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Lab Instructions: Jenkins Pipeline

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Prerequisites

- To use the Jenkins image and pipeline, you must have:
  - A Kubernetes cluster in your project
  - At least one Node.js deployment already running in the cluster

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Creating a Jenkins Server VM

- You will use Terraform to create a virtual machine that has Jenkins installed and running
- Open Cloud Shell and run the following commands:
  - `mkdir terraformjenkins`
  - `cd terraformjenkins`
  - `wget https://storage.googleapis.com/roi-materials/main.tf`
- Open **main.tf** in the editor
  - There are two variables (project_id , and ip_address) that need to have values set
  - Instructions on the next slide

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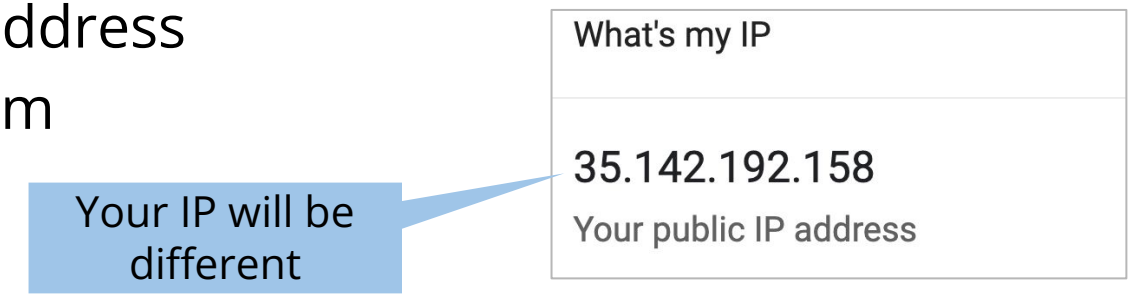
Creating a Jenkins Server VM

- Locate your local computer's public IP address
  - Open a new browser tab and perform a search for "what is my ip"
  - Copy your IP4 address displayed



- Set the string values inside **main.tf** to your IP address, and your project id. Then run the following commands in Cloud Shell from the **terraformjenkins** folder:
  - `terraform init`
  - `terraform apply -auto-approve`
- Terraform should create your VM

```
Apply complete! Resources: 2 added, 0 changed, 0 destroyed.
```

  - It will take a minute or two for the virtual machine to boot and finish loading Jenkins

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Configuring Jenkins

- In the Google Cloud Console, go to Compute Engine
  - You should see a jenkins-terraform VM running
- Copy the external IP address and visit it in a new browser tab
  - It should load a “Welcome to Jenkins!” login page
    - If you do not get a login page, wait a little longer to allow more time to finish loading and then refresh the page
- Log in with the username and password provided by your instructor
- Once in, install the Docker plugin. The steps are as follows:
  - Click **Manage Jenkins** and then **Manage Plugins**
  - Click the **Available** tab and then enter *docker* in the search box
  - Click the checkbox beside the **Docker** plugin and then click the **Install without restart** button on the bottom
  - Wait for the success check marks, then proceed to the next step

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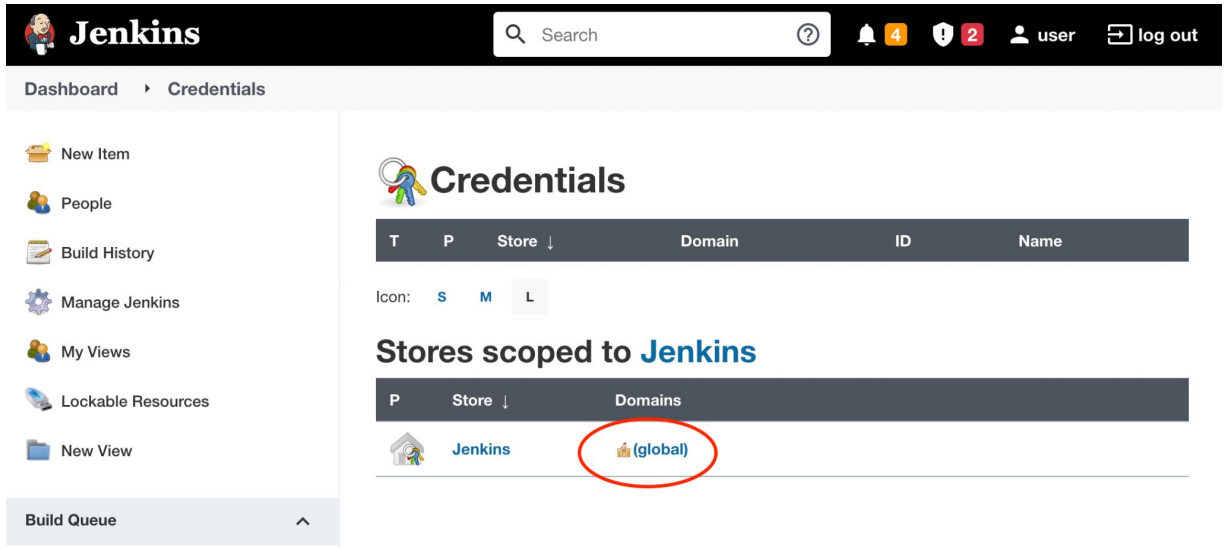
Configuring Docker Plugin

- Add your docker hub credentials to the docker plugin as follows:
  - Go to **Manage Jenkins → Manage Credentials → (global) → Add credentials**



  - Fill out the form with:
    - *your* docker username and password
    - A memorable id, e.g. **docker**
      - You will need to provide the id inside your groovy script

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Creating a Jenkins Pipeline

- On the top left, click the **Jenkins** logo
- Click **New Item** on the left-hand side or click the **Create a job** link under **Welcome**
- Give it a name, click **Pipeline**, and then click **OK**
- Click the **Pipeline** tab
  - You will put your jenkins pipeline script in the text area displayed
  - On the next slide you will download a startpoint for this script and modify it for your case study

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Creating a Jenkins Pipeline

- Use `wget` in your Cloud Shell to download a start point for your Jenkinsfile
  - `wget https://storage.googleapis.com/roi-materials/CND/GCP/Jenkinsfile`
- Open the Jenkins file in the editor and follow the instructions at the top of the file to replace *[VARS]* with your values
  - When replacing the [VARS], be sure to delete the **[** and **]**
- Copy all the code in the Jenkins file and paste to the Pipeline textarea in Jenkins
- Click **Save**

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Running the Jenkins Pipeline

- Click **Build Now**
  - You will see the stages complete
  - If you get an error, click the build date in the *Build History* section on the bottom left, and then click **Console output**
  - Review the output and correct any errors
- If the pipeline successfully completes, run the following command in your Cloud Shell
  - `kubectl get pods`
  - You should see the pod is being replaced

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