Module 8: Terraform Assignment - 5

Assignment Submitted By:-Hitesh Chauhan
Course Offered: -Advanced Cloud Computing and Devops
Assignment By: -Intellipaat
Trainer: -Kumar
Date Of Submission: -03/03/2025

Tasks To Be Performed:

1. Destroy the previous deployments

2. Create a script to install Apache2

3. Run this script on a newly created EC2 instance

4. Print the IP address of the instance in a file on the local once deployed

SOLUTION

1. Destroy the previous deployment.

Now in this task we need to run another command for destroy the deployment.the command is **terraform destroy –auto-approve**

```
root@DESKTOP-VOHL7L3:/home/hitesh/terraform/assignment04# terraform destroy --auto-approve
aws_vpc.assignment-4-vpc: Refreshing state... [id=vpc-0ec0a1e2370e960d1]
aws_internet_gateway.gw: Refreshing state... [id=igw-0687aecac1fd2b823]
aws_subnet.assignment-4-subnet: Refreshing state... [id=subnet-097c50079958c9fd6]
aws_route_table.public: Refreshing state... [id=rtb-0206111b4db43c605]
aws_instance.assignment-4: Refreshing state... [id=i-0a16e10df763adf24]
aws_route_table_association.public: Refreshing state... [id=rtbassoc-0a0f83f7d1c4bfb97]

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
  - destroy

Terraform will perform the following actions:

  # aws_instance.assignment-4 will be destroyed
  - resource "aws_instance" "assignment-4" {
      - ami                                  = "ami-09040d770ffe2224f" -> null
      - arn                                  = "arn:aws:ec2:us-east-2:850995532146:instance/i-0a16e10df763adf24" -> null
      - associate_public_ip_address          = true -> null
      - availability_zone                    = "us-east-2a" -> null
      - cpu_core_count                       = 1 -> null
      - cpu_threads_per_core                 = 1 -> null
      - disable_api_stop                     = false -> null
      - disable_api_termination              = false -> null
      - ebs_optimized                        = false -> null
      - get_password_data                    = false -> null
      - hibernation                          = false -> null
      - id                                   = "i-0a16e10df763adf24" -> null
      - instance_initiated_shutdown_behavior = "stop" -> null
      - instance_state                       = "running" -> null
      - instance_type                        = "t2.micro" -> null
      - ipv6_address_count                   = 0 -> null
      - ipv6_addresses                       = [] -> null
      - key_name                             = "docker" -> null
      - monitoring                           = false -> null
      - placement_partition_number           = 0 -> null
      - primary_network_interface_id         = "eni-09e1c1ea43f3d4f11" -> null
      - private_dns                          = "ip-10-10-5-30.us-east-2.compute.internal" -> null
      - private_ip                           = "10.10.5.30" -> null
      - public_ip                            = "3.149.23.214" -> null
```

```
          - instance_tenancy                    = "default" -> null
          - ipv6_netmask_length                 = 0 -> null
          - main_route_table_id                 = "rtb-028a4d27801c64308" -> null
          - owner_id                            = "850995532146" -> null
          - tags                                = {
              - "Name" = "assignment-4-vpc"
            } -> null
          - tags_all                            = {
              - "Name" = "assignment-4-vpc"
            } -> null
            # (4 unchanged attributes hidden)
      }

Plan: 0 to add, 0 to change, 6 to destroy.
aws_route_table_association.public: Destroying... [id=rtbassoc-0a0f83f7d1c4bfb97]
aws_instance.assignment-4: Destroying... [id=i-0a16e10df763adf24]
aws_route_table_association.public: Destruction complete after 2s
aws_route_table.public: Destroying... [id=rtb-0206111b4db43c605]
aws_route_table.public: Destruction complete after 1s
aws_internet_gateway.gw: Destroying... [id=igw-0687aecac1fd2b823]
aws_instance.assignment-4: Still destroying... [id=i-0a16e10df763adf24, 10s elapsed]
aws_internet_gateway.gw: Still destroying... [id=igw-0687aecac1fd2b823, 10s elapsed]
aws_instance.assignment-4: Still destroying... [id=i-0a16e10df763adf24, 20s elapsed]
aws_internet_gateway.gw: Still destroying... [id=igw-0687aecac1fd2b823, 20s elapsed]
aws_instance.assignment-4: Still destroying... [id=i-0a16e10df763adf24, 30s elapsed]
aws_internet_gateway.gw: Still destroying... [id=igw-0687aecac1fd2b823, 30s elapsed]
aws_instance.assignment-4: Still destroying... [id=i-0a16e10df763adf24, 40s elapsed]
aws_internet_gateway.gw: Still destroying... [id=igw-0687aecac1fd2b823, 40s elapsed]
aws_instance.assignment-4: Still destroying... [id=i-0a16e10df763adf24, 50s elapsed]
aws_internet_gateway.gw: Still destroying... [id=igw-0687aecac1fd2b823, 50s elapsed]
aws_instance.assignment-4: Still destroying... [id=i-0a16e10df763adf24, 1m0s elapsed]
aws_internet_gateway.gw: Still destroying... [id=igw-0687aecac1fd2b823, 1m0s elapsed]
aws_internet_gateway.gw: Destruction complete after 1m3s
aws_instance.assignment-4: Destruction complete after 1m10s
aws_subnet.assignment-4-subnet: Destroying... [id=subnet-097c50079958c9fd6]
aws_subnet.assignment-4-subnet: Destruction complete after 0s
aws_vpc.assignment-4-vpc: Destroying... [id=vpc-0ec0a1e2370e960d1]
aws_vpc.assignment-4-vpc: Destruction complete after 2s

Destroy complete! Resources: 6 destroyed.
root@DESKTOP-VOHL7L3:/home/hitesh/terraform/assignment04#
```

2. Create a script to install Apache2

```
provider "aws"{
   region = "us-east-2"
   access_key = ""
   secret_key = ""
}
resource "aws_instance" "assignment-5"{
   ami = "ami-09040d770ffe2224f"
   instance_type = "t2.micro"
   key_name = "docker"
   user_data = <<-EOF
      #!/bin/bash
      apt update -y
      apt-get install apache2 -y
      EOF
   tags = {
   Name = "assignment-5"
   }
}
output "instance_ip"{
```

```
    value = aws_instance.assignment-5.public_ip
  }
  resource "local_file" "instance_ip_file"{
    content = aws_instance.assignment-5.public_ip
    filename = "${path.module}/instance_ip.txt"
  }
```

Now We need to terraform init command.
Run this command terraform init

```
root@DESKTOP-VOHL7L3:/home/hitesh/terraform/assignment05# terraform init
Initializing the backend...
Initializing provider plugins...
- Finding latest version of hashicorp/aws...
- Finding latest version of hashicorp/local...
- Installing hashicorp/aws v5.89.0...
- Installed hashicorp/aws v5.89.0 (signed by HashiCorp)
- Installing hashicorp/local v2.5.2...
- Installed hashicorp/local v2.5.2 (signed by HashiCorp)
Terraform has created a lock file .terraform.lock.hcl to record the provider
selections it made above. Include this file in your version control repository
so that Terraform can guarantee to make the same selections by default when
you run "terraform init" in the future.

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
root@DESKTOP-VOHL7L3:/home/hitesh/terraform/assignment05#
```

After Complete the **terraform init** command we need to run the **terraform apply –auto-approve** command then after run this commnd you will see the creating the deployment in us-east-2 region because I mentioned ohio region in code.

```
root@DESKTOP-VOHL7L3:/home/hitesh/terraform/assignment05#
root@DESKTOP-VOHL7L3:/home/hitesh/terraform/assignment05#
root@DESKTOP-VOHL7L3:/home/hitesh/terraform/assignment05#
root@DESKTOP-VOHL7L3:/home/hitesh/terraform/assignment05# terraform apply --auto-approve

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
  + create

Terraform will perform the following actions:

  # aws_instance.assignment-5 will be created
  + resource "aws_instance" "assignment-5" {
      + ami                                  = "ami-09040d770ffe2224f"
      + arn                                  = (known after apply)
      + associate_public_ip_address          = (known after apply)
      + availability_zone                    = (known after apply)
      + cpu_core_count                       = (known after apply)
      + cpu_threads_per_core                 = (known after apply)
      + disable_api_stop                     = (known after apply)
      + disable_api_termination              = (known after apply)
      + ebs_optimized                        = (known after apply)
      + enable_primary_ipv6                  = (known after apply)
      + get_password_data                    = false
      + host_id                              = (known after apply)
      + host_resource_group_arn              = (known after apply)
      + iam_instance_profile                 = (known after apply)
      + id                                   = (known after apply)
      + instance_initiated_shutdown_behavior = (known after apply)
      + instance_lifecycle                   = (known after apply)
      + instance_state                       = (known after apply)
      + instance_type                        = "t2.micro"
      + ipv6_address_count                   = (known after apply)
      + ipv6_addresses                       = (known after apply)
      + key_name                             = "docker"
      + monitoring                           = (known after apply)
      + outpost_arn                          = (known after apply)
      + password_data                        = (known after apply)
      + placement_group                      = (known after apply)
      + placement_partition_number           = (known after apply)
      + primary_network_interface_id         = (known after apply)
      + private_dns                          = (known after apply)
```

After Completed the deployed outputs has been generated by terraform as per the code.

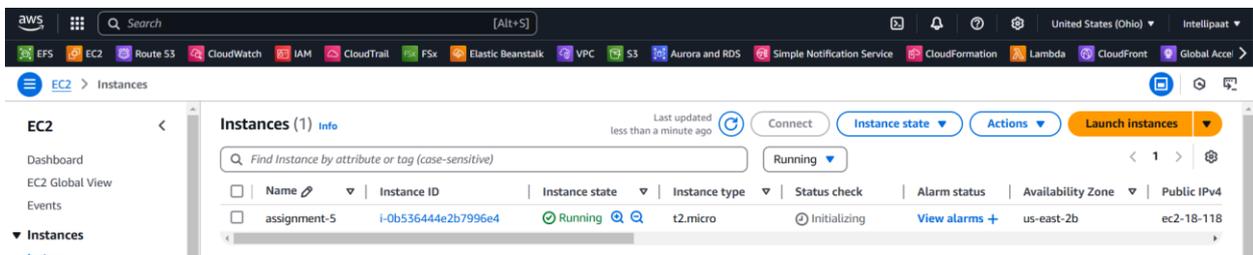## Instance ip= "18.118.108.87"

```
      + metadata_options (known after apply)

      + network_interface (known after apply)

      + private_dns_name_options (known after apply)

      + root_block_device (known after apply)
    }

  # local_file.instance_ip_file will be created
  + resource "local_file" "instance_ip_file" {
      + content              = (known after apply)
      + content_base64sha256 = (known after apply)
      + content_base64sha512 = (known after apply)
      + content_md5          = (known after apply)
      + content_sha1         = (known after apply)
      + content_sha256       = (known after apply)
      + content_sha512       = (known after apply)
      + directory_permission = "0777"
      + file_permission      = "0777"
      + filename             = "./instance_ip.txt"
      + id                   = (known after apply)
    }

Plan: 2 to add, 0 to change, 0 to destroy.

Changes to Outputs:
  + instance_ip = (known after apply)
aws_instance.assignment-5: Creating...
aws_instance.assignment-5: Still creating... [9s elapsed]
aws_instance.assignment-5: Creation complete after 16s [id=i-0b536444e2b7996e4]
local_file.instance_ip_file: Creating...
local_file.instance_ip_file: Creation complete after 0s [id=c9be5669656587621394abb3598d4179176dba7c]

Apply complete! Resources: 2 added, 0 changed, 0 destroyed.

Outputs:

instance_ip = "18.118.105.87"
root@DESKTOP-VOHL7L3:/home/hitesh/terraform/assignment05#
```


All task has been done now need to destroy the deployment

```
Outputs:

instance_ip = "18.118.105.87"
root@DESKTOP-VOHL7L3:/home/hitesh/terraform/assignment05# terraform destroy --auto-approve
aws_instance.assignment-5: Refreshing state... [id=i-0b536444e2b7996e4]
local_file.instance_ip_file: Refreshing state... [id=c9be5669656587621394abb3598d4179176dba7c]

Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the following symbols:
  - destroy

Terraform will perform the following actions:

  # aws_instance.assignment-5 will be destroyed
  - resource "aws_instance" "assignment-5" {
      - ami                                  = "ami-09040d770ffe2224f" -> null
      - arn                                  = "arn:aws:ec2:us-east-2:850995532146:instance/i-0b536444e2b7996e4" -> null
      - associate_public_ip_address          = true -> null
      - availability_zone                    = "us-east-2b" -> null
      - cpu_core_count                       = 1 -> null
      - cpu_threads_per_core                 = 1 -> null
      - disable_api_stop                     = false -> null
      - disable_api_termination              = false -> null
      - ebs_optimized                        = false -> null
      - get_password_data                    = false -> null
      - hibernation                          = false -> null
      - id                                   = "i-0b536444e2b7996e4" -> null
      - instance_initiated_shutdown_behavior = "stop" -> null
      - instance_state                       = "running" -> null
      - instance_type                        = "t2.micro" -> null
      - ipv6_address_count                   = 0 -> null
      - ipv6_addresses                       = [] -> null
      - key_name                             = "docker" -> null
      - monitoring                           = false -> null
      - placement_partition_number           = 0 -> null
      - primary_network_interface_id         = "eni-01fd3ca664398d852" -> null
```

```
          - iops          = 3000 -> null
          - tags          = {} -> null
          - tags_all      = {} -> null
          - throughput    = 125 -> null
          - volume_id     = "vol-04d41db25baac18c7" -> null
          - volume_size   = 8 -> null
          - volume_type   = "gp3" -> null
            # (1 unchanged attribute hidden)
        }
    }

  # local_file.instance_ip_file will be destroyed
  - resource "local_file" "instance_ip_file" {
      - content              = "18.118.105.87" -> null
      - content_base64sha256 = "2KYsfdiDmnND2QUFEeqib95WywIHY3hRZHUOyppqJaM=" -> null
      - content_base64sha512 = "0B938m5GSGYKSQdDs7uQcyQpa1aax7TP+CljL2YPJdmgHGu2GHoYUlEIfZ7medcsKGn4RhGSrIUEueO4yqVTxg==" -> null
      - content_md5          = "9c92913e31df520e6fa2d3e8d690bd8d" -> null
      - content_sha1         = "c9be5669656587621394abb3598d4179176dba7c" -> null
      - content_sha256       = "d8a62c7dd8839a7343d9050511eaa26fde56cb020763785164750eca9a6a25a3" -> null
      - content_sha512       = "381f77f26e4648660a490743b3bb907324296b569ac7b4cff829632f660f25d9a01c6bb6187a185251087d9ee679d72c2869f8461192ac8504b9e3b8c
aa553c6" -> null
      - directory_permission = "0777" -> null
      - file_permission      = "0777" -> null
      - filename             = "./instance_ip.txt" -> null
      - id                   = "c9be5669656587621394abb3598d4179176dba7c" -> null
    }

Plan: 0 to add, 0 to change, 2 to destroy.

Changes to Outputs:
  - instance_ip = "18.118.105.87" -> null
local_file.instance_ip_file: Destroying... [id=c9be5669656587621394abb3598d4179176dba7c]
local_file.instance_ip_file: Destruction complete after 0s
aws_instance.assignment-5: Destroying... [id=i-0b536444e2b7996e4]
aws_instance.assignment-5: Still destroying... [id=i-0b536444e2b7996e4, 8s elapsed]
aws_instance.assignment-5: Still destroying... [id=i-0b536444e2b7996e4, 18s elapsed]
aws_instance.assignment-5: Still destroying... [id=i-0b536444e2b7996e4, 28s elapsed]
aws_instance.assignment-5: Destruction complete after 29s

Destroy complete! Resources: 2 destroyed.
root@DESKTOP-VOHL7L3:/home/hitesh/terraform/assignment05#
```

The Destroy has been completed.