Jenkins Task

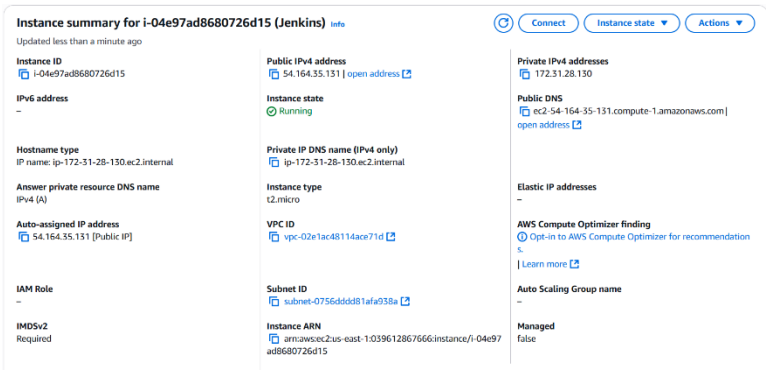
TASKS

Work Flow:

- Create an EC2 instance with the help of AWS Management Console with linux OS of required configuration and ensure that where the instance type should be “t2.medium” and also configure an security group and edit an inbound traffic to “all traffic”.
- Now, Connect an EC2 instance with an help of Windows Terminal or Gitbash or Vbox.
- To connect an EC2 instance the command is:
    - ssh -i “**key_file**” ec2-user@“**Public_IP_address**”

Key_file --- Key file of the instance with the extension .pem

Public_IP_address --- Public IP address of the instance.



1. Launch jenkins and explore creating projects and users.

Step 1: Install Java and Jenkins in EC2-instance

Install An Java Package :

- ✓ Before installing an Jenkins, we have to install an java package because where Jenkins are developed using java programming language, so we need an java package to run an jenkins. In this case java package installation is mandatory.

- ✓ To list the java package from an repository, The command is:
    - **yum list | grep java**

- ✓ Once you got an right package, now to install that java package, the command is:
    - **sudo yum install java-21-amazon-corretto.x86_64**

```
[ec2-user@ip-172-31-28-130 ~]$ sudo yum install java-21-amazon-corretto.x86_64
Amazon Linux 2023 Kernel Livepatch repository                    119 kB/s |  16 kB     00:00
Dependencies resolved.
================================================================================
 Package                  Architecture  Version                  Repository  Size
================================================================================
Installing:
 java-21-amazon-corretto  x86_64        1:21.0.7+6-1.amzn2023.1  amazonlinux  214 k
Installing dependencies:
 alsa-lib                 x86_64        1.2.7.2-1.amzn2023.0.2   amazonlinux  504 k
 cairo                    x86_64        1.18.0-4.amzn2023.0.1    amazonlinux  718 k
 dejavu-sans-fonts        noarch        2.37-16.amzn2023.0.2     amazonlinux  1.3 M
 dejavu-sans-mono-fonts   noarch        2.37-16.amzn2023.0.2     amazonlinux  467 k
 dejavu-serif-fonts       noarch        2.37-16.amzn2023.0.2     amazonlinux  1.0 M
 fontconfig               x86_64        2.13.94-2.amzn2023.0.2   amazonlinux  273 k
 fonts-filesystem         noarch        1:2.0.5-12.amzn2023.0.2  amazonlinux  9.5 k
 freetype                 x86_64        2.13.2-5.amzn2023.0.1    amazonlinux  423 k
 giflib                   x86_64        5.2.1-9.amzn2023.0.1     amazonlinux   49 k
 google-noto-fonts-common noarch        20201206-2.amzn2023.0.2  amazonlinux   15 k
 google-noto-sans-vf-fonts noarch       20201206-2.amzn2023.0.2  amazonlinux  492 k
 graphite2                x86_64        1.3.14-7.amzn2023.0.2    amazonlinux   97 k
 harfbuzz                 x86_64        7.0.0-2.amzn2023.0.2     amazonlinux  873 k
 java-21-amazon-corretto-headless x86_64 1:21.0.7+6-1.amzn2023.1 amazonlinux  96 M
 javapackages-filesystem  noarch        6.0.0-7.amzn2023.0.6     amazonlinux   12 k
 langpacks-core-font-en   noarch        3.0-21.amzn2023.0.4      amazonlinux   10 k
 libICE                   x86_64        1.1.1-3.amzn2023.0.1     amazonlinux   76 k
 libSM                    x86_64        1.2.4-3.amzn2023.0.1     amazonlinux   45 k
 libX11                   x86_64        1.8.10-2.amzn2023.0.1    amazonlinux  659 k
 libX11-common            noarch        1.8.10-2.amzn2023.0.1    amazonlinux  147 k
 libXau                   x86_64        1.0.11-6.amzn2023.0.1    amazonlinux   33 k
 libXext                  x86_64        1.3.6-1.amzn2023.0.1     amazonlinux   42 k
 libXi                    x86_64        1.8.2-1.amzn2023.0.1     amazonlinux   42 k
 libXinerama              x86_64        1.1.5-6.amzn2023.0.1     amazonlinux   16 k
 libXrandr                x86_64        1.5.4-3.amzn2023.0.1     amazonlinux   29 k
 libXrender               x86_64        0.9.11-6.amzn2023.0.1    amazonlinux   29 k
 libXt                    x86_64        1.3.0-3.amzn2023.0.1     amazonlinux  183 k
 libXtst                  x86_64        1.2.5-1.amzn2023.0.1     amazonlinux   22 k
 libbrotli                x86_64        1.0.9-4.amzn2023.0.2     amazonlinux  315 k
 libjpeg-turbo            x86_64        2.1.4-2.amzn2023.0.5     amazonlinux  190 k
 libpng                   x86_64        2:1.6.37-10.amzn2023.0.6 amazonlinux  128 k
 libxcb                   x86_64        1.17.0-1.amzn2023.0.1    amazonlinux  235 k
```

Install An Jenkins :

- ✓ To install an Jenkins in linux machine go to an official website by using below link.
- ✓ Link : https://www.jenkins.io/doc/book/installing/linux/#red-hat-centos
- ✓ Now you can see the instructions given in the official page to install an Jenkins, follow all the steps to install.
- ✓ And also where the command as given below to install an Jenkins from an official Page, run all the commands in your linux machine one by one.
    - sudo wget -O /etc/yum.repos.d/jenkins.repo \ https://pkg.jenkins.io/redhat-stable/jenkins.repo

```
[ec2-user@ip-172-31-28-130 ~]$ sudo wget -O /etc/yum.repos.d/jenkins.repo \
    https://pkg.jenkins.io/redhat-stable/jenkins.repo
--2025-06-02 16:28:10--  https://pkg.jenkins.io/redhat-stable/jenkins.repo
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: 85
Saving to: '/etc/yum.repos.d/jenkins.repo'

/etc/yum.repos.d/jenkins.repo         100%[==========================================================================>]      85  --.-KB/s    in 0s

2025-06-02 16:28:10 (2.52 MB/s) - '/etc/yum.repos.d/jenkins.repo' saved [85/85]
```

- sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key
- sudo yum upgrade

```
[ec2-user@ip-172-31-28-130 ~]$ sudo rpm --import https://pkg.jenkins.io/redhat-stable/jenkins.io-2023.key
[ec2-user@ip-172-31-28-130 ~]$ sudo yum upgrade
Jenkins-stable                                   529 kB/s |  31 kB     00:00
Dependencies resolved.
Nothing to do.
Complete!
```

- sudo yum install fontconfig

```
[ec2-user@ip-172-31-28-130 ~]$ sudo yum install fontconfig
Last metadata expiration check: 0:00:35 ago on Mon Jun  2 16:28:46 2025.
Package fontconfig-2.13.94-2.amzn2023.0.2.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
```

- sudo yum install Jenkins

```
[ec2-user@ip-172-31-28-130 ~]$ sudo yum install jenkins
Last metadata expiration check: 0:00:52 ago on Mon Jun  2 16:28:46 2025.
Dependencies resolved.
================================================================================
 Package                 Architecture  Version          Repository  Size
================================================================================
Installing:
 jenkins                 noarch        2.504.2-1.1      jenkins     90 M

Transaction Summary
================================================================================
Install  1 Package
```

- sudo systemctl daemon-reload

✓ To start and enable an jenkins service, The command is:

- **sudo systemctl start jenkins**
- **sudo systemctl enable jenkins**

✓ To check the status of the jenkins service, The command is:

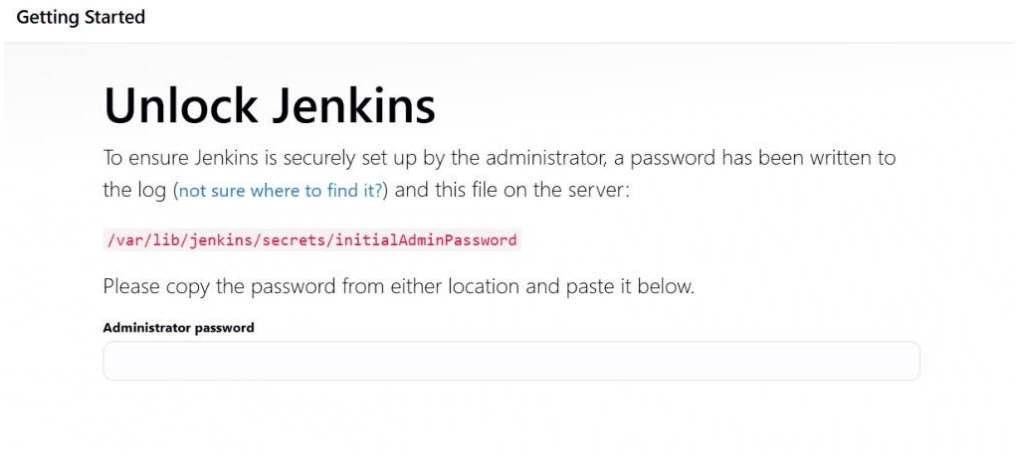
- **sudo systemctl status Jenkins**

```
[ec2-user@ip-172-31-28-130 ~]$ sudo systemctl enable jenkins
Created symlink /etc/systemd/system/multi-user.target.wants/jenkins.service → /usr/lib/systemd/system/jenkins.service.
[ec2-user@ip-172-31-28-130 ~]$ sudo systemctl start jenkins
[ec2-user@ip-172-31-28-130 ~]$ sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
     Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: disabled)
     Active: active (running) since Mon 2025-06-02 16:30:53 UTC; 8s ago
   Main PID: 26499 (java)
      Tasks: 45 (limit: 1111)
     Memory: 389.1M
        CPU: 15.887s
     CGroup: /system.slice/jenkins.service
             └─26499 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080
```

Step 2: Access Jenkins through an web browser.

✓ To accessing an Jenkins through an web browser copy / paste the public IP along with the localhost(:8080), The format is given below:

- **http://54.226.235.178:8080**



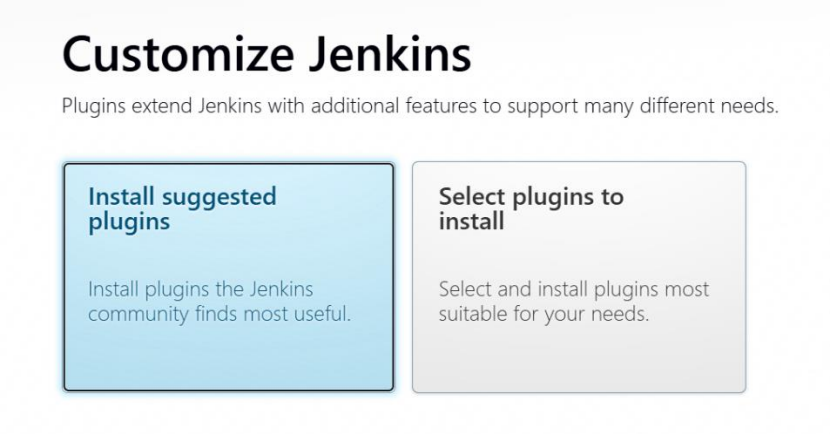
✓ To get an initial admin password run an below command it will give you an password for an initial login, The command is:

- **sudo cat /var/lib/jenkins/secrets/initialAdminPassword**

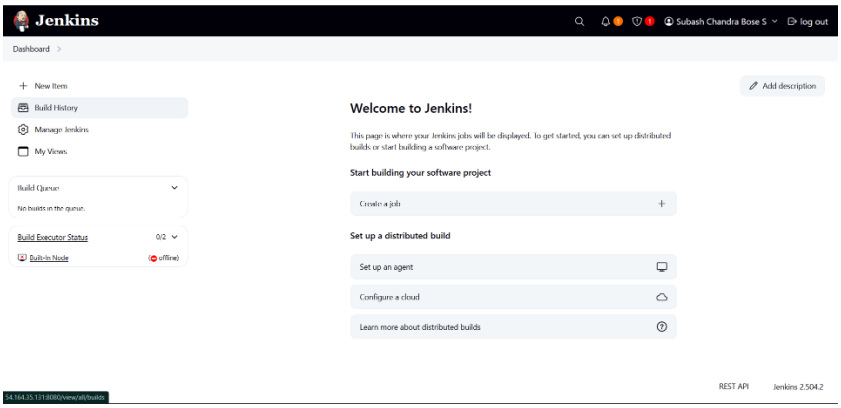
```
[ec2-user@ip-172-31-28-130 ~]$ sudo cat /var/lib/jenkins/secrets/initialAdminPassword
546b30aa1de04c7ab7d27763e4578152
[ec2-user@ip-172-31-28-130 ~]$
```

✓ Now copy and paste the password into the Jenkins UI to unlock.

✓ Now it will ask you to select an customize plugins, you can choose “Install suggested plugins”.

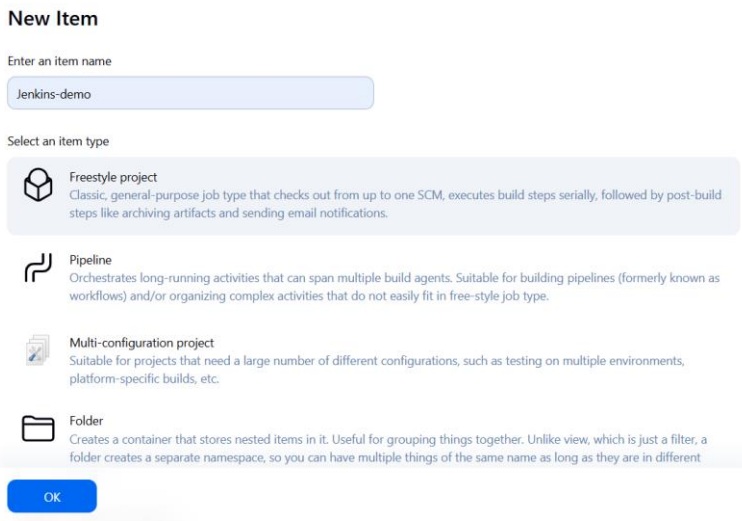


- ✓ And then it will move you to create an your first admin user account, Once created it will move you to the Jenkins dashboard.



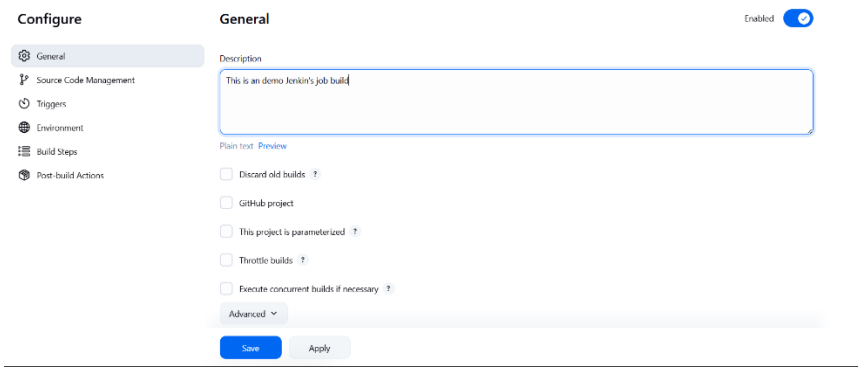
Step 3: Create a New Project.

- ✓ To create an new project in Jenkins dashboard, where there is an option called “New Item” click it.
- ✓ Now you where get into to create an new job for your project, their you should select an project category.
- ✓ For an simple project I will go with an “Freestyle Project” and click OK



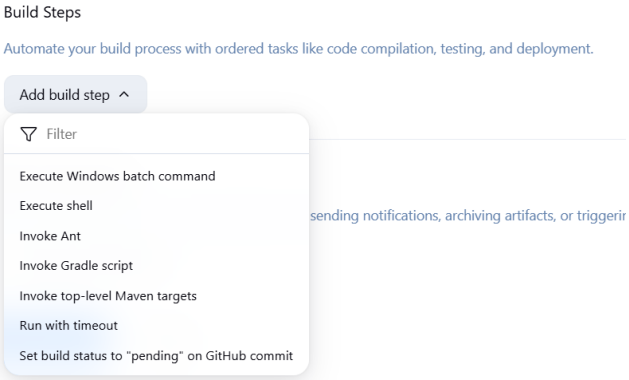
✓ Now Configure your project (add description, source code, build steps, etc.).

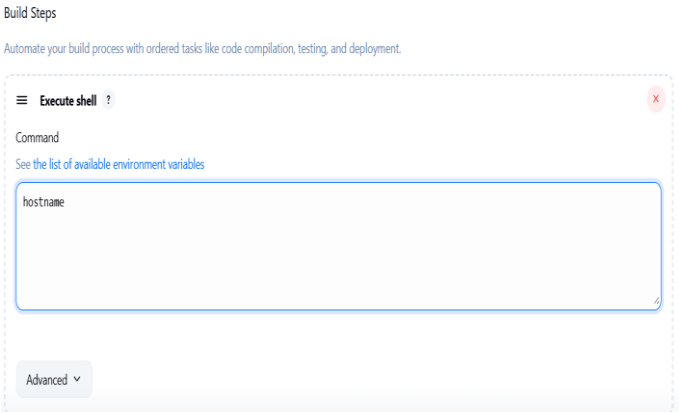
✓ Click save, now where new project job was created



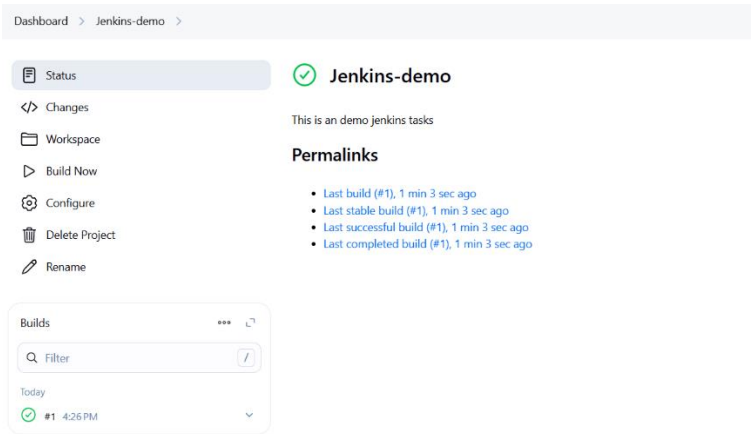
✓ Now Their will be an option called "build", where it will build your project and if their no any error it will gives you an output as per your shell script, given an command as hostname.

- hostname



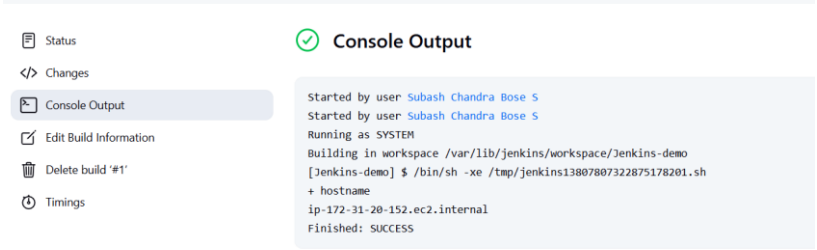


✓ On the project page, click **"Build #1"** (or whichever build number you want to see)



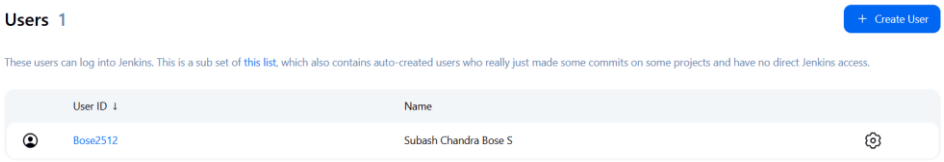
✓ Click **"Console Output"** to see your shell script output.

✓ You'll now see the full terminal output of the shell script Jenkins ran:

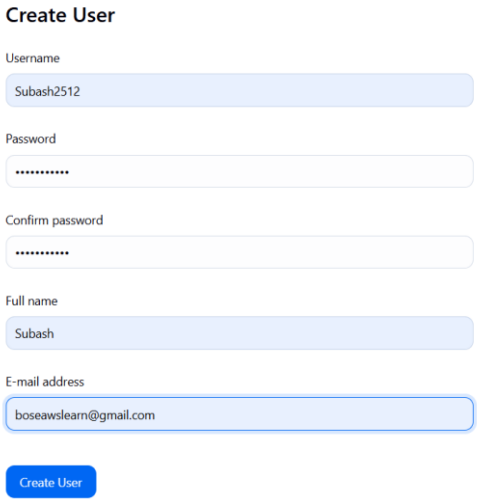


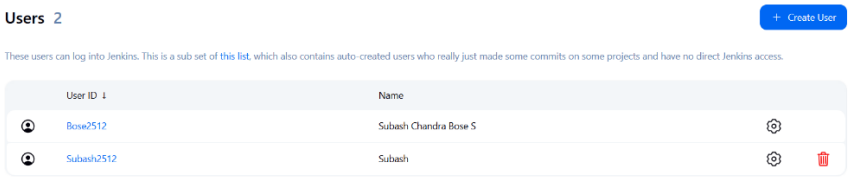
Step 4: Create New Users in Jenkins.

- ✓ Now we are going to create an user in Jenkins. In Jenkins dashboard, Go to **Manage Jenkins > Manage Users > Create User**.



- ✓ Provide your details to create an user such as username, password, full name, and email.
- ✓ Click **Create User**, it will create an user in Jenkins.





- ✓ Creating users in Jenkins is essential for managing **access control**, **collaboration**, and **security** within your CI/CD pipeline

********** **TASK COMPLETED** **********