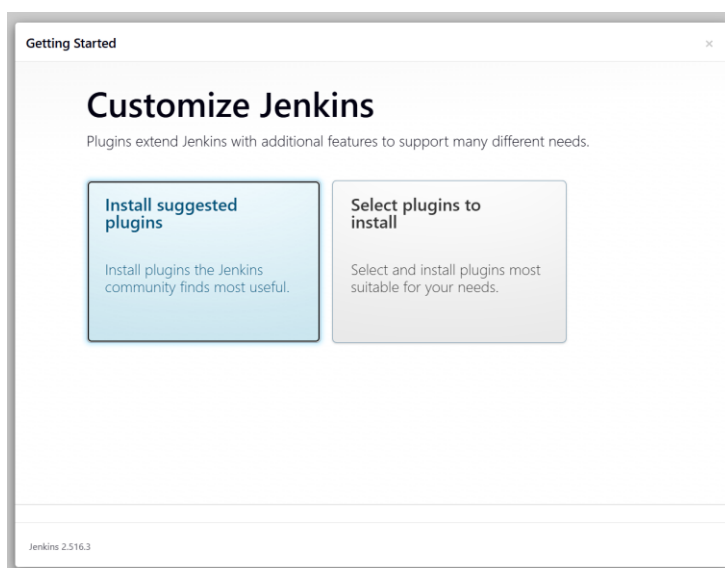
Instance Configuration

Getting Started

Instance Configuration

Jenkins URL: http://54.82.168.70:8080/

The Jenkins URL is used to provide the root URL for absolute links to various Jenkins resources. That means this value is required for proper operation of many Jenkins features including email notifications, PR status updates, and the BUILD_URL environment variable provided to build steps.
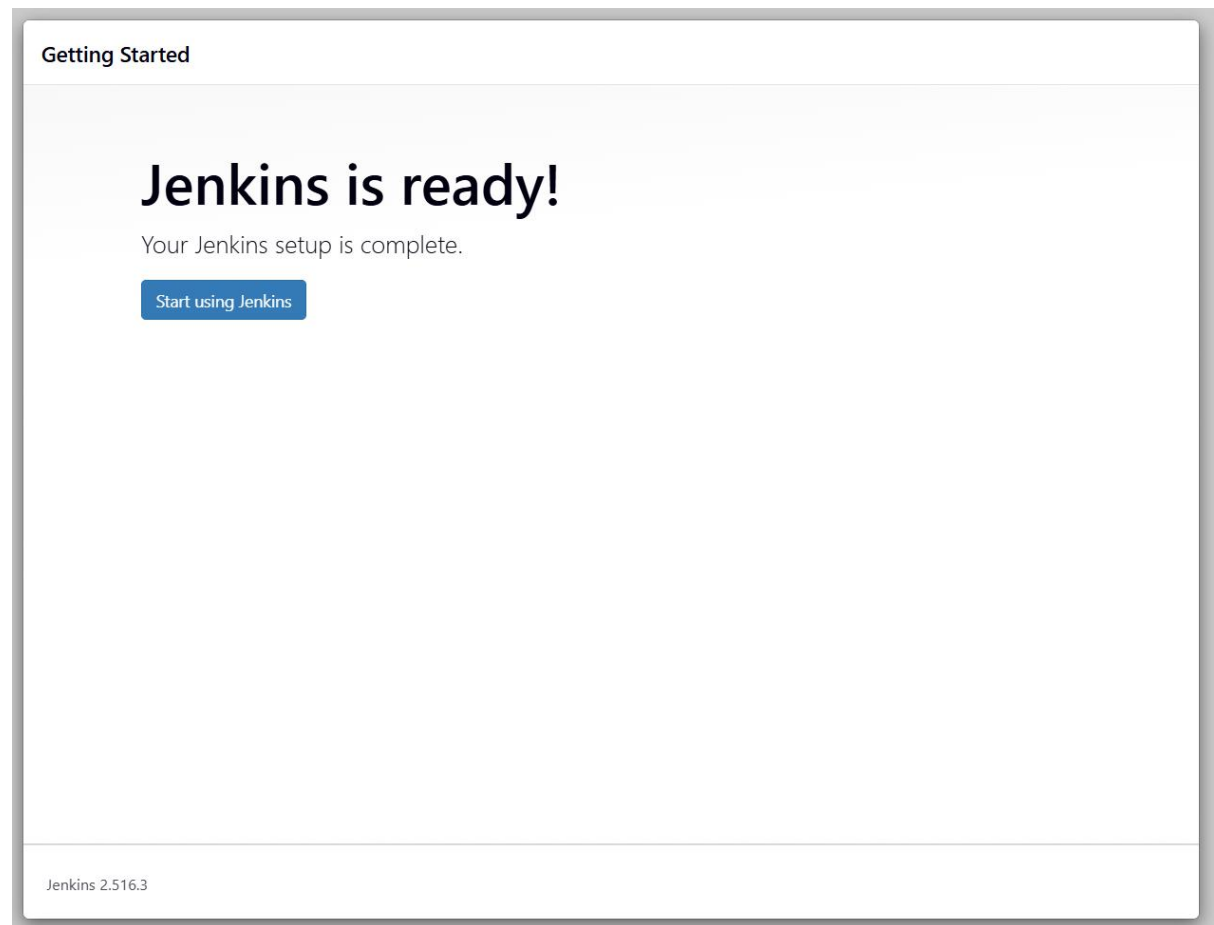
The proposed default value shown is **not saved yet** and is generated from the current request, if possible. The best practice is to set this value to the URL that users are expected to use. This will avoid confusion when sharing or viewing links.

Not now   Save and Finish

Jenkins is ready

Getting Started

Jenkins is ready!

Your Jenkins setup is complete.

Start using Jenkins

Jenkins 2.516.3

Jenkins Dashboard

Jenkins

+ New Item

Build History

Build Queue ∨

No builds in the queue.

Build Executor Status   0/2 ∨

Add description

Welcome to Jenkins!

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

Start building your software project

Create a job   +

Set up a distributed build

Set up an agent   🖥

Configure a cloud   ☁

Learn more about distributed builds   ?

REST API   Jenkins 2.516.3