

⌚ Jenkins Installation on AWS EC2 (Ubuntu)

Deployed and configured **Jenkins CI/CD server** on an **AWS EC2 Ubuntu instance**. Set up environment by installing **Java (OpenJDK 21)**, configured **Jenkins**, and enabled **port 8080** for external web access. Managed **security group inbound rules** to ensure secure connectivity.

Skills demonstrated:

⌚ AWS EC2 • ⚡ Jenkins • 🔒 Security Groups • 🛡 Java • ⚙️ Linux Commands • 🌐 Port Management

Result: Successfully accessed Jenkins through a public endpoint and verified continuous integration setup.

Step 1: Create an EC2 Instance

- Launch an **EC2 instance** using the **Ubuntu** AMI (e.g., Ubuntu 22.04 LTS).

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links like Dashboard, EC2 Global View, Events, Instances, Images, and Elastic Block Store. The main area displays an 'Instance summary' for an instance named 'i-0d75ca5ad5fb44fd2 (demo)'. The summary includes the following details:

Category	Value
Instance ID	i-0d75ca5ad5fb44fd2
IPv6 address	—
Hostname type	IP name: ip-172-31-25-184.ec2.internal
Answer private resource DNS name	IPv4 (A)
Auto-assigned IP address	54.235.63.13 [Public IP]
IAM Role	—
IMDSv2	Required
Public IPv4 address	54.235.63.13 open address
Private IP DNS name (IPv4 only)	ip-172-31-25-184.ec2.internal
Instance type	t3.micro
VPC ID	vpc-0831fdec33fbf09a7
Subnet ID	subnet-0a837bd217f77bc11
Instance ARN	arn:aws:ec2:us-east-1:395069634226:instance/i-0d75ca5ad5fb44fd2
Public DNS	ec2-54-235-63-13.compute-1.amazonaws.com open address
Private IPv4 addresses	172.31.25.184
Public DNS	ec2-54-235-63-13.compute-1.amazonaws.com open address
Elastic IP addresses	—
AWS Compute Optimizer finding	Opt-in to AWS Compute Optimizer for recommendations.
Auto Scaling Group name	—
Managed	false

- Choose an appropriate instance type (e.g., `t2.micro` for testing).
- Create or select an existing **key pair** (.pem file) for SSH access.

Step 2: Connect to the Instance via SSH

From your terminal (Linux/Mac) or PowerShell (Windows), connect using:

Bash

```
ssh -i "your-key.pem" ubuntu@<public-ip-address>
```

```

PS C:\Users\Priyadarshini> cd downloads
PS C:\Users\Priyadarshini\downloads> ssh -i demo3.pem ubuntu@54.235.63.13
The authenticity of host '54.235.63.13 (54.235.63.13)' can't be established.
ED25519 key fingerprint is SHA256:A714J8kvdx5tEUvijesGMgmpA3zbzh6C28JuPR208Y.
This host key is known by the following other names/addresses:
  C:\Users\Priyadarshini/.ssh/known_hosts:28: ec2-54-235-63-13.compute-1.amazonaws.com
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '54.235.63.13' (ED25519) to the list of known hosts.
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1015-aws x86_64)

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

System information as of Mon Nov 10 03:30:53 UTC 2025

System load: 0.08 Temperature: -273.1 C
Usage of /: 26.2% of 6.71GB Processes: 115
Memory usage: 24% Users logged in: 1
Swap usage: 0% IPv4 address for ens5: 172.31.25.184

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

Last login: Mon Nov 10 03:22:54 2025 from 60.243.83.175
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-25-184:~$ sudo apt update

```

Step 3: Install Java

Jenkins requires Java to run. Update your packages and install Java.

`sudo apt update`

`sudo apt install openjdk-21-jre`

Verify the installation:

`java -version`

```

ubuntu@ip-172-31-25-184:~$ sudo apt update
sudo apt install fontconfig openjdk-21-jre
java -version
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [381 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1585 kB]
Get:14 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1385 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [299 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.7 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1498 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [383 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [31.4 kB]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [2244 kB]
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [509 kB]
Get:24 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [215 kB]
Get:25 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.5 kB]

```

Step 4: Install Jenkins

Add the Jenkins repository and install it:

`sudo wget -O /etc/apt/keyrings/jenkins-keyring.asc \`

`https://pkg.jenkins.io/debian/jenkins.io-2023.key`

`echo "deb [signed-by=/etc/apt/keyrings/jenkins-keyring.asc]" \`

`https://pkg.jenkins.io/debian binary/ | sudo tee \`

```
/etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt update
sudo apt install Jenkins
```

```
OpenJDK Runtime Environment (build 21.0.8+9-Ubuntu-0ubuntu124.04.1)
OpenJDK 64-Bit Server VM (build 21.0.8+9-Ubuntu-0ubuntu124.04.1, mixed mode, sharing)
ubuntu@ip-172-31-25-184:~$ java --version
openjdk 21.0.8 2025-07-15
OpenJDK Runtime Environment (build 21.0.8+9-Ubuntu-0ubuntu124.04.1)
OpenJDK 64-Bit Server VM (build 21.0.8+9-Ubuntu-0ubuntu124.04.1, mixed mode, sharing)
ubuntu@ip-172-31-25-184:~$ sudo wget -O /etc/apt/keyrings/jenkins-keyring.asc \
  https://pkg.jenkins.io/debian/jenkins.io-2023.key
echo "deb [signed-by=/etc/apt/keyrings/jenkins-keyring.asc]" \
  https://pkg.jenkins.io/debian/binary/ | sudo tee \
  /etc/apt/sources.list.d/jenkins.list > /dev/null
sudo apt update
sudo apt install jenkins
--2025-11-10 03:42:29 -- https://pkg.jenkins.io/debian/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'

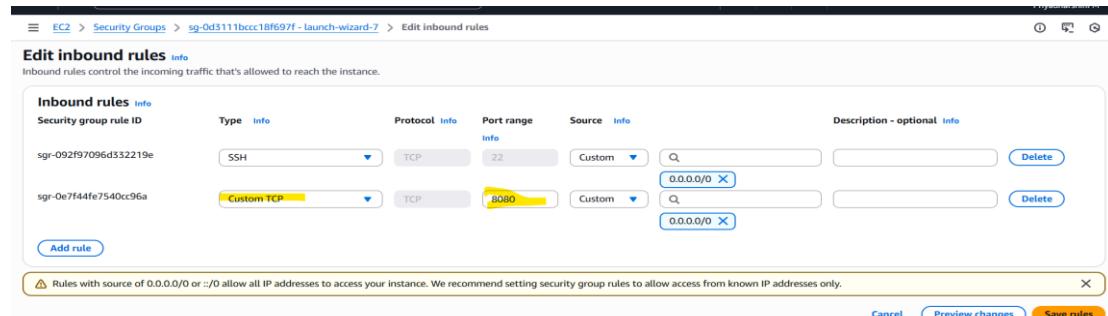
/etc/apt/keyrings/jenkins-keyring.asc 100%[=====] 3.10K
2025-11-10 03:42:29 (44.2 MB/s) - '/etc/apt/keyrings/jenkins-keyring.asc' saved [3175/3175]

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 binary/ InRelease
Get:5 https://pkg.jenkins.io/debian binary/ Release [2044 B]
Get:6 https://security.ubuntu.com/ubuntu noble-security InRelease
Get:7 https://security.ubuntu.com/ubuntu noble-security Packages [73.0 kB]
Fetched 76.5 kB in 1s (147 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
9 packages can be upgraded. Run 'apt list --upgradable' to see them.
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 9 not upgraded.
```

Step 5: Open Port 8080 for Jenkins

In your EC2 Security Group:

- Edit Inbound Rules → Add Rule
 - Type: Custom TCP
 - Port Range: 8080
 - Source: 0.0.0.0/0 (for public access) or your IP (for restricted access)



Step 6: Access Jenkins Web Interface

Now, open your browser and visit:

`http://<your-public-ip>:8080`

