

COMSATS UNIVERSITY ISLAMABAD, ATTOCK CAMPUS



Assignment#4

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Reg # FA19-BCS-038

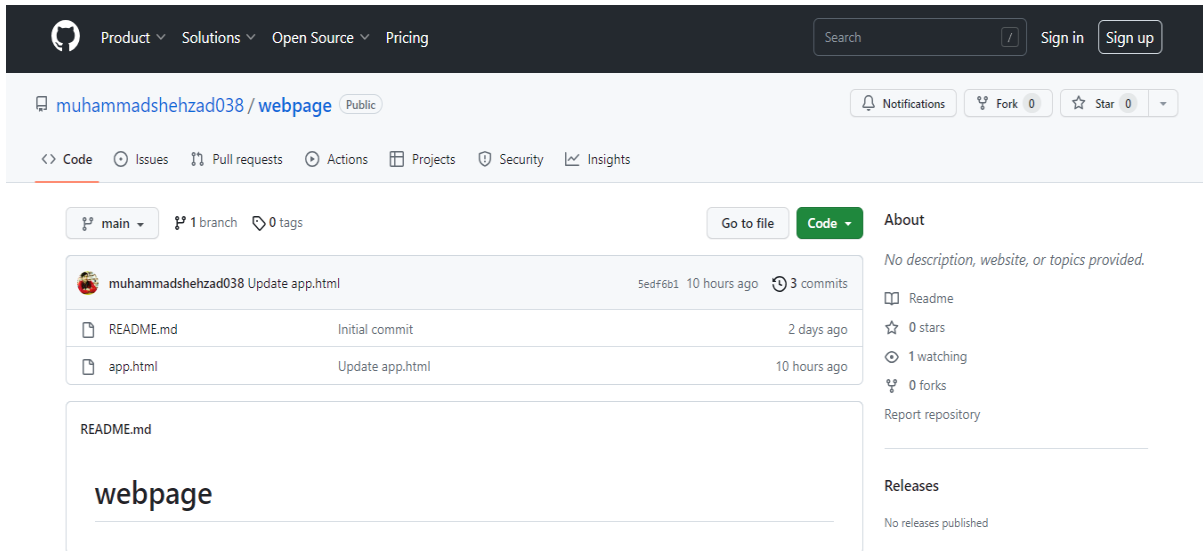
Class: BCS 8(A)

Subject: TICS

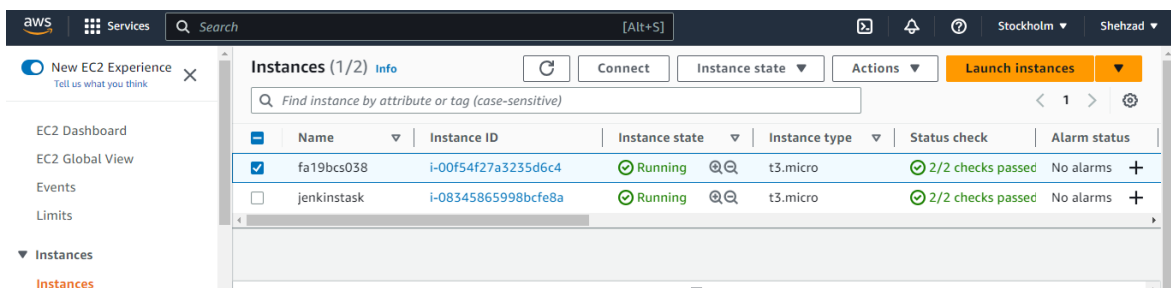
Dated: 19/June/2023

Jenkins CI/CD pipeline and deploying application on an AWS EC2 instance.

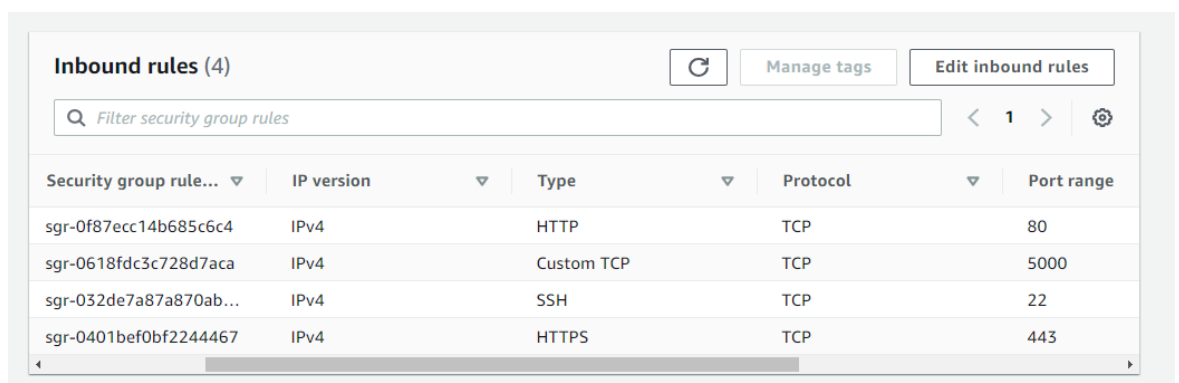
Set up a git repository:



AWS EC2 Instance:



- ✚ AWS EC2 (Elastic Compute Cloud) is a web service provided by Amazon Web Services that offers scalable computing capacity in the cloud. It allows you to provision virtual servers, known as instances, on-demand and configure them according to your specific requirements.



- ✚ Inbound rules refer to the rules that control the incoming network traffic to your instances. These rules define which protocols, ports, and IP addresses are allowed to access your instances.

Jenkins configuration:

Publish over SSH:

Dashboard > Manage Jenkins > System >

Publish over SSH

Jenkins SSH Key ?

Passphrase ?

🔒 Concealed

Change Password

Path to key ?

Key ?

-----BEGIN RSA PRIVATE KEY-----
MIIIEowlBAAKCAQEAsgeISWfObHmlKxPBy7wM3VyE8gcR+36nagDI7h+iTbagEFG
Wk1xCJPoo6zgTV7DBXqPEXkZMSzZzqXcG0eRejM+3gTOolFqTTyywUW5xUyK3XMA
coW5nyxsD646lnRqhrM61LmlHZyx5ptzNMvVwNu8RG8ncjP1gGqkRUW19KLnrjRS
QFEWQCT0ghbhuB.../4QCEkLUMfCfudTmYIN...kRNP3C...KVT...A...z...Q...

SSH Servers

SSH Server

Name ?

fa19bcs038-server

Hostname ?

16.16.215.51

Username ?

ec2-user

Remote Directory ?

/var/www/html

Publishing over SSH refers to the process of deploying or transferring files to a remote server using the SSH (Secure Shell) protocol. SSH provides a secure way to access and manage remote servers over an encrypted connection.

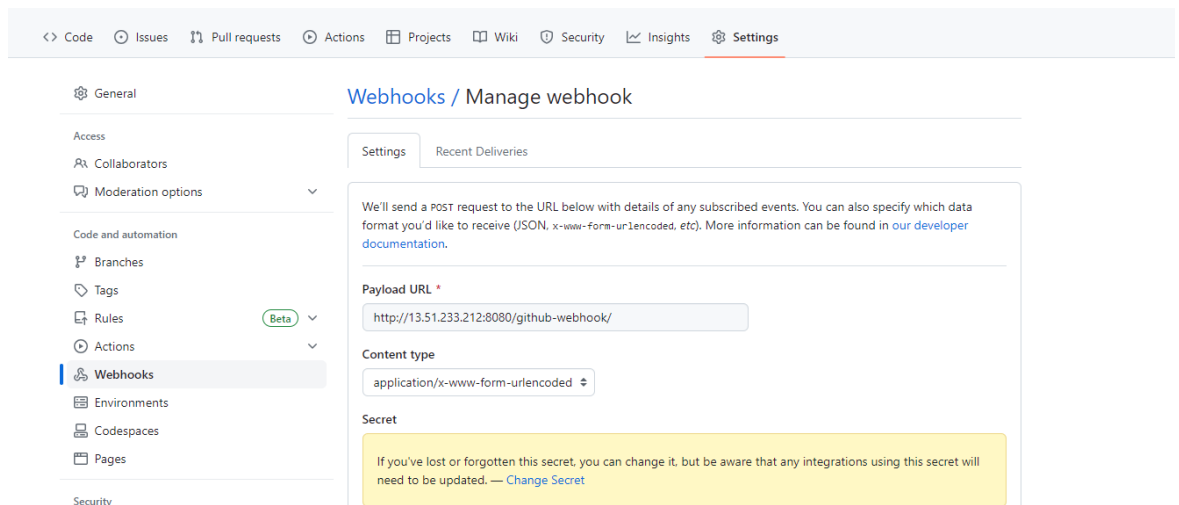
To publish files over SSH, you typically follow these steps:

- ✓ Set up SSH access: Ensure that you have SSH access to the remote server where you want to publish the files. This may involve generating SSH key pairs, configuring SSH access credentials, and ensuring the server is configured to accept SSH connections.
- ✓ Prepare your files: Gather the files that you want to publish to the remote server. These could be website files, application code, or any other files that need to be transferred.
- ✓ Connect to the remote server: Use an SSH client to establish a connection to the remote server. This can be done using the command-line interface (CLI) or an SSH client software like PuTTY (for Windows) or OpenSSH (for Linux).

- ✓ **Transfer files:** Once connected to the remote server, you can use SSH file transfer protocols like SCP (Secure Copy) or SFTP (Secure File Transfer Protocol) to transfer your files from your local machine to the remote server. These protocols provide secure file transfer capabilities over the SSH connection.
- ✓ **Verify file transfer:** After the files are transferred, you can verify that they have been successfully published to the remote server. You can check the file locations, permissions, and any other relevant details to ensure the files are in the expected location.

Configuring webhook in github repository setting:

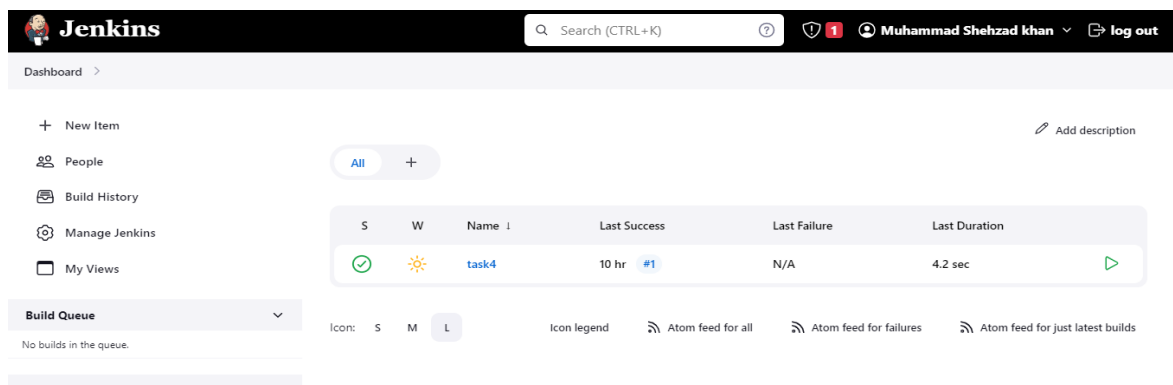
Webhooks in GitHub allow you to receive notifications about events that occur within your GitHub repositories. When certain actions or events take place, such as a new commit, a pull request, or a repository update, GitHub can send a payload of data to a specified URL, commonly known as a webhook.





Create a new job:

To create a new job in Jenkins, you can follow these steps:


- Log in to your Jenkins dashboard.
- Click on "New Item" or "Create new jobs" to start creating a new job.
- Provide a name for your job and select the type of job you want to create. Jenkins offers various types of jobs such as Freestyle project, Pipeline, Multibranch Pipeline, etc. Choose the appropriate type based on your requirements.
- Click on "OK" or "OK" button to proceed.



**Jenkins**

**1**


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 log out


Dashboard > All >

Enter an item name


» This field cannot be empty, please enter a valid name

**Freestyle project**

This is the central feature of Jenkins. Jenkins will build your project, combining any SCM with any build system, and this can be even used for something other than software build.

**Pipeline**

Orchestrates long-running activities that can span multiple build agents. Suitable for building pipelines (formerly known as workflows) and/or organizing complex activities that do not easily fit in free-style job type.

**Multi-configuration project**

Suitable for projects that need a large number of different configurations, such as testing on multiple environments, platform-specific builds, etc.

OK

Cancel

Configure a job:

Configure

General

Source Code Management

Build Triggers

Build Environment

Build Steps

Post-build Actions

Source Code Management

☐ None

☒ Git

Repositories

Repository URL

Credentials

- none -

Add

Configure

General

Source Code Management

Build Triggers

Build Environment

Build Steps

Post-build Actions

Build Triggers

☒ Trigger builds remotely (e.g., from scripts)

☐ Build after other projects are built

☐ Build periodically

☒ GitHub hook trigger for GITScm polling

☐ Poll SCM

Configure

General

Source Code Management

Build Triggers

Build Environment

Build Steps

Post-build Actions

☒ Send files or execute commands over SSH after the build runs

SSH Publishers

SSH Server Name

fa19bcs038-server

Advanced

Transfers

Transfer Set

Source files

Remove prefix

Build process:

Dashboard > task4 > #1

Status

</> Changes

Console Output

Edit Build Information

Delete build '#1'

Polling Log

Git Build Data

Build #1 (19 Jun 2023, 18:22:52)

Keep this build forever

Started 10 hr ago

Took 4.2 sec

Add description

No changes.

Started by GitHub push by muhammadshehzad038

Revision: 5edf6b1a0e33d63718a80a440a9479462ff5c931

Repository: <https://github.com/muhammadshehzad038/webpage.git>

refs/remotes/origin/main

REST API Jenkins 2.401.1

Dashboard > task4 > #1 > Console Output

Status

</> Changes

Console Output

View as plain text

Edit Build Information

Delete build '#1'

Polling Log

Git Build Data

Console Output

Started by GitHub push by muhammadshehzad038

Running as SYSTEM

Building in workspace /var/lib/jenkins/workspace/task4

The recommended git tool is: NONE

No credentials specified

Cloning the remote Git repository

Cloning repository <https://github.com/muhammadshehzad038/webpage.git>

> git init /var/lib/jenkins/workspace/task4 # timeout=10

Fetching upstream changes from <https://github.com/muhammadshehzad038/webpage.git>

> git --version # timeout=10

> git --version # 'git version 2.25.1'

> git fetch --tags --progress -- <https://github.com/muhammadshehzad038/webpage.git> +refs/heads/*:refs/remotes/origin/* # timeout=10

> git config remote.origin.url <https://github.com/muhammadshehzad038/webpage.git> # timeout=10

> git config --add remote.origin.fetch +refs/heads/*:refs/remotes/origin/* # timeout=10

Avoid second fetch

> git rev-parse refs/remotes/origin/main^{commit} # timeout=10

Checking out Revision 5edf6b1a0e33d63718a80a440a9479462ff5c931 (refs/remotes/origin/main)

> git config core.sparsecheckout # timeout=10

Jenkins

Search (CTRL+K)

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log out

Dashboard > task4 > #2 > Git Build Data

Status

</> Changes

Console Output

Edit Build Information

Delete build '#2'

Git Build Data

Previous Build

Git Build Data

Revision: 5edf6b1a0e33d63718a80a440a9479462ff5c931

Repository: <https://github.com/muhammadshehzad038/webpage.git>

refs/remotes/origin/main

Built Branches

refs/remotes/origin/main: Build #2 of Revision 5edf6b1a0e33d63718a80a440a9479462ff5c931 (refs/remotes/origin/main)

6 of 6