

## Integration of Devops tools with Jenkins

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You have been Hired as a Devops Engineer in xyz software company. They want to implement CI/CD pipeline in their company. You have been asked to implement this lifecycle as fast as possible. As this is a product-based company, their product is available on this GitHub link.

<https://github.com/hshar/website.git>

**Following are the specifications of the Continuous integration:**

1. Git Workflow has to be implemented
2. Code Build should automatically be triggered once commit is made to master branch or develop branch.

If commit is made to master branch, build and publish website on

port 82. If commit is made to develop branch, just build the product, do not publish.

3. Create a pipeline for the above tasks.
  4. Create a container with Ubuntu and apache installed in it and use that container to build the code and the code should be on '/var/www/html'.
- 

Solution:

Fork the repository.

**Code** **Pull requests** **Actions** **Projects** **Wiki** **Security** **Insights** **Settings**

**website** Public  
forked from [hshar/website](#)

**Code** **Branches** **Tags** **Go to file** **Add file** **Code**

This branch is up to date with [hshar/website:master](#).

**About**  
No description, website, or topics provided.

**Activity**  
0 stars  
0 watching  
0 forks

**Releases**  
No releases published  
[Create a new release](#)

**Packages**

## Create 3 ec2 servers

1)Jenkins-master

2)Prod

3)test

Instances (1/3) <a href="#">Info</a>								
<a href="#">Launch instances</a>								
<a href="#">Find Instance by attribute or tag (case-sensitive)</a>								
Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Last updated
test	i-0a1946da156fe799e	<span>Running</span>	t2.micro	<span>Initializing</span>	<a href="#">View alarms</a>	us-east-2b	ec2-18-223-186-15	less than a minute ago
<b>prod</b>	i-0234f1f1e8a05f789a	<span>Running</span>	t2.micro	<span>Initializing</span>	<a href="#">View alarms</a>	us-east-2b	ec2-18-188-97-55	
jenkins-master	i-0ba1a6b475368f1df	<span>Running</span>	t2.medium	<span>2/2 checks passed</span>	<a href="#">View alarms</a>	us-east-2b	ec2-18-217-167-10	

Connect to the ec2 servers and update them

```
ubuntu@ip-172-31-121:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:4 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:5 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:6 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:7 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:8 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:9 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:10 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:11 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1988 kB]
Get:12 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [349 kB]
Get:13 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [17.8 kB]
Get:14 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [2386 kB]
Get:15 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [410 kB]
Get:16 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [616 B]
Get:17 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1123 kB]
Get:18 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [261 kB]
Get:19 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [26.2 kB]
Get:20 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [43.3 kB]
Get:21 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [10.8 kB]
Get:22 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [444 B]
Get:23 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [67.8 kB]
Get:24 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [11.1 kB]
Get:25 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]
Get:26 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
```

i-0ba1a6b475368f1df (jenkins-master)

PublicIPs: 18.217.167.101 PrivateIPs: 172.31.23.121

```
ubuntu@ip-172-31-18-197:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:5 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:6 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1771 kB]
Get:7 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:8 http://security.ubuntu.com/ubuntu jammy-security/main Translation-en [291 kB]
Get:9 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:10 http://security.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [13.3 kB]
Get:11 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [2327 kB]
Get:12 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:13 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:14 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:15 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1988 kB]
Get:16 http://security.ubuntu.com/ubuntu jammy-security/restricted Translation-en [400 kB]
Get:17 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [349 kB]
Get:18 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [584 B]
```

i-0a1946da156fe799e (test)

PublicIPs: 18.223.186.190 PrivateIPs: 172.31.18.197

```
ubuntu@ip-172-31-55:~$ sudo apt update
Hit:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:4 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [14.1 MB]
Get:5 http://security.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:6 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe Translation-en [5652 kB]
Get:7 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 c-n-f Metadata [286 kB]
Get:8 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [217 kB]
Get:9 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse Translation-en [112 kB]
Get:10 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/multiverse amd64 c-n-f Metadata [8372 B]
Get:11 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1988 kB]
Get:12 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [349 kB]
Get:13 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Metadata [17.8 kB]
Get:14 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [2386 kB]
Get:15 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [410 kB]
Get:16 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [616 B]
Get:17 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1123 kB]
Get:18 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [261 kB]
Get:19 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [26.2 kB]
Get:20 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [43.3 kB]
Get:21 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [10.8 kB]
Get:22 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [444 B]
Get:23 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [67.8 kB]
Get:24 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main Translation-en [11.1 kB]
Get:25 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]
Get:26 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-backports/restricted amd64 c-n-f Metadata [116 B]
```

i-0234ff1e8a05f789a (prod)

PublicIPs: 18.188.97.55 PrivateIPs: 172.31.25.55

Install java & jenkins on master server

```
ubuntu@ip-172-31-23-121:~$ sudo nano a.sh
```

i-0ba1a6b475368f1df (jenkins-master)

PublicIPs: 18.217.167.101 PrivateIPs: 172.31.23.121

aws Services Search [Alt+S]

```
GNU nano 6.2
sudo apt update
sudo apt-get install openjdk-17-jdk -y
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 -y
```

[ Wrote 9 lines ]

^G Help ^O Write Out ^W Where Is ^K Cut ^T Execute ^C Location M-U Undo  
^X Exit ^R Read File ^\ Replace ^U Paste ^J Justify ^/ Go To Line M-E Redo

i-Oba1a6b475368f1df (jenkins-master)

Public IPs: 18.217.167.101 Private IPs: 172.31.23.121

ubuntu@ip-172-31-23-121:~\$ bash a.sh

i-Oba1a6b475368f1df (jenkins-master)

Public IPs: 18.217.167.101 Private IPs: 172.31.23.121

```
aws Services Search [Alt+S]
The following NEW packages will be installed:
  jenkins net-tools
0 upgraded, 2 newly installed, 0 to remove and 67 not upgraded.
Need to get 91.5 MB of archives.
After this operation, 94.2 MB of additional disk space will be used.
Get:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 net-tools amd64 1.60+git20181103.0eebece-1ubuntu5 [204
Get:2 https://pkg.jenkins.io/debian-stable binary/ jenkins 2.462.2 [91.3 MB]
Fetched 91.5 MB in 21s (4322 kB/s)
Selecting previously unselected package net-tools.
(Reading database ... 81671 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20181103.0eebece-1ubuntu5_amd64.deb ...
Unpacking net-tools (1.60+git20181103.0eebece-1ubuntu5) ...
Selecting previously unselected package jenkins.
Preparing to unpack .../jenkins_2.462.2_all.deb ...
Unpacking jenkins (2.462.2) ...
Setting up net-tools (1.60+git20181103.0eebece-1ubuntu5) ...
Setting up jenkins (2.462.2) ...
Created symlink /etc/systemd/system/multi-user.target.wants/jenkins.service → /lib/systemd/system/jenkins.service.
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@ip-172-31-23-121:~$ █
```

## Install docker on jenkins master

```
sudo apt-get install docker.io -y
```

```
ubuntu@ip-172-31-23-121:~$ sudo apt-get install docker.io -y
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-doc rinse zfs-fuse | zfsutils
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 67 not upgraded.
Need to get 75.5 MB of archives.
After this operation, 284 MB of additional disk space will be used.
Get:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]

i-0ba1a6b475368f1df (jenkins-master)

PublicIPs: 18.217.167.101 PrivateIPs: 172.31.23.121
```

## Install java & docker on prod and test server

```
sudo apt-get install openjdk-17-jdk -y
```

```
sudo apt-get install docker.io -y
```

aws | Services | Search [Alt+S]

```
Unpacking hicolor-icon-theme (0.17-2) ...
Selecting previously unselected package libgdk-pixbuf2.0-common.
Preparing to unpack .../001-libgdk-pixbuf2.0-common_2.42.8+dfsg-1ubuntu0.3_all.deb ...
Unpacking libgdk-pixbuf2.0-common (2.42.8+dfsg-1ubuntu0.3) ...
Selecting previously unselected package libjpeg-turbo8:amd64.
Preparing to unpack .../002-libjpeg-turbo8_2.1.2-0ubuntu1_amd64.deb ...
Unpacking libjpeg-turbo8:amd64 (2.1.2-0ubuntu1) ...
Selecting previously unselected package libjpeg8:amd64.
Preparing to unpack .../003-libjpeg8_8c-2ubuntu10_amd64.deb ...
Unpacking libjpeg8:amd64 (8c-2ubuntu10) ...
Selecting previously unselected package libdeflate0:amd64.
Preparing to unpack .../004-libdeflate0_1.10-2_amd64.deb ...
Unpacking libdeflate0:amd64 (1.10-2) ...
Selecting previously unselected package libjbig0:amd64.
Preparing to unpack .../005-libjbig0_2.1-3.1ubuntu0.22.04.1_amd64.deb ...
Unpacking libjbig0:amd64 (2.1-3.1ubuntu0.22.04.1) ...
Selecting previously unselected package libwebp7:amd64.
Preparing to unpack .../006-libwebp7_1.2.2-2ubuntu0.22.04.2_amd64.deb ...
Unpacking libwebp7:amd64 (1.2.2-2ubuntu0.22.04.2) ...
Selecting previously unselected package libtiff5:amd64.
Preparing to unpack .../007-libtiff5_4.3.0-6ubuntu0.10_amd64.deb ...
Unpacking libtiff5:amd64 (4.3.0-6ubuntu0.10) ...
Selecting previously unselected package libgdk-pixbuf-2.0-0:amd64.
Preparing to unpack .../008-libgdk-pixbuf-2.0-0_2.42.8+dfsg-1ubuntu0.3_amd64.deb ...
Unpacking libgdk-pixbuf-2.0-0:amd64 (2.42.8+dfsg-1ubuntu0.3) ...
Selecting previously unselected package gtk-update-icon-cache.
Preparing to unpack .../009-gtk-update-icon-cache_3.24.33-1ubuntu2.2_amd64.deb ...
Unpacking gtk-update-icon-cache (3.24.33-1ubuntu2.2) ...
Selecting previously unselected package humanity-icon-theme.
Preparing to unpack .../010-humanity-icon-theme_0.6.16_all.deb ...
Unpacking humanity-icon-theme (0.6.16) ...
```

aws Services Search [Alt+S]

```
Get:90 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libbatk-wrapper-java all 0.38.0-5build1 [53.1 kB]
Get:91 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libbatk-wrapper-java-jni amd64 0.38.0-5build1 [49.0 kB]
Get:92 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libpixman-1-0 amd64 0.40.0-1ubuntu22.04.1 [264 kB]
Get:93 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libxcb-render0 amd64 1.14-3ubuntu3 [16.4 kB]
Get:94 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libcairo2 amd64 1.16.0-5ubuntu2 [628 kB]
Get:95 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libcairo-gobject2 amd64 1.16.0-5ubuntu2 [19.4 kB]
Get:96 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libdatriel amd64 0.2.13-2 [19.9 kB]
Get:97 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgtk2.0-common all 2.24.33-2ubuntu2.1 [125 kB]
Get:98 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libthai-data all 0.1.29-1build1 [162 kB]
Get:99 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libthai0 amd64 0.1.29-1build1 [19.2 kB]
Get:100 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libpango-1.0-0 amd64 1.50.6+ds-2ubuntu1 [230 kB]
Get:101 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libpangoft2-1.0-0 amd64 1.50.6+ds-2ubuntu1 [54.0 kB]
Get:102 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libpangocairo-1.0-0 amd64 1.50.6+ds-2ubuntu1 [39.8 kB]
Get:103 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libcursor1 amd64 1:1.2.0-2build4 [20.9 kB]
Get:104 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libxdamage1 amd64 1:1.5-2build2 [7154 kB]
Get:105 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgtk2.0-0 amd64 2.24.33-2ubuntu2.1 [2038 kB]
Get:106 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgail11 amd64 2.24.33-2ubuntu2.1 [15.9 kB]
Get:107 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgail-common amd64 2.24.33-2ubuntu2.1 [132 kB]
Get:108 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgd-pixbuf2.0-bin amd64 2.42.8+dfsg-1ubuntu0.3 [14.2 kB]
Get:109 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgif7 amd64 5.1.9-2ubuntu0.1 [33.9 kB]
Get:110 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgl1-amber-dri amd64 21.3.9-0ubuntu1~22.04.1 [4218 kB]
Get:111 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 libgtk2.0-bin amd64 2.24.33-2ubuntu2.1 [7936 kB]
Get:112 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 xorg-sgml-doctools all 1:1.11-1.1 [10.9 kB]
Get:113 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 x11proto-dev all 2021.5-1 [604 kB]
Get:114 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libice-dev amd64 2:1.0.10-1build2 [51.4 kB]
Get:115 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libpthread-stubs0-dev amd64 0.4-1build2 [5516 B]
Get:116 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 librsvg2-2 amd64 2.52.5+dfsg-3ubuntu0.2 [2974 kB]
Get:117 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 librsvg2-common amd64 2.52.5+dfsg-3ubuntu0.2 [17.7 kB]
Get:118 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libsm-dev amd64 2:1.2.3-1build2 [18.1 kB]
Get:119 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libxau-dev amd64 1:1.0.9-1build5 [9724 B]
Get:120 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 libxdmcp-dev amd64 1:1.1.3-0ubuntu5 [26.5 kB]
```

```
No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-25-55:~$ sudo apt-get install docker.io -y
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-doc rinse zfs-fuse | zfsutils
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 67 not upgraded.
Need to get 75.5 MB of archives.
After this operation, 284 MB of additional disk space will be used.
Get:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bridge-utils amd64 1.7-lubuntu3 [34.4 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 runc amd64 1.1.12-0ubuntu2-22.04.1 [8405 kB]
Get:4 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 containerd amd64 1.7.12-0ubuntu2-22.04.1 [37.8 MB]
```

i-0234ff1e8a05f789a (prod)

PublicIPs: 18.188.97.55 PrivateIPs: 172.31.25.55

```
ubuntu@ip-172-31-18-197:~$ sudo apt-get install docker.io -y
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-doc rinse zfs-fuse | zfsutils
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 67 not upgraded.
Need to get 75.5 MB of archives.
After this operation, 284 MB of additional disk space will be used.
Get:1 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 pigz amd64 2.6-1 [63.6 kB]
Get:2 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/main amd64 bridge-utils amd64 1.7-lubuntu3 [34.4 kB]
Get:3 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 runc amd64 1.1.12-0ubuntu2-22.04.1 [8405 kB]
Get:4 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 containerd amd64 1.7.12-0ubuntu2-22.04.1 [37.8 MB]
Get:5 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/main amd64 dns-root-data all 2023112702-ubuntu0.22.04.1 [5136 kB]
Get:6 http://us-east-2.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-2.ec2.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 docker.io amd64 24.0.7-0ubuntu2~22.04.1 [28.8 MB]
Get:8 http://us-east-2.ec2.archive.ubuntu.com/ubuntu jammy/universe amd64 ubuntu-fan all 0.12.16 [35.2 kB]
Fetched 75.5 MB in 1s (73.5 MB/s)
Preconfiguring packages ...
Selecting previously unselected package pigz.
(Reading database ... 81671 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-lubuntu3_amd64.deb ...
Unpacking bridge-utils (1.7-lubuntu3) ...
Selecting previously unselected package runc.
Preparing to unpack .../2-runc_1.1.12-0ubuntu2~22.04.1_amd64.deb ...
```

i-0a1946da156fe799e (test)

PublicIPs: 18.223.186.190 PrivateIPs: 172.31.18.197

## Check docker & java version

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.  
ubuntu@ip-172-31-23-121:~$ java --version  
openjdk 17.0.12 2024-07-16  
OpenJDK Runtime Environment (build 17.0.12+7-Ubuntu-1ubuntu222.04)  
OpenJDK 64-Bit Server VM (build 17.0.12+7-Ubuntu-1ubuntu222.04, mixed mode, sharing)  
ubuntu@ip-172-31-23-121:~$ docker --version  
Docker version 24.0.7, build 24.0.7-0ubuntu2~22.04.1  
ubuntu@ip-172-31-23-121:~$
```

i-0ba1a6b475368f1df (jenkins-master)

PublicIPs: 18.217.167.101 PrivateIPs: 172.31.23.121

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.  
ubuntu@ip-172-31-18-197:~$ java --version  
openjdk 17.0.12 2024-07-16  
OpenJDK Runtime Environment (build 17.0.12+7-Ubuntu-1ubuntu222.04)  
OpenJDK 64-Bit Server VM (build 17.0.12+7-Ubuntu-1ubuntu222.04, mixed mode, sharing)  
ubuntu@ip-172-31-18-197:~$ docker --version  
Docker version 24.0.7, build 24.0.7-0ubuntu2~22.04.1  
ubuntu@ip-172-31-18-197:~$
```

i-0a1946da156fe799e (test)

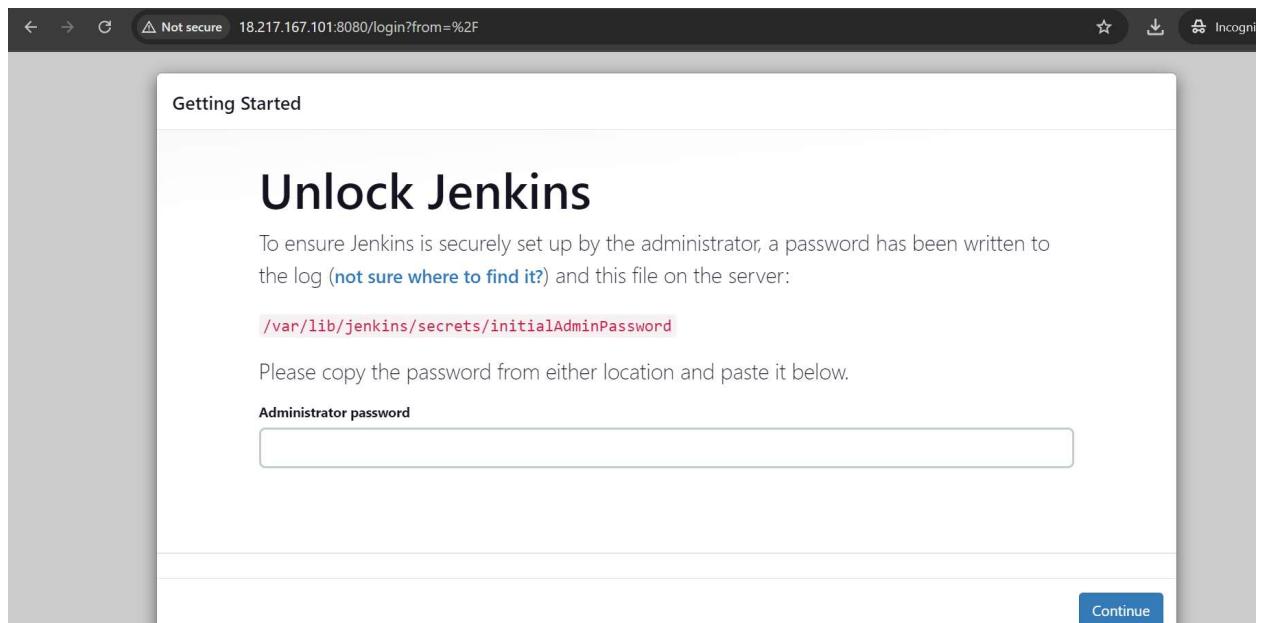
PublicIPs: 18.223.186.190 PrivateIPs: 172.31.18.197

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.  
ubuntu@ip-172-31-25-55:~$ java --version  
openjdk 17.0.12 2024-07-16  
OpenJDK Runtime Environment (build 17.0.12+7-Ubuntu-1ubuntu222.04)  
OpenJDK 64-Bit Server VM (build 17.0.12+7-Ubuntu-1ubuntu222.04, mixed mode, sharing)  
ubuntu@ip-172-31-25-55:~$ docker --version  
Docker version 24.0.7, build 24.0.7-0ubuntu2~22.04.1  
ubuntu@ip-172-31-25-55:~$
```

i-0234ff1e8a05f789a (prod)

PublicIPs: 18.188.97.55 PrivateIPs: 172.31.25.55

Setup jenkins dashboard



```
ubuntu@ip-172-31-23-121:~$ sudo cat /var/lib/jenkins/secrets/initialAdminPassword
```

```
Last login: Wed Sep 11 16:53:13 2024 from 3.16.146.3
ubuntu@ip-172-31-23-121:~$ sudo cat /var/lib/jenkins/secrets/initialAdminPassword

a5824b6b502a4147a00ff414c7fc5ed8
ubuntu@ip-172-31-23-121:~$ █
```

```
i-0ba1a6b475368f1df (jenkins-master)
```

```
Public IPs: 18.217.167.101 Private IPs: 172.31.23.121
```

## 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

## Install suggested plugins

The screenshot shows a web browser window with the Jenkins 'Getting Started' page. The URL bar indicates the site is not secure (Not secure) and the address is 18.217.167.101:8080. The main title is 'Customize Jenkins'. Below it, a sub-instruction states: 'Plugins extend Jenkins with additional features to support many different needs.' There are two main options presented in boxes: 'Install suggested plugins' (described as installing community-favorite plugins) and 'Select plugins to install' (described as selecting and installing specific plugins). At the bottom left of the page, the text 'Jenkins 2.462.2' is visible.

Getting Started

# Getting Started

✓ Folders	✓ Browser Markup Formatter	Build Timeout	Credentials Binding
✓ Timestamper	✓ Workspace Cleanup	✓ Ant	✓ Gradle
✓ Pipeline	○ GitHub Branch Source	○ Pipeline: GitHub Groovy Libraries	○ Pipeline Graph View
○ Git	○ SSH Build Agents	○ Matrix Authorization Strategy	○ PAM Authentication
○ LDAP	○ Email Extension	✓ Mailer	○ Dark Theme

Jenkins 2.462.2

```
ep
** Pipeline: Groovy Libraries
** Pipeline: Stage Step
** Joda Time API
** Pipeline: Model API
** Pipeline: Declarative
Extension Points API
** Branch API
** Pipeline: Multibranch
** Pipeline: Stage Tags Metadata
** Pipeline: Input Step
** Pipeline: Declarative
Pipeline
** Java JSON Web Token (JWT)
** GitHub API
** Mina SSHD API :: Common
** Mina SSHD API :: Core
** Gson API
** - required dependency
```

Getting Started

## Create First Admin User

Username

Password

Confirm password

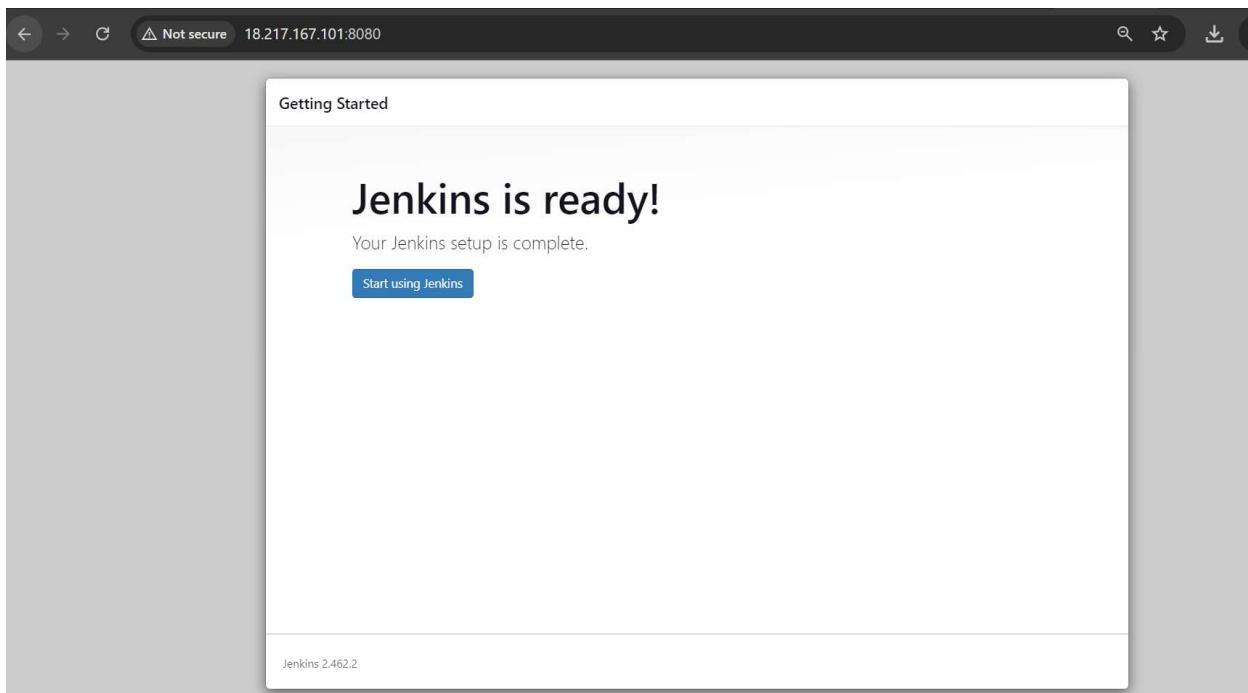
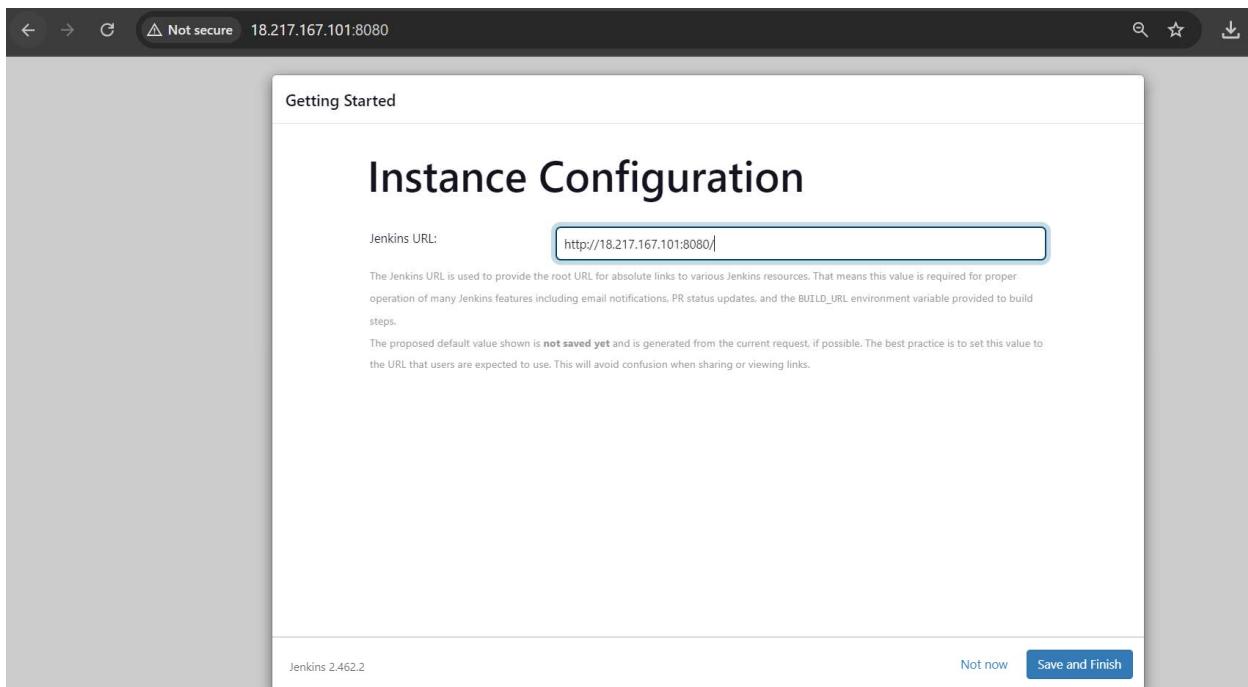
Full name

E-mail address

 manoharo32@gmail.com

Jenkins 2.462.2

Skip and continue as admin Save and Continue



The screenshot shows the Jenkins dashboard at the URL 18.217.167.101:8080. The top navigation bar includes links for 'Dashboard', 'New Item', 'Build History', 'Manage Jenkins', and 'My Views'. On the left, there are two collapsed sections: 'Build Queue' (No builds in the queue) and 'Build Executor Status' (1 Idle, 2 Idle). The main content area features a 'Welcome to Jenkins!' message, a search bar, and several links: 'Create a job' (with a '+' icon), 'Set up a distributed build', 'Set up an agent' (with a computer icon), 'Configure a cloud' (with a cloud icon), and 'Learn more about distributed builds' (with a question mark icon). A 'Add description' link is located in the top right corner.

## Install ssh agent from plugins

The screenshot shows the 'Manage Jenkins > Plugins' page. The left sidebar has links for 'Updates', 'Available plugins' (selected), 'Installed plugins', 'Advanced settings', and 'Download progress'. The main area shows a search bar with 'ssh agent' and a results table. The first result is 'SSH Agent' (version 376.v8933585c69d3), which is checked and highlighted. It has a 'Released' status and was published '1 mo 13 days ago'. There are 'Install' and 'Uninstall' buttons in the top right of the table row.

← → ⚡ Not secure 18.217.167.101:8080/manage/pluginManager/updates/

Dashboard > Manage Jenkins > Plugins

## Plugins

Updates Available plugins Installed plugins Advanced settings Download progress

Plugin	Status
Pipeline Script Analysis	Success
Metrics	Success
Pipeline Graph View	Success
Git	Success
EDDSA API	Success
Trilead API	Success
SSH Build Agents	Success
Matrix Authorization Strategy	Success
PAM Authentication	Success
LDAP	Success
Email Extension	Success
Mailer	Success
Theme Manager	Success
Dark Theme	Success
Loading plugin extensions	Success
SSH Agent	Success
Loading plugin extensions	Running

→ Go back to the top page  
(you can start using the installed plugins right away)

→  Restart Jenkins when installation is complete and no jobs are running

## Setup prod & test nodes

Jenkins

Dashboard > Manage Jenkins > Nodes >

## Nodes

Nodes Clouds

+ New Node Configure Monitors

S	Name	Architecture	Clock Difference	Free Disk Space	Free Swap Space	Free Temp Space	Response Time
Built-In Node	Linux (amd64)	In sync	4.80 GiB	0 B	4.80 GiB	0ms	12 min
Data obtained	12 min	12 min	12 min	12 min	12 min	12 min	12 min

Build Queue: No builds in the queue.

Build Executor Status: 1 idle, 2 idle

Icon: S M L

Legend



The screenshot shows the Jenkins interface for creating a new node. At the top, there's a navigation bar with the Jenkins logo and a search bar labeled "Search (CTRL+K)". Below the navigation, the breadcrumb trail reads "Dashboard > Manage Jenkins > Nodes > New node". The main title "New node" is centered above a form. The first field is "Node name" with the value "test". The "Type" section shows "Permanent Agent" selected. A descriptive text explains that it adds a plain, permanent agent to Jenkins. At the bottom is a blue "Create" button.

## New node

Node name

test

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**

## In host I updated private ip of the test server



The screenshot shows the Jenkins interface for configuring a node. The navigation bar and breadcrumb trail are identical to the previous screenshot. The main form includes fields for "Number of executors" (set to 1), "Remote root directory" (/home/ubuntu/jenkins), "Labels" (empty), "Usage" (set to "Use this node as much as possible"), "Launch method" (set to "Launch agents via SSH"), "Host" (IP address 172.31.18.197), and "Credentials" (empty). A blue "Save" button is at the bottom.

## Add credentials

Dashboard > Manage Jenkins > Nodes >

Launch method ?  
Launch agents via SSH

Host ?  
172.31.18.197

Credentials ?  
- none -  
+ Add ▾  
① The selected credentials cannot be found

Host Key Verification Strategy ?  
Known hosts file Verification Strategy

Advanced ▾

Availability ?  
Keep this agent online as much as possible

Save

Dashboard > Manage Jenkins > Nodes >

Launch method ?  
Launch agents via SSH

Host ?  
172.31.18.197

Create New Node

Available Nodes

Keep this agent online as much as possible

Jenkins Credentials Provider: Jenkins

Kind  
SSH Username with private key

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

ID ?  
ubuntu

Description ?

Username  
ubuntu

Treat username as secret ?

Private Key

Paste the private key

Dashboard > Manage Jenkins > Nodes >

### Jenkins Credentials Provider: Jenkins

Launch method: Launch agents via SSH

Host: 172.31.18.197

Credentials: ubuntu

Passphrase: (empty)

Advanced: (checkboxes for 'Keep this agent online as much as possible' and 'Node Properties')

**Save**

Username: ubuntu

Treat username as secret: (checkbox)

Private Key:

Enter directly:

```
>>>-----END RSA PRIVATE KEY-----
```

Passphrase: (empty)

Cancel Add

Dashboard > Manage Jenkins > Nodes >

### New Node Configuration

Launch method: Launch agents via SSH

Host: 172.31.18.197

Credentials: ubuntu

Host Key Verification Strategy: Non verifying Verification Strategy

Availability: Keep this agent online as much as possible

Node Properties: (checkbox)

**Save**

Setup prod node and copy all the configuration from the test node

← → G ⚠ Not secure 18.217.167.101:8080/manage/computer/new

# Jenkins

Search (CTRL+K) ?

Dashboard > Manage Jenkins > Nodes > New node

## New node

Node name

 prod

In host I only updated the private ip of the prod server

← → G ⚠ Not secure 18.217.167.101:8080/manage/computer/prod/configure

Dashboard > Manage Jenkins > Nodes > prod > Configure

Usage ?  
Use this node as much as possible

Launch method ?  
Launch agents via SSH

Host ?  
172.31.25.55

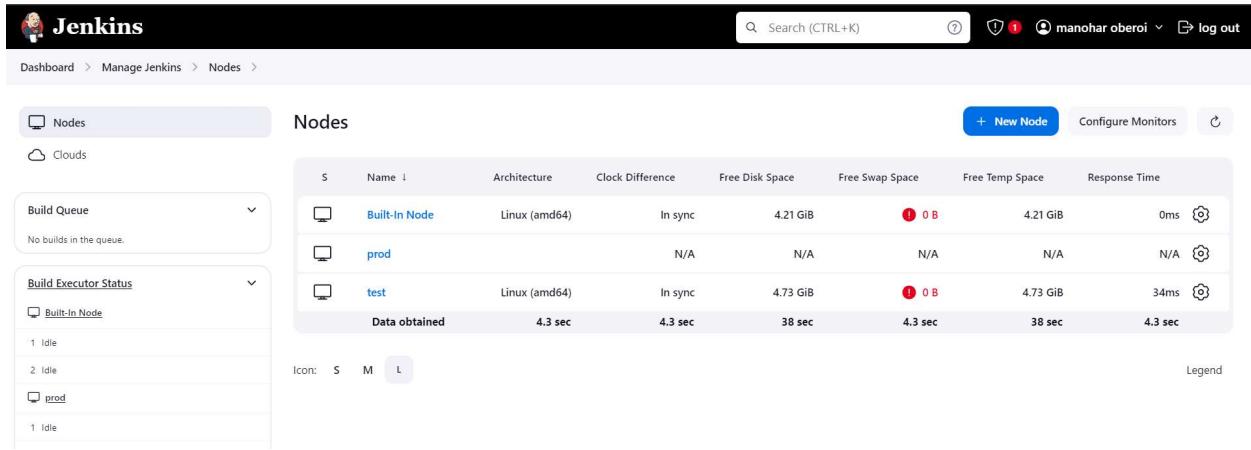
Credentials ?  
ubuntu  
+ Add

Host Key Verification Strategy ?  
Non verifying Verification Strategy

Advanced ▾ / Edited

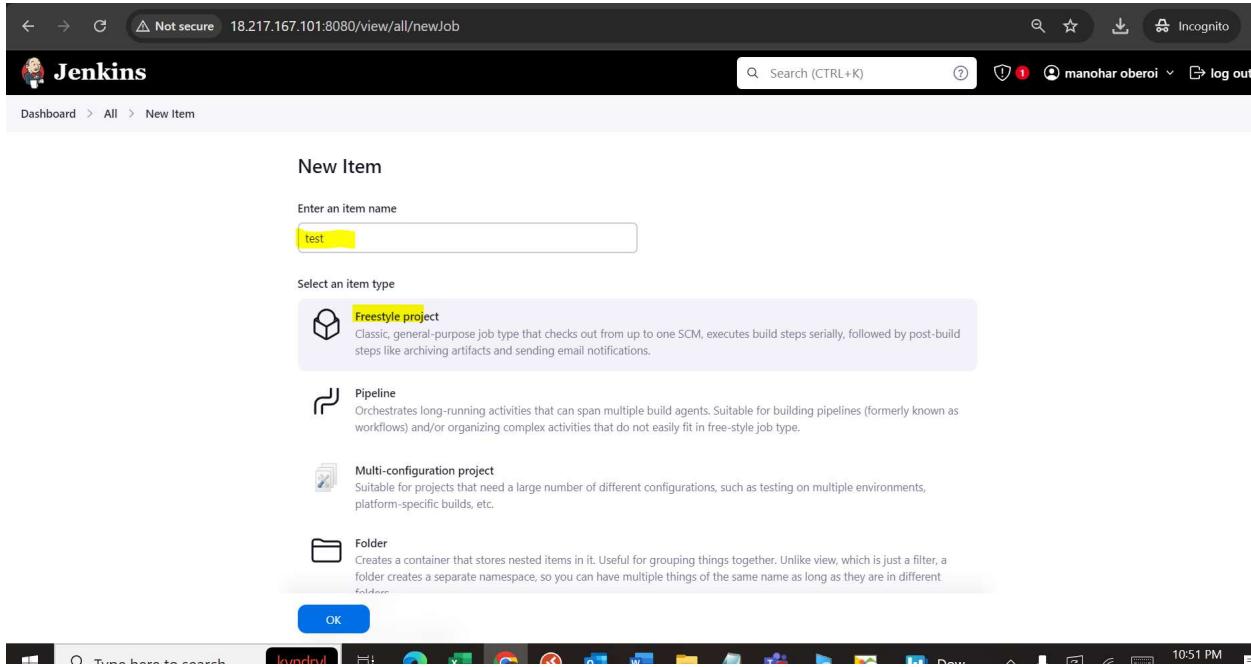
**Save**

All the nodes are connected



The screenshot shows the Jenkins 'Nodes' page. At the top, there's a navigation bar with links for 'Dashboard', 'Manage Jenkins', and 'Nodes'. On the right side of the header are search, help, and user profile icons. Below the header, the main content area has a title 'Nodes' and a table showing node details. The table columns are: S, Name, Architecture, Clock Difference, Free Disk Space, Free Swap Space, Free Temp Space, and Response Time. There are three nodes listed: 'Built-In Node' (Linux (amd64), In sync, 4.21 GiB free disk space, 0 B swap, 4.21 GiB temp, 0ms response), 'prod' (N/A for all metrics), and 'test' (Linux (amd64), In sync, 4.73 GiB free disk space, 0 B swap, 4.73 GiB temp, 34ms response). A 'Data obtained' row shows values: 4.3 sec for clock difference, 4.3 sec for free disk space, 38 sec for free swap space, 4.3 sec for free temp space, and 4.3 sec for response time. To the left of the table, there are sections for 'Build Queue' (empty) and 'Build Executor Status' (one idle executor named 'prod'). A legend at the bottom indicates icons for 'S' (Status), 'M' (Metrics), and 'L' (Logs).

Now I am creating a test job



The screenshot shows the 'New Item' creation page in Jenkins. The URL in the browser is '18.217.167.101:8080/view/all/newJob'. The page has a title 'New Item' and a search bar with the placeholder 'Enter an item name'. A yellow box highlights the word 'test' in the search bar. Below the search bar is a section titled 'Select an item type' with three options: 'Freestyle project' (selected), 'Pipeline', and 'Multi-configuration project'. Each option has a description and a small icon. An 'OK' button is at the bottom. The background shows the Windows taskbar with various pinned icons.

I am going to run this job in test server

The screenshot shows the Jenkins job configuration page for a job named "test". In the "General" section, there is a checkbox labeled "Restrict where this project can be run" which is checked. Below it, a "Label Expression" field contains the label "test". A tooltip indicates that "Label test matches 1 node. Permissions or other restrictions provided by plugins may further reduce that list." At the bottom of the General section, there is an "Advanced" dropdown menu.

Source Code Management is set to "None".

At the bottom, there are "Save" and "Apply" buttons.

Updated the github repository URL and I am not creating any credentials for it because it's a public repository but if it's a private repository then we can create personal access tokens

The screenshot shows the Jenkins job configuration page for a job named "test". In the "General" section, the "Source Code Management" dropdown is set to "Git".

In the "Repositories" section, there is a "Repository URL" input field containing "https://github.com/mancharoberoi/website.git".

In the "Credentials" section, there is a dropdown menu showing "- none -".

At the bottom, there are "Save" and "Apply" buttons.

In branch I updated develop branch and also created the develop branch in github

Not secure 18.217.167.101:8080/job/test/configure

Dashboard > test > Configuration

## Configure

General

Source Code Management

Build Triggers

Build Environment

Build Steps

Post-build Actions

Repository URL ?  
https://github.com/manoharoberoi/website.git

Credentials ?  
- none -

+ Add ▾

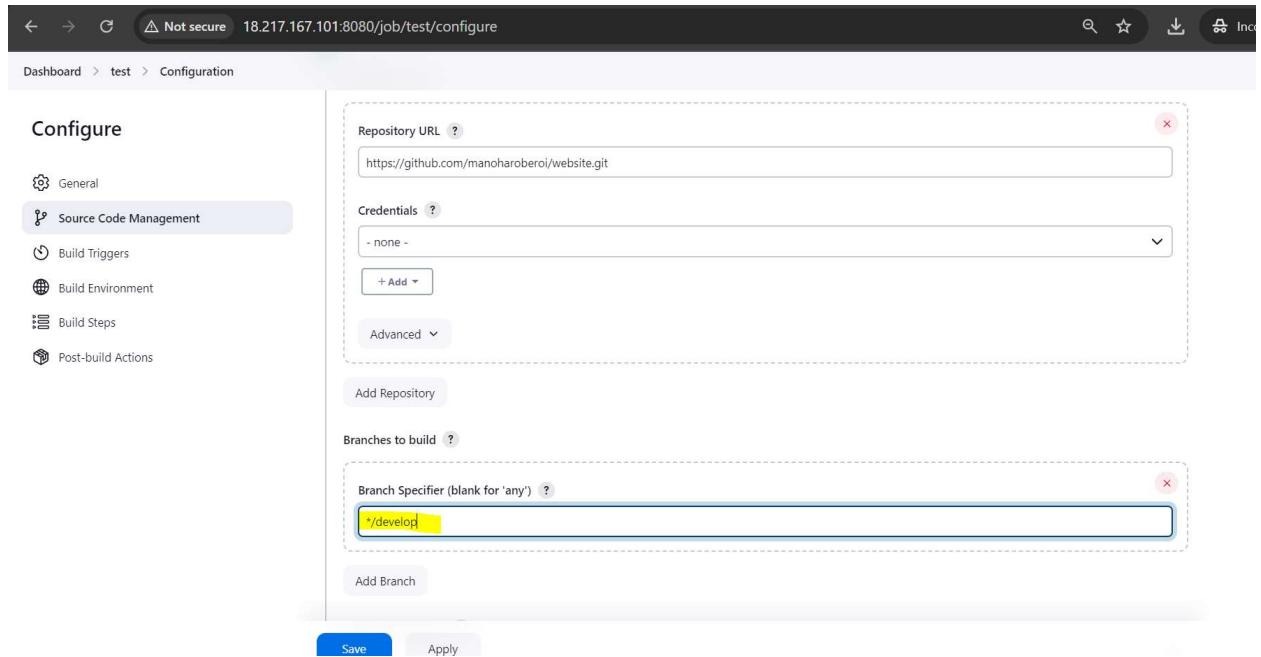
Advanced ▾

Add Repository

Branches to build ?  
Branch Specifier (blank for 'any') ?  
\*/develop

Add Branch

Save Apply



manoharoberoi / website

Type ⌘ to search | + ⌄ ⌂ ⌃ ⌅ ⌆ ⌇ ⌈ ⌉ ⌊ ⌋

Code Pull requests Actions Projects Wiki Security Insights Settings

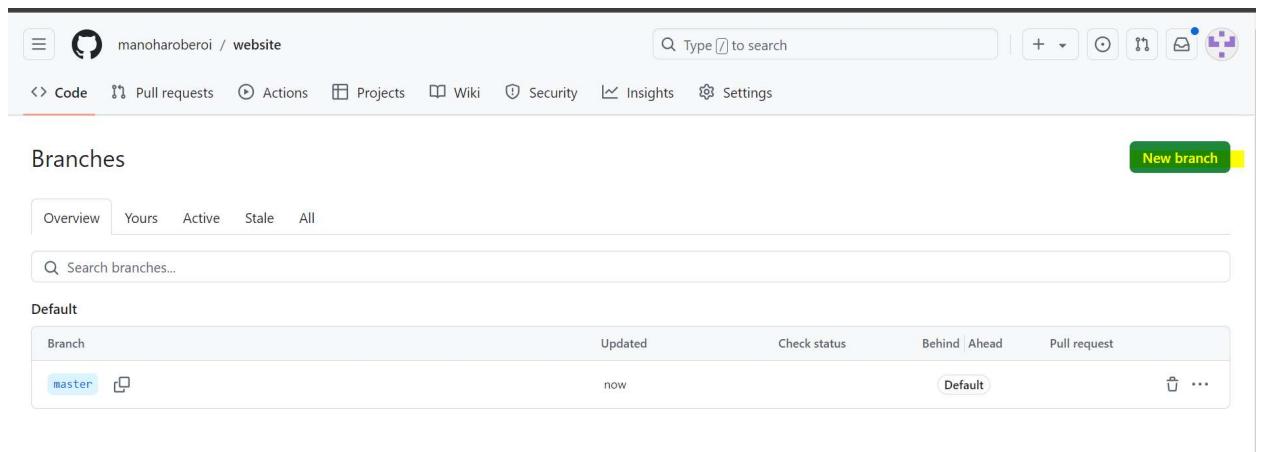
## Branches

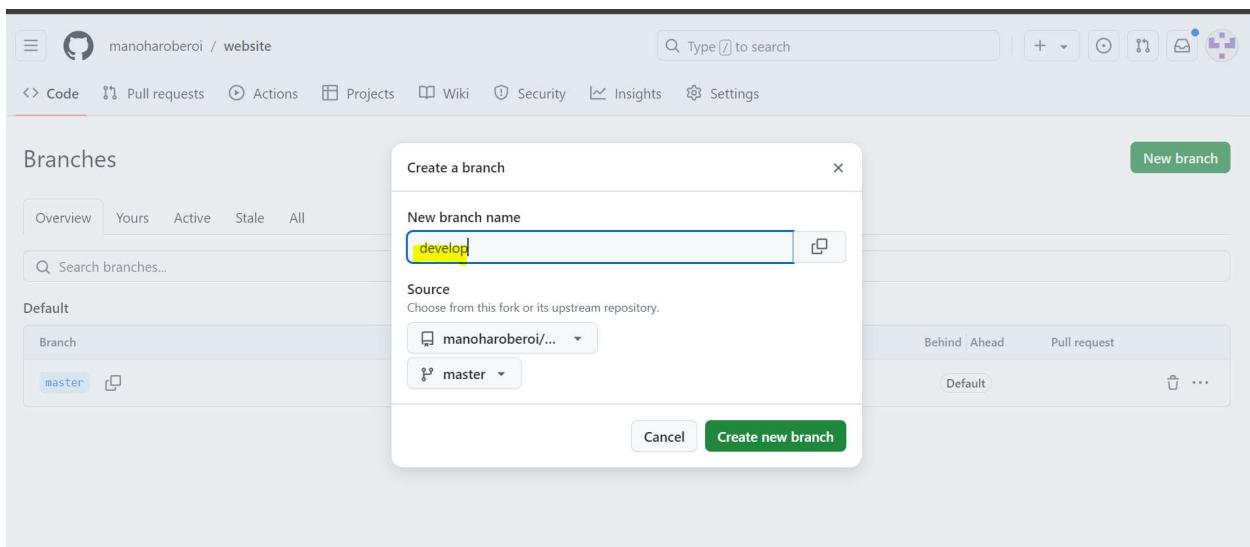
New branch

Overview Yours Active Stale All

Search branches...

Branch	Updated	Check status	Behind   Ahead	Pull request
master	now	(Default)		...





A screenshot of the GitHub repository page for 'website'. The 'Code' tab is selected. The main area shows the 'develop' branch is selected, with 2 branches and 0 tags. A message indicates it is up to date with 'hshar/website:master'. The file list includes 'Ubuntu' (modified), 'images' (final), and 'index.html' (modified). On the right, there's an 'About' section with no description, activity stats (0 stars, 0 forks, 0 watching), and release and package sections.

I choose the option github hook trigger for gitscm polling

The screenshot shows a configuration page for a CI/CD pipeline. On the left, there's a sidebar with options like General, Source Code Management, Build Triggers (which is selected), Build Environment, Build Steps, and Post-build Actions. The main area has tabs for Repository browser (Auto) and Additional Behaviours (Add). Under Build Triggers, several options are listed: Trigger builds remotely (unchecked), Build after other projects are built (unchecked), Build periodically (unchecked), GitHub hook trigger for GITScm polling (checked), and Poll SCM (unchecked). Below this is a section for Build Environment with options to Delete workspace before build starts and Use secret text(s) or file(s). At the bottom are Save and Apply buttons.

I will now create a github webhook in github so whenever if anyone update changes in the develop branch the job build will happen automatically.

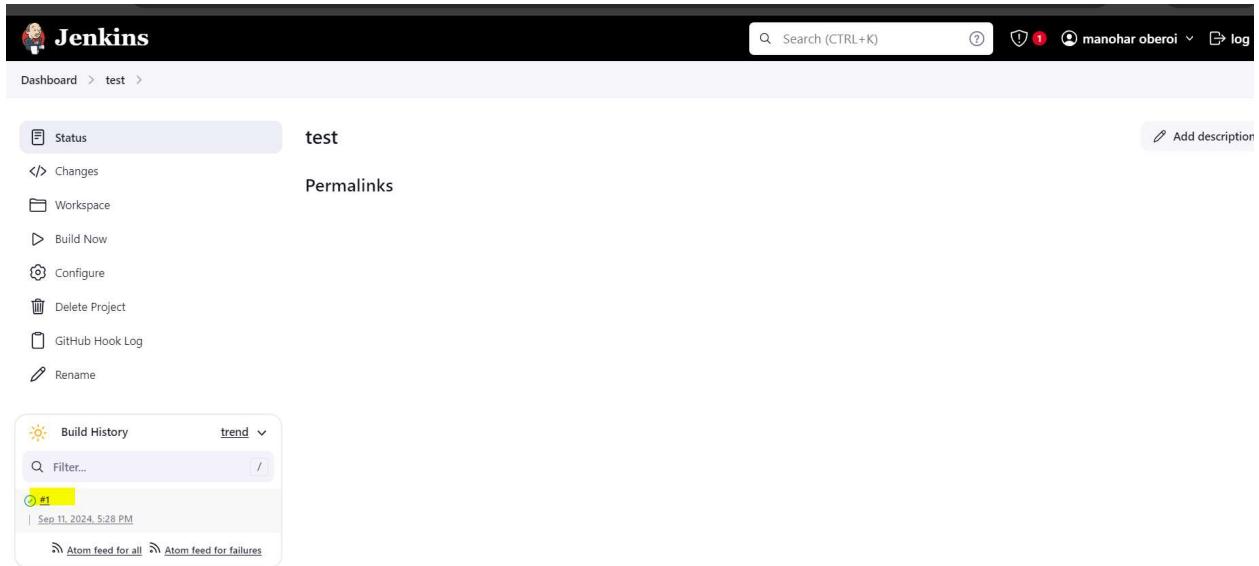
The screenshot shows the GitHub settings page for creating a new webhook. The left sidebar lists Collaborators, Moderation options, Code and automation (with Branches, Tags, Rules, Actions, and Webhooks selected), Environments, Codespaces, Pages, Security (Code security and analysis, Deploy keys, Secrets and variables), Integrations, and GitHub Apps. The main content area is titled "We'll send a POST request to the URL below with details of any subscribed events. You can also specify which data format you'd like to receive (JSON, x-www-form-urlencoded, etc). More information can be found in [our developer documentation](#)". It includes fields for Payload URL (http://18.217.167.101:8080/github-webhook/), Content type (application/x-www-form-urlencoded), Secret (empty), and SSL verification (Enable SSL verification selected). It also asks "Which events would you like to trigger this webhook?" with options: Just the push event (selected), Send me everything, and Let me select individual events.

The screenshot shows the GitHub settings interface for the repository 'manoharoberoi / website'. The left sidebar is collapsed, and the main area is titled 'Webhooks'. A single webhook is listed with the URL 'http://18.217.167.101:8080/github... (push)'. The status indicates 'Last delivery was successful.' There are 'Edit' and 'Delete' buttons next to the webhook entry.

Test job created successfully

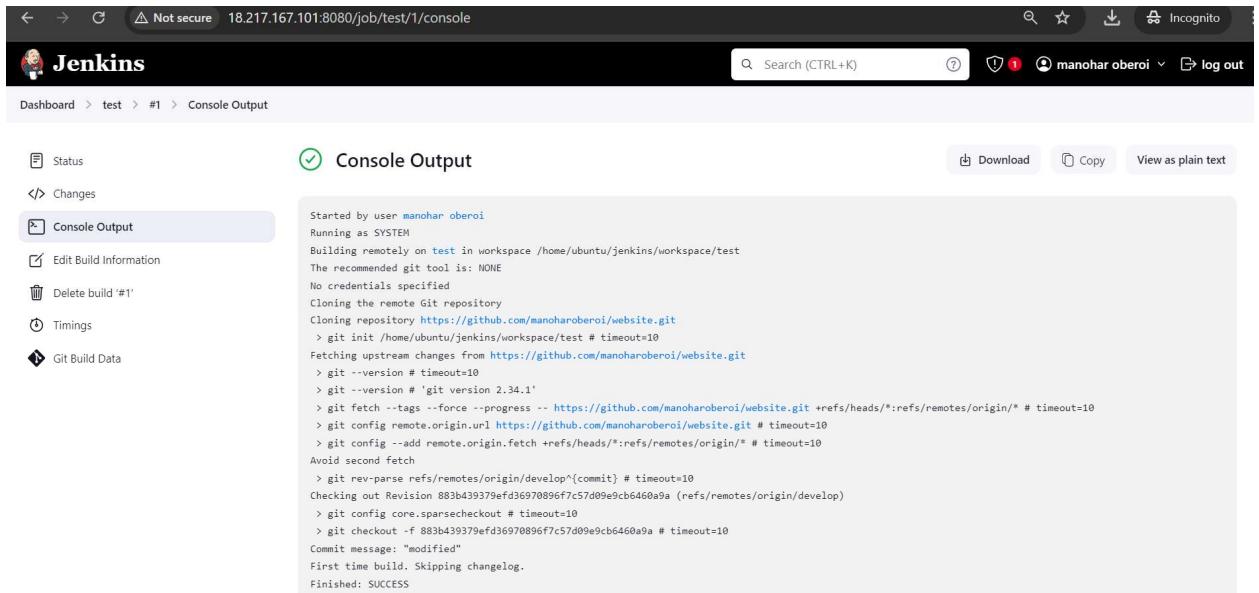
The screenshot shows the Jenkins dashboard for the 'test' job. The left sidebar includes options like 'Status', 'Changes', 'Workspace', 'Build Now', 'Configure', 'Delete Project', 'GitHub Hook Log', and 'Rename'. The main content area displays the 'Build History' section, which shows 'No builds' and links to 'Atom feed for all' and 'Atom feed for failures'. The bottom right corner of the page shows 'REST API' and 'Jenkins 2.462.2'.

I will click on build now



The screenshot shows the Jenkins interface for a job named 'test'. On the left, there's a sidebar with options like Status, Changes, Workspace, Build Now, Configure, Delete Project, GitHub Hook Log, and Rename. The main area is titled 'test' and shows a 'Build History' section. It lists a single build '#1' from Sep 11, 2024, at 5:28 PM. Below the build list are links for 'Atom feed for all' and 'Atom feed for failures'.

As you can see the build is successfully & will go to console output to check the logs. We can see all the files in the develop branch copied to the test server in this path  
/home/ubuntu/jenkins/workspace/test



The screenshot shows the Jenkins interface for the same 'test' job, specifically the 'Console Output' page for build '#1'. The sidebar on the left includes 'Status', 'Changes', 'Console Output' (which is selected), 'Edit Build Information', 'Delete build #1', 'Timings', and 'Git Build Data'. The main content area is titled 'Console Output' and displays the command-line log of the build process. The log shows the execution of a git clone command from a GitHub repository into the '/home/ubuntu/jenkins/workspace/test' directory.

```
Started by user manohar oberoi
Running as SYSTEM
Building remotely on test in workspace /home/ubuntu/jenkins/workspace/test
The recommended git tool is: NONE
No credentials specified
Cloning the remote Git repository
Cloning repository https://github.com/manoharoberoi/website.git
> git init /home/ubuntu/jenkins/workspace/test # timeout=10
> git fetch upstream changes from https://github.com/manoharoberoi/website.git
> git --version # timeout=10
> git --version # 'git version 2.34.1'
> git fetch --tags --force --progress -- https://github.com/manoharoberoi/website.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git config remote.origin.url https://github.com/manoharoberoi/website.git # timeout=10
> git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10
Avoid second fetch
> git rev-parse refs/remotes/origin/develop^(commit) # timeout=10
Checking out Revision 883b439379ef3d36970896f7c57d09e9cb6460a9a (refs/remotes/origin/develop)
> git config core.sparsecheckout # timeout=10
> git checkout -f 883b439379ef3d36970896f7c57d09e9cb6460a9a # timeout=10
Commit message: "modified"
First time build. Skipping changelog.
Finished: SUCCESS
```

I will go to below path in the test server to check if the files are copied or not & below screenshot prove that the files copied successfully.

```
ubuntu@ip-172-31-18-197:~$ docker --version
Docker version 24.0.7, build 24.0.7-0ubuntu2~22.04.1
ubuntu@ip-172-31-18-197:~$ cd /home/ubuntu/jenkins/workspace/test
ubuntu@ip-172-31-18-197:~/jenkins/workspace/test$ ls
images index.html
ubuntu@ip-172-31-18-197:~/jenkins/workspace/test$
```

i-0a1946da156fe799e (test)

Public IPs: 18.223.186.190 Private IPs: 172.31.18.197

Similar way I will create a prod job for the prod server

Dashboard > All > New Item

Enter an item name

prod

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.

OK

Copying all the configuration settings from the test job but in restrict where this project can be run I will update prod server and in branch we will update master branch

Dashboard > All > New Item

**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, 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:

Copy from

**OK**

← → G ⚠ Not secure 18.217.167.101:8080/job/prod/configure

Dashboard > prod > Configuration

**Configure**

Throttle builds ?  
 Execute concurrent builds if necessary ?  
 Restrict where this project can be run ?  
Label Expression :   
Label prod matches 1 node. Permissions or other restrictions provided by plugins may further reduce that list.

Advanced ▾

**Source Code Management**

None  
 Git ?

Repositories ?

Repository URL ?

**Save** **Apply**

The screenshot shows the Jenkins configuration interface for a job named 'prod'. On the left, a sidebar lists configuration sections: General, Source Code Management (selected), Build Triggers, Build Environment, Build Steps, and Post-build Actions. The 'Source Code Management' section is active, showing a dropdown for 'Credentials' (set to 'none'), a '+ Add' button, and an 'Advanced' dropdown. Below this is an 'Add Repository' button. The 'Branches to build' section contains a 'Branch Specifier' field with the value '\*/master'. There are 'Add Branch' and 'Repository browser' dropdowns set to '(Auto)'. Under 'Additional Behaviours', there are two buttons: 'Save' (highlighted in blue) and 'Apply'.

I click on save and job got successfully created

The screenshot shows the Jenkins project page for 'prod'. The top navigation bar includes links for Dashboard, prod, Configuration, and a search bar. The main area displays project details: 'Status' (green), 'Changes' (empty), 'Workspace' (empty), 'Build Now' (disabled), 'Configure' (link), 'Delete Project' (link), 'GitHub Hook Log' (link), and 'Rename' (link). A 'Permalinks' section shows 'Build History' (empty) and 'trend' dropdown. At the bottom, there are links for 'Atom feed for all' and 'Atom feed for failures'.

I will click on build now & as you can see the build is successfull

Dashboard > prod >

Status prod Add description

Changes

Workspace

Build Now

Configure

Delete Project

GitHub Hook Log

Rename

Permalinks

- Last build (#1), 8 min 0 sec ago
- Last stable build (#1), 8 min 0 sec ago
- Last successful build (#1), 8 min 0 sec ago
- Last completed build (#1), 8 min 0 sec ago

Build History trend

#2 Sep 11, 2024, 5:44 PM

#1 Sep 11, 2024, 5:36 PM

Atom feed for all Atom feed for failures

Type here to search kyndryl 11:14 PM

I will go to console output to check the logs

Dashboard > prod > #2 > Console Output

Status Console Output Download Copy Vi

Changes

Edit Build Information

Delete build '#2'

Timings

Git Build Data

Previous Build

Started by user manohar oberoi  
Running as SYSTEM  
Building remotely on prod in workspace /home/ubuntu/jenkins/workspace/prod  
The recommended git tool is: NONE  
No credentials specified  
Cloning the remote Git repository  
Cloning repository https://github.com/manoharoberoi/website.git  
> git init /home/ubuntu/jenkins/workspace/prod # timeout=10  
Fetching upstream changes from https://github.com/manoharoberoi/website.git  
> git --version # timeout=10  
> git --version # 'git version 2.34.1'  
> git fetch -t --tags --progress -- https://github.com/manoharoberoi/website.git +refs/heads/\*:refs/remotes/origin/\* # timeout=10  
> git config remote.origin.url https://github.com/manoharoberoi/website.git # timeout=10  
> git config --add remote.origin.fetch +refs/heads/\*:refs/remotes/origin/\* # timeout=10  
Avoid second fetch  
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10  
Checking out Revision 883b439379ef3d36970896f7c57d09e9cb6460a9a (refs/remotes/origin/master)  
> git config core.sparsecheckout # timeout=10  
> git checkout -f 883b439379ef3d36970896f7c57d09e9cb6460a9a # timeout=10  
Commit message: "modified"  
> git rev-list --no-walk 883b439379ef3d36970896f7c57d09e9cb6460a9a # timeout=10  
Finished: SUCCESS

As you can see all the files in the master branch copied to the prod server in this path

/home/ubuntu/jenkins/workspace/prod

```
Last login: Wed Sep 11 16:53:43 2024 from 3.16.146.4
ubuntu@ip-172-31-25-55:~$ cd /home/ubuntu/jenkins/workspace/prod
ubuntu@ip-172-31-25-55:~/jenkins/workspace/prod$ ls
images index.html
ubuntu@ip-172-31-25-55:~/jenkins/workspace/prod$
```

i-0234ff1e8a05f789a (prod)

PublicIPs: 18.188.97.55 PrivateIPs: 172.31.25.55

Now I am creating a docker file in master branch

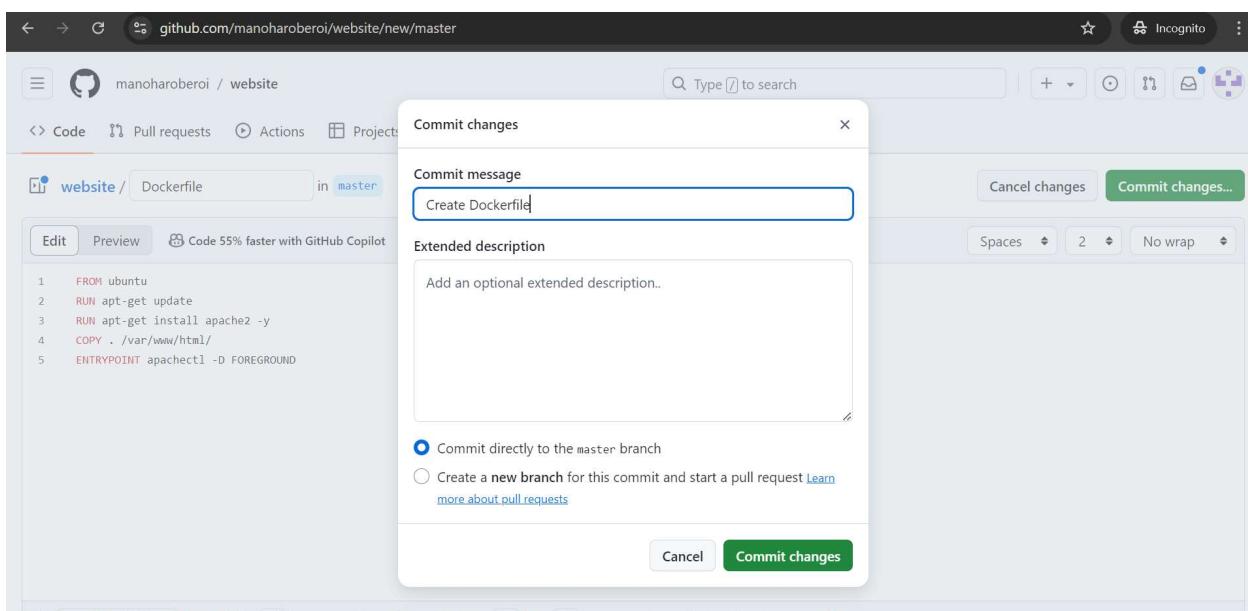
The screenshot shows a GitHub repository page for 'manoharoberoi / website'. The repository is public and was forked from 'hshar/website'. The 'master' branch is selected, showing 2 branches and 0 tags. A message indicates the branch is up-to-date with 'hshar/website:master'. The repository contains three files: 'Ubuntu' (modified), 'index.html' (modified), and 'images' (final). A context menu is open over the 'Create new file' button, listing options like 'Contributors', 'Upload files', and 'Create new file'. To the right, there's an 'About' section with repository details: no description, 0 stars, 0 forks, 0 watching, and 2 commits. Below that is a 'Releases' section with a link to 'Create a new release'. At the bottom, there's a Windows taskbar with various pinned icons.

A screenshot of the GitHub Code editor interface. The repository is 'manoharoberoi / website'. The file being edited is 'Dockerfile' in the 'master' branch. The code content is:

```
1 FROM ubuntu
2 RUN apt-get update
3 RUN apt-get install apache2 -y
4 COPY . /var/www/html/
5 ENTRYPOINT apachectl -D FOREGROUND
```

The editor has tabs for 'Edit' and 'Preview', and a note 'Code 55% faster with GitHub Copilot'. There are buttons for 'Cancel changes' and 'Commit changes...' at the top right.

When I commit the changes in the master branch the prod job build automatically



The screenshot shows a software interface for a project named "prod". The top navigation bar includes "Dashboard" and "Changes". On the left, a sidebar lists project management options: "Status" (selected), "Changes", "Workspace", "Build Now", "Configure", "Delete Project", "GitHub Hook Log", and "Rename". The main content area displays the project name "prod" with a green checkmark icon. Below it is a "Permalinks" section with a copy icon. A "Build History" card is open, showing four builds: #3 (Sep 11, 2024, 6:10 PM), #2 (Sep 11, 2024, 5:44 PM), and #1 (Sep 11, 2024, 5:36 PM). Each build has a green circular icon with a white number. At the bottom of the card are links for "Atom feed for all" and "Atom feed for failures". The bottom of the screen features a taskbar with icons for File Explorer, Task View, Edge, Google Chrome, File Manager, Word, Excel, Powerpoint, OneDrive, and a few others. The system tray shows the date as "11:40 PM" and the temperature as "28°C".

I will go to console output to check the logs



# Jenkins

Dashboard > prod > #3 > Console Output

- [Status](#)
- [Changes](#)
- [Console Output](#) ✓
- [Edit Build Information](#)
- [Delete build '#3'](#)
- [Polling Log](#)
- [Timings](#)
- [Git Build Data](#)
- [Previous Build](#)

## Console Output

Started by GitHub push by manoharoberoi  
Running as SYSTEM  
Building remotely on **prod** in workspace /home/ubuntu/jenkins/workspace/prod  
The recommended git tool is: NONE  
No credentials specified  
> git rev-parse --resolve-git-dir /home/ubuntu/jenkins/workspace/prod/.git # timeout=10  
Fetching changes from the remote Git repository  
> git config remote.origin.url https://github.com/manoharoberoi/websit... # timeout=10  
Fetching upstream changes from https://github.com/manoharoberoi/websit...  
> git -version # timeout=10  
> git -version # git version 2.34.1'  
> git fetch --tags --force --progress -- https://github.com/manoharoberoi/websit... +refs/heads/\*:refs/remotes/origin/\* # timeout=10  
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10  
Checking out Revision 291cbac4d96650d61451174ef94571bf8e2c15a6 (refs/remotes/origin/master)  
> git config core.sparsecheckout # timeout=10  
> git checkout -f 291cbac4d96650d61451174ef94571bf8e2c15a6 # timeout=10  
Commit message: "Create Dockerfile"  
> git rev-list --no-walk 883b439379efd36970896f7c57d09e9cb6460a9a # timeout=10  
Finished: SUCCESS

[Download](#) [Copy](#) [View as plain text](#)

The docker file successfully copied in the prod server in this path:

/home/ubuntu/jenkins/workspace/prod

```
images index.html
ubuntu@ip-172-31-25-55:~/jenkins/workspace/prod$ ls
Dockerfile images index.html
ubuntu@ip-172-31-25-55:~/jenkins/workspace/prod$
```

i-0234ff1e8a05f789a (prod)

Public IPs: 18.188.97.55 Private IPs: 172.31.25.55

Now I am going to build the docker file so I will go to the prod job and click on configure

The screenshot shows the Jenkins dashboard with the 'prod' project selected. The left sidebar has options like Status, Changes, Workspace, Build Now, Configure (which is highlighted with a yellow box), Delete Project, GitHub Hook Log, and Rename. The main area shows the 'prod' project with a green checkmark icon. Below it is a 'Permalinks' section with a list of recent builds. A 'Build History' section shows three builds: #3 (Sep 11, 2024, 6:10 PM), #2 (Sep 11, 2024, 5:44 PM), and #1 (Sep 11, 2024, 5:36 PM). The 'Configure' button in the sidebar is also highlighted with a yellow box.

In build step I will choose execute shell and update the below commands to build the dockerfile and save the changes

Dashboard > prod > Configuration

## Configure

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

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

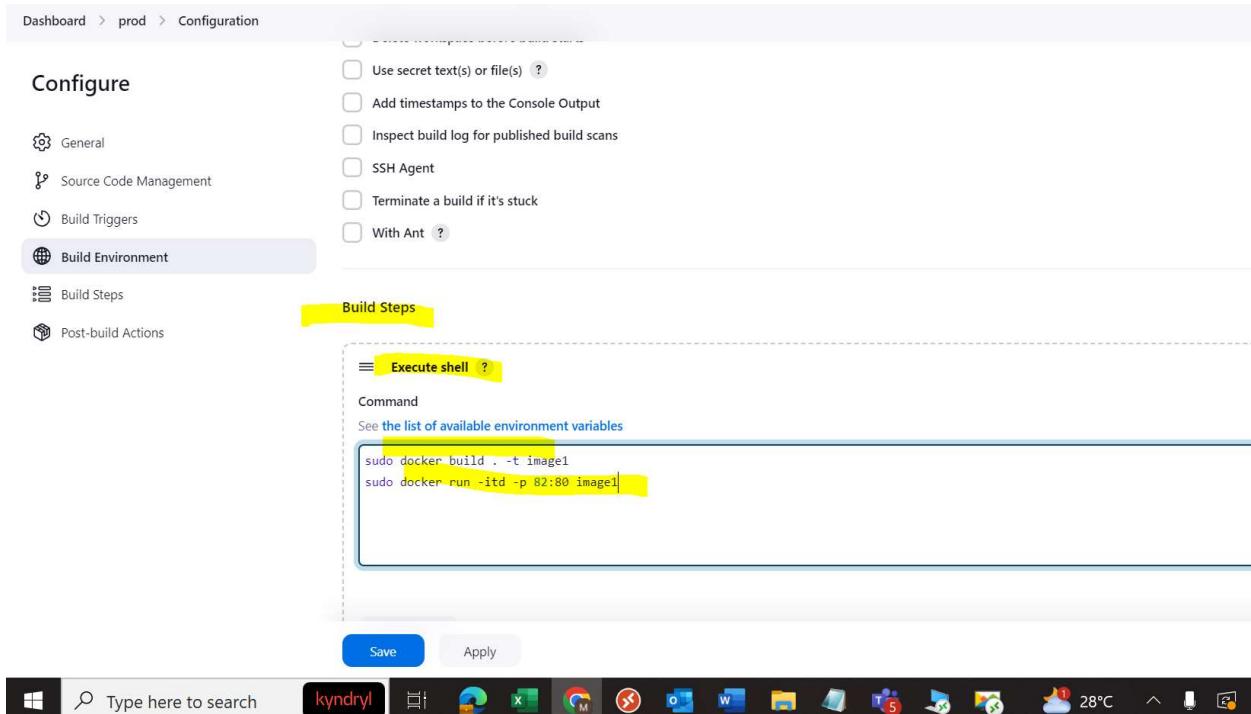
**Build Steps**

**Execute shell** ?

Command  
See the list of available environment variables

```
sudo docker build . -t image1
sudo docker run -itd -p 82:80 image1
```

Save Apply



I will click on build now & as you can see the build is successful.

← → ⚡ Not secure 18.217.167.101:8080/job/prod/

# Jenkins

Dashboard > prod >

Status prod Add description

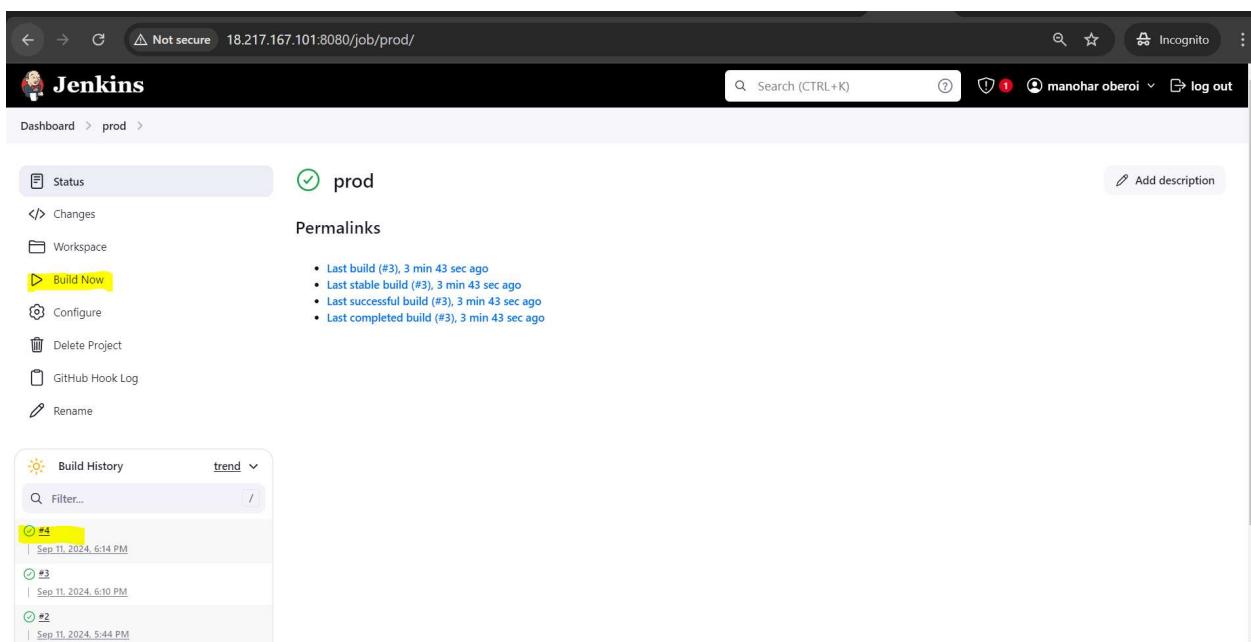
Changes Workspace Build Now Configure Delete Project GitHub Hook Log Rename

Permalinks

- Last build (#3), 3 min 43 sec ago
- Last stable build (#3), 3 min 43 sec ago
- Last successful build (#3), 3 min 43 sec ago
- Last completed build (#3), 3 min 43 sec ago

Build History trend ▾

#	Build Status	Date
#4	Success	Sep 11, 2024, 6:14 PM
#3	Success	Sep 11, 2024, 6:10 PM
#2	Success	Sep 11, 2024, 5:44 PM



we can go to the console output to check the logs

docker image build successfully and container is running.

← → G (⚠ Not secure) 18.217.167.101:8080/job/prod/4/console

Dashboard > prod > #4 > Console Output

```

Enabling conf localized_error_pages.
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
invoke-rc.d: could not determine current runlevel
invoke-rc.d: policy-rc.d denied execution of start.
Processing triggers for libc-bin (2.39-0ubuntu8.2) ...
Processing triggers for ca-certificates (20240203) ...
Updating certificates in /etc/ssl/certs...
0 added, 0 removed; done.
Running hooks in /etc/ca-certificates/update.d...
done.
Removing intermediate container c6035212bd30
--> d71524cabce5
Step 4/5 : COPY . /var/www/html/
--> 1b8946eae023
Step 5/5 : ENTRYPOINT apachectl -D FOREGROUND
--> Running in 2b7530821284
Removing intermediate container 2b7530821284
--> 4d95b1b0d97b
Successfully built 4d95b1b0d97b
Successfully tagged image1:latest
+ sudo docker run -itd -p 82:80 image1
006eb619524e41ecc013a0eb00dd82fc57ad8407e3369820a94ecb1dd61ad40
Finished: SUCCESS

```

REST

```

$ docker ps
CONTAINER ID   IMAGE   COMMAND   CREATED          STATUS          PORTS     NAMES
006eb619524e   image1   "/bin/sh -c 'apachectl -D FOREGROUND'"   About a minute ago   Up About a minute   0.0.0.0:82->80/tcp, ::82->80/tcp   gifted_joliot
$ sudo docker images
REPOSITORY   TAG      IMAGE ID   CREATED          SIZE
image1       latest   4d95b1b0d97b   About a minute ago   232MB
ubuntu        latest   edbfe74c41f8   5 weeks ago    78.1MB
$ 

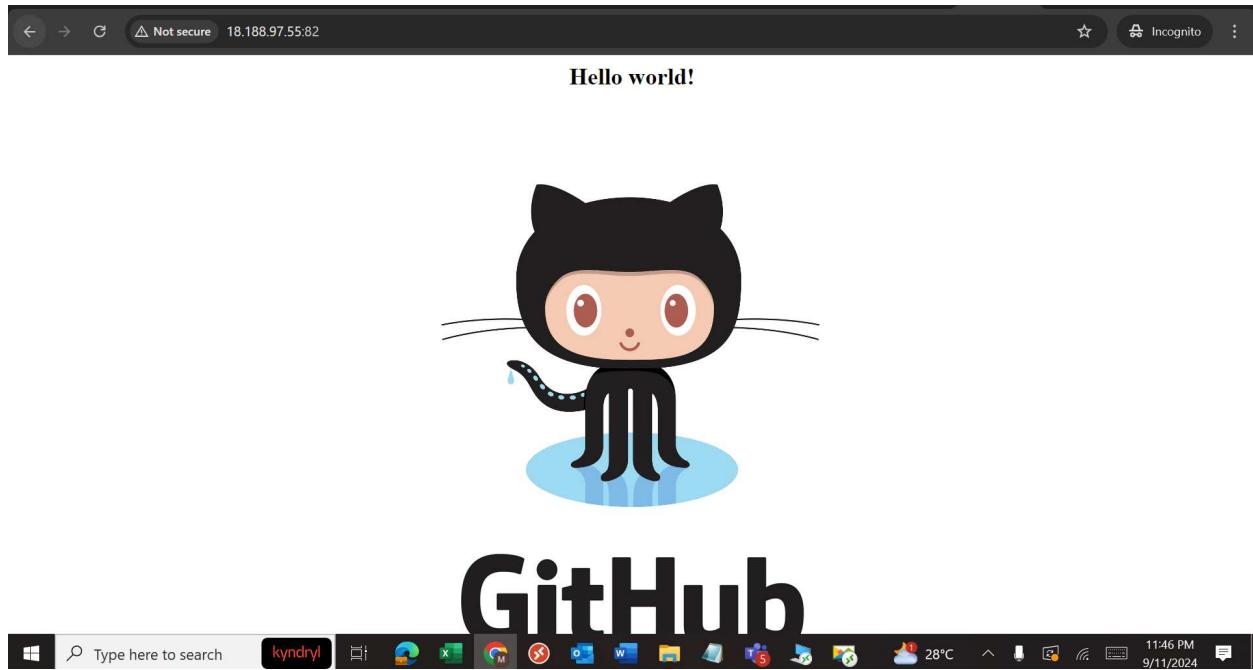
```

i-0234ff1e8a05f789a (prod)

Public IPs: 18.188.97.55 Private IPs: 172.31.25.55

I will copy the public ip of the prod server and paste on the browser followed by the port 82

<http://18.188.97.55:82/>



Now in the github repo masterbranch I will edit the index.html file and update the below html code and commit the changes

A screenshot of a GitHub repository page. The top navigation bar includes 'Code', 'Pull requests', 'Actions', 'Projects', 'Wiki', 'Security', 'Insights', and 'Settings'. The current branch is 'master'. A commit by 'manoharoberoi' titled 'Create Dockerfile' is shown, with the commit ID '291cbac' and a timestamp of '8 minutes ago'. Below the commit, a message states 'This branch is 1 commit ahead of hshar/website:master.' There are buttons for 'Contribute' and 'Sync fork'. A table lists the repository's contents:

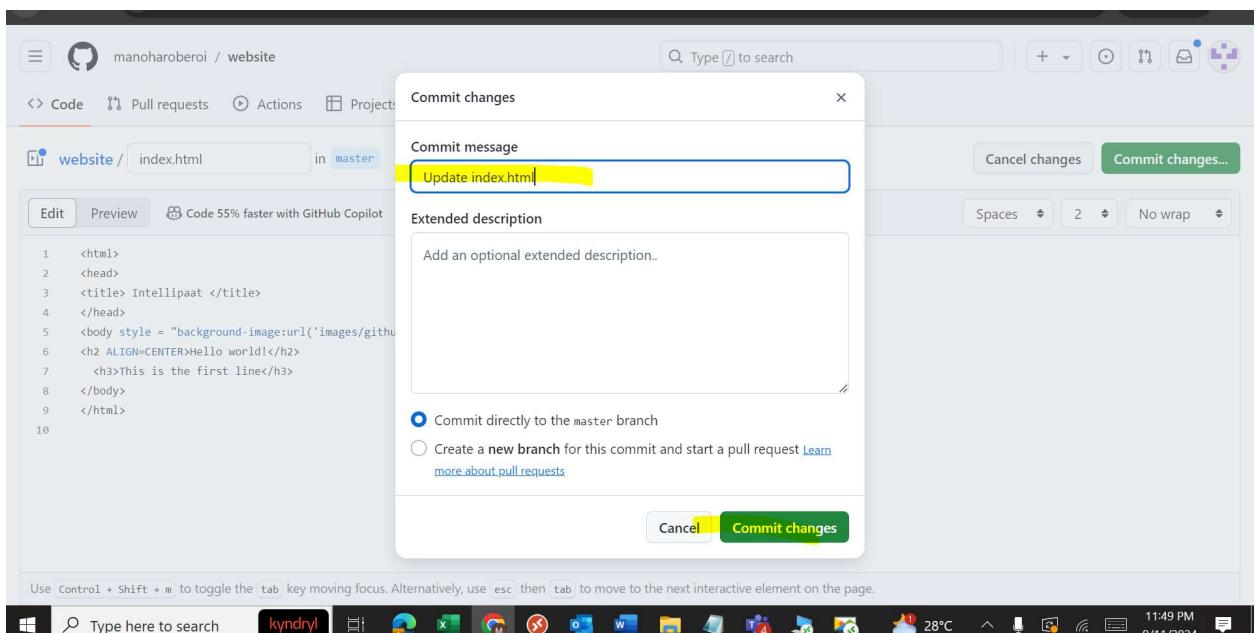
Name	Last commit message	Last commit date
images	final	5 years ago
Dockerfile	Create Dockerfile	8 minutes ago
index.html	modified	5 years ago

The 'index.html' row is highlighted with a yellow background.

A screenshot of a GitHub code editor interface. The URL in the address bar is `github.com/manoharoberoi/website/edit/master/index.html`. The editor shows the following HTML code:

```
1 <html>
2 <head>
3 <title> Intellipaat </title>
4 </head>
5 <body style = "background-image:url('images/github3.jpg'); background-size: 100%">
6 <h2 ALIGN=CENTER>Hello world!</h2>
7 <h3>This is the first line</h3>
8 </body>
9 </html>
```

The line `<h3>This is the first line</h3>` is highlighted with a yellow background.



Prod job run automatically but this time it failed

The screenshot shows the Jenkins interface for the 'prod' job. On the left, there's a sidebar with options like Status, Changes, Workspace, Build Now, Configure, Delete Project, GitHub Hook Log, and Rename. The main area displays the 'prod' job with a green checkmark icon. Below it is a 'Permalinks' section with a bulleted list of recent builds. A large yellow box highlights the 'Build History' section, which lists three builds: #5 (Sep 11, 2024, 6:19 PM), #4 (Sep 11, 2024, 6:14 PM), and #3 (Sep 11, 2024, 6:10 PM). Another yellow box highlights an error message at the bottom of the page: 'Bind for 0.0.0.0:82 failed: port is already allocated.'

I will go to console output to check the logs and as you can see I am getting the error port is already allocated

The screenshot shows a browser window with the URL '18.217.167.101:8080/job/prod/5/console'. The page title is 'Console Output'. The content of the page shows Docker build logs. A yellow box highlights the error message at the end of the logs: 'Bind for 0.0.0.0:82 failed: port is already allocated.'

To resolve this issue I need to update the commands in execute shell in such a way that whenever any software developer make any changes in the index.html file then our job should be successful and when we try to access our application we can see the required changes

I will name the container as c2 and change the port to 83 & also in the starting we will write a command to remove the container but for now I will comment the command so it will not execute but in my second build I will uncomment it.

The screenshot shows the Jenkins job configuration interface for a job named 'prod'. The 'Build Steps' section is active, displaying a command block with the following content:

```
#sudo docker rm -f c1
sudo docker build . -t image1
sudo docker run -itd -p 83:80 --name=c2 image1
```

The 'Post-build Actions' section is also visible below, with an 'Add post-build action' button.

I will build the job again and this time my build was successful.

The screenshot shows the Jenkins job status page for 'prod'. The 'Build History' section displays the following build logs:

- Last build (#6), 1 min 39 sec ago
- Last stable build (#4), 11 min ago
- Last successful build (#4), 11 min ago
- Last failed build (#6), 1 min 39 sec ago
- Last unsuccessful build (#6), 1 min 39 sec ago
- Last completed build (#6), 1 min 39 sec ago

A specific build (#7) is highlighted with a yellow background.

And if I copy the public ip and paste on the browser followed by port 83 I can see the required changes

<http://18.188.97.55:83/>



Now I will uncomment the command and save it

A screenshot of a Jenkins configuration interface. The left sidebar shows 'Configure' with sections for General, Source Code Management, Build Triggers, Build Environment, Build Steps (which is selected), and Post-build Actions. The right panel shows a 'Command' section with the following code:

```
sudo docker rm -f c2
sudo docker build . -t image1
sudo docker run -td -p 83:80 --name=c2 image1
```

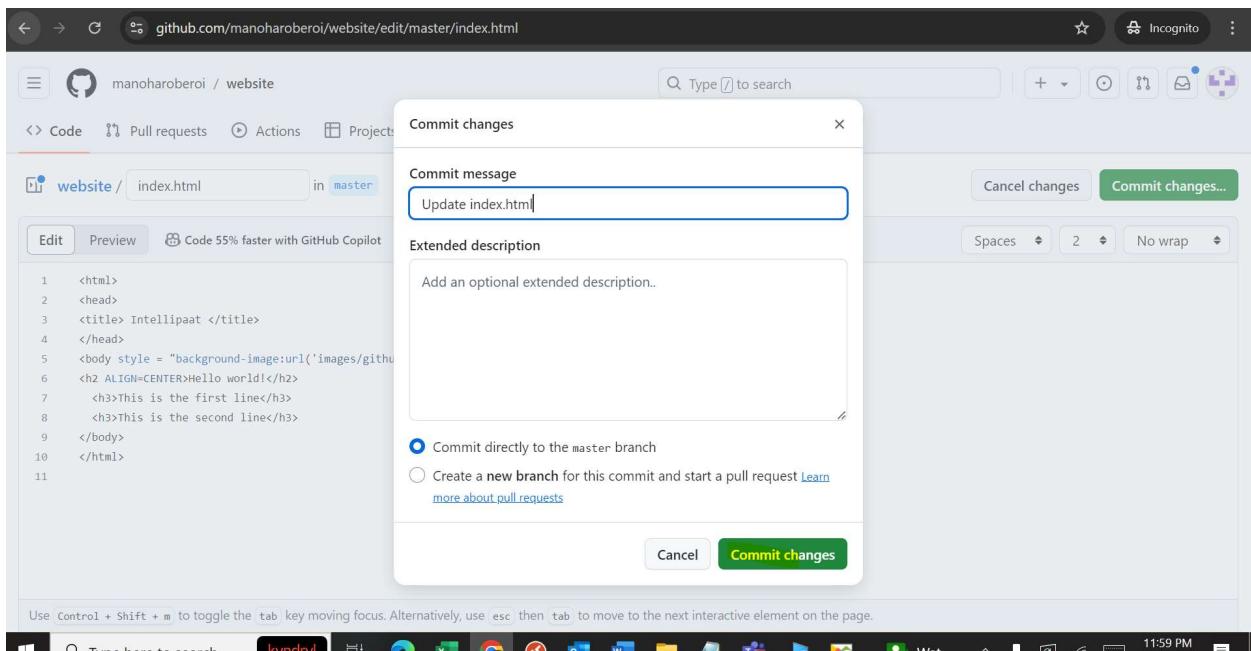
A dashed box highlights the 'Advanced' dropdown menu and the 'Add build step' button.

Now I will edit the index.html file again and commit the changes

The screenshot shows the GitHub code editor interface. The top navigation bar includes 'Code', 'Pull requests', 'Actions', 'Projects', 'Wiki', 'Security', 'Insights', and 'Settings'. The repository path 'manoharoberoi / website' is at the top left. A search bar says 'Type ⌘ to search'. On the right are icons for creating a new file, committing changes, and more. Below the navigation is a breadcrumb trail: 'website / index.html' and 'in master'. Buttons for 'Cancel changes' and 'Commit changes...' are on the right. The main area shows the following code:

```
1 <html>
2 <head>
3 <title> Intellipaat </title>
4 </head>
5 <body style = "background-image:url('images/github3.jpg'); background-size: 100%">
6 <h2 ALIGN=CENTER>Hello world!</h2>
7 <h3>This is the first line</h3>
8 <h3>This is the second line</h3>
9 </body>
10 </html>
```

Below the code, a note says 'Use ⌘ + Shift + m to toggle the tab key moving focus. Alternatively, use esc then tab to move to the next interactive element on the page.'



My prod job run successfully after committing the changes

Jenkins

Dashboard > prod >

Status prod Add description

Changes Workspace Build Now Configure Delete Project GitHub Hook Log Rename

Permalinks

- Last build (#9), 1 min 27 sec ago
- Last stable build (#9), 1 min 27 sec ago
- Last successful build (#9), 1 min 27 sec ago
- Last failed build (#8), 8 min 28 sec ago
- Last unsuccessful build (#8), 8 min 28 sec ago
- Last completed build (#9), 1 min 27 sec ago

Build History trend Filter... #9 Sep 11, 2024, 6:36 PM #8 Sep 11, 2024, 6:29 PM #7

Not secure 18.188.97.55:83

Incognito

Hello world!

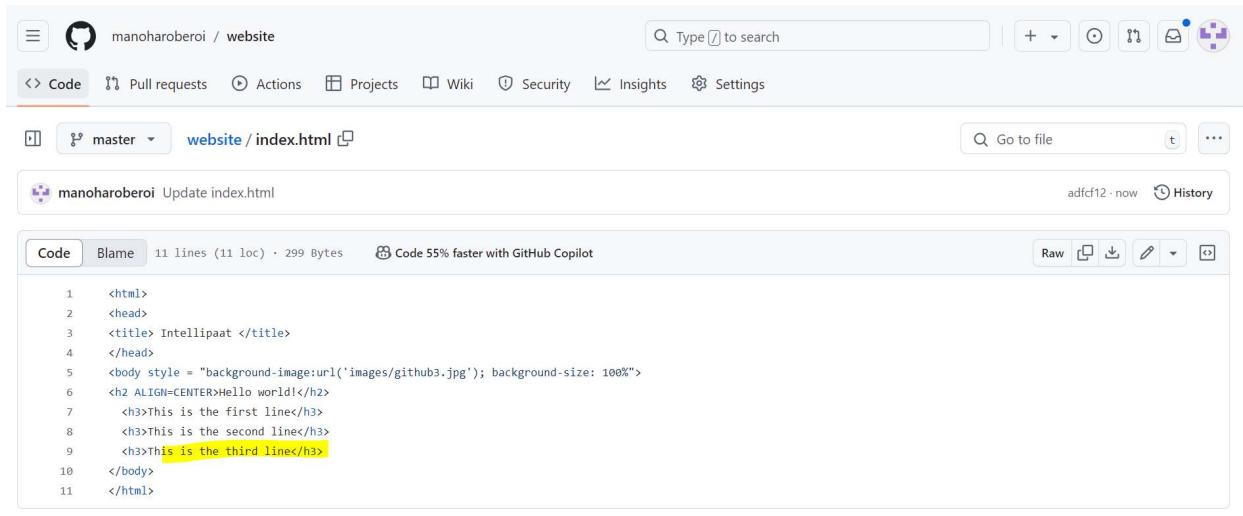
This is the first line

This is the second line



# GitHub

I am again editing the index.html file

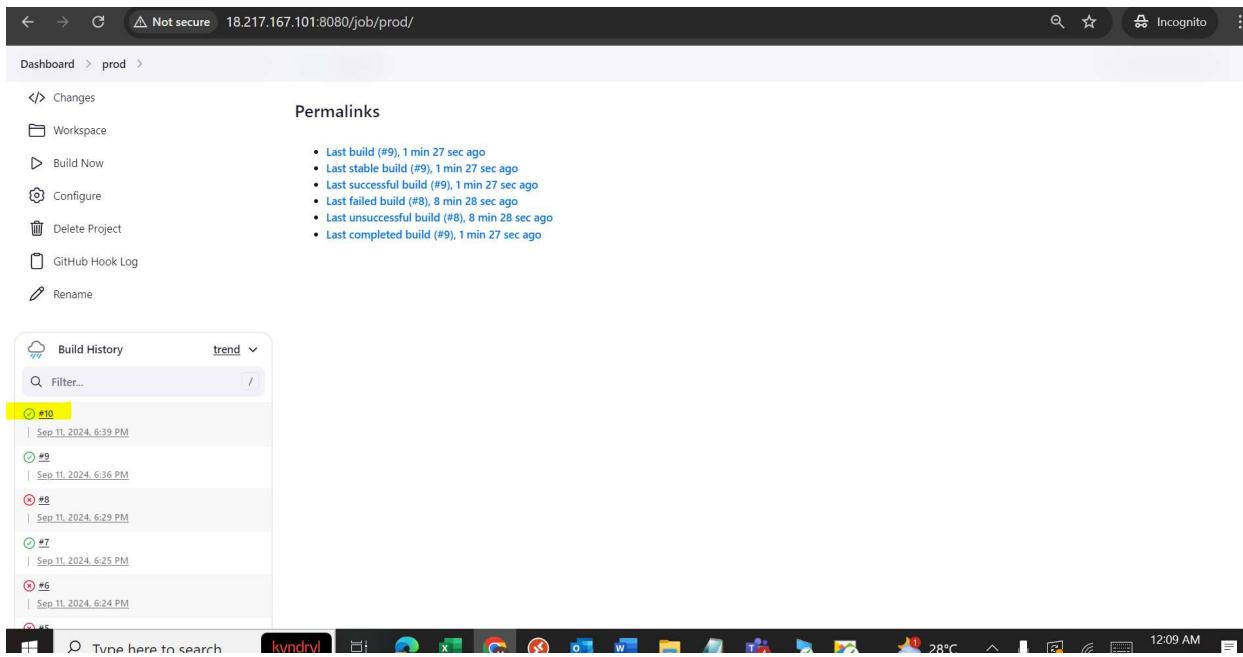


The screenshot shows the GitHub interface for a repository named 'manoharoberoi / website'. The 'Code' tab is selected, displaying the file 'website / index.html'. The code editor shows the following HTML:

```
1 <html>
2 <head>
3 <title> Intellipaat </title>
4 </head>
5 <body style = "background-image:url('images/github3.jpg'); background-size: 100%">
6 <h2 ALIGN= CENTER>Hello world</h2>
7 <h3>This is the first line</h3>
8 <h3>This is the second line</h3>
9 <h3>This is the third line</h3>
10 </body>
11 </html>
```

The line '9 <h3>This is the third line</h3>' is highlighted with a yellow background.

This time job run successfully



The screenshot shows a browser window displaying the build history for a project named 'prod'. The URL is 18.217.167.101:8080/job/prod/. The left sidebar shows project settings like 'Changes', 'Workspace', 'Build Now', 'Configure', 'Delete Project', 'GitHub Hook Log', and 'Rename'. The main area shows a 'Build History' table with the following data:

Build	Date
#10	Sep 11, 2024, 6:39 PM
#9	Sep 11, 2024, 6:36 PM
#8	Sep 11, 2024, 6:29 PM
#7	Sep 11, 2024, 6:25 PM
#6	Sep 11, 2024, 6:24 PM
#5	Sep 11, 2024, 6:23 PM

The build entry for '#10' is highlighted with a yellow background.

The required changes also present when we access application.



Hello world!

This is the first line

This is the second line

This is the third line



# GitHub

This complete jenkins case study.