Steps by step.

1. Install the terraform on the Ubuntu.
   1. sudo apt-get update && sudo apt-get install -y wget unzip
   2. wget <https://releases.hashicorp.com/terraform/1.5.2/terraform_1.5.2_linux_amd64.zip>
   3. unzip terraform\_1.5.2\_linux\_amd64.zip
   4. sudo mv terraform /usr/local/bin/
2. Validate the Terraform installations by using the below commands
   1. terraform -v
3. Define terraform for setting up the Dockers and Jenkins and Boot Microservices.
4. I m creating a directory so that configured Terraform files will be available.
5. Unix command for creation of the directories
   1. mkdir terraform-docker-jenkins
   2. cd terraform-docker-jenkins
6. create a main.tf
7. and then subsequent generations of the forms.
8. **Provider Configuration** (main.tf)

Create main.tf :

1. Provider “docker” {
   1. Host = “unix:///var/run/docker.sock”

}

1. Jenkins Container Configuration (Jenkins.tf)
2. Create Jenkins.tf:

resource "docker\_image" "jenkins" {

name = "jenkins/jenkins:lts-jdk17"

}

resource "docker\_container" "jenkins" {

image = docker\_image.jenkins.latest

name = "jenkins-server"

ports {

internal = 8080

external = 8080

}

ports {

internal = 50000

external = 50000

}

volumes {

host\_path = "/var/jenkins\_home"

container\_path = "/var/jenkins\_home"

}

}

1. Microservices Configuration (microservices.tf)

resource "docker\_image" "microservice\_image" {

name = "nginx:latest"

}

resource "docker\_container" "student\_profile\_service" {

image = docker\_image.microservice\_image.latest

name = "microservice-one"

ports {

internal = 80

external = 8081

}

}

resource "docker\_container" "student\_course\_service" {

image = docker\_image.microservice\_image.latest

name = "microservice-two"

ports {

internal = 80

external = 8082

}

}

1. Not the above will make it run on the 8081 and 8082 port number.