# Jenkins Server on a Private Subnet

## 1. Setting Up VPC Resources

### NAT Gateway

Create a NAT Gateway inside a public subnet of the default VPC:

Graphical user interface, text, application, email

Description automatically generated

### Private Subnets

Create two private subnets:

Graphical user interface, application

Description automatically generated

Graphical user interface, application

Description automatically generated

Confirm creation of the two subnets:

Graphical user interface, text, application

Description automatically generated

### Private Route Table

Create a private route table:

Graphical user interface, text, application, email

Description automatically generated

Edit route to include the NAT gateway as a destination:

Graphical user interface, text, application, email

Description automatically generated

Add the Private Subnets to the subnet associations:

Graphical user interface, table

Description automatically generated

### Jumphost

Create a public EC2 to be used as a jumphost:

Graphical user interface, text, application

Description automatically generated

Graphical user interface, application

Description automatically generated

Graphical user interface, application

Description automatically generated

### ALB

Create an application load balancer for Jenkins Server GUI access: Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Create Security Group:Graphical user interface, text, application

Description automatically generated

Graphical user interface, application, Teams

Description automatically generated

Target Group:Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, application

Description automatically generated

Confirm target group:Graphical user interface, text, application

Description automatically generated

Back to ALB setup:Graphical user interface, text, application, email

Description automatically generated

### Private EC2

Create a private EC2 to set up as the Jenkins Server:

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface, text, application, email

Description automatically generated

Graphical user interface

Description automatically generated

Ensure that the inbound rules include SSH access from Jumphost Server’s security group and 8080 access from ALB’s security group:Graphical user interface, application

Description automatically generated

Bootstrap script to install Jenkins (*setup\_jenkins\_server.sh*):

Graphical user interface, text, application, letter

Description automatically generated

## 2. Confirm Jenkins Access and Server Setup

Navigate to the DNS of ALB created (<http://jenkins-alb-1997639621.us-east-1.elb.amazonaws.com>) and follow instructions on setting up the Jenkins server:

Graphical user interface, text, application, email

Description automatically generated

To get the initial administrator password: first, send the private key from local machine to Jenkins Jumphost:



SSH into the Jumphost EC2 and confirm file was received:



From the Jumphost, SSH into the private Jenkins server using the private IP address:

Text

Description automatically generated

Retrieve the password from /var/lib/jenkins/secrets/initialAdminPassword:



Enter the password in the GUI and then install the suggested plugins:

Graphical user interface

Description automatically generated

Setup the administrator user:

Graphical user interface, application

Description automatically generated

*Username: klgroup4*

*Password: KLgroup4\**

Save Jenkins URL configuration:

Graphical user interface, text, application, email

Description automatically generated

Confirm Jenkins is up and running:Graphical user interface, application, Teams

Description automatically generated

## 3. Set Up CI/CD Pipeline

On Jenkins server, create a new multibranch pipeline:

Graphical user interface, text, application

Description automatically generated

Enter GitHub repo link to use for pipeline and select global credential set from earlier step:

Graphical user interface, application, Teams

Description automatically generated

Confirm creation of pipeline:

Graphical user interface, application

Description automatically generated