WILEY

Infrastructure-as-Code using Terraform

Terraform - Assignment 1 (Create an Ubuntu Droplet on Digital Ocean using Terraform)

Note(s):

1. *This Lab would need you to have an account on Digital Ocean. If you don't have an account on Digital Ocean, create one using the link: https://m.do.co/c/7a4461a50be1*
2. *Make sure you clean up your Digital Ocean environment once the project is complete to avoid incurring any unnecessary charges.*

Task 1 (Install and configure Terraform for Digital Ocean)

1. Install Terraform on a VM of your choice. You can also do this on your laptop. Terraform can be installed on all major platforms such as MacOS, Windows and Linux.
   Check the following link(s), if needed:

   https://docs.digitalocean.com/reference/terraform/getting-started/

Task 2 (Getting Digital Ocean Authentication Token)

1. To authenticate terraform for digital ocean you need to generate the Authentication token in Digital Ocean console. Perform the following steps to get the token:
   a. Login to your Digital Ocean dashboard.
   b. Go to API → Token/Keys
   c. Click on "Generate New Token
   d. Make sure you select both *Read* and *Write* permissions for the token.

e. Make sure you copy the token string and keep it safe. Once you come out of the screen, the token will not be displayed again.

Task 3 (copy the fingerprint for ssh-key)

1. When you create a droplet, you also want to make sure that you can ssh into the instance. For that, you need to make sure that public key of your ssh key pair is being placed inside the droplet. To make sure that happens, you would need the "*fingerprint*" of the SSH public key you have setup during your lab setup.
2. In order to get the ssh public key *"fingerprint"*:
    a. Login to your Digital Ocean dashboard.
    b. Go to Settings → Security
    c. Copy the Fingerprint of the public key which you want to be placed in your droplet.
    d. Keep it in a text editor. We will need it when we write our terraform file.

Task 4 (Write the terraform file to create a Droplet)

1. Now we are ready to write our terraform file to create a new Droplet.
2. Write a terraform main file which creates a Droplet with following specifications:
    - Droplet Image – Ubuntu 20.04 LTS
    - Droplet size – Regular Intel (1GB, 1CPU)
    - Region – Bangalore
    - Hostname – Terraform-node

Task 5 (Provision Droplet using terraform init/plan/apply)

1. Once you have written the file and saved it, login to your terminal and go the folder where you have written the terraform file.
2. Run “terraform init” to initialize the environment and all providers. Troubleshoot, if necessary.
3. Run “terraform plan” to do a dry run of what you are about to do. Go through the output and verify changes you are about to make. Troubleshoot, if necessary.
4. Run “terraform apply” to provision the droplet. Troubleshoot, if necessary.
5. Login to Digital Ocean Console on a browser of your choice and verify that the droplet has been created successfully.

Task 6 (Terminate All Resources)

1. Use Terraform destroy command to terminate the droplet.
2. Login to Digital Ocean dashboard to verify that droplet has been terminated/destroyed.

Reference:

- Terraform Installation: https://learn.hashicorp.com/tutorials/terraform/install-cli
- Digital Ocean API Slugs: https://slugs.do-api.dev/