

Managing access control and authorization

- Managing access control and authorization
 - Go to **Manage Jenkins > Configure Global Security > Enable security.**
- Creating Users in Jenkins
 - Select **Manage Jenkins > Manage Users > Create a user**
- Maintaining roles and project-based security
 - Lets configure some users in Jenkins, create a read only user **readonlyuser**
 - Go to **Manage Jenkins > Configure Global Security > under Authorization > Select Project-based Matrix Authorization Strategy.**
 - Add **User/Group** configure security based on different sections such as **Overall,Credentials,Job,View** and so on.
 - Click on **Apply and Save.**

Project-based Matrix Authorization Strategy ?

This mode is an extension to "Matrix-based security" that allows additional ACL matrix to be defined for each project separately (which is done on the job configuration screen.)

This allows you to say things like "Joe can access project A, B, and C but he can't see D." See the help of "Matrix-based security" for the concept of matrix-based security in general.

ACLs are additive, so the access rights granted below will be effective for all the projects.

(from [Matrix Authorization Strategy Plugin](#))

User/group	Overall	Credentials	Agent				Job				Run	View	SCM	Lockable Resources																																																																																																																																																																																																																																																																																																																																																			
	Administer	Read Create Delete Update View Manage Domains	Build Configure Connect Create Delete Disconnect	Build Cancel Configure	Create Delete Discover Move Read Workspace	Replay Delete Update Configure	Create Delete Read Tag Reserve Steal Unlock View																																																																																																																																																																																																																																																																																																																																																										
Anonymous	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<

- Use another browser and try to access the Jenkins dashboard with a newly added user. This User will not be able to see all the options in Jenkins Dashboard.

Jenkins

Search

test user

log out

Dashboard

People

Build History

Project Relationship

Check File Fingerprint

My Views

Build Queue

No builds in the queue.

Build Executor Status

1 Idle

2 Idle

All

S	W	Name	Last Success	Last Failure	Last Duration
		jenkins-freestyle-job	12 hr #12	N/A	2.5 sec
		jenkins-pipeline-test-job	6 days 12 hr #20	6 days 12 hr #18	5.9 sec

Icon: S M L

Atom feed for all

Atom feed for failures

Atom feed for just latest builds

- Here, the user is not able to see the **Configure** Option under a specific Job, because Job Specific Permissions are granted.

The screenshot shows the Jenkins web interface. At the top, there's a header with the Jenkins logo, a search bar, and user information (test user, log out). Below the header, the breadcrumb trail is 'Dashboard > jenkins-freestyle-job'. On the left sidebar, there are links for 'Back to Dashboard', 'Status', 'Changes', 'Build with Parameters', 'GitHub Hook Log', and 'Build History' (which is selected and shows a 'trend' view). The main content area is titled 'Project jenkins-freestyle-job' and includes a 'Recent Changes' section with a list of builds: #12 (Mar 2, 2022 3:47 AM), #11 (Mar 2, 2022 3:43 AM), #10 (Mar 2, 2022 3:26 AM), #9 (Mar 2, 2022 3:24 AM), #8 (Mar 2, 2022 3:02 AM), and #7 (Feb 22, 2022 3:26 AM). Below the build list, there's a 'Permalinks' section with links to 'Last build (#12, 12 hr ago)', 'Last stable build (#12), 12 hr ago', 'Last successful build (#12), 12 hr ago', and 'Last completed build (#12), 12 hr ago'.

Role-Based Strategy

- Add plugin from available tab in Plugins Manager i.e **Role Based Authorized Strategy**
- To enable **Role-Based Strategy**, Go to **Manage Jenkins > Configure Global Security > Select the Role-based Strategy**

The screenshot shows the 'Configure Global Security' page in Jenkins. The breadcrumb trail is 'Dashboard > Configure Global Security'. The page has a section titled 'Authorization' with several radio button options: 'Anyone can do anything', 'Legacy mode', 'Logged-in users can do anything', 'Matrix-based security', 'Project-based Matrix Authorization Strategy', and 'Role-Based Strategy'. The 'Role-Based Strategy' option is selected, indicated by a blue dot.

- To Create a Role, Go to **Manage Jenkins > Manage and Assign Roles > Manage Roles > Role to add > Enter ReadOnlyRole**.

Security



Configure Global Security

Secure Jenkins; define who is allowed to access/use the system.



Manage Credentials

Configure credentials



Manage and Assign Roles

Handle permissions by creating roles and assigning them to users/groups



Manage Users

Create/delete/modify users that can log in to this Jenkins

Manage and Assign Roles

Global roles

Role	Overall	Credentials	Agent	Job	Run
admin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ReadOnlyRole	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Role to add

ReadOnlyRole

Add

- Click on **Apply** and **Save**.
- To Assign this Role to a user, Go to **Manage Jenkins > Manage and Assign Roles > Assign Roles > Enter Username > Select Role to be assigned ReadOnlyRole**.

Assign Roles

Global roles

User/group	ReadOnlyRole	admin
No type prefix: admin	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Anonymous	<input type="checkbox"/>	<input type="checkbox"/>
testuser	<input checked="" type="checkbox"/>	<input type="checkbox"/>

User/group to add

testuser

Add

- Use another browser and try to access the Jenkins dashboard with a user to check permissions in the Role are applied.

Jenkins Github Webhook

- Integrate jenkins with github so automatically CICD works when any commit is made to the repo Go to **Jenkins > Manage Jenkins > Configure System > Add a Github Server > Enter URL : <http://public-ip:8080/github-webhook/>**
- Lets add a webhook in Github to point to Jenkins URL
- In **Github Repository > Go to Repository > Settings > Go to webhook and addnew webhook > Specify <http://public-ip:8080/github-webhook/>**
- Go to Jenkins Project, Select the **GitHub hook trigger for GITScm polling** checkbox under Build Triggers tab > **Save**
- For Webhook to work, open port **8080** in security group for IP address of Github.
- Now if we make some changes to some file in Github, this Jenkins Project should be triggered.
- Jenkins receives a Github Payload similar to this [Github Push Webhook Event Payload](#)

Audit Trail Plugin

- Manage Jenkins > Manage Plugins > Install the **Audit Trail** Plugin.
- Go to **Manage Jenkins > Configure Systems > Audit Trail > Add Logger > Select Log**

- Provide the Log Location as `/var/log/jenkins/audit-%g.log`, provide Log File Size as `50` and Log File Count `10`.
- After executing some build job for some Jenkins Project, check the content of the audit file.

```
ls -ltr /var/log/jenkins/
```

> Audit Trail Plugin keeps a log of users who performed particular Jenkins operations, such as configuring jobs.

This plugin adds an Audit Trail section in the main Jenkins configuration page.

Here you can configure log location and settings (file size and number of rotating log files), and a URI pattern for requests to be logged. The default options select most actions with significant effect such as creating/configuring/deleting jobs and views or delete/save-forever/start a build. The log is written to disk as configured and recent entries can also be viewed in the Manage / System Log section.