

Jenkins 01

1) Install jenkins and run jenkins on port number 8081:

→ Ensure that your software packages are up to date:

```
sudo yum update-y
```

→ Add the Jenkins repo to system's package manager (yum) :

```
sudo wget -O /etc/yum.repos.d/jenkins.repo \ https://pkg.jenkins.io/redhat-stable/jenkins.repo
```

→ Import a key file from Jenkins-CI to enable installation from the package:

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

→ Install Java

```
[root@ip-172-31-20-167 ~]# yum install java  
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd  
Resolving Dependencies
```

```
sudo yum install java-17-amazon-corretto-y
```

→ Install Jenkins

```
sudo yum install jenkins-y
```

→ start Jenkins

```
sudo systemctl start Jenkins
```

```
Dependency Installed:  
  dejavu-sans-mono-fonts.noarch 0:2.33-6.amzn2      dejavu-serif-fonts.noarch 0:2.33-6.amzn2      java-17-amazon-corretto-headless.x86_64 1:17.0.1  
  libXrandr.x86_64 0:1.5.1-2.amzn2.0.3             libXt.x86_64 0:1.1.5-3.amzn2.0.2  
  
Complete!  
[root@ip-172-31-20-167 ~]# sudo yum install fontconfig java-17-openjdk  
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd  
Existing lock /var/run/yum.pid: another copy is running as pid 6573.  
Another app is currently holding the yum lock; waiting for it to exit...  
The other application is: yum  
  Memory : 220 M RSS (441 MB VSZ)  
  Started: Mon Mar 17 09:54:20 2025 - 00:06 ago  
  State   : Running, pid: 6573  
Package fontconfig-2.13.0-4.3.amzn2.x86_64 already installed and latest version  
No package java-17-openjdk available.  
Nothing to do  
[root@ip-172-31-20-167 ~]# java -version  
openjdk version "17.0.14" 2025-01-21 LTS  
OpenJDK Runtime Environment Corretto-17.0.14.7.1 (build 17.0.14+7-LTS)  
OpenJDK 64-Bit Server VM Corretto-17.0.14.7.1 (build 17.0.14+7-LTS, mixed mode, sharing)  
[root@ip-172-31-20-167 ~]# sudo systemctl start jenkins  
[root@ip-172-31-20-167 ~]# sudo systemctl status jenkins  
● jenkins.service - Jenkins Continuous Integration Server  
   Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; vendor preset: disabled)  
   Active: active (running) since Mon 2025-03-17 09:55:07 UTC; 10s ago  
     Main PID: 6780 (java)  
       CGroup: /system.slice/jenkins.service  
               └─6780 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=%C/jenkins/war --httpPort=8080
```

→ Edit jenkins service file to change port number

```
sudo vi /usr/lib/systemd/system/jenkins.service
```

```
ExecStart=/usr/bin/Jenkins---httpport=8081
```

```
[root@ip-172-31-20-167 ~]# cd /usr/lib/systemd/system  
[root@ip-172-31-20-167 system]# vi jenkins.service
```

→ Reload and restart jenkins

```
sudo systemctl daemon-reload
```

```
sudo systemctl restart jenkins
```

```
[root@ip-172-31-20-167 system]# systemctl stop jenkins
warning: jenkins.service changed on disk. Run 'systemctl daemon-reload' to reload units.
[root@ip-172-31-20-167 system]# systemctl daemon-reload
[root@ip-172-31-20-167 system]# systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
   Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; vendor preset: disabled)
   Active: inactive (dead) since Mon 2025-03-17 10:21:13 UTC; 14s ago
     Main PID: 15282 (code=exited, status=143)
    Status: "Jenkins stopped"

Mar 17 10:21:13 ip-172-31-20-167.us-east-2.compute.internal jenkins[15282]: 2025-03-17 10:21:13.744+0000 [id=25] INFO jenkins.model.Jenkins$17#onAttained: Start
Mar 17 10:21:13 ip-172-31-20-167.us-east-2.compute.internal jenkins[15282]: 2025-03-17 10:21:13.764+0000 [id=25] INFO jenkins.model.Jenkins$17#onAttained: Comp
Mar 17 10:21:13 ip-172-31-20-167.us-east-2.compute.internal jenkins[15282]: 2025-03-17 10:21:13.765+0000 [id=25] INFO jenkins.model.Jenkins#_cleanupDisconnectCo
Mar 17 10:21:13 ip-172-31-20-167.us-east-2.compute.internal jenkins[15282]: 2025-03-17 10:21:13.775+0000 [id=25] INFO jenkins.model.Jenkins#_cleanupShutdownPlus
Mar 17 10:21:13 ip-172-31-20-167.us-east-2.compute.internal jenkins[15282]: 2025-03-17 10:21:13.775+0000 [id=25] INFO jenkins.model.Jenkins#_cleanupPersistQueue
Mar 17 10:21:13 ip-172-31-20-167.us-east-2.compute.internal jenkins[15282]: 2025-03-17 10:21:13.782+0000 [id=25] INFO jenkins.model.Jenkins#_cleanupAwaitDiscont
Mar 17 10:21:13 ip-172-31-20-167.us-east-2.compute.internal jenkins[15282]: 2025-03-17 10:21:13.782+0000 [id=25] INFO hudson.lifecycle.Lifecycle#onStatusUpdate
Mar 17 10:21:21 ip-172-31-20-167.us-east-2.compute.internal systemd[1]: Stopped Jenkins Continuous Integration Server.
Mar 17 10:21:21 ip-172-31-20-167.us-east-2.compute.internal systemd[1]: [/usr/lib/systemd/system/jenkins.service:16] Unknown lvalue 'StartLimitBurst' in section 'Unit'
Mar 17 10:21:21 ip-172-31-20-167.us-east-2.compute.internal systemd[1]: [/usr/lib/systemd/system/jenkins.service:17] Unknown lvalue 'StartLimitIntervalSec' in section 'Unit'
Hint: Some lines were ellipsized, use -l to show in full.
[root@ip-172-31-20-167 system]# systemctl start jenkins
^[[root@ip-172-31-20-167 system]# systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
   Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; vendor preset: disabled)
   Active: active (running) since Mon 2025-03-17 10:21:52 UTC; 12s ago
     Main PID: 18518 (java)
    CGroup: /system.slice/jenkins.service
            └─18518 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=%C/jenkins/war --httpPort=8081
```

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

2)Secure Jenkins server:

→Configuring Admin User With Custom credentials:

→removed initialAdminPassword from /var/lib/jenkins/secrets/

```

naren@narendar MINGW64 /c/Users/Public/Downloads
$ ssh -i "jenkins.pem" ec2-user@ec2-18-222-27-18.us-east-2.compute.amazonaws.com
Last login: Mon Mar 17 09:39:44 2025 from 103.143.169.218

_#_
#####
~\#####\
~\###|
~\#/
~\V~'-'>
~\
~\.._/_/
~\m/'

Amazon Linux 2

AL2 End of Life is 2026-06-30.

A newer version of Amazon Linux is available!

Amazon Linux 2023, GA and supported until 2028-03-15.
https://aws.amazon.com/linux/amazon-linux-2023/

[ec2-user@ip-172-31-20-167 ~]$
[ec2-user@ip-172-31-20-167 ~]$ sudo -i
[root@ip-172-31-20-167 ~]# ll
total 0
[root@ip-172-31-20-167 ~]# cd /var/lib/jenkins/
[root@ip-172-31-20-167 jenkins]# cd secrets/
[root@ip-172-31-20-167 secrets]# cat initialadminpassword
cat: initialadminpassword: No such file or directory
[root@ip-172-31-20-167 secrets]# cat initialAdminPassword
690a5f405bfb45489141dd0df1d0706d
[root@ip-172-31-20-167 secrets]# cat initialAdminPassword
690a5f405bfb45489141dd0df1d0706d
[root@ip-172-31-20-167 secrets]# rm initialAdminPassword
rm: remove regular file 'initialAdminPassword'? yes
[root@ip-172-31-20-167 secrets]# cat initialAdminPassword
cat: initialAdminPassword: No such file or directory
[root@ip-172-31-20-167 secrets]#

```

3) Create users called Devops, Testing in Jenkins with Limited access:

→ Installed rolebasedAuthorizedStrategy plugin:

Search: role

Install ☒ Name ↓ Released

Install	Name ↓	Released
<input checked="" type="checkbox"/>	Role-based Authorization Strategy 756.v978cb_392eb_d3 Security Authentication and User Management Enables user authorization using a Role-Based strategy. Roles can be defined globally or for particular jobs or nodes selected by regular expressions.	1 mo 18 days ago

→ Created Users With names Devops and Testing

Manage Jenkins->users-> create user

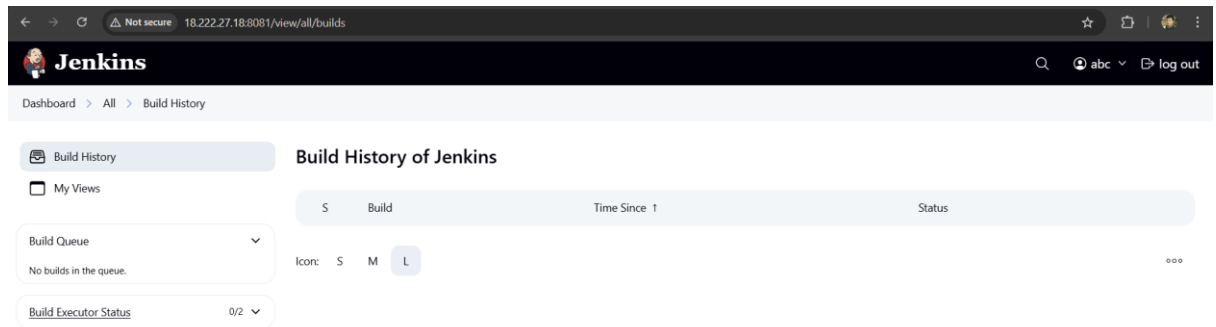
Users 3 [+ Create User](#)

These users can log into Jenkins. This is a sub set of [this list](#), which also contains auto-created users who really just made some commits on some projects and have no direct Jenkins access.

User ID ↓	Name	
admin	admin	
devops	abc	
testing	xyz	

→ Configured Limited Access

**Manage jenkins-> Security-> Authorization-> select installed plugin
in previous step:**



The screenshot shows the Jenkins 'Build History of Jenkins' page. The browser address bar indicates the URL is '18.222.27.18:8081/view/all/builds'. The page header includes the Jenkins logo and a search bar. The sidebar on the left contains links to 'Build History', 'My Views', 'Build Queue', and 'Build Executor Status'. The main content area displays a table with columns: 'S', 'Build', 'Time Since', and 'Status'. The 'Build' column has a dropdown menu with options 'S', 'M', and 'L'. The 'Time Since' column shows '1'. The 'Status' column is empty. The 'Build Queue' section shows 'No builds in the queue.' and the 'Build Executor Status' shows '0/2'.

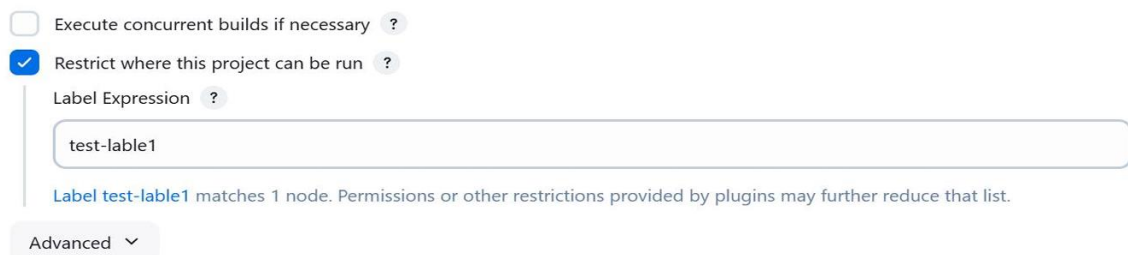
**4)Configure labels and restrict the jobs to execute based on
label only:**

→Configuring Lable:



The screenshot shows the Jenkins 'Configure Labels' page. The page has a breadcrumb trail: 'Manage Jenkins > System >'. The main content area includes a text input field for 'Labels' with the value 'test-lable1'. Below it, there is a section for '# of executors' with a value of '2'. The page also includes a 'Plain text' preview and a 'Preview' button.

→Configuring job with lable:



The screenshot shows the Jenkins job configuration page. The page has a section for 'Restrict where this project can be run' which is checked. Below it, there is a 'Label Expression' field with the value 'test-lable1'. The page also includes a message: 'Label test-lable1 matches 1 node. Permissions or other restrictions provided by plugins may further reduce that list.' and an 'Advanced' dropdown menu.

→ Job without lable in queue:

Jenkins Dashboard

Build Queue (2)

- project321
- project1

Build Executor Status: 0/2

S	W	Name	Last Success	Last Failure	Last Duration
✓	☀	first_job	9.5 sec #3	N/A	19 ms
⋮	☀	project1	N/A	N/A	N/A
⋮	☀	project321	N/A	N/A	N/A

Icons: S M L

Jenkins Dashboard

Build Queue (2)

- first_job
- project321

Build Executor Status: 0 of 2 executors busy

S	W	Name	Last Success	Last Failure	Last Duration
✓	☀	first_job	3 min 28 sec #4	N/A	10 ms
✓	☀	project1	1 min 29 sec #1	N/A	9 ms
⋮	☀	project321	N/A	N/A	N/A

Icons: S M L

5) Create Three sample jobs using the below

URL. [https://github.com/betawins/Techie horizon Login app.git](https://github.com/betawins/Techie_horizon_Login_app.git)

→ Installed git :

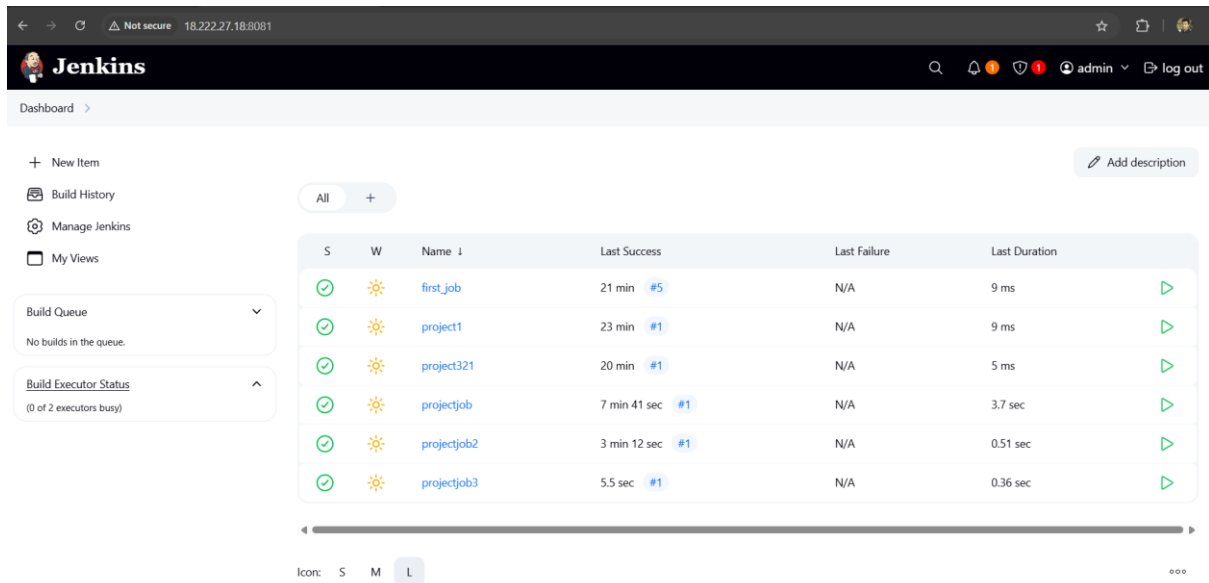
```
Installed:
  git.x86_64 0:2.47.1-1.amzn2.0.2
Dependency Installed:
  git-core.x86_64 0:2.47.1-1.amzn2.0.2  git-core-doc.noarch 0:2.47.1-1.amzn2.0.2  perl-Error.noarch 1:0.17020-2.amzn2  perl-Git.noarch 0:2.47.1-1.amzn2.0.2  perl-TermReadKey.x86_64 0:2.30-20.amzn2.0.2
Complete!
[root@ip-172-31-20-167 ~]#
```

→ Created 3 sample jobs using above git repo url:

Projectjob

Projectjob2

Projectjob3



The screenshot shows the Jenkins Dashboard. On the left, there's a sidebar with 'New Item', 'Build History', 'Manage Jenkins', and 'My Views'. The main area displays a table of jobs. The table has columns for status (S), icon (W), name, last success, last failure, and last duration. The jobs listed are 'first_job', 'project1', 'project321', 'projectjob', 'projectjob2', and 'projectjob3'. All jobs show a green checkmark for status and a sun icon for W. The 'Last Success' column shows the time since the last successful build, and the 'Last Failure' column shows 'N/A' for all jobs. The 'Last Duration' column shows the duration of the last build.

S	W	Name	Last Success	Last Failure	Last Duration
✓	☀	first_job	21 min #5	N/A	9 ms
✓	☀	project1	23 min #1	N/A	9 ms
✓	☀	project321	20 min #1	N/A	5 ms
✓	☀	projectjob	7 min 41 sec #1	N/A	3.7 sec
✓	☀	projectjob2	3 min 12 sec #1	N/A	0.51 sec
✓	☀	projectjob3	5.5 sec #1	N/A	0.36 sec

→ workspace created in our EC2 On jenkins job build:

```
Installing git-core...
Installed:
  git.x86_64 0:2.47.1-1.amzn2.0.2

Dependency Installed:
  git-core.x86_64 0:2.47.1-1.amzn2.0.2  git-core-doc.noarch 0:2.47.1-1.amzn2.0.2  perl-Error.noarch 1:0.17020-2.amzn2  perl-Git.noarch 0:2.47.1-1.amzn2.0.2

Complete!
[root@ip-172-31-20-167 ~]# cd /var/lib/jenkins/workspace
[root@ip-172-31-20-167 workspace]# ls
first_job  project1  project123  project321  projectjob
[root@ip-172-31-20-167 workspace]# cd projectjob
[root@ip-172-31-20-167 projectjob]# ll
total 20
drwxr-xr-x 2 jenkins jenkins  91 Mar 17 13:26 ansible
-rw-r--r-- 1 jenkins jenkins 508 Mar 17 13:26 azure-pipelines.yml
-rw-r--r-- 1 jenkins jenkins 137 Mar 17 13:26 Dockerfile
-rw-r--r-- 1 jenkins jenkins 5830 Mar 17 13:26 pom.xml
-rw-r--r-- 1 jenkins jenkins  978 Mar 17 13:26 README.md
drwxr-xr-x 4 jenkins jenkins  30 Mar 17 13:26 src
[root@ip-172-31-20-167 projectjob]#
```

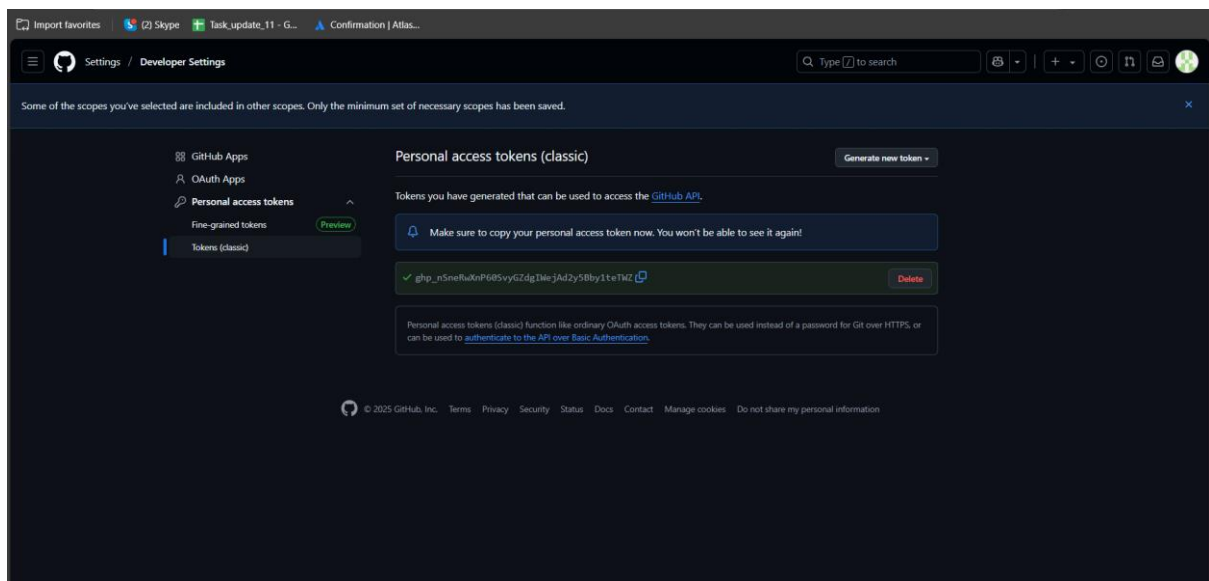
```

[root@ip-172-31-20-167 ~]# cd /var/lib/jenkins/workspace
[root@ip-172-31-20-167 workspace]# ls
first_job project1 project123 project321 projectjob
[root@ip-172-31-20-167 workspace]# cd projectjob
[root@ip-172-31-20-167 projectjob]# ll
total 20
drwxr-xr-x 2 jenkins jenkins  91 Mar 17 13:26 ansible
-rw-r--r-- 1 jenkins jenkins  508 Mar 17 13:26 azure-pipelines.yml
-rw-r--r-- 1 jenkins jenkins  137 Mar 17 13:26 Dockerfile
-rw-r--r-- 1 jenkins jenkins 5830 Mar 17 13:26 pom.xml
-rw-r--r-- 1 jenkins jenkins  978 Mar 17 13:26 README.md
drwxr-xr-x 4 jenkins jenkins   30 Mar 17 13:26 src
[root@ip-172-31-20-167 projectjob]# cd
[root@ip-172-31-20-167 ~]# cd /var/lib/jenkins/workspace
[root@ip-172-31-20-167 workspace]# ls
first_job project1 project123 project321 projectjob projectjob2
[root@ip-172-31-20-167 workspace]# cd projectjob2
[root@ip-172-31-20-167 projectjob2]# ll
total 20
drwxr-xr-x 2 jenkins jenkins  91 Mar 17 13:30 ansible
-rw-r--r-- 1 jenkins jenkins  508 Mar 17 13:30 azure-pipelines.yml
-rw-r--r-- 1 jenkins jenkins  137 Mar 17 13:30 Dockerfile
-rw-r--r-- 1 jenkins jenkins 5830 Mar 17 13:30 pom.xml
-rw-r--r-- 1 jenkins jenkins  978 Mar 17 13:30 README.md
drwxr-xr-x 4 jenkins jenkins   30 Mar 17 13:30 src
[root@ip-172-31-20-167 projectjob2]#

```

6) Create one jenkins job using git hub Private repository :

→ Created an Access token:



→ Created a private repository in github:

> pvt-jenkins > #2

→ created a new job with credentials in jenkins (private repo):

Dashboard > test > Configuration

Configure

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

Jenkins Credentials Provider: Jenkins

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

Username ?
narendar-20

☐ Treat username as secret ?

Password ?
.....

ID ?

Description ?

Cancel Add

→build job:

Dashboard > pvt-jenkins > #2

Jenkins

Search, Notifications, Admin, admin, log out

Status #2 (Mar 17, 2025, 2:02:57 PM) Add description Keep this build forever

Changes

Console Output

Edit Build Information

Delete build '#2'

Timings

Git Build Data

Previous Build

Started by user admin

This run spent:

- 2 ms waiting;
- 0.36 sec build duration;
- 0.36 sec total from scheduled to completion.

Revision: 22fdd7482e86ef091b3722de92d8ec04737d38b9

Repository: <https://github.com/narendar-20/jenkins.git>

- origin/main

No changes.

Started 17 sec ago
Took 0.36 sec

```

[root@ip-172-31-20-167 ~]# cd /var/lib/jenkins/workspace
[root@ip-172-31-20-167 workspace]# ls
first_job  project1  project123  project321  projectjob  projectjob2  projectjob3  pvt-jenkins  pvt-jenkins@tmp  test  test@tmp
[root@ip-172-31-20-167 workspace]# cd pvt-jenkins
[root@ip-172-31-20-167 pvt-jenkins]# ls
pvt-jenkins
[root@ip-172-31-20-167 pvt-jenkins]# cd pvt-jenkins
-bash: cd: pvt-jenkins: Not a directory
[root@ip-172-31-20-167 pvt-jenkins]# cat pvt-jenkins
hello world
[root@ip-172-31-20-167 pvt-jenkins]#

```

→workspace created in our EC2 On jenkins job build:

```

[root@ip-172-31-20-167 ~]# cd /var/lib/jenkins/workspace
[root@ip-172-31-20-167 workspace]# ls
first_job  project1  project123  project321  projectjob  projectjob2  projectjob3  pvt-jenkins  pvt-jenkins@tmp  test  test@tmp
[root@ip-172-31-20-167 workspace]# cd pvt-jenkins
[root@ip-172-31-20-167 pvt-jenkins]# ls
pvt-jenkins
[root@ip-172-31-20-167 pvt-jenkins]# cd pvt-jenkins
-bash: cd: pvt-jenkins: Not a directory
[root@ip-172-31-20-167 pvt-jenkins]# cat pvt-jenkins
hello world
[root@ip-172-31-20-167 pvt-jenkins]#

```