HashiCorp

Terraform

Terraform

- Terraform is an open-source infrastructure as code (IAC) software from HashiCorp company. Terraform software written in Go programming language.
- IAC is all about writing code that describes your infrastructure
- Infrastructure : resources to run applications
- IAC (Infrastructure as code) : provisioning infrastructure using scripts/tools instead of manually configuring machines
- Provisioning means
    - Creating
    - Updating
    - Deleting

Terraform

- Terraform is a software enables you to create, change, and delete infrastructure safely and efficiently
- Terraform supports all cloud providers
- Terraform provides a consistent CLI workflow to manage hundreds of cloud services
- The infrastructure Terraform can manage components such as compute instances, storage, networking, etc.
- **In terraform, for creating the infrastructure we use HCL (Hashicorp Configuration Language)**

Tools for IAC

- Terraform
- AWS CloudFormation
- Microsoft Azure Resource Manager
- Google Cloud Deployment Manager
- OpenStack
- VMware
- IBM Cloud

Terraform

- Install Terraform on Windows
  - https://www.terraform.io
  - Download terraform software
  - Extract downloaded zip file
  - Add terraform path to system environment variables
  - terraform --version
  - terraform --help

Terraform

- Install Terraform on Linux
  - https://www.terraform.io
  - Download terraform software
  - Unzip downloaded file
  - ./terraform --version
  - ./terraform –help

Terraform

- Set the path for terraform as a EC2-USER

  - PATH=${PATH}:/home/ec2-user/terraform
  - source ~/.bash_profile

    or

  - echo $"export PATH=\PATH:$(pwd)" >> ~/.bash_profile
  - source ~/.bash_profile

    or

  - sudo mv terraform /usr/local/bin/

Terraform

- There are two types of Terraform configuration files
    - Terraform format which ends with .tf (human readable)
    - Terraform JSON format which ends with .tf.json (machine readable)
- If you are having combination of these two extension files that is completely fine. Still it works

Configuring Terraform on AWS

- Terraform supports many cloud providers
  - Terraform has plugins for each provider and we need to download it before going to work with any cloud with terraform
  - Create any file with .tf / .tf.json extension and pass the provider information
  - We create .tf files which is written in HCL (HashiCorp Configuration Language)
  - terraform init (This command downloads the plugins for required provider which we mention in terraform file)

Terraform

- AWS IAM user setup to work with terraform for IAC
- Configuring credentials of IAM user on EC2 instance
- aws configure --profile <user name>
- curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
- unzip awscliv2.zip
- sudo ./aws/install
- aws configure --profile <user name>

Terraform commands

terraform init

terraform validate

terraform fmt

terraform plan

terraform apply

terraform destroy


• IF IN DOUBT PLEASE ASK •