

6.Set up a Jenkins and run few sample jobs on a different server for deployments (download sample code from git and need to deploy in remote server)

Prerequisites:

- Jenkins installed and configured on a server (e.g., Jenkins Server)
- Git repository set up (e.g., Git-hub)
- Remote server with SSH access (e.g., Deployment Server)

Step 1: Install and Configure Jenkins

- Install Jenkins on the Jenkins Server
- Configure Jenkins by setting up the administrator account and plugins

Step 2: Create a New Jenkins Job

- Log in to Jenkins and click on "New Item"
- Enter a job name (e.g., "Demo") and select "Freestyle project"
- Click "OK"

Step 3: Add Credentials and publish over ssh

- Dashboard-Manage Jenkins-Credentials-Click on global (Add details e.g,name,kind,username,Private key)
- Dashboard-Manage Jenkins-add Jenkins URL(e.g,[HTTP://65.1.85.248:8080/](http://65.1.85.248:8080/))-Publish over SSH-add SSH server-Name(Ubuntu)-Host name(e.g,65.1.85.248)-username(**Ubuntu**)-Remote Directory(**/var/www/myapp**)-click on Apply and Save.
- Dashboard-Manage Keys-Security-Git Host Key Verification Configuration-Manually Provided Keys-apply-save.

Step 4: Configure Git Repository

- In the job configuration page, scroll down to the "Source Code Management" section
- Select "Git" and enter the repository URL (e.g.,(<https://git-hub.com/Noorjahan153/github-ass1.git>))
- Adding webhook from github (<http://65.1.85.248:8080/github-webhook/>)
- Click "Save"
- Credentials-(e.g,Ubuntu)
- Build Triggers-(Git-hub hook trigger for GiTScm polling)
- Build Environment(Send files or execute command over SSH after the build runs)
- Add SSH Server(E.g,Name,Source Files,etc..)
- Build Steps-Execute Shell-Apply-Save.

Step 6: Run the Job

- Click on "Build Now" to run the job
- Jenkins will clone the Git repository and deploy the code to the remote server using SSH

Expected Outcome:

- Jenkins will successfully deploy the code to the remote server
- The deployment will be successful, and the log will show "Finished: SUCCESS"
- Test the Deployment(Open a web browser e.g,(<http://65.1.85.248/Jenkins.html>))

Commands

- Installing Jenkins

```
1 sudo apt update
2 sudo apt install fontconfig openjdk-17-jre
3 java -version
4 sudo wget -O /usr/share/keyrings/jenkins-keyring.asc
  https://pkg.jenkins.io/debian/jenkins.io-2023.key
5 echo "deb [signed-by=/usr/share/keyrings/jenkins-keyring.asc]" https://pkg.jenkins.io/debian
  binary/ | sudo tee /etc/apt/sources.list.d/jenkins.list > /dev/null
6 sudo apt-get update
7 sudo apt-get install jenkins
8 sudo cat /var/lib/jenkins/secrets/initialAdminPassword
```

- Create SSH directory for Jenkins

```
9 sudo mkdir -p /var/lib/jenkins/.ssh
```

- Add remote server to known_hosts to avoid SSH prompts

```
10 sudo ssh-keyscan -H 65.1.85.248 | sudo tee -a /var/lib/jenkins/.ssh/known_hosts
```

- Set permissions for Jenkins SSH directory and files

```
11 sudo chmod 700 /var/lib/jenkins/.ssh
sudo chmod 644 /var/lib/jenkins/.ssh/known_hosts
sudo chown -R jenkins:jenkins /var/lib/jenkins/.ssh
```

- Switch to Jenkins user and test SSH connection

```
12 sudo -u jenkins -i
ssh -i /var/lib/jenkins/.ssh/id_rsa ubuntu@65.1.85.248
```

- Install Apache on the remote server

```
13 sudo apt install apache2
```

- Move Jenkins.html to Apache's web directory

```
14 sudo mv /var/www/html/Jenkins.html /home/ubuntu/deployment/
sudo mv /home/ubuntu/deployment/Jenkins.html /var/www/html/
```

- Set permissions for the moved file

```
15 sudo chmod 644 /var/www/html/Jenkins.html
sudo chown www-data:www-data /var/www/html/Jenkins.html
```

- Restart Apache to apply changes

```
16 sudo systemctl restart apache2
```

- Copy Jenkins.html from Jenkins workspace to the remote server

```
17 scp -i /var/lib/jenkins/.ssh/id_rsa /var/lib/jenkins/workspace/RemoteServer/Jenkins.html
  ubuntu@65.1.85.248:/home/ubuntu/deployment/
```

Instances | EC2 | ap-southeast-1 | EC2 Instance Connect | RemoteServer #21 | 404 Not Found | 404 Not Found | My Static Site

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#instancesv=3&case=tags:true%5C,client:false;\$regex=tags:false%5C,client:false

Services Search [Alt+S]

EC2 Dashboard
EC2 Global View
Events

▼ Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations

▼ Images
Images
AMIs
AMI Catalog

▼ Elastic Block Store
Volumes
Snapshots
Lifecycle Manager

▼ Network & Security
Security Groups

Instances (1/2) Info

Find Instance by attribute or tag (case-sensitive)

All states

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
Jenkins Instance	i-061fd6fce712162cb	Running	t2.micro	2/2 checks passed	View alarms	ap-south-1a	ec2-65-1-85-248.ap-so...

i-061fd6fce712162cb (Jenkins Instance)

Details | Status and alarms | Monitoring | Security | Networking | Storage | Tags

▼ Instance summary Info

Instance ID
i-061fd6fce712162cb (Jenkins Instance)

Public IPv4 address
65.185.248 | open address

Private IPv4 addresses
172.31.63.101

Instance state
Running

Public IPv4 DNS
ec2-65-1-85-248.ap-south-1.compute.amazonaws.com | open address

IPv6 address
-

Private IP DNS name (IPv4 only)
ip-172-31-63-101.ap-south-1.compute.internal

Hostname type
IP name: ip-172-31-63-101.ap-south-1.compute.internal

Answer private resource DNS name

Elastic IP addresses

CloudShell Feedback

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Console Home | Console Home | Instances | EC2 | ap-south-1 | EC2 Instance Connect | ap-south-1 | Sign in [Jenkins]

Not secure 13.126.4.40:8080/login?from=%2F

Sign in to Jenkins

Username

Password

☐ Keep me signed in

Sign in

Console Home | Console Home | Launch an instance | EC2 | ap-south-1 | EC2 Instance Connect | (1) Day-19 | Jenkins Z | Jenkins-Zero-To-Hero | Setup Wizard [Jenkins]

Not secure 65.2.186.22:8080

Getting Started

Instance Configuration

Jenkins URL:

The Jenkins URL is used to provide the root URL for absolute links to various Jenkins resources. That means this value is required for proper operation of many Jenkins features including email notifications, PR status updates, and the BUILD_URL environment variable provided to build steps.

The proposed default value shown is **not saved yet** and is generated from the current request, if possible. The best practice is to set this value to the URL that users are expected to use. This will avoid confusion when sharing or viewing links.

Jenkins 2.471

Not now Save and Finish

Console Home | Launch an instance | Instances | EC2 | EC2 Instance Connect | (1) Day-19 | Jenkins | Jenkins-Zero-Topic | Dashboard | New Tab

Not secure 65.2.186.22:8080

Jenkins

Search (CTRL+K)

admin log out

Dashboard

- New Item
- Build History
- Manage Jenkins
- My Views

Build Queue

No builds in the queue.

Build Executor Status

0/2

Welcome to Jenkins!

This page is where your Jenkins jobs will be displayed. To get started, you can set up distributed builds or start building a software project.

Start building your software project

Create a job

Set up a distributed build

- Set up an agent
- Configure a cloud
- Learn more about distributed builds

REST API Jenkins 2.471

Instances | EC2 | ap-southeast-1 | EC2 Instance Connect | Instances | EC2 | ap-southeast-1 | RemoteServer Config | My Static Site | 404 Not Found | My Static Site

Not secure 65.1.85.248:8080/job/RemoteServer/configure

Jenkins

Search (CTRL+K)

admin log out

Dashboard > RemoteServer > Configuration

Configure

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

General

Enabled

Description

Plain text Preview

☐ Discard old builds

☒ GitHub project

Project url

https://github.com/Noorjahan153/github-ass1/blob/master/Jenkins.html/

Advanced

☐ This project is parameterized

☐ Throttle builds

Save Apply

Instances | EC2 | ap-southeast-1 | EC2 Instance Connect | Instances | EC2 | ap-southeast-1 | RemoteServer Config | My Static Site | 404 Not Found | My Static Site

Not secure 65.1.85.248:8080/job/RemoteServer/configure

Jenkins

Search (CTRL+K)

admin log out

Dashboard > RemoteServer > Configuration

Configure

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

Build Steps

Execute shell

Command

See the list of available environment variables

```
#!/bin/bash
# Define variables
WORKSPACE_PATH="/var/lib/jenkins/workspace/RemoteServer/"
REMOTE_USER="ubuntu"
REMOTE_SERVER="65.1.85.248"
DEPLOYMENT_DIR="/home/ubuntu/deployment/"

# Deploying files to remote server
echo "Deploying Jenkins.html to remote server"
scp -i ~/.ssh/id_rsa ${WORKSPACE_PATH}Jenkins.html ${REMOTE_USER}@${REMOTE_SERVER}:${DEPLOYMENT_DIR}
```

Advanced

Add build step

Save Apply

Instances | EC2 | ap-south-1 x EC2 Instance Connect | ap-south-1 x Instances | EC2 | ap-south-1 x RemoteServer #20 Console [Jenkins]

65.1.85.248:8080/job/RemoteServer/20/console

Dashboard > RemoteServer > #20 > Console Output

Status Console Output Changes Edit Build Information Delete build #20 Timings Git Build Data Previous Build

Console Output

Download Copy View as plain text

```
Started by user admin
Running as SYSTEM
Building in workspace /var/lib/jenkins/workspace/RemoteServer
The recommended git tool is: NONE
using credential e8a84d74-05a9-4d30-a695-b76a44b62a50
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/RemoteServer/.git # timeout=10
Fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/Noorjahan153/github-ass1.git # timeout=10
Fetching upstream changes from https://github.com/Noorjahan153/github-ass1.git
> git --version # timeout=10
> git --version # 'git version 2.43.0'
using GIT_SSH to set credentials
Verifying host key using manually-configured host key entries
> git fetch --tags --force --progress -- https://github.com/Noorjahan153/github-ass1.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/master^{commit} # timeout=10
Checking out Revision b668424e8a7778f455dcba84d73a58ac384d9b80 (refs/remotes/origin/master)
> git config core.sparsecheckout # timeout=10
> git checkout -f b668424e8a7778f455dcba84d73a58ac384d9b80 # timeout=10
Commit message: "Add files via upload"
> git rev-list --no-walk b668424e8a7778f455dcba84d73a58ac384d9b80 # timeout=10
[RemoteServer] $ /bin/bash /tmp/jenkins3545763123578611987.sh
Deploying Jenkins.html to remote server
SSH: Connecting from host [ip-172-31-63-101]
SSH: Connecting with configuration [Demo] ...
SSH: Disconnecting configuration [Demo] ...
SSH: Transferred 1 file(s)
Finished: SUCCESS
```

Instances | EC2 | ap-south-1 x EC2 Instance Connect | ap-south-1 x Instances | EC2 | ap-south-1 x RemoteServer #21 Console [Jenkins] x 404 Not Found x 404 Not Found x My Static Site x

65.1.85.248/jenkins.html

Welcome to My Static Site!

This is a sample static website deployed using Jenkins.