

Jenkins TASK 1

This document outlines the steps taken to create different kind of projects in jenkins and to implement Role-Based Access Control (RBAC) in Jenkins, managing permissions and restricting job access for two users, Satya and Sandhya. The goal is to restrict job visibility and actions based on specific roles assigned to users, ensuring that each user has access only to their respective project's jobs.

Pre req: Install jenkins, enable the jenkins service and start it.

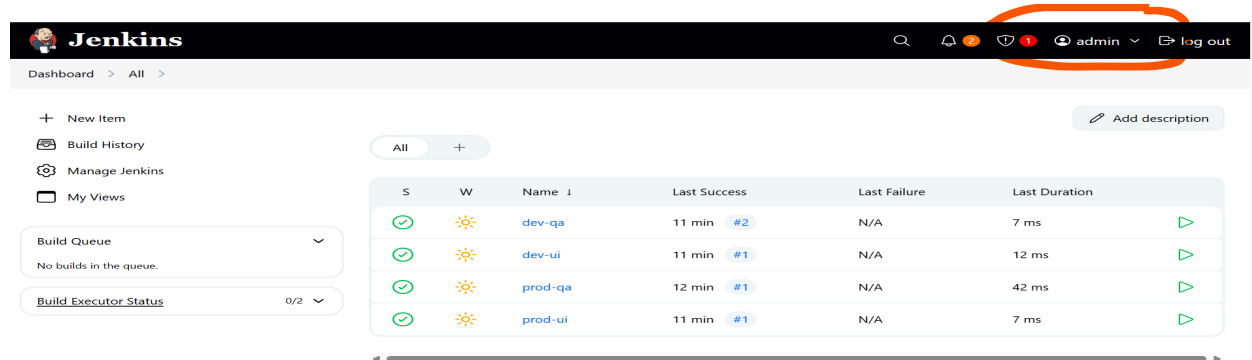
```
ubuntu@ip-172-31-2-83:~$ history
history: command not found
ubuntu@ip-172-31-2-83:~$ history
 1 clear
 2 java -version
 3 sudo apt install openjdk-17-jre-headless
 4 sudo apt update -y
 5 sudo apt install openjdk-17-jre-headless
 6 clear
 7 sudo wget -O /etc/apt/keyrings/jenkins-keyring.asc https://pkg.jenkins.io/debian-stable/jenkins.io-2023.key
 8 echo "deb [signed-by=/etc/apt/keyrings/jenkins-keyring.asc] https://pkg.jenkins.io/debian-stable binary/" | sudo tee /etc/apt/sources.list.d/jenkins.list > /dev/null
 9 sudo apt-get update
10 sudo apt-get install jenkins
11 sudo systemctl enable jenkins
12 sudo systemctl start jenkins
13 sudo systemctl status jenkins
14 clear
15 history
16 history
ubuntu@ip-172-31-2-83:~$ sudo systemctl status jenkins
● jenkins.service - Jenkins Continuous Integration Server
   Loaded: loaded (/usr/lib/systemd/system/jenkins.service; enabled; preset: enabled)
   Active: active (running) since Fri 2025-05-09 13:53:25 UTC; 42s ago
     Main PID: 3053 (java)
       Tasks: 47 (limit: 4674)
      Memory: 708.1M (peak: 723.9M)
         CPU: 18.17s
        CGroup: /system.slice/jenkins.service
                └─3053 /usr/bin/java -Djava.awt.headless=true -jar /usr/share/java/jenkins.war --webroot=/var/cache/jenkins/war --httpPort=8080

May 09 13:53:19 ip-172-31-2-83 jenkins[3053]: 1d19abcd14154669aabb61f94fa7fc06
May 09 13:53:19 ip-172-31-2-83 jenkins[3053]: This may also be found at: /var/lib/jenkins/secrets/initialAdminPassword
May 09 13:53:19 ip-172-31-2-83 jenkins[3053]: *****
May 09 13:53:19 ip-172-31-2-83 jenkins[3053]: *****
May 09 13:53:25 ip-172-31-2-83 jenkins[3053]: 2025-05-09 13:53:25.001+0000 [id=32] INFO jenkins.InitReactorRunner$1onAttained: Completed initialization
May 09 13:53:25 ip-172-31-2-83 jenkins[3053]: 2025-05-09 13:53:25.024+0000 [id=23] INFO hudson.lifecycle.Lifecycle$onReady: Jenkins is fully up and running
May 09 13:53:25 ip-172-31-2-83 systemd[1]: Started jenkins.service - Jenkins Continuous Integration Server.
May 09 13:53:26 ip-172-31-2-83 jenkins[3053]: 2025-05-09 13:53:26.577+0000 [id=49] INFO hudson.DownloadService$Downloadable$Load: Obtained the updated data file
May 09 13:53:26 ip-172-31-2-83 jenkins[3053]: 2025-05-09 13:53:26.578+0000 [id=49] INFO hudson.util.Retrier$start: Performed the action check updates server
lines 1-20/20 (END)
```

Step 1: Create 4 Freestyle Projects (Jobs) in Jenkins:

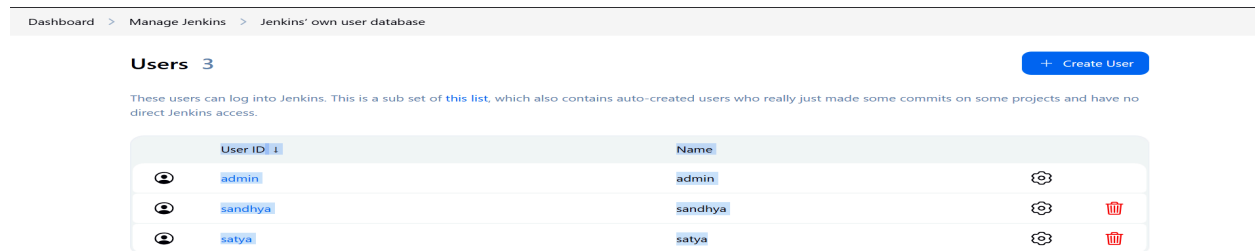
How to create jobs:

1. Navigate to Jenkins Dashboard
2. Click on New Item.
3. Enter a name (e.g., dev-ui) and select Freestyle Project.
4. Configure the project as required (e.g., source code, build steps).
5. Repeat for the other 3 jobs (dev-qa, prod-ui, prod-qa).



Step 2: Create Users (Satya and Sandhya):

6. Go to Manage Jenkins → Security → Users
7. Click Create User.
8. Enter Username, Password, Full Name, and Email for both users:
9. Satya
10. Sandhya
11. Click Create User after entering the details for each.



Step 3: Install RBAC plugin

12. Go to Manage Jenkins → Manage Plugins → Available tab.
13. Search for Role-based Authorization Strategy.
14. Select it and click Install without Restart.
15. After installation, restart Jenkins for the changes to take effect.

Step 4: Configure Jenkins Security Settings

16. Go to Manage Jenkins → Security.
17. Under Security Realm, select Jenkins' own user database for authentication.
18. Under Authorization, select Role-Based Strategy.
19. Click Save.

Step 5: Create Roles and Define Permissions

20. Create Roles for Users: Go to Manage Jenkins → Manage and Assign Roles → Manage Roles.
21. Global Roles: developer:Permissions: Give this role Overall > Read to allow users to see Jenkins UI and jobs.
22. Item Roles (specific to projects/jobs):
 - prod-role (for production jobs):
 - Pattern: prod.* (Matches jobs like prod-ui, prod-qa).
 - Permissions:
 - Job > Build: Allows building prod jobs.
 - Job > Configure: Allows configuring prod jobs.
 - Job > Read: Allows reading prod jobs.
 - Job > Cancel: Allows canceling prod jobs.

Sandhya: Assign the dev-role to Sandhya for dev. jobs*.

Dashboard > Manage Jenkins > Manage and Assign Roles > Assign Roles

Assign Roles

Manage Roles

Assign Roles

Permission Templates

Role Strategy Macros

Global roles

User/Group	admin	developer
Anonymous	<input type="checkbox"/>	<input type="checkbox"/>
Authenticated Users	<input type="checkbox"/>	<input type="checkbox"/>
admin	<input checked="" type="checkbox"/>	<input type="checkbox"/>
sandhya	<input type="checkbox"/>	<input checked="" type="checkbox"/>
satya	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Add User

Add Group

Item roles


User/Group	dev-role	prod-role
Anonymous	<input type="checkbox"/>	<input type="checkbox"/>
Authenticated Users	<input type="checkbox"/>	<input type="checkbox"/>
sandhya	<input checked="" type="checkbox"/>	<input type="checkbox"/>
satya	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Add User

Add Group

Step 7: Verify User Access

27. Login as Satya: Navigate to the Jenkins login page and log in with Satya's credentials. Satya should be able to see and access only the prod-ui and prod-qa jobs. Satya should not see or have access to dev-ui or dev-qa jobs.
28. Login as Sandhya: Navigate to the Jenkins login page and log in with Sandhya's credentials. Sandhya should be able to see and access only the dev-ui and dev-qa jobs. Sandhya should not see or have access to prod-ui or prod-qa jobs.

 Build History

☐ My Views

Build Queue ▾

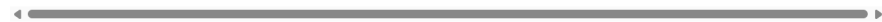
No builds in the queue.

Build Executor Status ▾

0/2 ▾

All

S	W	Name ↓	Last Success	Last Failure	Last Duration	
✓	☀	dev-qa	1 sec #2	N/A	7 ms	▶
✓	☀	dev-ui	8.2 sec #1	N/A	12 ms	▶



Icon: S M L

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 Build History

☐ My Views

Build Queue ▾

No builds in the queue.

Build Executor Status ▾

0/2 ▾

All

S	W	Name ↓	Last Success	Last Failure	Last Duration	
✓	☀	prod-qa	27 sec #1	N/A	42 ms	▶
✓	☀	prod-ui	1.1 sec #1	N/A	7 ms	▶



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