What is Terraform?

Terraform is a tool for building, changing, and versioning infrastructure safely and efficiently.

It is developed by Hashicorp & written in GoLang

Terraform is also known as infrastructure as code solution

Infrastructure as code

insimple words provisioning / creating infrastructure with code

Infrastructure as code, or IaC, has gained a lot of momentum over the years because it helps solve several problems that troubled infrastructure management in the past

When should we use Terraform

With the trend in industry tending to move toward multi-cloud platform to host, including hybrid clouds, it is more efficient to have one tool and one common workflow to manage infrastructure no matter where it is hosted.

Even if you are only using one cloud now, it may be worth futureproofing yourself in case you do leverage multiple clouds later on.

When you have spread your infrastructure in multi-cloud

Install Terraform CLI

https://www.terraform.io/downloads.html

Install Terraform CLI on VM

Belowwould install the terraform Version 1.0.1

cd /tmp; wget https://releases.hashicorp.com/terraform/1.0.1/terraform_1.0.1_linux_amd64.zip

aptupdate ; apt install–y unzip   onUbuntu/Debian Systems
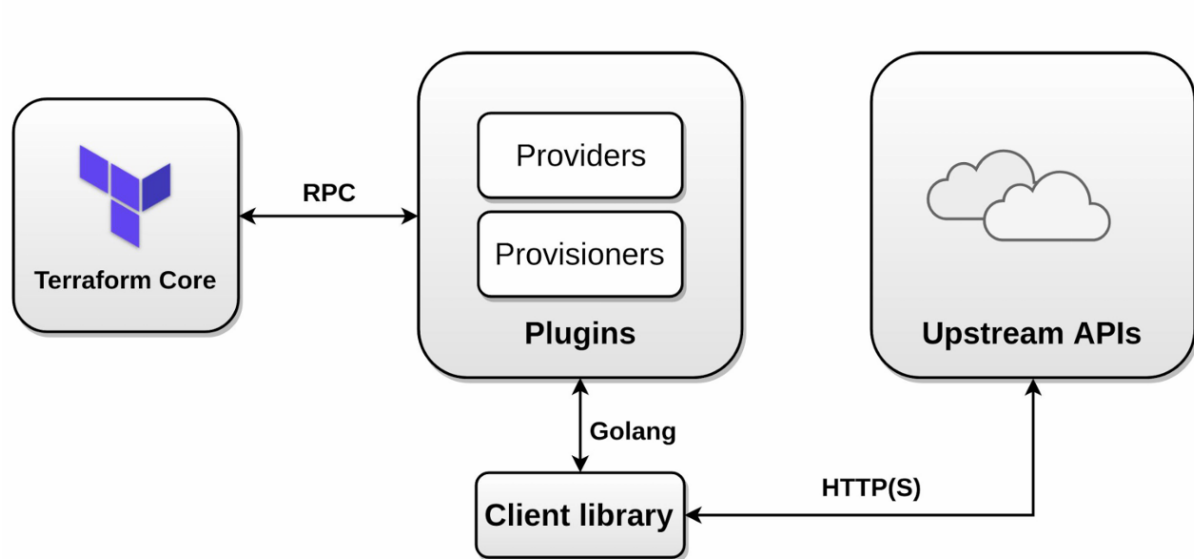
yumupdate ; yum install–y unzip è on RHEL/Centos/Fedora

unzip /tmp/terraform_1.0.1_linux_amd64.zip

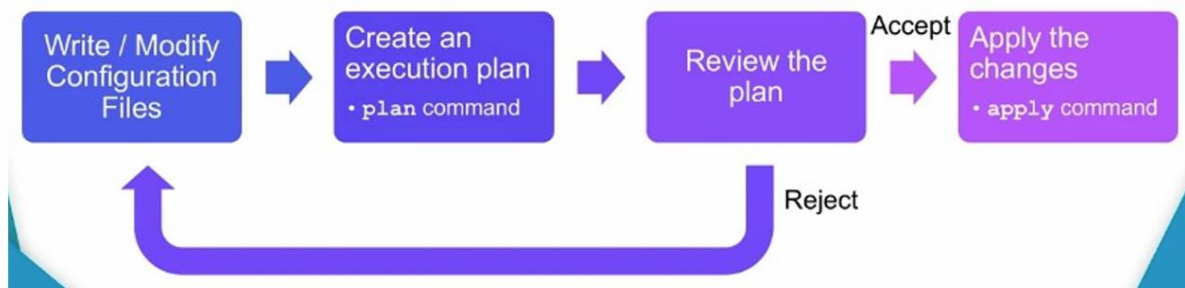mv/tmp/terraform /usr/local/bin/

chmod755/usr/local/bin/terraform

terraform–version   validate the version

Terraform Architecture

Terraform Workflow

S Terraform Script to create Virtual Machine on GCP

```
provider "google" {
#   project = "your-gcp-project-id" # Replace with your project ID
#   region  = "us-central1"
# }

# resource "google_compute_instance" "default" {
#   name         = "${var.resource_prefix}-gcp-vm"
#   machine_type = "e2-micro"
#   zone         = "us-central1-a"

#   boot_disk {
#     initialize_params {
#       image = "debian-cloud/debian-11"
#     }
#   }

#   network_interface {
#     network = "default"
#     access_config {
#     }
#   }

#   metadata_startup_script = "echo 'Hello, World!' > index.html && nohup python3 -m
http.server 80 &"
# }
```