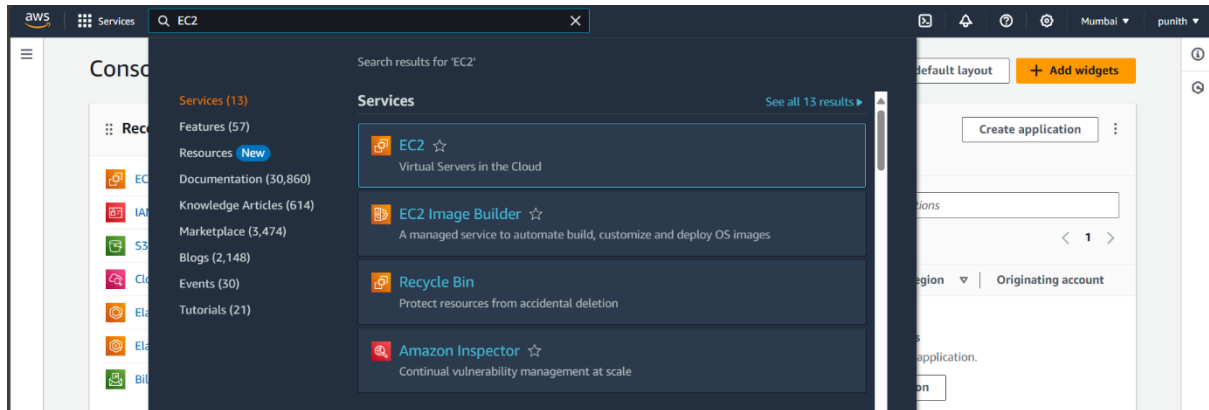


EC2(Elastic Compute Cloud)

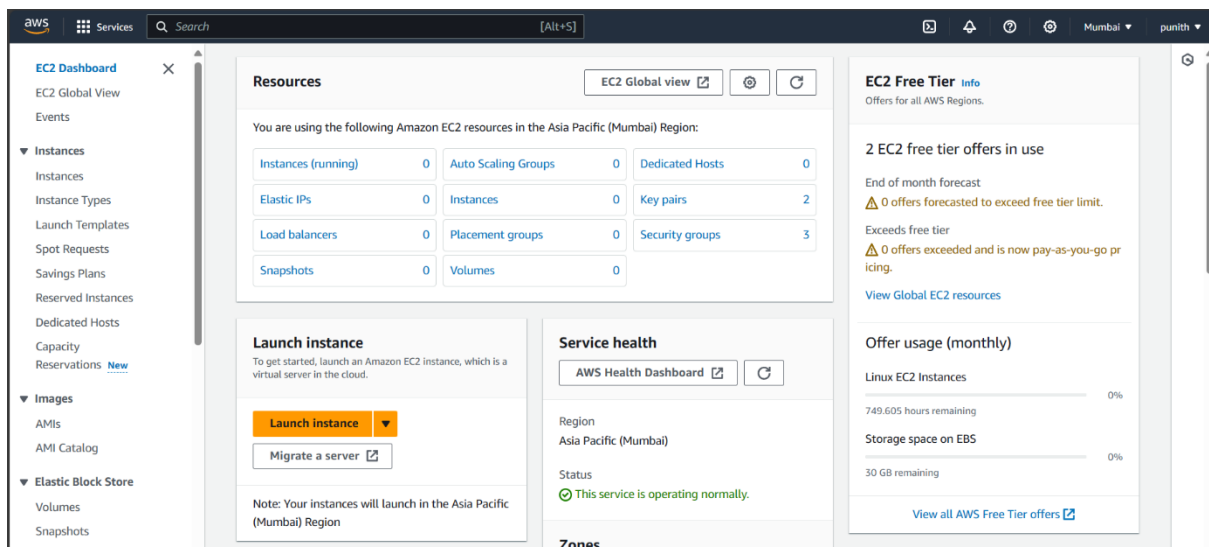
- EC2 stands for Elastic Compute Cloud and the ec2 are used for creating new virtual servers or virtual machines on-demand AWS. They can be accessed from server and reduces physical storage and helps in deploying applications faster and can be created easily.
- Instances: Instances are the images of the respective OS like AMI, Ubuntu etc.. Instances define the size and the RAM, CPU and cost of an OS for using. There are instance types like general purpose, compute optimized, memory optimized and storage optimized instances.
- Key Pairs: Key pairs contains Public and Private Key of the instance and It secures the login information of the instance.
- Region and Availability Zones: Regions are the locations of AWS infrastructure like US East, Asia Pacific, Europe, etc. .There can be multiple Availability Zones in Single Region like N.Virginia, Mumbai, Tokyo etc.. and the Availability Zones contains many Data Centres.

The Hands-on Images has been attached and explained in detailed way below:

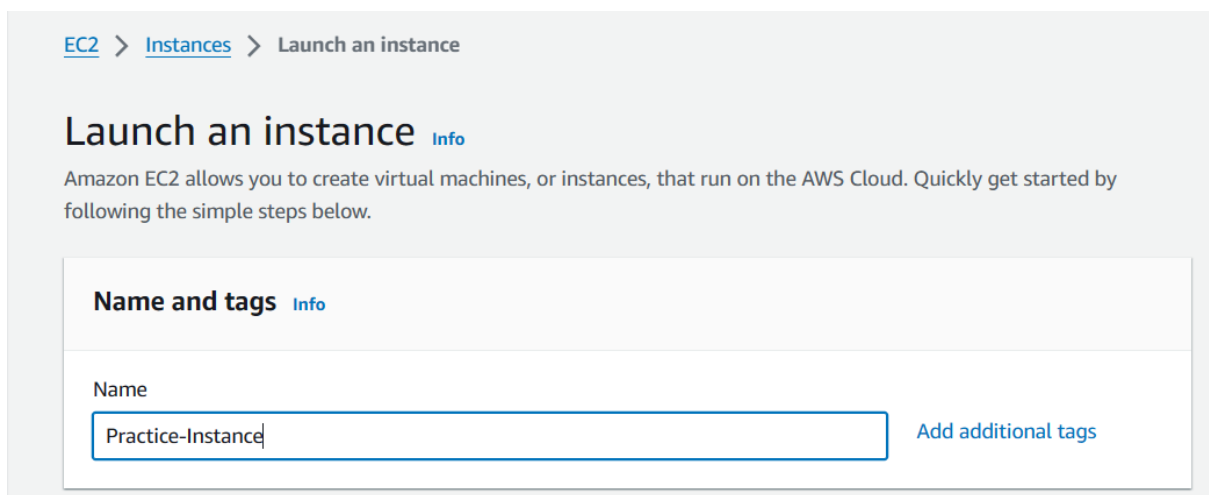
Search for EC2 in the AWS console.



The EC2 dashboard gets displayed and Click on Launch Instance.



Name the Instance.



Select the OS the its version.

▼ Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Q Search our full catalog including 1000s of application and OS images

Quick Start

Amazon Linux

aws

macOS

Mac

Ubuntu

ubuntu

Windows

Microsoft

Red Hat

Red Hat

SUSE Li

SUSE

Q

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Ubuntu Server 22.04 LTS (HVM), SSD Volume Type

Free tier eligible

ami-007020fd9c84e18c7 (64-bit (x86)) / ami-09c443d9277298026 (64-bit (Arm))

Virtualization: hvm ENA enabled: true Root device type: ebs

Description

Canonical, Ubuntu, 22.04 LTS, amd64 jammy image build on 2024-03-01

Architecture

AMI ID

Create a new key-pair.

Create key pair

×

Key pair name

Key pairs allow you to connect to your instance securely.

instance-key-pair

The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type

☒ RSA

RSA encrypted private and public key pair

☐ ED25519

ED25519 encrypted private and public key pair

Private key file format

☒ .pem

For use with OpenSSH

☐ .ppk

For use with PuTTY

⚠ When prompted, store the private key in a secure and accessible location on your computer. You will need it later to connect to your instance. [Learn more](#)

Cancel

Create key pair

Select instance type and the key-pair created.

▼ Instance type [Info](#) | [Get advice](#)

Instance type

t2.micro

Free tier eligible

Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Linux base pricing: 0.0124 USD per Hour
On-Demand Windows base pricing: 0.017 USD per Hour
On-Demand RHEL base pricing: 0.0724 USD per Hour
On-Demand SUSE base pricing: 0.0124 USD per Hour

▼

☒ All generations

[Compare instance types](#)

[Additional costs apply for AMIs with pre-installed software](#)

▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

instance-key-pair

▼

↻

[Create new key pair](#)

Check on all protocols to allow traffic from every protocol.

▼ Network settings [Info](#)

Edit

Network [Info](#)

vpc-0a86523624e51656e

Subnet [Info](#)

No preference (Default subnet in any availability zone)

Auto-assign public IP [Info](#)

Enable

[Additional charges apply](#) when outside of [free tier allowance](#)

Firewall (security groups) [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

☒ Create security group

☐ Select existing security group

We'll create a new security group called 'launch-wizard-3' with the following rules:

☒ Allow SSH traffic from

Helps you connect to your instance

Anywhere

0.0.0.0/0

▼

☒ Allow HTTPS traffic from the internet

To set up an endpoint, for example when creating a web server

☒ Allow HTTP traffic from the internet

To set up an endpoint, for example when creating a web server

Select the Storage and Launch instance.

The screenshot shows the 'Configure storage' and 'Launch instance' panels in the AWS Management Console. The 'Configure storage' panel on the left shows a configuration for 1x 10 GiB gp2 Root volume (Not encrypted). Below this, there is a warning about instance store volumes and a section for backup information. The 'Launch instance' panel on the right shows the 'Software Image (AMI)' as Canonical, Ubuntu, 22.04 LTS, the 'Virtual server type (instance type)' as t2.micro, and the 'Storage (volumes)' as 1 volume(s) - 10 GiB. At the bottom right, there are 'Cancel' and 'Launch instance' buttons, with a 'Review commands' link below the launch button.

Here , we can view IP address of instance and status of the instance.

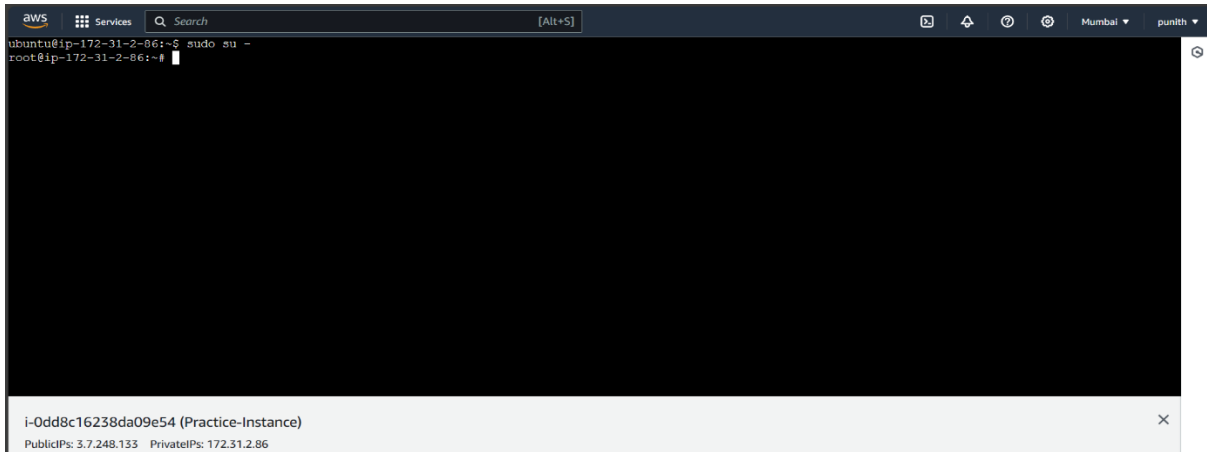
The screenshot shows the 'Instances' page in the AWS Management Console. The top section is a table with columns: Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IP. The table contains one instance: Practice-Insta... with Instance ID i-Odd8c16238da09e54, Instance state Running, Instance type t2.micro, Status check 2/2 checks passed, Alarm status View alarms, Availability Zone ap-south-1b, and Public IP ec2-3-7-2. Below the table, there is a detailed view of the instance 'i-Odd8c16238da09e54 (Practice-Instance)'. The 'Details' tab is selected, showing the 'Instance summary' with fields: Instance ID (i-Odd8c16238da09e54 (Practice-Instance)), IPv6 address (none), Hostname type (IP name: ip-172-31-2-86.ap-south-1.compute.internal), Answer private resource DNS name (none), Public IPv4 address (3.7.248.133), Instance state (Running), Private IP DNS name (IPV4 only) (ip-172-31-2-86.ap-south-1.compute.internal), Instance type (t2.micro), Private IPv4 addresses (172.31.2.86), Public IPv4 DNS (ec2-3-7-248-133.ap-south-1.compute.amazonaws.com), and Elastic IP addresses (none).

Now , we have many ways to connect ec2, Click on connect ec2 and we can use the instance on the web browser itself.

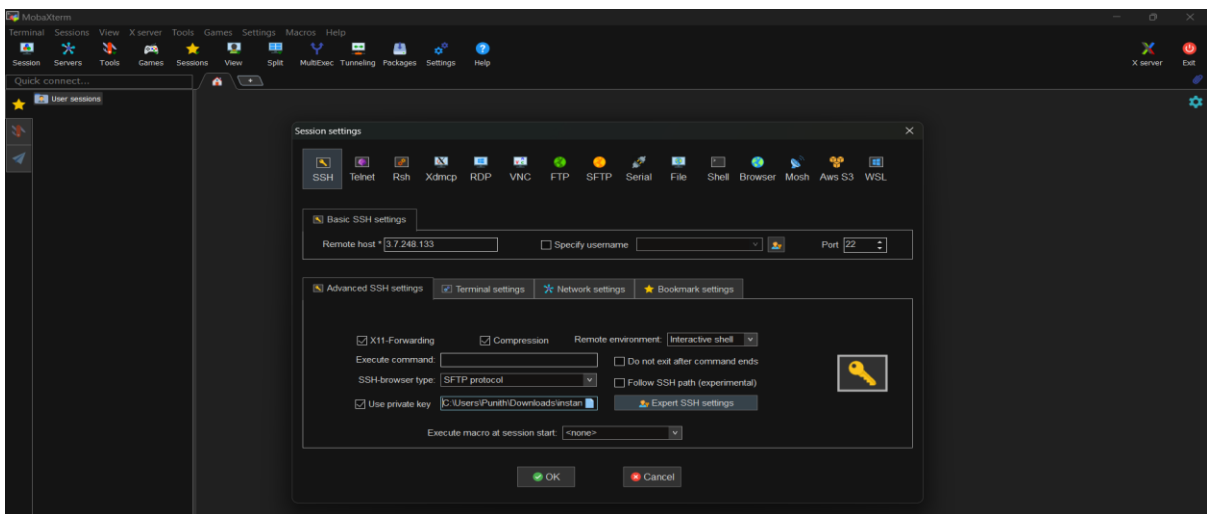
The screenshot shows the 'Connect to instance' page in the AWS Management Console. The page title is 'Connect to instance' and the subtitle is 'Connect to your instance i-Odd8c16238da09e54 (Practice-Instance) using any of these options'. The page has four tabs: 'EC2 Instance Connect', 'Session Manager', 'SSH client', and 'EC2 serial console'. The 'EC2 Instance Connect' tab is selected. Below the tabs, there is a section for 'Instance ID' showing i-Odd8c16238da09e54 (Practice-Instance). Below this, there is a section for 'Connection Type' with two options: 'Connect using EC2 Instance Connect' (selected) and 'Connect using EC2 Instance Connect Endpoint'. Below the connection type section, there is a section for 'Public IP address' showing 3.7.248.133. Below this, there is a section for 'Username' with a text input field containing 'ubuntu' and a search icon.

- Now , I am going to install Jenkins and Run Jenkins on the server using our instance created.

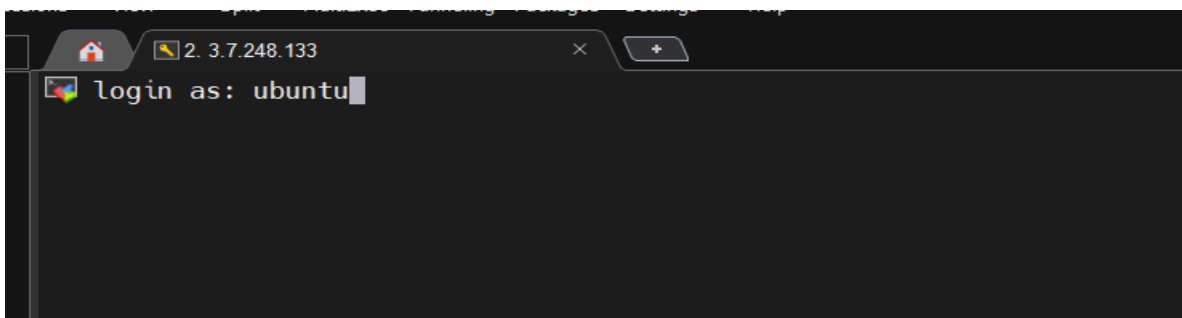
We get the CLI of the ubuntu on the web browser. Login into the root by `sudo su -` command.



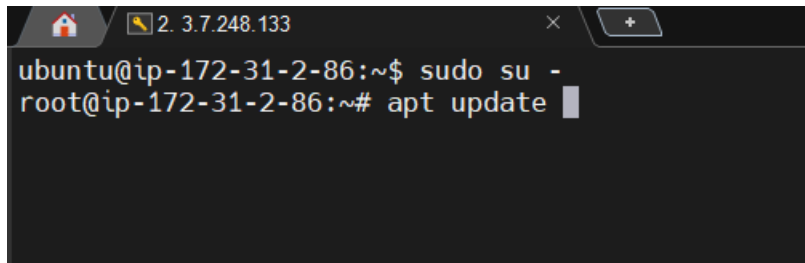
Other way of connecting ec2 is using MobaXterm. Here, we can connect using the .pem file that is creating at the time of launching an instance. Give the IP address and check the private key to connect .pem file.



The default username for ubuntu instance is 'ubuntu'.

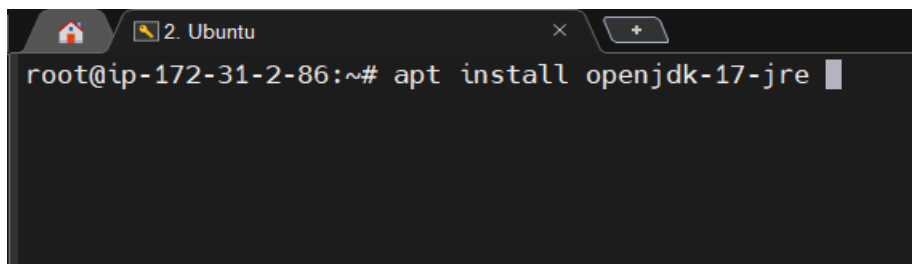


Enter 'sudo su -' command to login to root and use 'apt update' command to update the packages.



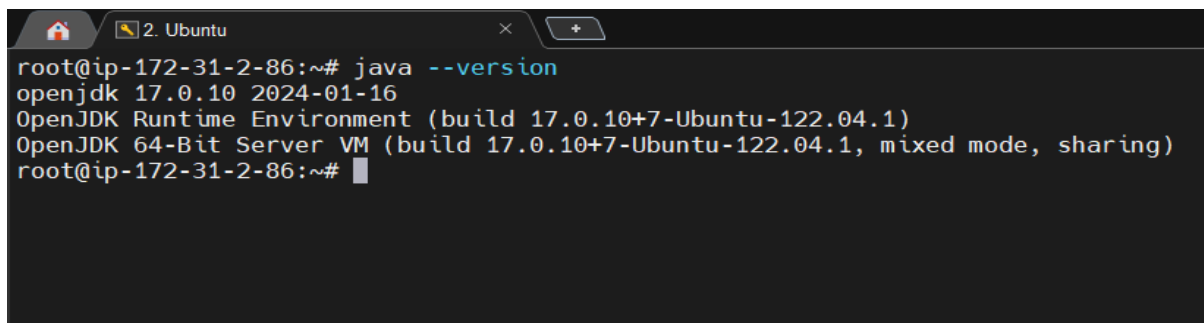
```
ubuntu@ip-172-31-2-86:~$ sudo su -
root@ip-172-31-2-86:~# apt update
```

Install java.



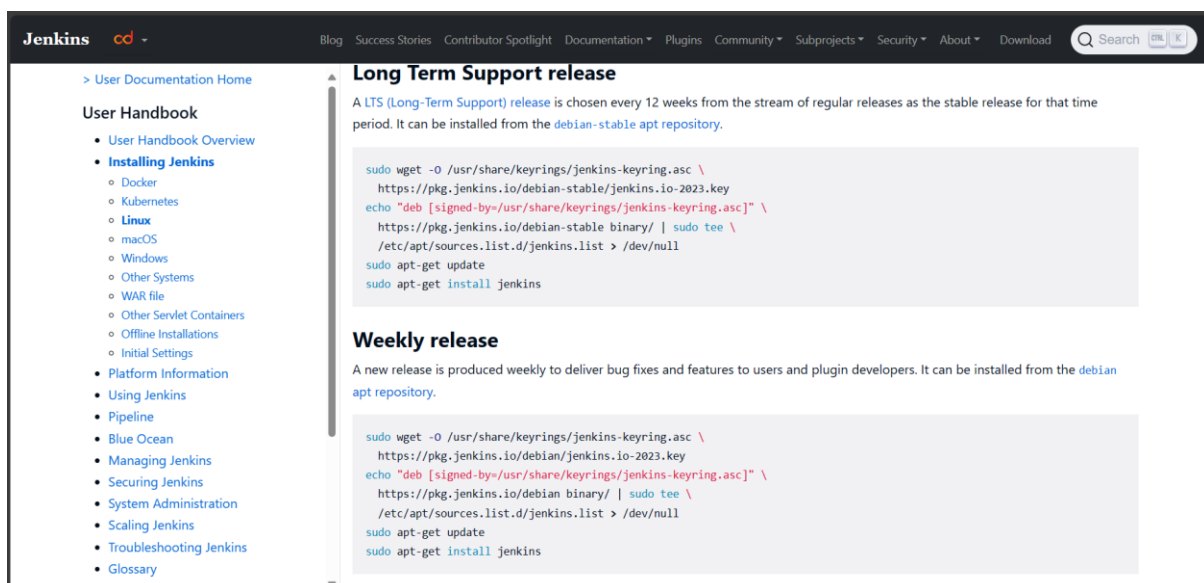
```
root@ip-172-31-2-86:~# apt install openjdk-17-jre
```

After installing check whether java installed or not by following command.



```
root@ip-172-31-2-86:~# java --version
openjdk 17.0.10 2024-01-16
OpenJDK Runtime Environment (build 17.0.10+7-Ubuntu-122.04.1)
OpenJDK 64-Bit Server VM (build 17.0.10+7-Ubuntu-122.04.1, mixed mode, sharing)
root@ip-172-31-2-86:~#
```

Go to official Jenkins site and choose the release that you want to install.



The screenshot shows the Jenkins website with a navigation bar at the top. The main content area is divided into two sections: 'Long Term Support release' and 'Weekly release'. The 'Long Term Support release' section describes a LTS release chosen every 12 weeks and provides a terminal command to install it. The 'Weekly release' section describes a new release produced weekly and also provides a terminal command to install it. A sidebar on the left contains a 'User Handbook' with links to various documentation pages.

Jenkins cd

Blog Success Stories Contributor Spotlight Documentation Plugins Community Subprojects Security About Download Search

> User Documentation Home

User Handbook

- User Handbook Overview
- Installing Jenkins**
 - Docker
 - Kubernetes
 - Linux
 - macOS
 - Windows
 - Other Systems
 - WAR file
 - Other Servlet Containers
 - Offline Installations
 - Initial Settings
- Platform Information
- Using Jenkins
- Pipeline
- Blue Ocean
- Managing Jenkins
- Securing Jenkins
- System Administration
- Scaling Jenkins
- Troubleshooting Jenkins
- Glossary

Long Term Support release

A LTS (Long-Term Support) release is chosen every 12 weeks from the stream of regular releases as the stable release for that time period. It can be installed from the [debian-stable apt repository](#).

```
sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \
https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] \
https://pkg.jenkins.io/debian-stable binary/" | sudo tee \
/etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins
```

Weekly release

A new release is produced weekly to deliver bug fixes and features to users and plugin developers. It can be installed from the [debian apt repository](#).

```
sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \
https://pkg.jenkins.io/debian/jenkins.io-2023.key
echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc] \
https://pkg.jenkins.io/debian binary/" | sudo tee \
/etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins
```

Copy and paste on the terminal and click enter.

```
root@ip-172-31-2-86:~# sudo wget -O /usr/share/keyrings/jenkins-keyring.asc \
https://pkg.jenkins.io/debian/jenkins.io-2023.key
echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc]" \
https://pkg.jenkins.io/debian binary/ | sudo tee \
/etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt-get update
sudo apt-get install jenkins
```

After installing, check the status of Jenkins by ‘systemctl status jenkins’.

```
root@ip-172-31-2-86:~# systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
   Loaded: loaded (/lib/systemd/system/jenkins.service; enabled; vendor preset: enabled)
   Active: active (running) since Fri 2024-04-19 16:07:10 UTC; 1min 2s ago
     Main PID: 6031 (java)
       Tasks: 45 (limit: 1121)
      Memory: 280.2M
         CPU: 38.590s
    CGroup: /system.slice/jenkins.service
            └─6031 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

Apr 19 16:06:39 ip-172-31-2-86 jenkins[6031]: ba035c30459d4a0eac537fe38cd1a734
Apr 19 16:06:39 ip-172-31-2-86 jenkins[6031]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
Apr 19 16:06:39 ip-172-31-2-86 jenkins[6031]: *****
Apr 19 16:06:39 ip-172-31-2-86 jenkins[6031]: *****
Apr 19 16:06:39 ip-172-31-2-86 jenkins[6031]: *****
Apr 19 16:07:10 ip-172-31-2-86 jenkins[6031]: 2024-04-19 16:07:10.679+0000 [id=31] INFO jenkins.InitReactorRunner$1#onAttained: Completed initial
Apr 19 16:07:10 ip-172-31-2-86 jenkins[6031]: 2024-04-19 16:07:10.720+0000 [id=24] INFO hudson.lifecycle.Lifecycle#onReady: Jenkins is fully up
Apr 19 16:07:10 ip-172-31-2-86 systemd[1]: Started Jenkins Continuous Integration Server.
Apr 19 16:07:10 ip-172-31-2-86 jenkins[6031]: 2024-04-19 16:07:10.825+0000 [id=47] INFO h.m.DownloadService$Downloadable#load: Obtained the upda
Apr 19 16:07:10 ip-172-31-2-86 jenkins[6031]: 2024-04-19 16:07:10.826+0000 [id=47] INFO hudson.util.Retrier#start: Performed the action check up
lines 1-20/20 (END)
```

Comeback to instance and go to security and go to inbound rules.

Details	Status and alarms New	Monitoring	Security	Networking	Storage	Tags
▼ Security details						
IAM Role		Owner ID		Launch time		
-		211125559768		Fri Apr 19 2024 21:18:49 GMT+0530 (India Standard Time)		
Security groups						
sg-087fc9c7f250c0c8d (launch-wizard-3)						

Inbound rules allows to define port , protocols and etc.. Click on Edit inbound rules.

Inbound rules	Outbound rules	Tags
Inbound rules (3)		
<input type="text" value="Search"/>		
<input type="checkbox"/>	Name	Security group rule...
<input type="checkbox"/>	-	sgr-04dd08702fb5245ee
<input type="checkbox"/>	-	sgr-07440d103e0431...
<input type="checkbox"/>	-	sgr-0bdd3f8c1e68dad3

Custom TCP

TCP

8080

Anyw...

0.0.0.0

Jenkins

Delete

Add rule

0.0.0.0

Rules with source of 0.0.0.0 or ::0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Cancel

Preview changes

Save rules

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

.....|

Continue

Jenkins is ready!


You have skipped the **setup of an admin user**.


To log in, use the username: "admin" and the administrator password you used to access the setup wizard.






Your Jenkins setup is complete.

[Start using Jenkins](#)

This is how Jenkins dashboard looks like.


 **Jenkins**


Search (CTRL+K) 


   admin   log out


Dashboard >

+ New Item


 Build History

 Manage Jenkins

 My Views

Build Queue 

No builds in the queue.

Build Executor Status 


1 Idle

2 Idle


Welcome to Jenkins!


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


Start building your software project


Create a job 

Set up a distributed build

Set up an agent 

Configure a cloud 

Learn more about distributed builds 

 Add description

REST API Jenkins 2.454