**Virtual Machine creation using Terraform Code**

In order to create a virtual machine using terraform we have to define the resource group, virtual network, subnets, NSG, assigning NSG to the subnet, public IP, NIC card, and virtual machine (separately) individually in the terraform configuration file.

But where as while creating the virtual machine using Azure portal (GUI), this all are created and assigned by default.

The below given are the steps to be follow in order creating the VM.

1. Resource Group
2. Virtual Network
3. Subnet
4. Public IP
5. NIC card.
6. NSG.
7. Assigning the NSG to the subnet.
8. Virtual Machine.

Step1: Create the resource group (RG).

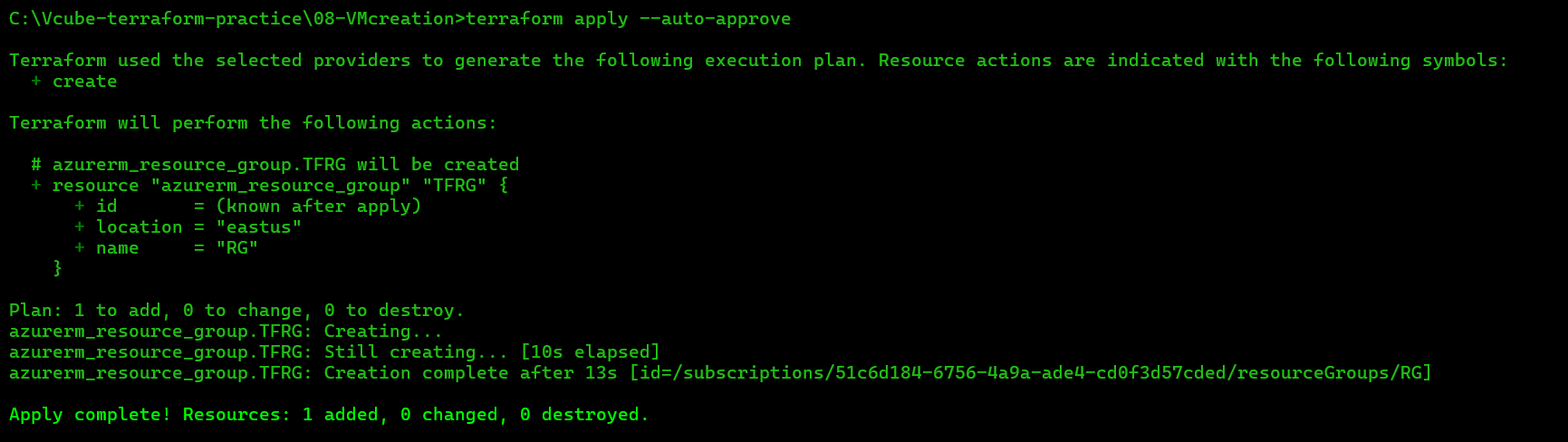
#resource group creation

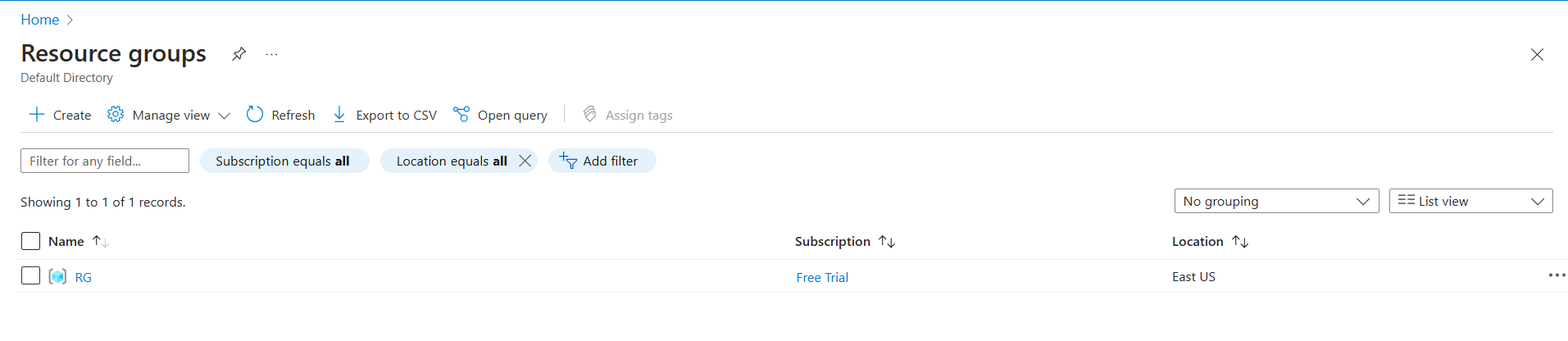
resource "azurerm\_resource\_group" "TFRG" {

  name     = "RG"

  location = "eastus"

}





Step2: Create the Virtual Network (Vnet).

#virtual network creation

resource "azurerm\_virtual\_network" "TFVnet" {

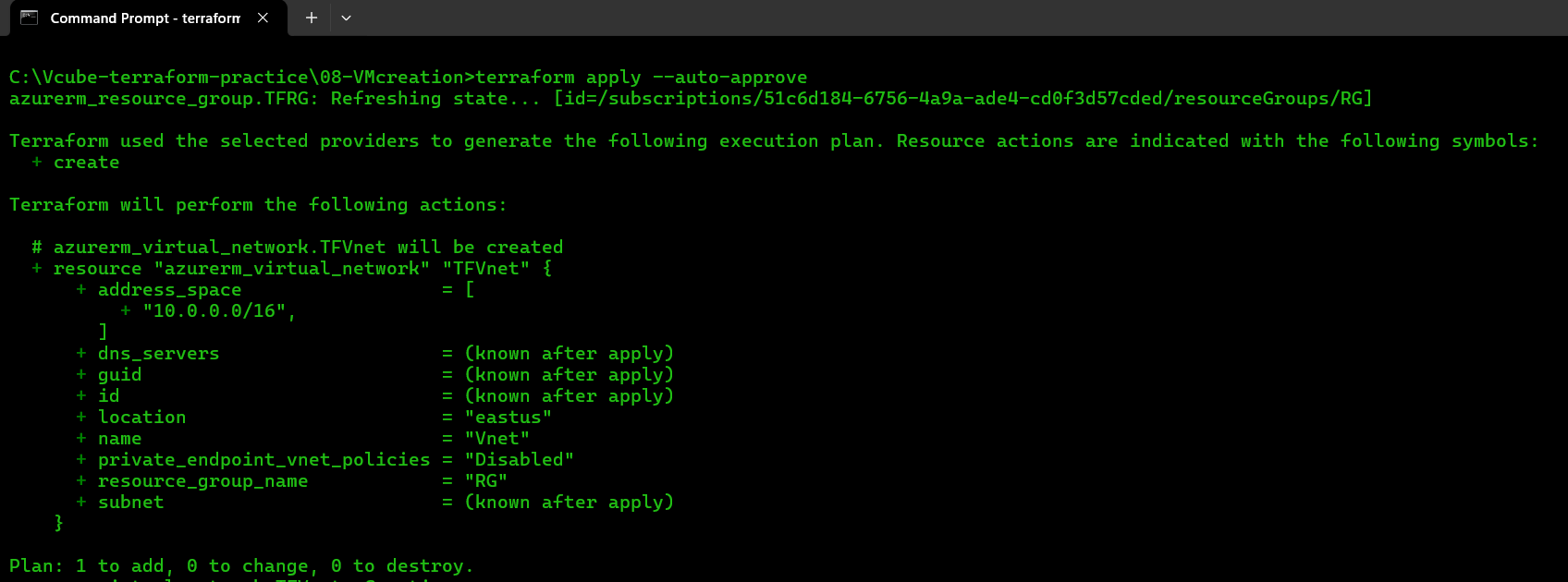
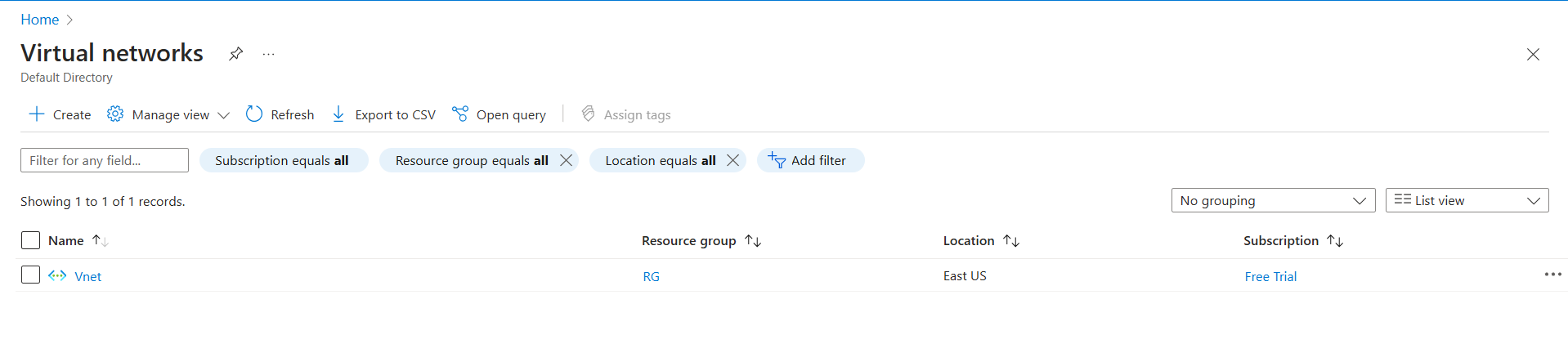
    name = "Vnet"

    location = azurerm\_resource\_group.TFRG.location

    resource\_group\_name = azurerm\_resource\_group.TFRG.name

    address\_space = ["10.0.0.0/16"]

}



Step3: Create the Subnet (subnet).

#subnet creation

resource "azurerm\_subnet" "TFsubnet" {

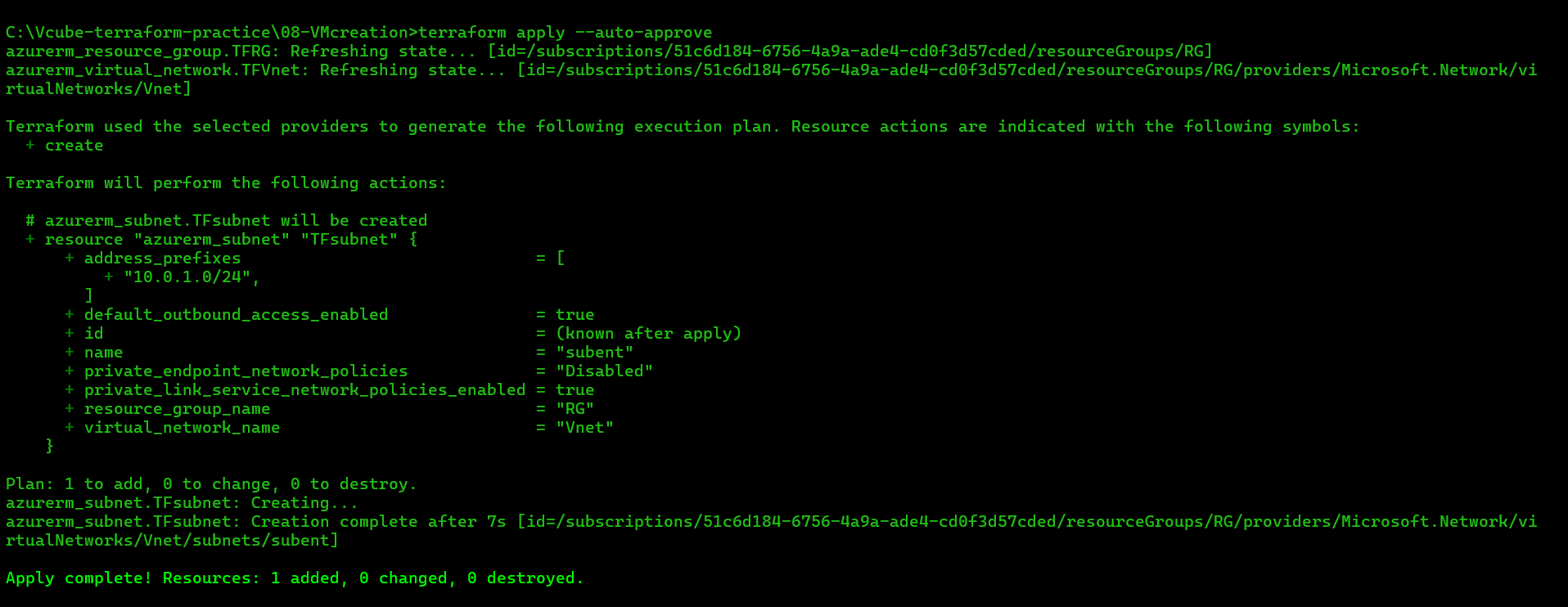
    name = "subent"

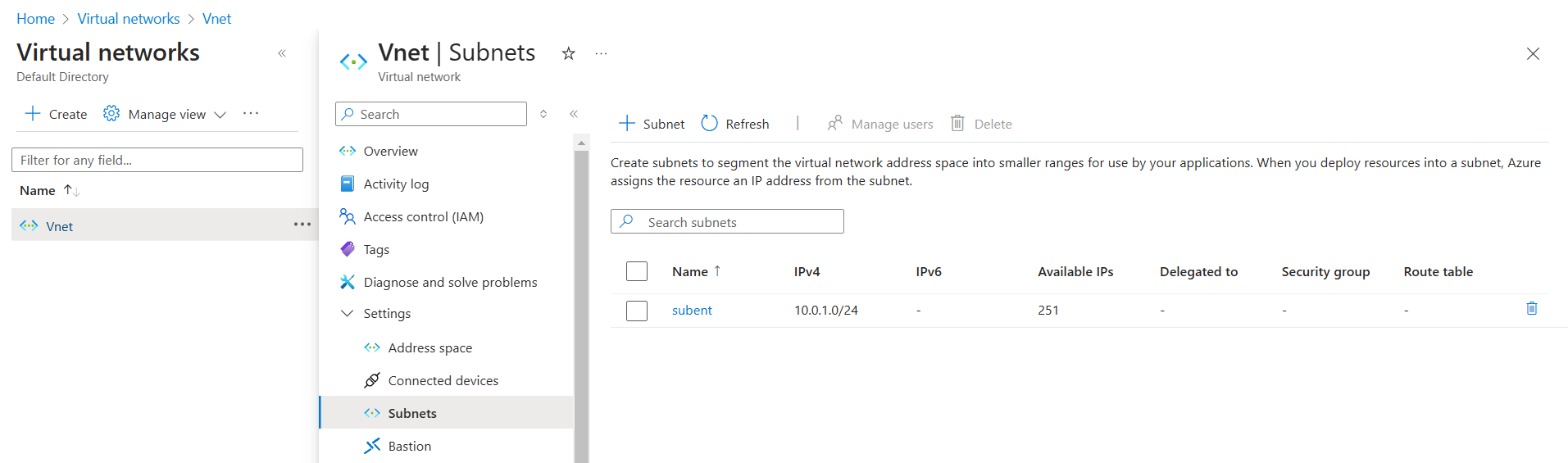
    resource\_group\_name = azurerm\_resource\_group.TFRG.name

    address\_prefixes = ["10.0.1.0/24"]

    virtual\_network\_name = azurerm\_virtual\_network.TFVnet.name

}





Step4: Create the public IP (publicIP).

#public ip creation

resource "azurerm\_public\_ip" "TFPIP" {

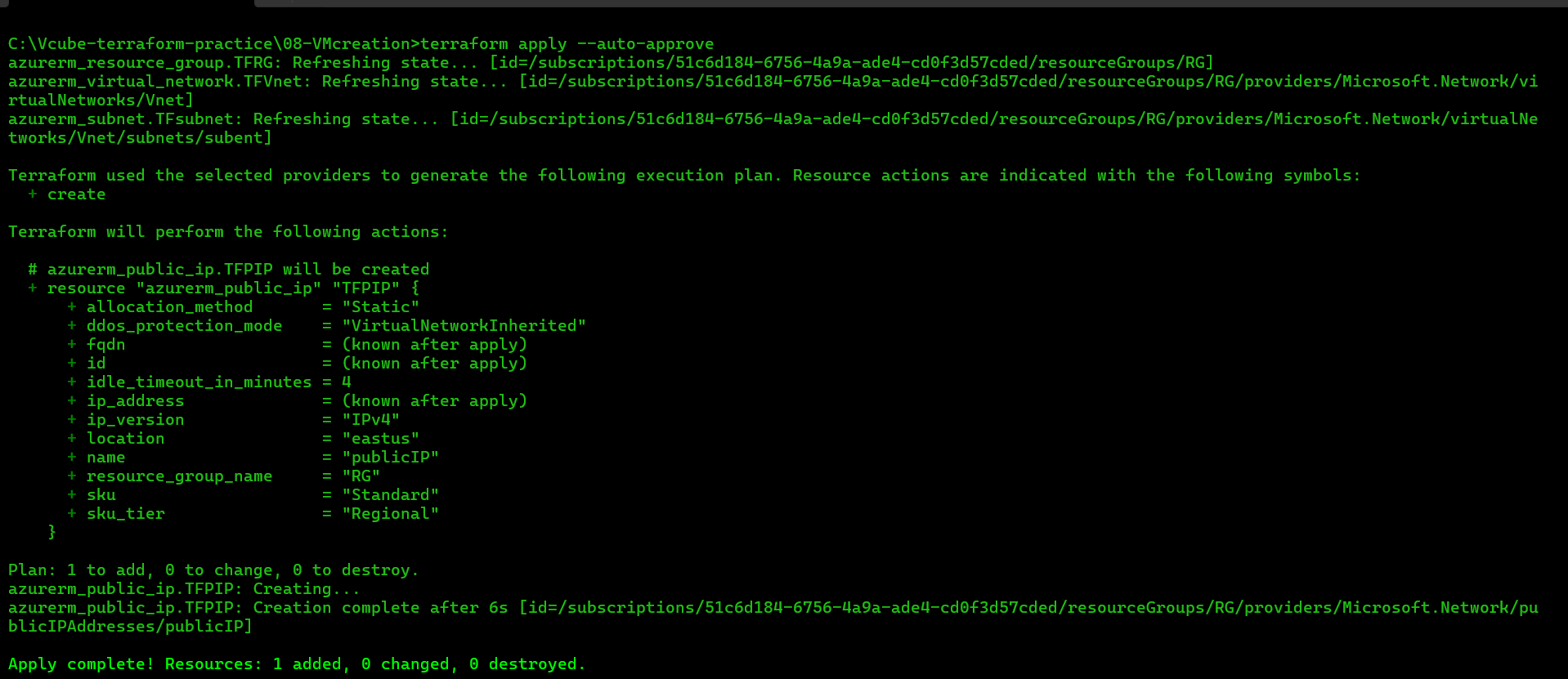
    name = "publicIP"

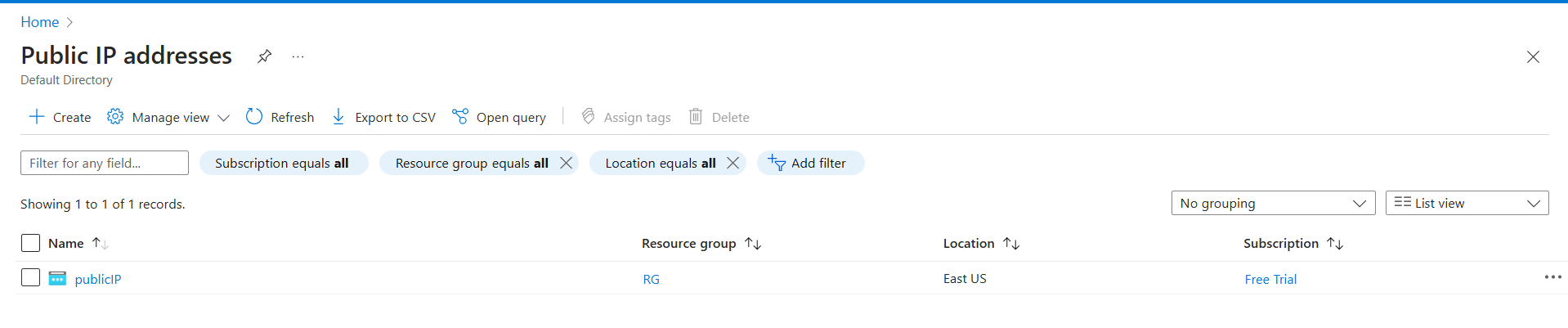
    location = azurerm\_resource\_group.TFRG.location

    resource\_group\_name = azurerm\_resource\_group.TFRG.name

    allocation\_method = "Static"

}





Step5: Create the NIC (network interface card) card (NIC).

#NIC card creation

resource "azurerm\_network\_interface" "TFNIC" {

    name = "NIC"

    location = azurerm\_resource\_group.TFRG.location

    resource\_group\_name = azurerm\_resource\_group.TFRG.name

    ip\_configuration {

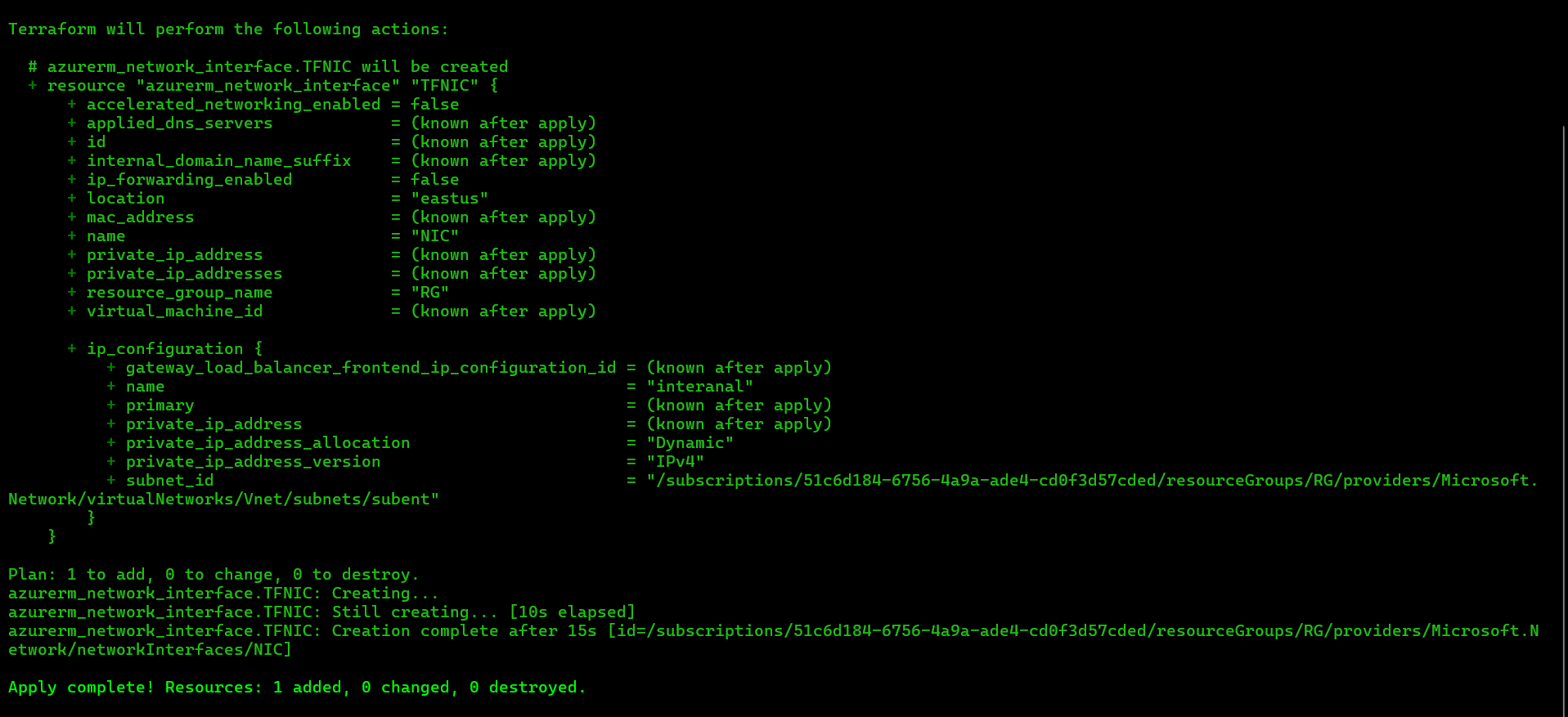
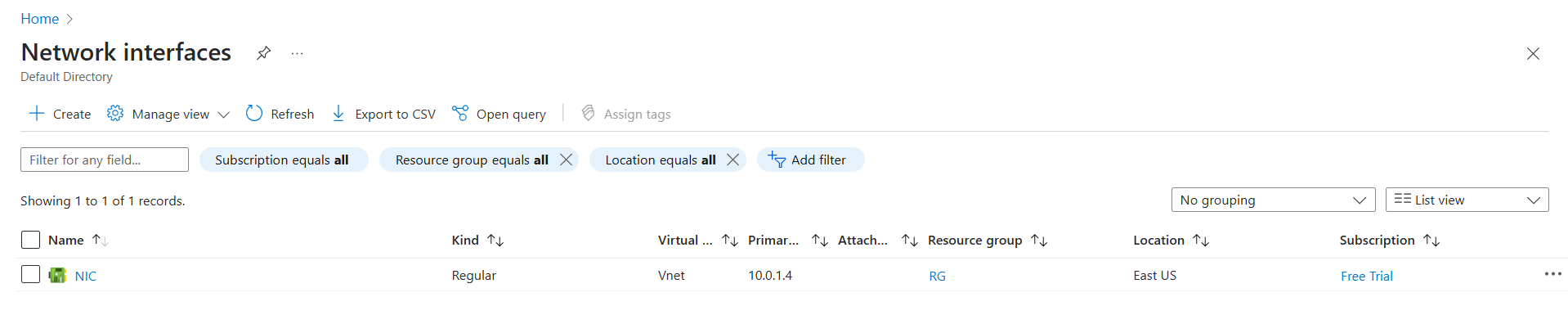
        name = "interanal"

      subnet\_id = azurerm\_subnet.TFsubnet.id

      private\_ip\_address\_allocation = "Dynamic"

    }

}



Step6: Create the network security group (NSG) and Write the inbound rules for it.

#NSG creation

resource "azurerm\_network\_security\_group" "TFNSG" {

    name = "NSG"

    location = azurerm\_resource\_group.TFRG.location

    resource\_group\_name = azurerm\_resource\_group.TFRG.nam

}

#writing of NSG rules

resource "azurerm\_network\_security\_rule" "allow\_ssh" {

  name                         = "AllowSSH"

  priority                     = 100

  direction                    = "Inbound"

  access                       = "Allow"

  protocol                     = "Tcp"

  source\_port\_range            = "\*"

  destination\_port\_range       = "22"

  source\_address\_prefix        = "\*"

  destination\_address\_prefix = "\*"

  resource\_group\_name          = azurerm\_resource\_group.rg.name

  network\_security\_group\_name  = azurerm\_network\_security\_group.TFNSG.name

}

resource "azurerm\_network\_security\_rule" "allow\_http" {

  name                         = "AllowHTTP"

  priority                     = 110

  direction                    = "Inbound"

  access                       = "Allow"

  protocol                     = "Tcp"

  source\_port\_range            = "\*"

  destination\_port\_range       = "80"

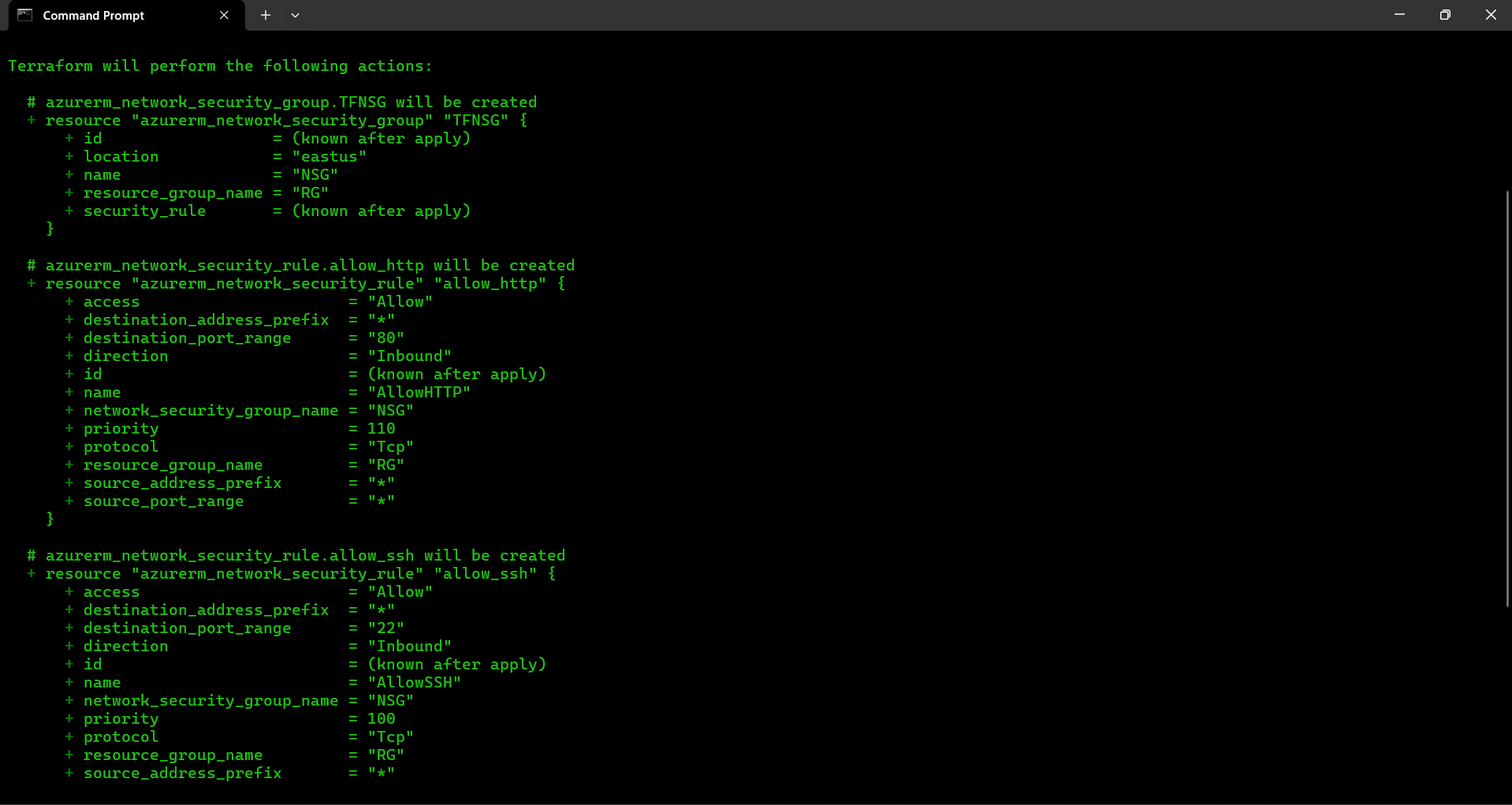
  source\_address\_prefix        = "\*"

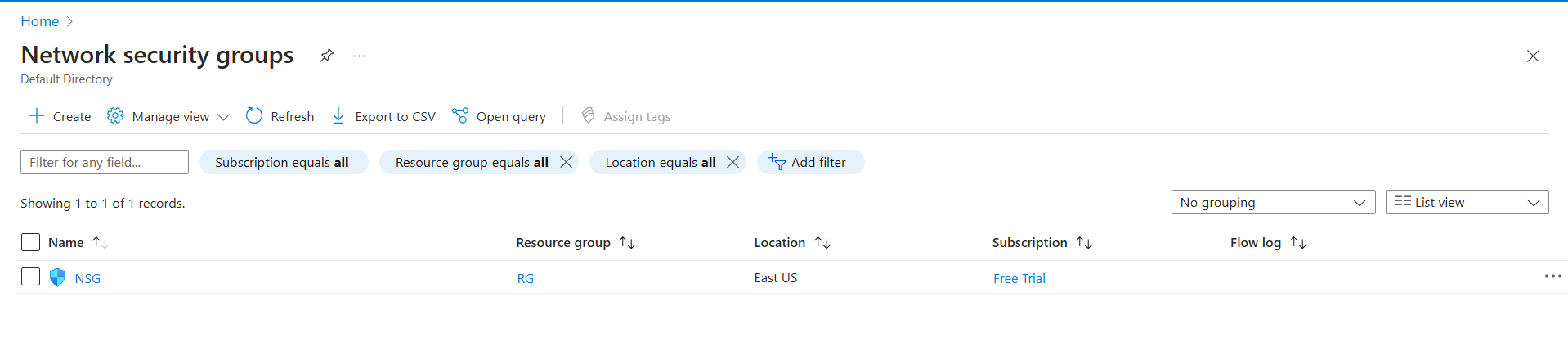
  destination\_address\_prefix = "\*"

  resource\_group\_name          = azurerm\_resource\_group.rg.name

  network\_security\_group\_name  = azurerm\_network\_security\_group.TFNSG.name

}





Step7: Assigning of NSG to the Subnet.

# Assigning of NSG to the subnet

resource "azurerm\_subnet\_network\_security\_group\_association" "example" {

  subnet\_id                 = azurerm\_subnet.TFsubnet.id

  network\_security\_group\_id = azurerm\_network\_security\_group.TFNSG.id

}

Step8: Virtual Machine creation (VM).

#virtual machine creation

resource "azurerm\_linux\_virtual\_machine" "TFVM" {

  name                            = "VM-0"

  resource\_group\_name             = azurerm\_resource\_group.TFRG.name

  location                        = azurerm\_resource\_group.TFRG.location

  size                            = "Standard\_B1s"

  admin\_username                  = "harish"

  admin\_password                  = "Harish@123456789"

  network\_interface\_ids = [azurerm\_network\_interface.TFNIC.id]

  disable\_password\_authentication = false  # Important: Allow password auth

  source\_image\_reference {

    publisher = "Canonical"

    offer     = "0001-com-ubuntu-server-jammy" # Ubuntu 22.04 LTS

    sku       = "22\_04-lts-gen2" # or "22\_04-lts"

    version   = "latest"

  }

  os\_disk {

    storage\_account\_type = "Standard\_LRS"

    caching              = "ReadWrite"

  }

}

