IAC Tools

Infrastructure as Code

-Terraform

Cloudformation

Heat

Anisble

SatStack

Chef and Puppet

Ansible, Chef, Puppet are configuration management tools which means that they are primarily designed to install and manage software on existing servers.

Terraform, CloudFromation are the infrastructure orchestration tools which basically means they can provision the servers and infrsstrucutre by themselves.

Configuration Management tools can do some degree of infrastructure provisioning but the focus here is that some tools are going to be better fit for certain types of tasks

Supports multiple platforms, has hundreds of providers

SImple configuration language that and faster learning curve

Easy integration with configuration management tools like Anisble

Easily extensible with the help of plugins

Free

CLI Commands

Terraform init - This will look through the related terraform code and install any plugins and code needed with the resources specified in the terraform configuration files. \* Note \* this is important if you try to run the **terraform plan** command without running the **terraform init** command it will result in an error.

Terraform plan - This will show you the difference that are about to be initialized. This is a useful tool to see the infrastructure that you are about to implement and the differences between what is currently deployed and will be changed. It is good practice to use this before deploying any changes.

Terraform apply - This will go and create the resources that we have written in our terraform configuration.

Terraform destroy - This will destroy the previously created infrastructure.

**Terraform Blocks**

Providers,

Terraform supports multiple providers ( usually this means a cloud provider )

Depending on what type of infrastructure we want to launch we have to use appropriate providers accordingly

Initialization Phase: Upon adding a provider, it is important to run terraform init which in turn will download plugins associated with the provider.

All provider plugins are stored in the .terraform folder that are added upon using the terraform init command.

Resources

Resources are the reference to the individual services which the provider has to offer

Ex. resource aws\_instance, aws\_alb, iam\_user, digitalocean\_droplet

Important Update - Newer Version

From 0.13 onwards, Terraform requires explicit source information for for any providers that are not HashiCop-maintained, using a new syntax in the required\_providers nested block inside the terraform configuration block