The setup deploys a VM using:

* 🔹 Image: focal
* 🔹 Flavor: m1.t1
* 🔹 Internal network: net1 (UUID: bdb275a4-3d6c-4d98-b860-97a5219d6ffd)
* 🔹 External floating IP pool: public
* 🔹 Keypair: key1
* 🔹 Security group: sec1

**Directory Structure**

terraform-openstack/

├── main.tf # Terraform configuration

├── variables.tf # Input variable definitions

├── terraform.tfvars # Actual input values

└── README.md # Deployment documentation

**main.tf – Terraform Configuration**

terraform {

required\_providers {

openstack = {

source = "terraform-provider-openstack/openstack"

version = "~> 1.51.0" # or omit for latest

}

}

}

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\_instance\_v2" "vm" {

name = var.instance\_name

image\_name = var.image\_name

flavor\_name = var.flavor\_name

key\_pair = var.keypair\_name # referencing existing keypair

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 = "key1" }

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

variable "instance\_name" { default = "focal-vm" }

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

variable "flavor\_name" { default = "m1.t1" }

variable "security\_group" { default = "sec1" }

variable "network\_id" {} # Internal network UUID

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

**terraform.tfvars – Actual Input Values**

terraform.tfstate terraform.tfstate.backup terraform.tfvars

(kolla-venv) root@controller1:~/terraform-openstack# cat terraform.tfvars

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

project\_name = "admin"

user\_name = "admin"

password = "7UdktWlkXp0HdBsMna1vN9QPpi50nXPwsjuEopNV"

network\_id = "bdb275a4-3d6c-4d98-b860-97a5219d6ffd" # net1

floating\_ip\_pool = "public"

**README.md – Deployment Guide**

# OpenStack VM Deployment with Terraform

## Prerequisites

- Terraform v1.x installed

- OpenStack project with:

- Internal network ID (`net1`)

- Floating IP pool (`public`)

- Available image (`focal`)

- Flavor (`m1.t1`)

- SSH keypair (`key1`)

- Security group (`sec1`)

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

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## Setup

1. Clone or copy the project:

```bash

git clone <repo-url> terraform-openstack/

cd terraform-openstack/

1. Initialize Terraform:
2. terraform init
3. Review and customize terraform.tfvars with your environment settings.
4. Deploy resources:
5. terraform apply
6. After deployment:
7. vm\_floating\_ip = "192.168.1.X"

**Notes**

* Ensure the public\_key\_path exists and contains a valid SSH key.
* Floating IP will be automatically assigned to the VM.
* To tear down everything:
* terraform destroy