

# DEVOPS TRAINING

## DAY 5 CONFIGURING PIPELINE

Step 1: Create github repository kubernetes and push the cd kubernetes files as frontend ,backend and k8s

```
select@ubuntu:~/k8s$ git pull --rebase origin main
fatal: 'origin' does not appear to be a git repository
fatal: Could not read from remote repository.

Please make sure you have the correct access rights
and the repository exists.

select@ubuntu:~/k8s$ cd ..
select@ubuntu:~/k8s$ cd kubernetes
select@ubuntu:~/k8s$ git status
On branch main
Your branch is up to date with 'origin/main'.

nothing to commit, working tree clean
select@ubuntu:~/k8s$ git pull
remote: Enumerating objects 10, done.
remote: Counting objects: 100% (10/10), done.
remote: Compressing objects: 100% (10/10), done.
remote: Total 17 (delta 11), reused 0 (delta 0), pack-reused 0 (from 0)
Unpacking objects: 100% (17/17), 3.40 KiB ( 229.00 KiB/s), done.
From https://github.com:select/k8s
   40be78..e09e80  main    -> origin/main
Updating e09e80..40be78
Fast-forward
 backend/app.py          | 1 +
 backend/dockerfile      | 1 +
 backend/requirements.txt | 1 +
 frontend/index.html     | 1 +
 k8s/namespace.yaml      | 1 +
 k8s/service.yaml        | 1 +
 6 files changed, 6 insertions(+), 0 deletions(-)
create mode 100644 backend/app.py
create mode 100644 backend/dockerfile
create mode 100644 backend/requirements.txt
create mode 100644 frontend/index.html
```

Step 2: create Jenkinsfile and add the following code and push into the github repo kubernetes

```
select@ubuntu:~/k8s$ cat Jenkinsfile
pipeline {
    agent {
        kubernetes {
            namespace = 'default'
            serviceAccount = 'jenkins'
        }
    }
    stages {
        stage('Checkout') {
            steps {
                checkout 'select/k8s'
            }
        }
        stage('Build Backend Docker Image') {
            steps {
                docker {
                    build {
                        context '.'
                        dockerfile 'Dockerfile.backend'
                    }
                }
            }
        }
        stage('Build Frontend Docker Image') {
            steps {
                docker {
                    build {
                        context '.'
                        dockerfile 'Dockerfile.frontend'
                    }
                }
            }
        }
        stage('Push to Docker Registry') {
            steps {
                docker {
                    push {
                        repository = 'select/k8s'
                        namespace = 'default'
                    }
                }
            }
        }
        stage('Deploy to Kubernetes') {
            steps {
                kubernetes {
                    manifest 'k8s/namespace.yaml'
                    manifest 'k8s/service.yaml'
                    manifest 'k8s/deployment.yaml'
                }
            }
        }
    }
}
```

Step 3: Open Jenkins create a item in pipeline and click ok and go to configure add the repo url and credentials and click build

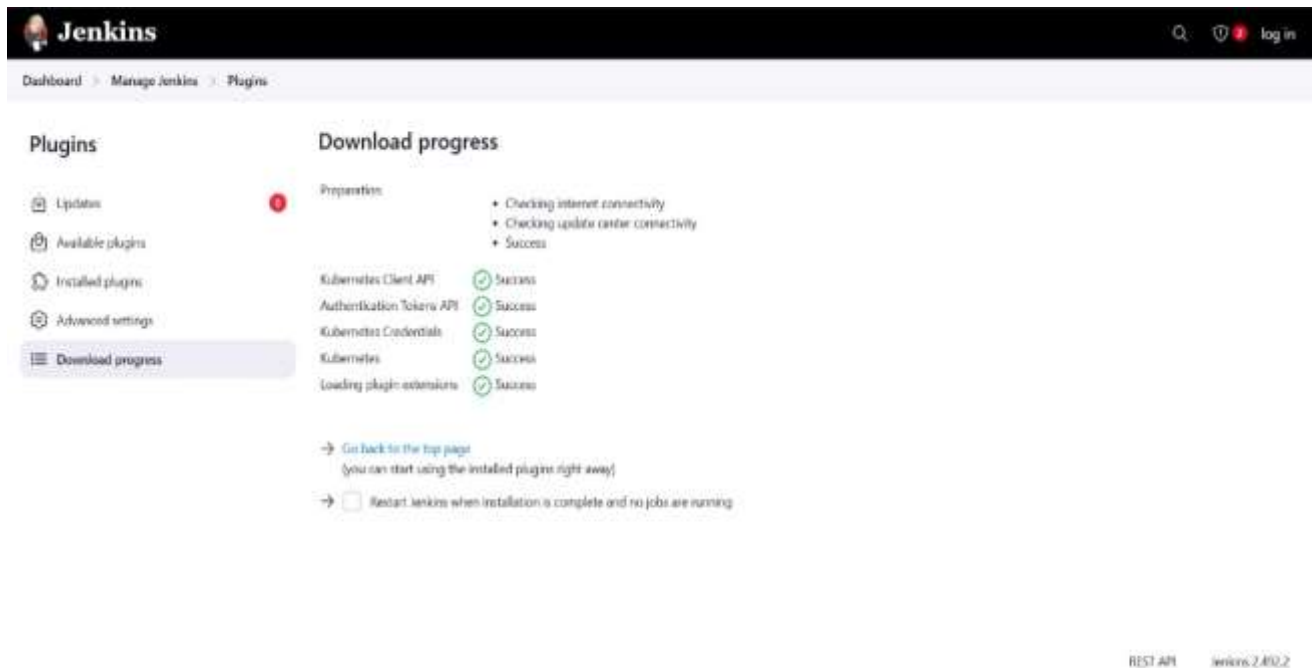
The screenshot shows the Jenkins build interface for build #9. The left sidebar contains navigation links: Status, Changes, Console Output, Edit Build Information, Timings, Git Build Data, Pipeline Overview, Pipeline Console, Thread Dump, Pause/resume, Replay, Pipeline Steps, Workspaces, and Previous Build. The main area displays build details for #9 (22 Mar 2025, 06:40:18). It indicates the build started by user Senthikumar, spent 3 ms waiting in the queue, and started 4.1 sec ago. The build is currently in progress. The configuration shows the repository as https://github.com/53nTh11-03/kubernetes.git, revision ea2bd4df80546e6fa4c3a06d4583d1506f299f1, and the ref as refs/remotes/origin/main. A warning icon indicates that the following steps may have insecure interpolation of sensitive variables. The build steps are listed as 'No changes'.

Step 4 : open console output and check build is complete or not.

The screenshot shows the Jenkins build interface for build #9, specifically the Console Output view. The left sidebar is the same as in the previous screenshot. The main area displays the console output for build #9. The output shows the build starting by user Senthikumar, obtaining the Jenkinsfile from the repository, and running on Jenkins in /var/lib/jenkins/workspace/test3. The output includes the following commands and their results:

```
[Pipeline] Start of Pipeline
[Pipeline] node
Running on Jenkins in /var/lib/jenkins/workspace/test3
[Pipeline] {
[Pipeline] stage
[Pipeline] [ (Declarative: Checkout stage) ]
[Pipeline] checkout
Selected Git installation does not exist. Using Default
The recommended git tool is: NONE
using credential github-senthil
> git rev-parse --resolve-git-dir /var/lib/jenkins/workspace/test3/.git # timeout=10
fetching changes from the remote Git repository
> git config remote.origin.url https://github.com/53nTh11-03/kubernetes.git # timeout=10
Fetching upstream changes from https://github.com/53nTh11-03/kubernetes.git
> git --version # timeout=10
> git --version # 'git version 2.43.0'
using GIT_ASKPASS to set credentials
> git fetch --tags --force --progress -- https://github.com/53nTh11-03/kubernetes.git +refs/heads/*:refs/remotes/origin/* # timeout=10
> git rev-parse refs/remotes/origin/main^{commit} # timeout=10
Checking out Revision ea2bd4df80546e6fa4c3a06d4583d1506f299f1 (refs/remotes/origin/main)
> git config core.sparsecheckout # timeout=10
> git checkout -f ea2bd4df80546e6fa4c3a06d4583d1506f299f1 # timeout=10
```

Step 5 : go to dashboard > manage Jenkins > plugins and install the Kubernetes once it all download success will shown.



The screenshot shows the Jenkins web interface. At the top is the Jenkins logo and a search bar. Below the header, the breadcrumb trail reads 'Dashboard > Manage Jenkins > Plugins'. The main content area is titled 'Plugins' and 'Download progress'. On the left, a sidebar lists navigation options: 'Updates', 'Available plugins', 'Installed plugins', 'Advanced settings', and 'Download progress' (which is highlighted). The 'Download progress' section shows a list of plugins being installed, each with a green checkmark indicating success. The plugins listed are: 'Kubernetes Client API', 'Authentication Token API', 'Kubernetes Credentials', 'Kubernetes', and 'Loading plugin extensions'. Below the list, there are two links: 'Go back to the top page (you can start using the installed plugins right away)' and a checkbox labeled 'Restart Jenkins when installation is complete and no jobs are running'.

**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	Success
Authentication Token API	Success
Kubernetes Credentials	Success
Kubernetes	Success
Loading plugin extensions	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 API    version 2.400.2