



COMSATS University Islamabad

Attock Campus

Program: BS

Fall 2023

Assignment 4

TICS

December 05, 2023

Total Marks: (25)

Last Date: December 06, 2023

Assignment No. 4

Objective:

The objective of this assignment is to provide students with hands-on experience in building a Jenkins CI/CD (Continuous Integration/Continuous Delivery) pipeline and deploying an application on an AWS EC2 instance.

Requirements:

- 1) Set up a Git Repository: Students should create a Git repository for their project. They can use an existing project or create a simple application to demonstrate the CI/CD pipeline. Create an AWS EC2 Instance: See the attached video tutorial for step-by-step guide to create an AWS EC2 instance to serve as the deployment target. You have to configure the necessary security groups, key pairs, and networking settings.
- 2) Configure AWS Credentials in Jenkins: Students should configure AWS credentials in Jenkins to enable interactions with the AWS services. This can be done by following the instructions in the attached video as well.
- 3) Create a Jenkins Job: Create a Jenkins job that defines the CI/CD pipeline. The job should include the following steps:
 - Pull the latest code from the Git repository.
 - Build the project.
 - Run any required tests.
 - Package the application, if applicable.
 - Deploy the application to the AWS EC2 instance.
- 4) Trigger Jenkins Job: Configure the Jenkins job to be triggered automatically whenever a new commit is pushed to the Git repository.
- 5) Documentation: Students should document the process of setting up the Jenkins CI/CD pipeline and deploying the application on an AWS EC2 instance. The documentation should include step-by-step instructions, screenshots, and any issues encountered during the setup.

Deliverables:

Jenkins CI/CD pipeline configured for application deployment on AWS EC2.

Documentation describing the setup process.

Evaluation Criteria:

Successful setup of the Jenkins CI/CD pipeline and AWS EC2 deployment (50%)

Proper configuration of Git trigger and AWS credentials in Jenkins (25%)

Documentation quality and clarity (25%)