

Day 5: DevOps

Create GitHub repo:

"Add and commit all files to the remote repository."

```
jegadeep@LAPTOP-EBJ4 x + ~
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
Initialized empty Git repository in /home/jegadeep/fullstack_jenkins/.git/
jegadeep@LAPTOP-EBJ40AHO:~/fullstack_jenkins$ git pull "https://github.com/jegadeeppandiarajan/k8s.git"
fatal: unable to access 'https://github.com/jegadeeppandiarajan/k8s.git/': Failed to connect to github.com port 443 a
fter 131476 ms: Couldn't connect to server
jegadeep@LAPTOP-EBJ40AHO:~/fullstack_jenkins$ git add .
jegadeep@LAPTOP-EBJ40AHO:~/fullstack_jenkins$ git commit -m "fifth day"
[master (root-commit) 045fbc5] fifth day
13 files changed, 209 insertions(+)
create mode 100644 Jenkinsfile
create mode 100644 backend/app.py
create mode 100644 backend/dockerfile
create mode 100644 backend/products.csv
create mode 100644 backend/requirements.txt
create mode 100644 frontend/dockerfile
create mode 100644 frontend/index.html
create mode 100644 jenkins
create mode 100644 k8s/allow-all.yaml
create mode 100644 k8s/backend-deployment.yaml
create mode 100644 k8s/configmap.yaml
create mode 100644 k8s/frontend-deployment.yaml
create mode 100644 k8s/service.yaml
```

Push local changes to the remote repository

```
Enumerating objects: 18, done.
Counting objects: 100% (18/18), done.
Delta compression using up to 16 threads
Compressing objects: 100% (16/16), done.
Writing objects: 100% (18/18), 2.71 MiB | 2.71 MiB/s, done.
Total 18 (delta 1), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (1/1), done.
To https://github.com/iamJABASTIN/DevOps-day-5.git
 * [new branch]      main -> main
```

Create a Jenkins config file **Jenkinsfile**

A **Jenkinsfile** is a script that defines a **Jenkins pipeline**. It outlines how Jenkins should build, test, and deploy your code. Instead of manually configuring Jenkins jobs through the web interface, you can store the entire pipeline as code in your repository

```
pipeline {
  agent any
  environment {
    DOCKER_IMAGE = "iamjabastin/docker-app:latest" // Change this to your registry
    CONTAINER_NAME = "docker-running-app"
    REGISTRY_CREDENTIALS = "docker-hub-jabastin" // Jenkins credentials ID
  }
  stages {
    stage('Checkout Code') {
      steps {
        withCredentials([usernamePassword(credentialsId: 'github-jabastin', usernameVariable: 'GIT_USER', passwordVariable: 'GIT_TOKEN')]) {
          git url: "https://$GIT_USER:$GIT_TOKEN@github.com/iamJABASTIN/devOps-day-5.git", branch: 'main'
        }
      }
    }
    stage('Build Docker Image') {
      steps {

```

Enable and Start the Jenkins

```
student@mcaccl-6:~/kubernetes-day5/day5$ sudo systemctl enable jenkins
[sudo] password for student:
Synchronizing state of jenkins.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable jenkins
student@mcaccl-6:~/kubernetes-day5/day5$ sudo systemctl start jenkins
student@mcaccl-6:~/kubernetes-day5/day5$ |
```

Vist the Jenkins in Port 8080

Jenkins Pipe Line

Create a Jenkins Pipeline

Push the Jenkins file to the Remote Repo

Install Kubernetes plugin in Jenkins

Dashboard > Manage Jenkins > Plugins

Plugins

Updates

Available plugins

Installed plugins

Advanced settings

Search: kubernetes plugin

Name	Enabled
Kubernetes Client API Plugin 6.10.0-251.v556f5f100500 Kubernetes Client API plugin for use by other Jenkins plugins. Report an issue with this plugin	<input checked="" type="checkbox"/>
Kubernetes Credentials Plugin 192.v4d5b_1c429d17 Common classes for Kubernetes credentials Report an issue with this plugin	<input checked="" type="checkbox"/>
Kubernetes plugin 4324.vfec199a_33512 This plugin integrates Jenkins with Kubernetes Report an issue with this plugin	<input checked="" type="checkbox"/>

Build the Jenkins

Dashboard > Manage Jenkins > Plugins

Plugins

Updates

Available plugins

Installed plugins

Advanced settings

Download progress

Download progress

Preparation

- Checking internet connectivity
- Checking update center connectivity
- Success

Kubernetes Client API

Authentication Tokens API

Kubernetes Credentials

Kubernetes

Loading plugin extensions

Success

Success

Success

Success

Success

Go back to the top page

(you can start using the installed plugins right away)

Restart Jenkins when installation is complete and no jobs are running

REST APIJenkins 2.492.2

Dashboard > day5

Status

Changes

Build Now

Configure

Delete Pipeline

Stages

Rename

Pipeline Syntax

day5

Permalinks

- Last build (#4), 3 hr 54 min ago
- Last stable build (#4), 3 hr 54 min ago
- Last successful build (#4), 3 hr 54 min ago
- Last failed build (#3), 3 hr 58 min ago
- Last unsuccessful build (#3), 3 hr 58 min ago
- Last completed build (#4), 3 hr 54 min ago

Builds

Filter

Today

#4 4:45 am

Add description

Build successful

To test Frontend

```
student@mcacci-6:~/kubernetes/k8s$ minikube service frontend-service --url
http://127.0.0.1:37341
! Because you are using a Docker driver on linux, the terminal needs to be open to run it.
```

127.0.0.1:373757

AI toolsGmailYouTubeGitHubReserchWebdevelopmentDesigningInterview preparati...Favorites barTech BlogsFun

Welcome to Our Store

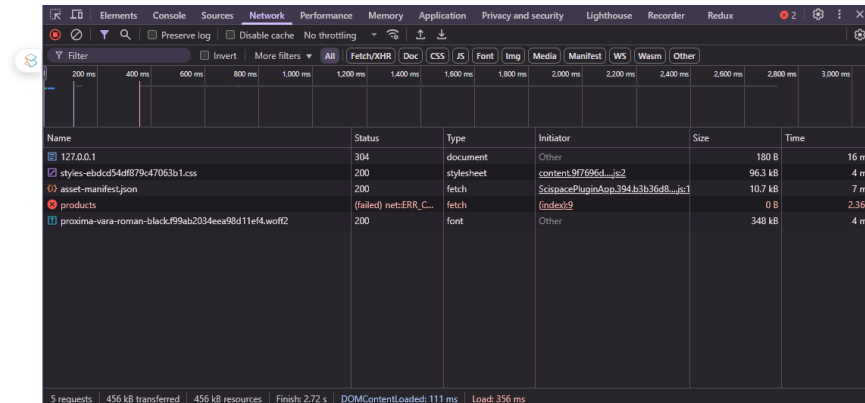
Loading...

To Test backend

```
If you don't see a command prompt, try pressing enter.
/ # kubectl get pod test-pod
sh: kubectl: not found
/ # kubectl exec -it test-pod -- sh
sh: kubectl: not found
/ # apk add curl
fetch https://dl-cdn.alpinelinux.org/alpine/v3.21/main/x86_64/APKINDEX.tar.gz
fetch https://dl-cdn.alpinelinux.org/alpine/v3.21/community/x86_64/APKINDEX.tar.gz
(1/9) Installing brotli-libs (1.1.0-r2)
(2/9) Installing c-ares (1.34.3-r0)
(3/9) Installing libunistring (1.2-r0)
(4/9) Installing libidn2 (2.3.7-r0)
(5/9) Installing nghttp2-libs (1.64.0-r0)
(6/9) Installing libpsl (0.21.5-r3)
(7/9) Installing zstd-libs (1.5.6-r2)
(8/9) Installing libcurl (8.12.1-r1)
(9/9) Installing curl (8.12.1-r1)
Executing busybox-1.37.0-r12.trigger
OK: 12 MiB in 24 packages
/ # curl http://backend-service:5000/products
{"id":{"0":1,"1":2,"2":3,"3":4,"4":5},"name":{"0":"pen","1":"book","2":"laptop","3":"shirt","4":"pants"},"price":{"0":20,"1":400,"2":50000,"3":500,"4":750},"qty":{"0":100,"1":50,"2":5,"3":50,"4":50}}/ #
```

Welcome to Our Store

Loading...



Note: We expect this kind of output because we are running this frontend on localhost.

— COMPLETED —