**Directory Structure**

terraform-openstack/

├── main.tf # Terraform configuration

├── variables.tf # (Optional) Input variable definitions

├── terraform.tfvars # (Optional) Actual input values

└── README.md # Deployment documentation and instructions

**main.tf – Terraform Configuration**

provider "openstack" {

auth\_url = var.auth\_url

tenant\_name = var.project\_name

user\_name = var.user\_name

password = var.password

region = var.region

domain\_name = var.domain\_name

}

resource "openstack\_compute\_keypair\_v2" "keypair" {

name = var.keypair\_name

public\_key = file(var.public\_key\_path)

}

resource "openstack\_compute\_instance\_v2" "vm" {

name = var.instance\_name

image\_name = var.image\_name

flavor\_name = var.flavor\_name

key\_pair = openstack\_compute\_keypair\_v2.keypair.name

security\_groups = [var.security\_group]

network {

uuid = var.network\_id

}

}

resource "openstack\_networking\_floatingip\_v2" "fip" {

pool = var.floating\_ip\_pool

}

resource "openstack\_compute\_floatingip\_associate\_v2" "fip\_assoc" {

floating\_ip = openstack\_networking\_floatingip\_v2.fip.address

instance\_id = openstack\_compute\_instance\_v2.vm.id

}

output "vm\_floating\_ip" {

value = openstack\_networking\_floatingip\_v2.fip.address

}

**variables.tf – Input Variable Definitions**

variable "auth\_url" {}

variable "project\_name" {}

variable "user\_name" {}

variable "password" {}

variable "region" { default = "RegionOne" }

variable "domain\_name" { default = "default" }

variable "keypair\_name" { default = "tf-key" }

variable "public\_key\_path" { default = "~/.ssh/id\_rsa.pub" }

variable "instance\_name" { default = "test-server" }

variable "image\_name" { default = "bionic" }

variable "flavor\_name" { default = "m1.small" }

variable "security\_group" { default = "default" }

variable "network\_id" {} # UUID of internal network

variable "floating\_ip\_pool" { default = "public" }

**terraform.tfvars – Actual Input Values (example)**

auth\_url = "http://172.168.1.254:5000"

project\_name = "admin"

user\_name = "admin"

password = "wbnydVRJrLSLDPHqUdyclRTqN9OLrkYQZ6Z30vcT"

network\_id = "c0ffee12-3456-7890-abcd-fedcba987654"

**Deployment Guide**

#OpenStack VM Deployment with Terraform

## Prerequisites

- Terraform 1.x installed

- OpenStack project with:

- Network ID (private network)

- Available image and flavor

- Floating IP pool (e.g. "public")

- SSH public key present at `~/.ssh/id\_rsa.pub`

## Setup

1. Clone this repo or copy the directory:

bash

git clone <repo> terraform-openstack/

cd terraform-openstack/

1. Initialize Terraform:
2. terraform init
3. Review and customize terraform.tfvars with your environment.
4. Apply configuration:
5. terraform apply
6. After deployment, Terraform will output:
7. vm\_floating\_ip = "X.X.X.X"

**Notes**

* Make sure public\_key\_path points to a valid SSH key.
* Floating IP will be attached automatically to the VM.
* To destroy the resources:
* terraform destroy