

**Practice for Lesson 3: Assign
Roles to User and Build
Master-slave configuration in
Jenkins Instance**

Practices for Lesson 3

Overview

In these practices, you will assign Role based authorization plugins to users created in Jenkins instance. Further, you will learn how to build a master-slave configuration on a Jenkins instances and followed by Backing up the configuration files of Jenkins in the AWS EC2 instance.

Practice 3-1: Assign Role Based Authorization Plugin to New Users

Overview

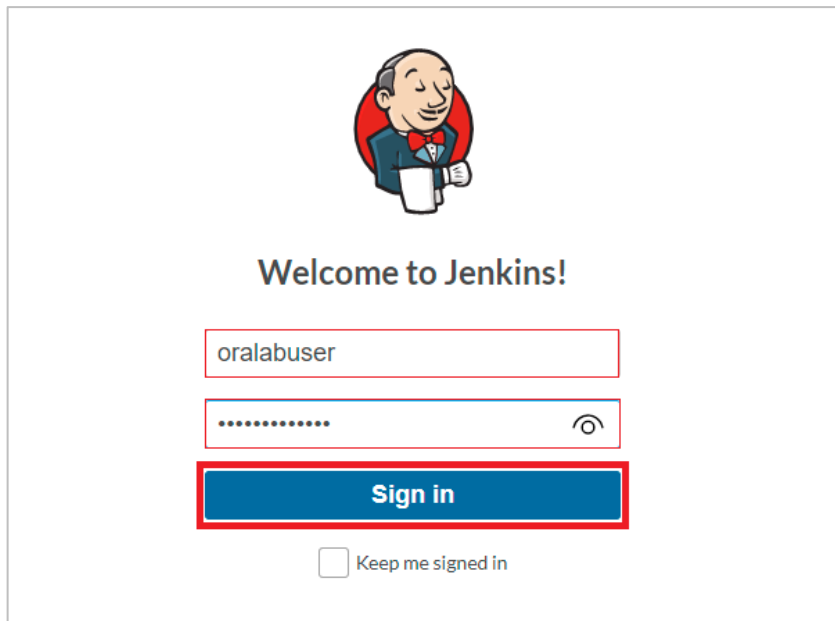
In this practice, you will learn to assign Role based authorization plugins to new users created in Jenkins Instance.

Assumptions

You should have completed the Practice of Lesson 2.

Tasks

1. Sign in to **Jenkins Instance Dashboard**.
 - a. In a browser on your local machine, enter the **Public IP** address of the EC2 instance followed by the IP address to sign in to the Jenkins Dashboard (for example, **34.208.77.168:8080**).

A screenshot of the Jenkins login page. At the top center is the Jenkins logo, a cartoon character with a red bow tie. Below the logo, the text "Welcome to Jenkins!" is displayed. Underneath, there are two input fields: the first contains the username "oralabuser", and the second contains a masked password "....." with a toggle icon on the right. Below these fields is a blue "Sign in" button, which is highlighted with a red rectangular border. At the bottom, there is a checkbox labeled "Keep me signed in".

- b. Enter the user name and password provided.
 - c. You will have access to the Jenkins Dashboard.
2. Install Role-based plugin on Jenkins AWS Instance.
 - a. In the Jenkins Instance Dashboard, navigate to **Main menu** and select **Manage Jenkins** as shown below.

The screenshot shows the Jenkins Dashboard. The left sidebar contains links: New Item, People, Build History, **Manage Jenkins** (highlighted with a red box), My Views, Lockable Resources, and New View. The main content area shows a table of jobs:

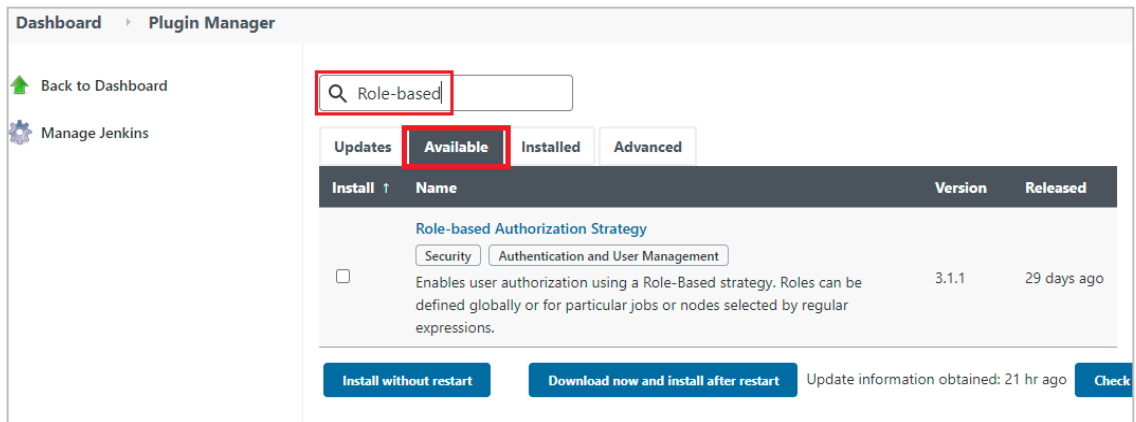
S	W	Name ↓	Last Success	Last Failure
		First_Job	5 days 20 hr - #1	N/A
		Git_Job	4 days 23 hr - #1	N/A

Below the table, there are links for 'Icon: S M L', 'Legend', and 'Atom feed for...'. At the bottom of the sidebar, there is a link for 'Build Executor Status'.

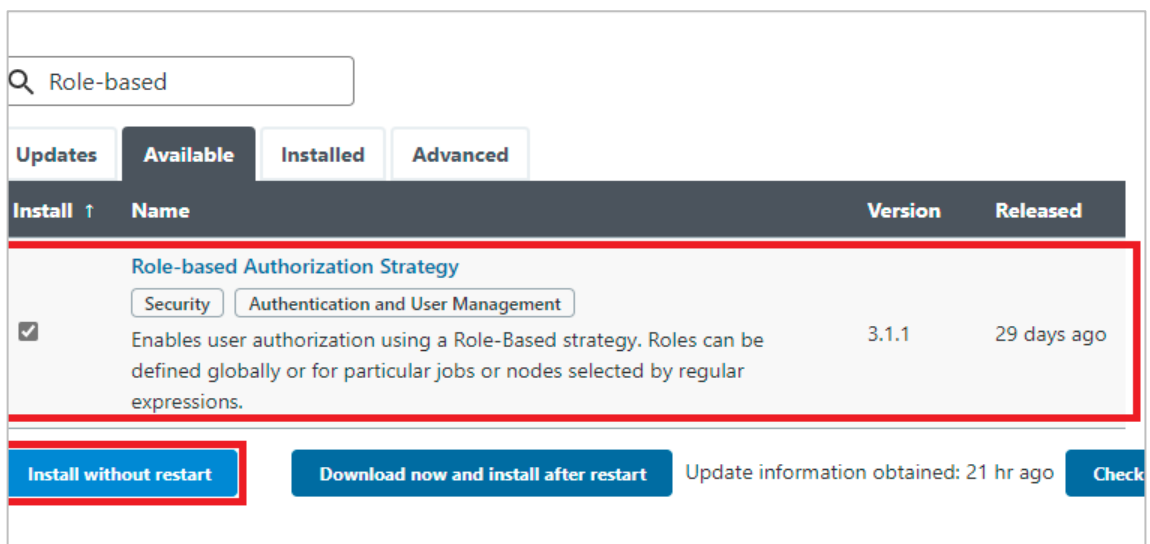
b. Under **System Configuration** select **Manage Plugins** as shown below.

The screenshot shows the 'Manage Jenkins' page. The left sidebar is the same as the previous screenshot. The main content area has a header 'Manage Jenkins' and a notification: 'New version of Jenkins (2.287) is available for [download](#) ([changelog](#)).'. Below this is the 'System Configuration' section with three options: 'Configure System' (gear icon), 'Global Tool Configuration' (wrench icon), and **Manage Plugins** (puzzle piece icon, highlighted with a red box). The 'Manage Plugins' option includes the text: 'Add, remove, disable or enable plugins that can extend the functionality of Jenkins.' and a red bell icon with the text 'There are updates available'. To the right of 'Manage Plugins' is the 'Manage Nodes and Clouds' option (computer icon).

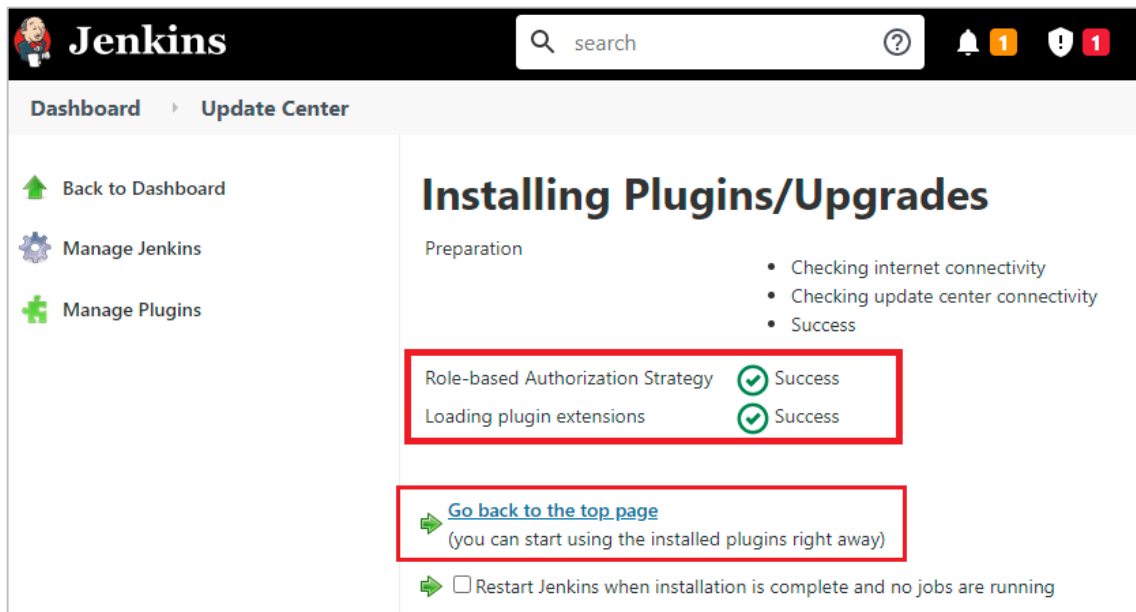
c. Select **Available** and type Role-based in the search bar (press Enter).



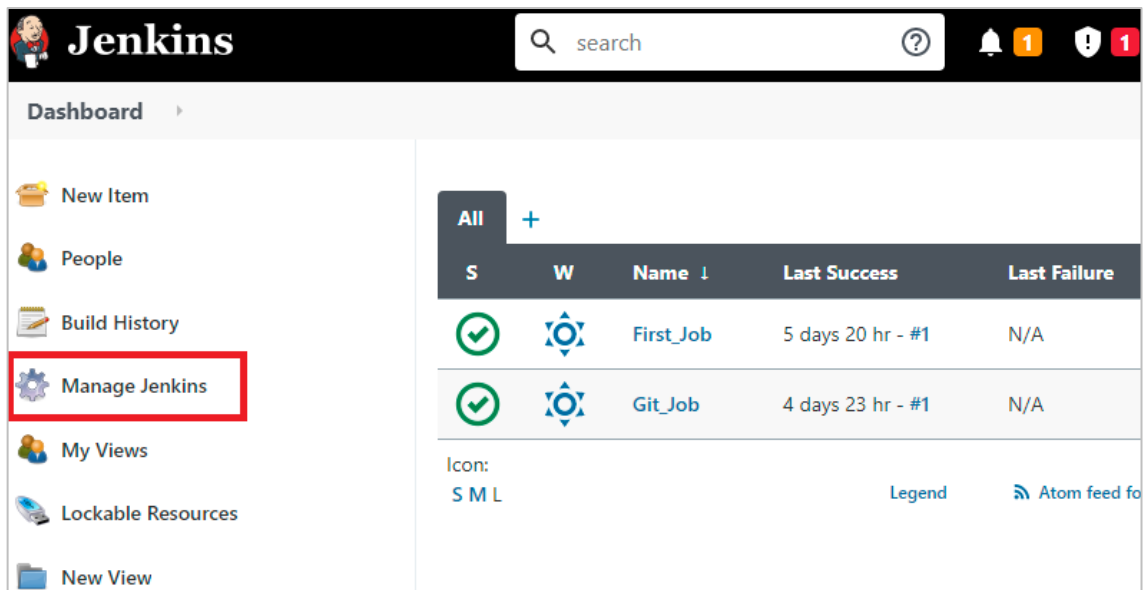
- d. The **Role-based Authorization Strategy** plugin appears, select the check box and click **Install without restart** as shown below.



- e. The installation process will proceed and Success message will be displayed as shown below.





3. Verify and enable the Role-based plugin in the Jenkins instance.
 - a. Navigate to **Main menu** and select **Manage Jenkins** as shown below.






- b. Select **Configure Global Security** under **Security** as shown below.

System Configuration



Configure System
 Configure global settings and paths.



Global Tool Configuration
 Configure tools, their locations and automatic installers.



Manage Plugins
 Add, remove, disable or enable plugins that can extend the functionality of Jenkins.
 There are updates available



Manage Nodes and Clouds
 Add, remove, control and monitor the various nodes that Jenkins runs jobs on.

Security



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



Manage Credentials
 Configure credentials


Configure Credential Providers
 Configure the credential providers and types


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

Status Information


System Information
 Displays various environmental information to assist trouble-shooting


System Log
 System log captures output from `java.util.logging` output related to Jenkins

- c. In **Configure Global Security** page scroll down to **Authorization** and select radio button of **Role-Based Strategy**, and click **Save**.

Dashboard > Configure Global Security

Configure Global Security

Authentication

- ☐ Disable remember me

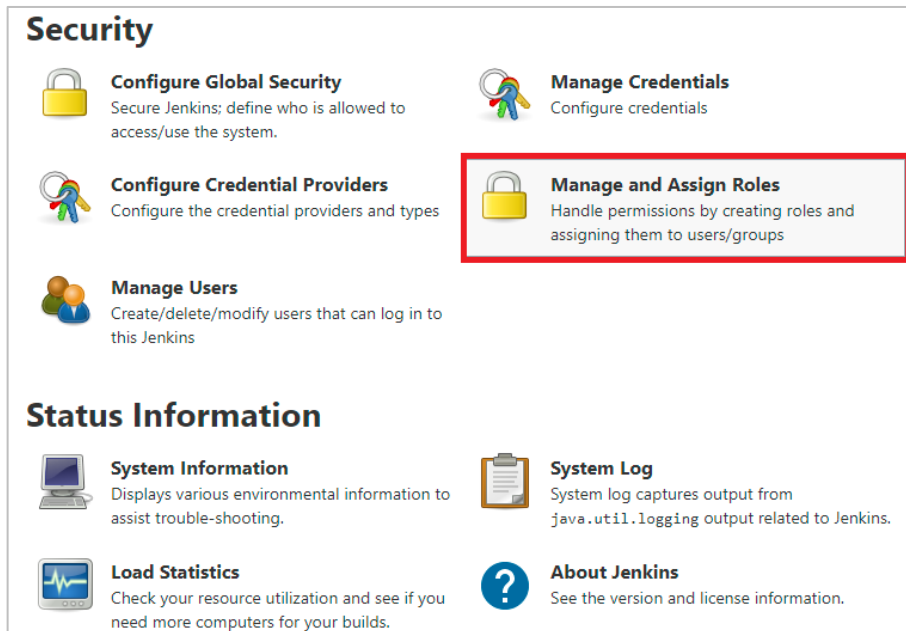
Security Realm

- ☐ Delegate to servlet container
- ☒ Jenkins' own user database
 - ☐ Allow users to sign up
- ☐ LDAP
- ☐ Unix user/group database
- ☐ None

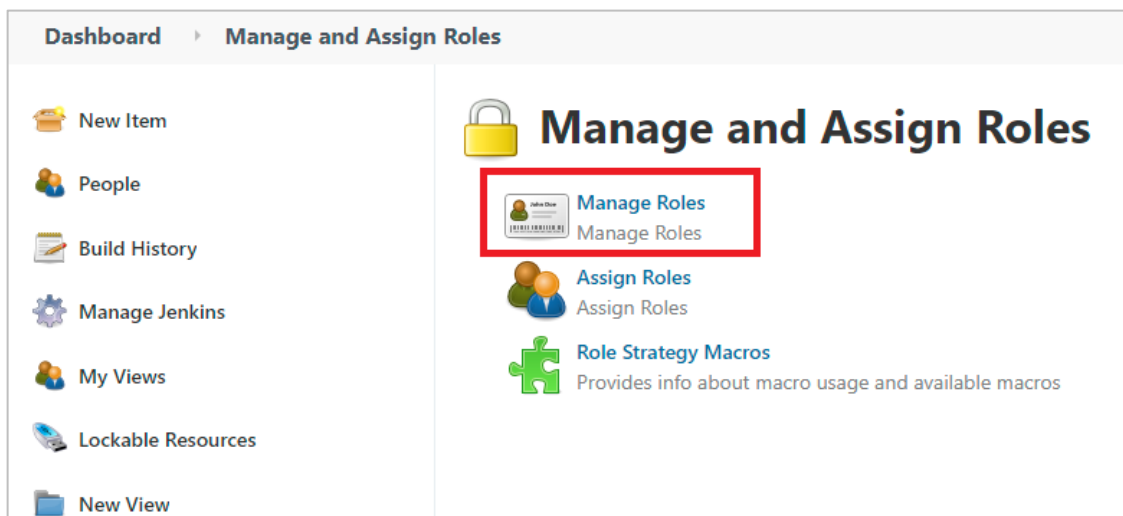
Authorization

- ☐ Anyone can do anything
- ☐ Legacy mode
- ☐ Logged-in users can do anything
- ☐ Matrix-based security
- ☐ Project-based Matrix Authorization Strategy
- ☒ Role-Based Strategy

4. Create Developer Role in Jenkins instances.
 - a. Navigate to **Manage Jenkins** and select **Manage and Assign Roles** under **Security** as shown below.



- b. In **Manage and Assign Roles** select **Manage Roles** to create a new role as shown below.



- c. In Manage Roles page, under **Global roles** click **Add** and provide the Name for the role in **Role to add** as **Developer**.

Manage Roles

Global roles

Role	Overall	Credentials						Agent					
	Administer	Read	Create	Delete	ManageDomains	Update	View	Build	Configure	Connect	Create	Delete	Disconnect
admin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Role to add

Developer

Add

Item roles

Role	Pattern	Credentials						Job					
		Create	Delete	ManageDomains	Update	View	Build	Cancel	Configure	Create	Delete	Discover	Move

- d. As shown below, select the check boxes for the Developer role.

Manage Roles

Global roles

Role	Overall	Credentials						Agent											
	Administer	Read	Create	Delete	ManageDomains	Update	View	Build	Configure	Connect	Create	Delete	Disconnect	Provision	Build	Cancel	Configure	Create	Delete
admin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Developer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Role to add

Developer

Add

- e. Select the check boxes by scrolling to right of the page as shown below.

Job										Run			View		SCM	Lockable Resources					
Disconnect	Provision	Build	Cancel	Configure	Create	Delete	Discover	Move	Read	Workspace	Delete	Replay	Update	Configure	Create	Delete	Read	Tag	Reserve	Unlock	View
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- f. Scroll down and select **Save** to save the new role.

Node roles

Role	Pattern	Credentials	Agent	Lockab							
Create	Delete	ManageDomains	Update	View	Build	Configure	Connect	Delete	Disconnect	Provision	Reserve

Role to add

Pattern


[?](#)


[Add](#)


[Save](#) [Apply](#)


5. Create a new user on the Jenkins instance.
 - a. Navigate to **Manage Jenkins** and select **Manage Users** under **Security** as shown below.


Security


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



Manage Credentials
 Configure credentials



Configure Credential Providers
 Configure the credential providers and types


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

Status Information


System Information
 Displays various environmental information to assist trouble-shooting.





System Log
 System log captures output from java.util.logging output related to Jenkins.

- b. Select **Create User** and provide the following details as shown below.



Jenkins

Dashboard > Jenkins' own user database

 Back to Dashboard
 Manage Jenkins
 **Create User**

Create User

Username:
 Password:
 Confirm password:
 Full name:
 E-mail address:

Create User

c. Once the details are provided, click **Create User** as shown below.


Create User

Username:
 Password:
 Confirm password:
 Full name:
 E-mail address:

Create User






d. The new user is created successfully as shown below.

Dashboard > Jenkins' own user database

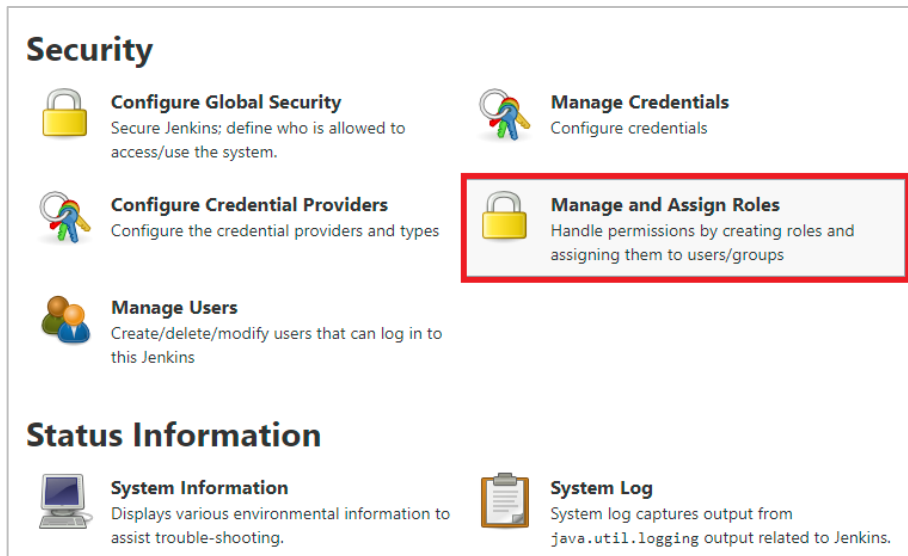
 Back to Dashboard
 Manage Jenkins
 Create User

Users

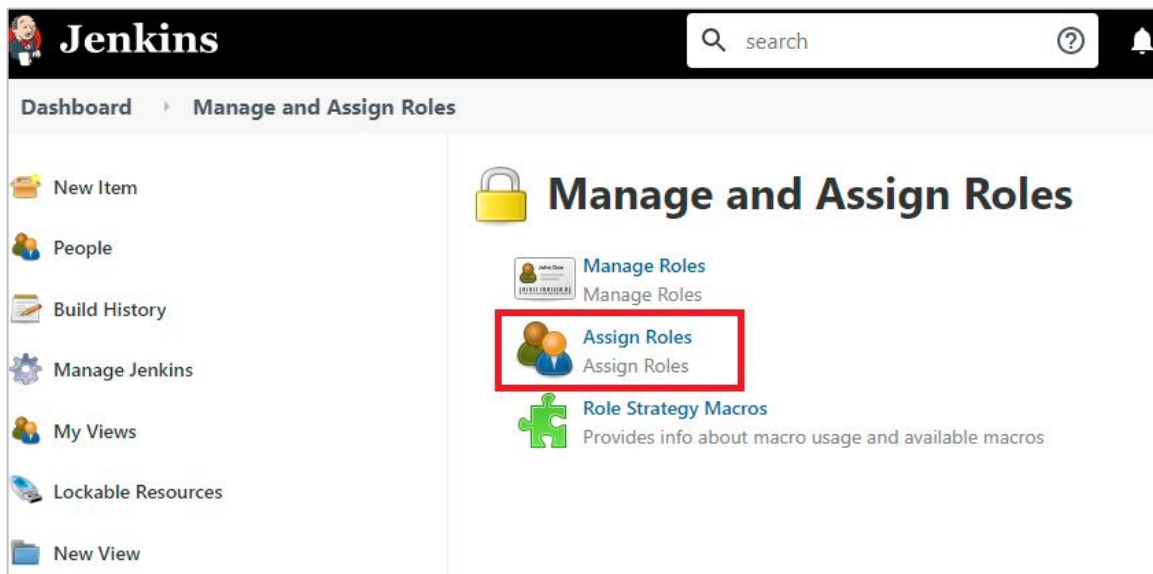
These users can log into Jenkins. This is a sub set of [this list](#), which also contains auto-created users who really just made some commits on some projects and have no direct Jenkins access.

User ID	Name	
 developer1	developer1	 
 oralabuser	oralabuser	

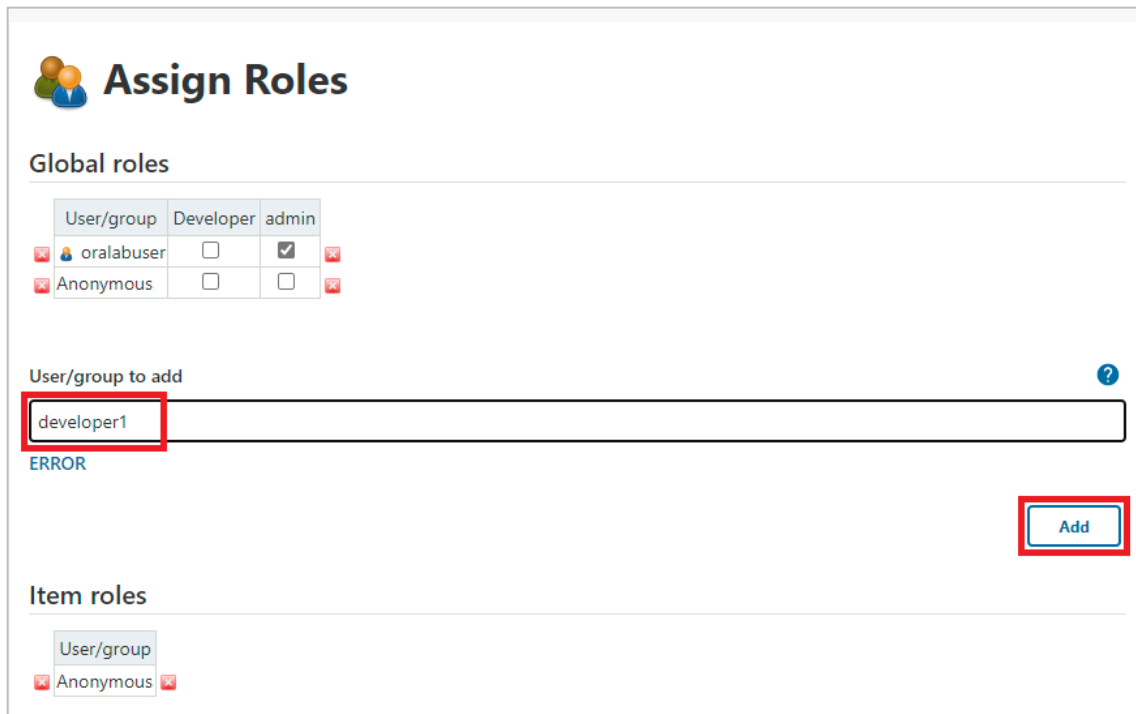
6. Set role for the new developer user created in Jenkins instance.
 - a. Navigate to **Manage Jenkins** and select **Manage and Assign Roles** under **Security** as shown below.



- b. In **Manage and Assign Roles** page, select **Assign Roles** as shown below.



- c. Type the user name in the **User/group to add** and click **Add** as shown below.



Assign Roles

Global roles

User/group	Developer	admin
<input checked="" type="checkbox"/> oralabuser	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Anonymous	<input type="checkbox"/>	<input type="checkbox"/>

User/group to add ?

developer1

ERROR

Add

Item roles

User/group
<input checked="" type="checkbox"/> Anonymous

- d. The new user is being listed under **Global roles** successfully. Select the **Developer** check box to assign the **Developer** role to the new user.



Assign Roles

Global roles

User/group	Developer	admin
<input checked="" type="checkbox"/> oralabuser	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Anonymous	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> developer1	<input checked="" type="checkbox"/>	<input type="checkbox"/>

- e. Scroll down and click **Save** to assign role to the new user created in the Jenkins.

Node roles

User/group

☒ Anonymous ☒

User/group to add ?

ERROR

7. Verify the permissions of the new developer user with the assigned role.
 - a. Logout from the current admin user and login as developer user with the new credentials as shown below.



The image shows the Jenkins login page. At the top is the Jenkins logo (a cartoon man in a tuxedo). Below it is the text "Welcome to Jenkins!". Underneath is a text input field containing "developer1". Below that is a password input field with masked characters ".....". At the bottom is a blue "Sign in" button.

- b. On successful Sign in, the Jenkins Dashboard is shown as below. The developer1 user will not be able to create a new job or trigger an existing Job as developer1 user does not have the required privileges, the required role is not added to this user.

search

developer1

log out

Dashboard

People

Build History

My Views

Credentials

New View

Build Executor Status

1 Idle

2 Idle

add description

All

S	W	Name ↓	Last Success	Last Failure	Last Duration
		First_Job	5 days 22 hr - #1	N/A	70 ms
		Git_Job	5 days 0 hr - #1	N/A	1,1 sec

Icon:

S M L

Legend

Atom feed for all

Atom feed for failures

Atom feed for just latest builds

- Keep the Jenkins Dashboard and the AWS Management Console open for the next practice.

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Practice for Lesson 3: Assign Roles to User and Build Master-slave configuration in Jenkins Instance

15