



SPCM LAB

LAB EXPERIMENTS

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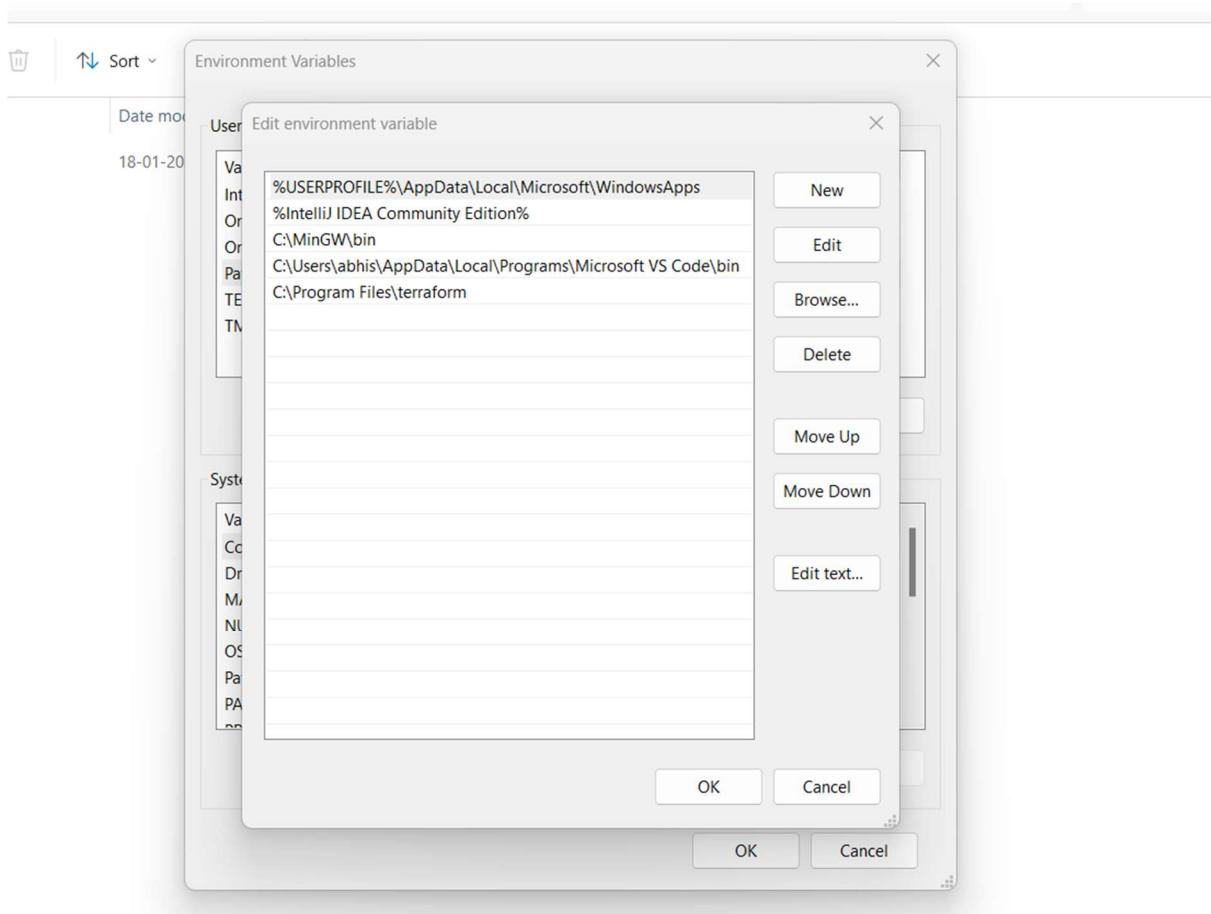
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EXPERIMENT-1

A screenshot of a Windows desktop environment. At the top is a terminal window titled 'MINGW64' showing command-line output. The output includes:

```
AbhishekPandey@Groot9798 MINGW64 ~
$ terraform --version
terraform v0.7.1
on windows_386
Your version of Terraform is out of date! The latest version
is 1.7.4. You can update by downloading from https://www.terraform.io/downloads.html
AbhishekPandey@Groot9798 MINGW64 ~
$ |
```

The system tray at the bottom shows the date (24-02-2024), time (23:48), battery level (9%), and network status (ENG IN).



EXPERIMENT-2

```
AbhishekPandey@Groot9798 MINGW64 ~
$ cd Documents/
AbhishekPandey@Groot9798 MINGW64 ~/Documents
$ mkdir terraform
AbhishekPandey@Groot9798 MINGW64 ~/Documents
$ cd terraform
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform
$ ls
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform
$ mkdir dir1
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform
$ ls
dir1/
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform
$ cd dir1
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1
$ ls
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1
$ vi file1.tf
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1
$ ls -a
./ ../ file1.tf
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1
$ terraform init
Initializing the backend...
Initializing provider plugins...
- Finding hashicorp/aws versions matching "~> 5.0"...
- Installing hashicorp/aws v5.33.0...
- Installed hashicorp/aws v5.33.0 (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.
```



```
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1
$ terraform init

Initializing the backend...

Initializing provider plugins...
- Reusing previous version of hashicorp/aws from the dependency lock file
- Using previously-installed hashicorp/aws v5.33.0

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.

AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1
$ vi file1.tf
```

EXPERIMENT-3

```
MINGW64:/c/Users/abhis/Documents/terraform/dir1/aws-terraform-demo
$ cd Documents/
$ cd terraform
$ cd dir1
$ mkdir terraform-vpc
$ cd terraform-vpc
$ vi main.tf
$ ls
main.tf
$ terraform init
Initializing the backend...
Initializing provider plugins...
- Finding latest version of hashicorp/aws...
- Installing hashicorp/aws v5.35.0...
- Installed hashicorp/aws v5.35.0 (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.
$ rm main.tf
$ cd dir1
bash: cd: dir1: No such file or directory
$ cd
```

7°C Sunny ENG IN 07-02-2024 1008

```
MINGW64:/c/Users/abhis/Documents/terraform/dir1/aws-terraform-demo
Error: creating EC2 Instance: InvalidImageId.NotFound: The image id 'ami-0c7217cdde317cfec' does not exist
  status code: 400, request id: 4648d8f8-1acf-45e2-bf7c-b46b46ee611
  with aws_instance.My-instance[0],
  on instance.tf line 1, in resource "aws_instance" "My-instance":
  : resource "aws_instance" "My-instance" {
```

```
$ vi instance.yf
$ vi instance.tf
$ vi main.tf
$ terraform init
Initializing the backend...
Initializing provider plugins...
- Reusing previous version of hashicorp/aws from the dependency lock file
- Using previously-installed hashicorp/aws v5.31.0

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.
$ terraform validate
Success! The configuration is valid.

$ terraform plan
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.My-instance[0] will be created
+ resource "aws_instance" "My-instance" {
    + ami                                = "ami-0c7217cdde317cfec"
    + ami_id                            = (known after apply)
    + associate_public_ip_address        = (known after apply)
    + availability_zone                 = (known after apply)
    + cpu_core_count                    = (known after apply)
```

7°C Sunny ENG IN 07-02-2024 1008

```
MINGW64/c/Users/abhis/Documents/terraform/dir1/aws-terraform-demo
MINGW64 ~/Documents/terraform/dir1/aws-terraform-demo
$ terraform apply
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.My-instance[0] will be created
+ resource "aws_instance" "My-instance" {
    ami                               = "ami-0c727cdde317cfec"
    ami_id                           = (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_stay                = (known after apply)
    dynamic_ip_allocation_behavior  = (known after apply)
    ebs_optimized                   = (known after apply)
    get_password_data               = false
    host_id                          = (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)
    monitoring                      = (known after apply)
    monitoring_arn                 = (known after apply)
    network_interface_id           = (known after apply)
    placement_group_id              = (known after apply)
    placement_partition_number      = (known after apply)
    primary_network_interface_id   = (known after apply)
    private_dns                     = (known after apply)
    public_dns                      = (known after apply)
    public_ip                       = (known after apply)
    secondary_private_ips          = (known after apply)
    source_dest_check               = true
    spot_instance_request_id       = (known after apply)
    subnet_id                       = (known after apply)
    tags {
        "Name" = "UPE5-EC2-Instnace"
    }
    tags_all {
        "Name" = "UPE5-EC2-Instnace"
    }
    tenancy                         = (known after apply)
    user_data                       = (known after apply)
    user_data_base64                = false
    user_data_replace_on_change     = (known after apply)
    vpc_security_group_ids          = (known after apply)
}
```

The screenshot shows two windows side-by-side. The left window is a terminal session titled 'MINGW64' running on Windows. It displays the output of the 'terraform apply' command, showing the creation of an AWS EC2 instance named 'My-instance'. The right window is the AWS CloudShell interface, specifically the 'Instances' section under the EC2 service. It lists two instances: one terminated (t2.micro) and one running (t2.micro). Both instances have the tag 'Name: UPE5-EC2-Instnace'. The AWS navigation bar at the top includes 'Services', 'Search', and the user's name 'AbhishekPandey900'. The bottom status bar shows the date '07-02-2024' and time '10:07'.

EXPERIMENT-4

```
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1
$ mkdir terraform-variables

AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1
$ cd terraform-variables

AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-variables
$ vi main.tf

AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-variables
$ terraform init

Initializing the backend...

Initializing provider plugins...
- Finding hashicorp/aws versions matching "5.31.0"...
- Installing hashicorp/aws v5.31.0...
- Installed hashicorp/aws v5.31.0 (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.
```

The screenshot shows a Windows desktop environment. In the foreground, there is a terminal window titled 'MINGW64/c/Users/abhi/Documents/terraform/dir1/terraform-variables'. The window displays the contents of a 'main.tf' file, which includes provider configurations for AWS and a resource block for an EC2 instance named 'SPCM-EC2-INSTANCE'. The terminal window has a blue header bar with standard window controls. Below the terminal, the Windows taskbar is visible, featuring the Start button, a search bar, and various pinned icons for common applications like File Explorer, Edge, and File History. On the right side of the taskbar, there is a system status bar showing the date (25-02-2024), time (00:22), battery level (19, 2%), signal strength, and language settings (ENG IN). The desktop background is a plain white.

```
provider "aws" {
  region = "us-east-1"
  access_key = "AKIAZQ3DOPJL163GMSTH"
  secret_key = "iWLeP1ZwWx3LA+f7Ps7JSJDDhp4ZAiVqHC4kp0K"
}

resource "aws_instance" "example" {
  ami           = var.ami
  instance_type = var.instance_type
  tags          = [
    {Name="SPCM-EC2-INSTANCE"}]
```

```
MINGW64/c/Users/abhis/Documents/terraform/drl/terraform-variables
variable "region" {
  description = "AWS region"
  default = "us-west-1"
}
variable "ami" {
  description = "AMI ID"
  default = "ami-0c7217cdde317cfec"
}
variable "instance_type" {
  description = "EC2 instance Type"
  default = "t2.micro"
}

variables.tf [unix] (09:20 25/02/2024)
variables.tf [unix] 12L, 23B
12,1,41

MINGW64/c/Users/abhis/Documents/terraform/drl/terraform-variables
- Using previously-installed hashicorp/aws v5.31.0
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.

$ vi variables.tf
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/drl/terraform-variables
$ terraform init
Initializing the backend...
Initializing provider plugins...
- Reusing previous version of hashicorp/aws from the dependency lock file
- Using previously-installed hashicorp/aws v5.31.0
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.

$ terraform apply
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.example will be created
+ resource "aws_instance" "example" {
    ami           = "ami-0c7217cdde317cfec"
    + 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)"
    ebs_optimized        = "(known after apply)"
    get_password_data     = false
    host_id             = "(known after apply)"
    host_resource_group_arn = "(known after apply)"
    + id                = "(known after apply)"

  8°C Partly cloudy
  Search
  ENG IN 00:23 25-02-2024
```

```
MinGW64/c/Users/abhis/Documents/terraform/dir1/terraform-variable
+ ami                                = "ami-0c7217cdde317cfec"
+ associate_public_ip_address          = (known after apply)
+ availability_zone                   = (known after apply)
+ cpu_core_count                      = (known after apply)
+ disable_api_gateway_core           = (known after apply)
+ disable_ami_stop                    = (known after apply)
+ disable_api_termination            = (known after apply)
+ ebs_optimized                       = (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                           = (known after apply)
+ monitoring                         = (known after apply)
+ network_interface_id               = (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)
+ private_ip                         = (known after apply)
+ public_dns                         = (known after apply)
+ public_ip                          = (known after apply)
+ secondary_private_ips              = (known after apply)
+ security_groups                   = (known after apply)
+ source_dest_check                 = true
+ spot_instance_request_id          = (known after apply)
+ subnet_id                          = (known after apply)
+ tags
  + "Name" = "SPCM-EC2-INSTANCE"
}
tags.all
  + "Name" = "SPCM-EC2-INSTANCE"
}
tenancy
  + tenancy_type                      = (known after apply)
user_data
  + user_data_base64                  = (known after apply)
  + user_data_replace_on_change       = false
  + vpc_security_group_ids            = (known after apply)
}

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
only 'yes' will be accepted to approve.

Enter a value: yes
aws_instance.example: Creating...
```

8°C Partly cloudy

```
MinGW64/c/Users/abhis/Documents/terraform/dir1/terraform-variable
+ instance.lifecycle                = (known after apply)
+ instance.state                    = "t2.micro"
+ instance.type                     = (known after apply)
+ ipv6.address_count               = (known after apply)
+ ipv6_addresses                   = (known after apply)
+ key_name                          = (known after apply)
+ monitoring                       = (known after apply)
+ network_interface_id             = (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)
+ private_ip                       = (known after apply)
+ public_dns                       = (known after apply)
+ public_ip                        = (known after apply)
+ secondary_private_ips            = (known after apply)
+ security_groups                 = (known after apply)
+ source_dest_check                = (known after apply)
+ spot_instance_request_id        = (known after apply)
+ subnet_id                        = (known after apply)
+ tags
  + "Name" = "SPCM-EC2-INSTANCE"
}
tags.all
  + "Name" = "SPCM-EC2-INSTANCE"
}
tenancy
  + tenancy_type                      = (known after apply)
user_data
  + user_data_base64                  = (known after apply)
  + user_data_replace_on_change       = (known after apply)
  + vpc_security_group_ids            = (known after apply)
}

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
only 'yes' will be accepted to approve.

Enter a value: yes
aws_instance.example: Creating...
aws_instance.example: Still creating... [10s elapsed]
aws_instance.example: Still creating... [20s elapsed]
aws_instance.example: Still creating... [30s elapsed]
aws_instance.example: Creation complete after 39s [id=ai-04b1c1def4b2ba62]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.

AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-variables
$ vi main.tf
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-variables
$ vi variables.tf
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-variables
$ |
```

8°C Partly cloudy

Screenshot of the AWS CloudShell interface showing the AWS Management Console and a terminal window.

AWS Management Console:

- Left sidebar: EC2 Dashboard, EC2 Global View, Events, Console-to-Code, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, New, Images (AMIs, AMI Catalog), Elastic Block Store (Volumes).
- Top navigation bar: Search, Instances (1) info, Connect, Instance state (Any state), Actions, Launch instances.
- Table view: One instance listed: SPCM-EC2-INS... (i-04b1c11def4b2ba62), Status: Running, Instance type: t2.micro, Status check: 2/2 checks passed, Alarm status: View alarms, Availability Zone: us-east-1d, Public IP: ec2-100-2...

Terminal Window:

```

$ cd /Users/abhishekPandey/Documents/terraform/dir1
$ terraform init
$ terraform apply

```

The terminal shows the execution of Terraform commands to initialize and apply a configuration. The configuration details the creation of an EC2 instance with specific attributes like instance type (t2.micro), security group, and tags.

```
MINGW64/c/Users/abhis/Documents/terraform/dirl/terraform-variables
credit_specification {
    cpu_credits = "standard" -> null
}
- enclave_options {
    enabled = false -> null
}
- maintenance_options {
    auto_recovery = "default" -> null
}
- metadata_options {
    http_endpoint           = "enabled" -> null
    http_get_ip_v6          = "disabled" -> null
    http_put_response_hop_limit = "1" -> null
    http_tokens              = "optional" -> null
    instance_metadata_tags   = "disabled" -> null
}
- private_dns_name_options {
    enable_resource_name_dns_a_record = false -> null
    enable_resource_name_dns_aaaa_record = false -> null
    hostname_type                  = "ip-name" -> null
}
- root_block_device {
    delete_on_termination = true -> null
    device_name           = "/dev/sda1" -> null
    encrypted             = false -> null
    iops                  = "100" -> null
    tags                  = "{}" -> null
    throughput             = "0" -> null
    volume_id              = "vol-08a7d2074dsa2505a" -> null
    volume_size            = "8" -> null
    volume_type             = "gp2" -> null
}
}
Plan: 0 to add, 0 to change, 1 to destroy.

Do you really want to destroy all resources?
Terraform will destroy all your managed infrastructure, as shown above.
There is no undo. Only 'yes' will be accepted to confirm.

Enter a value: yes

aws_instance.example: Destroying... [id=i-04b1c11def4b2ba62]
aws_instance.example: Still destroying... [id=i-04b1c11def4b2ba62, 10s elapsed]
aws_instance.example: Still destroying... [id=i-04b1c11def4b2ba62, 20s elapsed]
aws_instance.example: Still destroying... [id=i-04b1c11def4b2ba62, 30s elapsed]
aws_instance.example: Still destroying... [id=i-04b1c11def4b2ba62, 40s elapsed]
aws_instance.example: Destruction complete after 44s

Destroy complete! Resources: 1 destroyed.

AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dirl/terraform-variables
$ |
```

The screenshot shows a dual-pane interface. The left pane is the AWS Management Console, specifically the EC2 Dashboard. It displays a list of instances under the 'Instances' section. One instance, 'SPCM-E22-INS...', is listed with the status 'Terminated'. The right pane is a terminal window titled 'CloudShell' with the command 'aws instance example' running, showing the process of destroying an instance. The terminal also shows the destruction of multiple instances and concludes with 'Destroy complete! Resources: 1 destroyed.' The system tray at the bottom indicates it's 00:27 on 25-02-2024.

EXPERIMENT-5

```
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1
$ mkdir terraform-variables

AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1
$ cd terraform-variables

AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-variables
$ vi main.tf

AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-variables
$ terraform init

Initializing the backend...

Initializing provider plugins...
- Finding hashicorp/aws versions matching "5.31.0"...
- Installing hashicorp/aws v5.31.0...
- Installed hashicorp/aws v5.31.0 (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.
```

```
MINGW64/c/Users/abbie/Documents/terraform/dif/terraform-variables
terraform {
  required_providers {
    aws = {
      source = "hashicorp/aws"
      version = "5.31.0"
    }
  }
  provider "aws" {
    region = "us-west-1"
    access_key = "AKIAZ03DXP3L163GMSTH"
    secret_key = "iWLept2wX3LA+FPz2JSJ0hg4ZAiVqjIC4kp0K"
  }
  resource "aws_instance" "example" {
    ami     = var.ami
    instance_type = var.instance_type
    tags = {
      Name = "SPCM-EC2-INSTANCE"
    }
  }
}
variable "region" {
  description = "AWS region"
  default = "us-west-1"
}
variable "ami" {
  description = "AMI ID"
  default = "ami-0c7217cdde317cfec"
}
variable "instance_type" {
  description = "EC2 Instance Type"
  default = "t2.micro"
}

variables.tf [unix] (00:19 25/02/2024)
variables.tf [unix] 20L, 351B
19,2 A1

MINGW64/c/Users/abbie/Documents/terraform/dif/terraform-variables
variable "region" {
  description = "AWS region"
  default = "us-west-1"
}
variable "ami" {
  description = "AMI ID"
  default = "ami-0c7217cdde317cfec"
}
variable "instance_type" {
  description = "EC2 Instance Type"
  default = "t2.micro"
}

variables.tf [unix] (00:20 25/02/2024)
variables.tf [unix] 12L, 238B
12,1 A1

8°C Partly cloudy 00:22 ENG IN 25-02-2024
```

```
AbhishekPandey@Groot9798 MINGW64 ~\Documents\terraform\dir1\terraform-variables
$ terraform apply -var "region=us-east-1" -var "ami=ami-0c7217cdde317cfec" -var
"instance_type=t2.micro"

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.example will be created
+ resource "aws_instance" "example" {
    + ami                                = "ami-0c7217cdde317cfec"
    + 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)
    + 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                           = (known after apply)
    + 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)
    + private_ip                         = (known after apply)
    + public_dns                         = (known after apply)
    + public_ip                          = (known after apply)
    + secondary_private_ips             = (known after apply)
    + security_groups                   = (known after apply)
    + source_dest_check                 = true
}
```

```
MINGW64/c/Users/abhis/Documents/terraform/dirl/terraform-variables

+ 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                    = (known after apply)
+ monitoring                = (known after apply)
+ output_port                = (known after apply)
+ password_data              = (known after apply)
+ placement_group            = (known after apply)
+ primary_nearest_interface_id = (known after apply)
+ private_dns                 = (known after apply)
+ private_ip                  = (known after apply)
+ public_ip                   = (known after apply)
+ public_ip                   = (known after apply)
+ secondary_private_ips       = (known after apply)
+ security_groups             = (known after apply)
+ source_dest_check           = true
+ spot_instance_request_id    = (known after apply)
+ subnet_id                   = (known after apply)
+ tags                        = {
    + "Name" = "SPCM-EC2-INSTANCE"
  }
+ tags_all                    = {
    + "Name" = "SPCM-EC2-INSTANCE"
  }
+ tenancy                     = (known after apply)
+ user_data                   = (known after apply)
+ user_data_base64             = (known after apply)
+ user_data_replace_on_change = false
+ user_security_group_ids     = (known after apply)
}

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

aws_instance.example: Creating...
aws_instance.example: Still creating... [10s elapsed]
aws_instance.example: Still creating... [20s elapsed]
aws_instance.example: Still creating... [30s elapsed]
aws_instance.example: Creation complete after 37s [id=i-0852e9418bd508788]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.

abhisekPandey@Groot9798 MINGW64 ~/Documents/terraform/dirl/terraform-variables
$ vi main.tf
abhisekPandey@Groot9798 MINGW64 ~/Documents/terraform/dirl/terraform-variables
$ |
```

Screenshot of the AWS CloudShell interface showing the AWS Management Console and a terminal window.

AWS CloudShell

Instances (2) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
SPCM-E2-INS...	i-04b1c1def4b2ba62	Terminated	t2.micro	-	View alarms +	us-east-1d	-
SPCM-EC2-INS...	i-0852e9418bd508788	Running	t2.micro	Initializing	View alarms +	us-east-1d	ec2-3-82-2

Select an instance

CloudShell

```

MINGW64 /c/Users/abhis/Documents/terraform/dirl/terraform-variables
$ vi main.tf
AbhishekPandey@Groot0798 MINGW64 ~/Documents/terraform/dirl/terraform-variables
$ terraform destroy
aws_instance.example: Refreshing state... [id=i-0852e9418bd508788]

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.example will be destroyed
- resource "aws_instance" "example" {
    - ami
    - arn
    - associate_public_ip_address
    - availability_zone
    - cpu_core_count
    - cpu_threads_per_core
    - disable_api_stop
    - disable_api_termination
    - disable_eni_promotion_on_launch
    - get_password_data
    - hibernation
    - id
    - instance_initiated_shutdown_behavior
    - instance_state
    - instance_type
    - ipv6_address_count
    - ipv6_addresses
    - monitoring
    - placement_partition_number
    - primary_network_interface_id
    - private_ip
    - public_dns
    - public_ip
    - secondary_private_ips
    - security_group_ids
        - default
    ] -> null
    - source_dest_check
    - subnet_id
    - tags
        - "Name" = "SPCM-EC2-INSTANCE"
    } -> null
    - tags
        - "Name" = "SPCM-EC2-INSTANCE"
    } -> null
    - tenancy
    - user_data_replace_on_change
    - vpc_security_group_ids
        - "sg-0791ab5b52bc492".
    ] -> null
    - capacity_reservation_specification {
        - capacity_reservation_preference = "open" -> null
    }
}

```

```
MinGW64/c/Users/abhis/Documents/terraform/dir1/terraform-variables
- credit_specification {
  - cpu_credits = "standard" -> null
}
- enclave_options {
  - enabled = false -> null
}
- maintenance_options {
  - auto_recovery = "default" -> null
}
- metadata_options {
  - http_endpoint = "enabled" -> null
  - http_protocol_ipv6 = "disabled" -> null
  - http_put_response_hop_limit = 1 -> null
  - http_tokens = "optional" -> null
  - instance_metadata_tags = "disabled" -> null
}
- private_dns_name_options {
  - enable_instance_dns_a_record = false -> null
  - enable_resource_name_dns_aaaa_record = false -> null
  - hostname_type = "ip-name" -> null
}
- root_block_device {
  - delete_on_termination = true -> null
  - device_name = "/dev/sda1" -> null
  - encrypted = false -> null
  - iops = 100 -> null
  - tags = {} -> null
  - throughput = 0 -> null
  - volume_id = "vol-0ea93ad2844cccd9cf" -> null
  - volume_size = 8 -> null
  - volume_type = "gp2" -> null
}
}

Plan: 0 to add, 0 to change, 1 to destroy.

Do you really want to destroy all resources?
Terraform will destroy all your managed infrastructure, as shown above.
There is no undo. Only 'yes' will be accepted to confirm.

Enter a value: yes

aws_instance.example: Destroying... [id=i-0852e9418bd508788]
aws_instance.example: Still destroying... [id=i-0852e9418bd508788, 10s elapsed]
aws_instance.example: Still destroying... [id=i-0852e9418bd508788, 20s elapsed]
aws_instance.example: Still destroying... [id=i-0852e9418bd508788, 30s elapsed]
aws_instance.example: Destruction complete after 33s

Destroy complete! Resources: 1 destroyed.

AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-variables
$ |
```

The screenshot shows a dual-pane interface. The left pane is the AWS Management Console, specifically the EC2 Dashboard. It displays a list of instances under the 'Instances' section. Two instances are listed: 'SPCM-E2-INS...' (terminated, t2.micro, us-east-1d) and 'SPCM-EC2-INS...' (terminated, t2.micro, us-east-1d). The right pane is a terminal window titled 'MinGW64/c/Users/abhis/Documents/terraform/dir1/terraform-variables'. It shows the output of a Terraform plan command, indicating 1 resource to destroy. A confirmation prompt asks if the user wants to proceed with destroying all resources. The user has entered 'yes' and the process is complete.

EXPERIMENT-6

```
1 resource "aws_instance" "example" {
2   ami = var.ami
3   instance_type = var.instance_type
4 }
5
6 terraform {
7   required_providers {
8     aws = {
9       source = "hashicorp/aws"
10      version = "5.31.0"
11    }
12  }
13}
14
15 provider "aws" {
16   region = "ap-south-1"
17   access_key = "AKIA5FTY77WSIB44R75Q"
18   secret_key = "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"
19 }
20
```

```
Terraform-multiple-tfvars > 🏛 variables.tf > 📄 variable "region" > 📂 default
1  variable "region" [
2    description = "AWS region"
3    default = "ap-south-1"
4  ]
5
6
7  variable "ami" {
8    description = "AMI ID"
9    type = string
10   default = "ami-03f4878755434977f"
11 }
12
13 variable "instance_type" {
14   description = "EC2 Instance Type"
15   default    = "t2.micro"
16 }
```

```
Terraform-multiple-tfvars > 🏛 dev.tfvars > 📂 region
1  region = "ap-south-1"
2  ami = "ami-0d63de463e6604d0a"
3  instance_type = "t2.micro"
```

```

Terraform-multiple-tfvars > 🎫 ops.tfvars > 📁 region
  1   region = "ap-south-1"
  2   ami     = "ami-03f4878755434977f"
  3   instance_type = "t2.large"

```

```

C:\Desktop\DevOps\Sem6\SMCP\Lab Files\TERRAFORM LAB SCRIPTS\Terraform-multiple-tfvars> terraform apply -var-file=dev.tfvars

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.example will be created
+ resource "aws_instance" "example" {
    + ami
    + arn
    + associate_public_ip_address
    + availability_zone
    + cpu_core_count
    + cpu_threads_per_core
    + disable_api_stop
    + disable_api_termination
    + ebs_optimized
    + get_password_data
    + host_id
    + host_resource_group_arn
    + iam_instance_profile
    + id
    = ami-0d63de463e6604d0a"
    = (known after apply)
    = false
    = (known after apply)
    = (known after apply)
}
```

```

C:\Desktop\DevOps\Sem6\SMCP\Lab Files\TERRAFORM LAB SCRIPTS\Terraform-multiple-tfvars> terraform apply -var-file=ops.tfvars

aws_instance.example: Refreshing state... [id=i-03753a6e6fb28a490]

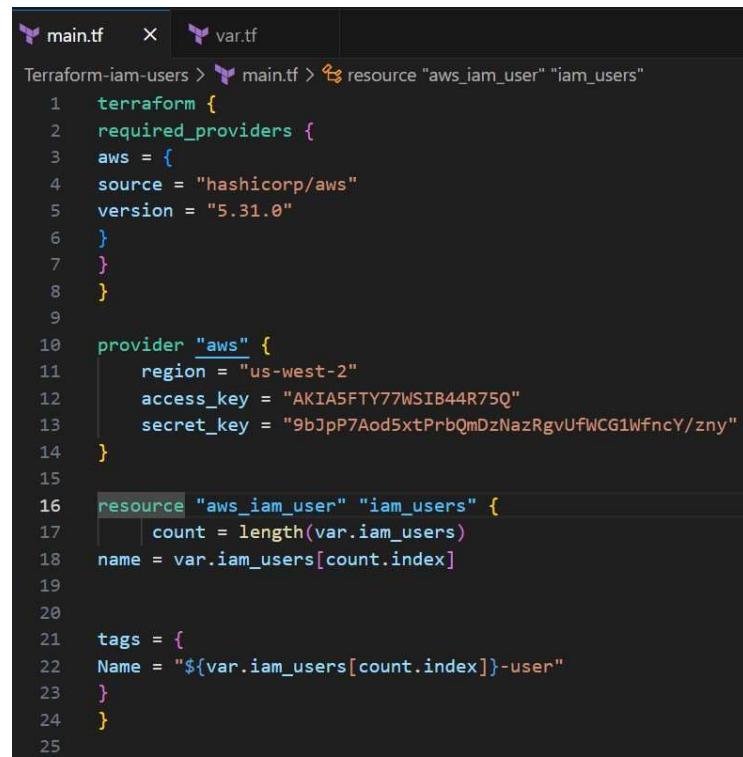
Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with the
following symbols:
-/+ destroy and then create replacement

Terraform will perform the following actions:

# aws_instance.example must be replaced
-/+ resource "aws_instance" "example" {
    ~ ami
    ~ arn
    ~ associate_public_ip_address
    ~ availability_zone
    ~ cpu_core_count
    ~ cpu_threads_per_core
    ~ disable_api_stop
    ~ disable_api_termination
    ~ ebs_optimized
    ~ hibernation
    ~ host_id
    ~ host_resource_group_arn
    ~ iam_instance_profile
    ~ id
    ~ instance_initiated_shutdown_behavior
    ~ instance.lifecycle
    = "ami-0d63de463e6604d0a" -> "ami-03f4878755434977f" # forces replacement
    = "arn:aws:ec2:ap-south-1:985418112420:instance/i-03753a6e6fb28a490" -> (known after apply)
    = true -> (known after apply)
    = "ap-south-1b" -> (known after apply)
    = 1 -> (known after apply)
    = 1 -> (known after apply)
    = false -> null
    = (known after apply)
    = (known after apply)
    = (known after apply)
    = "i-03753a6e6fb28a490" -> (known after apply)
    = "stop" -> (known after apply)
    = (known after apply)
}
```

Instances (1) <small>Info</small>		<input type="button" value="C"/>	<input type="button" value="Connect"/>	<input type="button" value="Instance state ▾"/>	<input type="button" value="Actions ▾"/>	<input type="button" value="Launch instances ▾"/>
<input type="text"/> Find Instance by attribute or tag (case-sensitive)						
<input type="button" value="Instance state = running"/> <input type="button" value="X"/>		<input type="button" value="Clear filters"/>				
Any state						
<input type="checkbox"/>	Name ↴	Instance ID	Instance state	Instance type	Status check	Alarm status
<input type="checkbox"/>	i-0336a03bf788061ec	Running	Q Q	t2.large	Initializing	<input type="button" value="View alarms +"/>

EXPERIMENT-7



The screenshot shows a terminal window with two tabs: "main.tf" and "var.tf". The "main.tf" tab is active and displays the following Terraform code:

```
Terraform-iam-users > main.tf > resource "aws_iam_user" "iam_users"
1  terraform {
2    required_providers {
3      aws = {
4        source = "hashicorp/aws"
5        version = "5.31.0"
6      }
7    }
8  }
9
10 provider "aws" {
11   region = "us-west-2"
12   access_key = "AKIA5FTY77WSIB44R75Q"
13   secret_key = "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"
14 }
15
16 resource "aws_iam_user" "iam_users" {
17   count = length(var.iam_users)
18   name = var.iam_users[count.index]
19
20
21   tags = {
22     Name = "${var.iam_users[count.index]}-user"
23   }
24 }
25
```

```

main.tf          var.tf          X
Terraform-iam-users > var.tf > variable "iam_users" > type
1   variable "iam_users" {
2     type    = list(string)
3     default = ["user3", "user4", "user5"]
4   }
5

PS C:\Desktop\DevOps\Sem6\SMCP\Lab Files\TERRAFORM LAB SCRIPTS\Terraform-iam-users> terraform init
Initializing the backend...
Initializing provider plugins...
- Finding hashicorp/aws versions matching "5.31.0"...
- Installing hashicorp/aws v5.31.0...
- Installed hashicorp/aws v5.31.0 (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!
PS C:\Desktop\DevOps\Sem6\SMCP\Lab Files\TERRAFORM LAB SCRIPTS\Terraform-iam-users> terraform apply
Terraform used the selected providers to generate the following execution plan. Resource actions are
+ create

Terraform will perform the following actions:

# aws_iam_user.iam_users[0] will be created
+ resource "aws_iam_user" "iam_users" {
    + arn          = (known after apply)
    + force_destroy = false
    + id          = (known after apply)
    + name        = "user3"
    + path        = "/"
    + tags        = {

IAM > Users

Users (5) Info
An IAM user is an identity with long-term credentials that is used to interact with AWS in an account.

Search < 1 > ⓘ
 User name ▲ | Path ▼ | Groups: ▼ | Last activity ▼ | MFA ▼ | Passw...
 user1 / 0 26 days ago - 20
 user2 / 0 25 minutes ago - 3
 user3 / 0 - -
 user4 / 0 - -
 user5 / 0 - -

```

IAM > Users

Users (5) Info

An IAM user is an identity with long-term credentials that is used to interact with AWS in an account.

User name	Path	Group	Last activity	MFA	Password last changed
user1	/	0	26 days ago	-	2023-09-15
user2	/	0	25 minutes ago	-	2023-09-15
user3	/	0	-	-	-
user4	/	0	-	-	-
user5	/	0	-	-	-

PS C:\Desktop\DevOps\Sem6\SMCP\Lab Files\TERRAFORM LAB SCRIPTS\Terraform-iam-users> **terraform destroy**

```
aws_iam_user.iam_users[2]: Refreshing state... [id=user5]
aws_iam_user.iam_users[1]: Refreshing state... [id=user4]
aws_iam_user.iam_users[0]: Refreshing state... [id=user3]
```

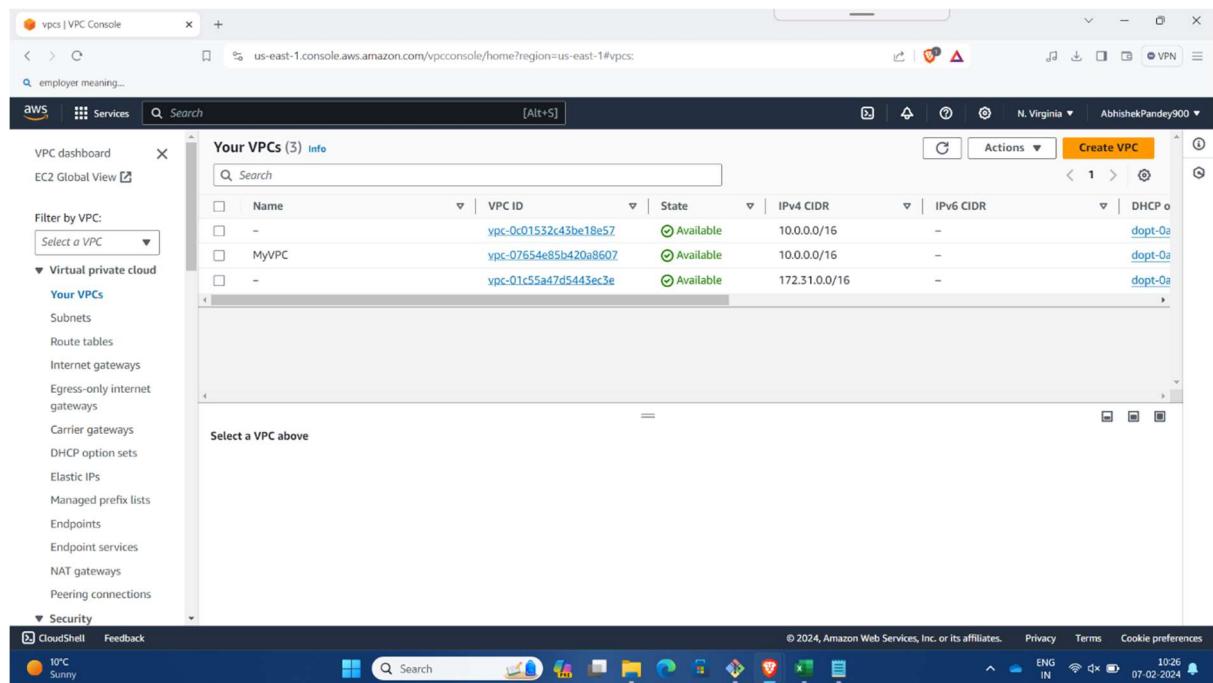
Terraform used the selected providers to generate the following execution plan. Resource actions are indicated with colors.

- destroy

Terraform will perform the following actions:

```
# aws_iam_user.iam_users[0] will be destroyed
- resource "aws_iam_user" "iam_users" {
    - arn          = "arn:aws:iam::905418112420:user/user3" -> null
    - force_destroy = false -> null
    - id          = "user3" -> null
    - name        = "user3" -> null
    - path        = "/" -> null}
```

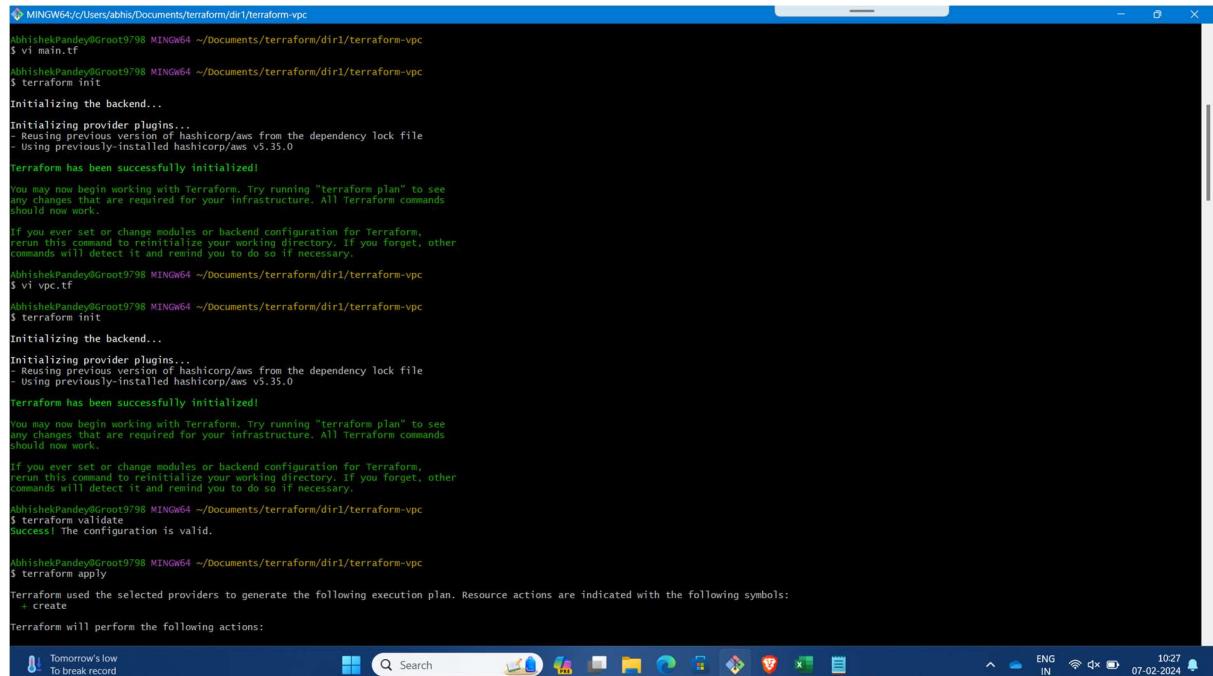
EXPERIMENT-8



The screenshot shows the AWS VPC Console interface. On the left, a sidebar lists various VPC-related services like EC2 Global View, Filter by VPC, and Your VPCs. The main area displays a table titled "Your VPCs (3) Info" with columns for Name, VPC ID, State, IPv4 CIDR, IPv6 CIDR, and DHCP options. Three VPCs are listed:

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP Options
-	vpc-0c1532c43be18e57	Available	10.0.0.0/16	-	dopt-0a
MyVPC	vpc-07654e85b420a8607	Available	10.0.0.0/16	-	dopt-0a
-	vpc-01c55a47d5443ec5e	Available	172.31.0.0/16	-	dopt-0a

Below the table, a message says "Select a VPC above".



```
abhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-vpc
$ vi main.tf
abhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-vpc
$ terraform init
Initializing the backend...
Initializing provider plugins...
- Reusing previous version of hashicorp/aws from the dependency lock file
- Using previously-installed hashicorp/aws v5.35.0
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.

abhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-vpc
$ vi vpc.tf
abhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-vpc
$ terraform init
Initializing the backend...
Initializing provider plugins...
- Reusing previous version of hashicorp/aws from the dependency lock file
- Using previously-installed hashicorp/aws v5.35.0
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.

abhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-vpc
$ terraform validate
Success! The configuration is valid.

abhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-vpc
$ terraform apply
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:

  + create
```

```
MINGW64/c/Users/abhi/Documents/terraform/dir1/terraform-vpc
$ sshFandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-vpc
$ terraform apply
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_internet_gateway.gfg-gw will be created
+ resource "aws_internet_gateway" "gfg-gw" {
  + arn = (known after apply)
  + id = (known after apply)
  + owner_id = (known after apply)
  + tags = {
    + "Name" = "gfg-Io"
  }
  + tags_all = {
    + "Name" = "gfg-IG"
  }
  + vpc_id = (known after apply)
}

# aws_route_table.gfg-rt will be created
+ resource "aws_route_table" "gfg-rt" {
  + arn = (known after apply)
  + id = (known after apply)
  + owner_id = (known after apply)
  + propagating_vgws = (known after apply)
  + route = [
    + {
      + carrier_gateway_id = ""
      + cidr_block = "0.0.0.0/0"
      + core_network_arn = ""
      + destination_prefix_list_id = ""
      + egress_only_gateway_id = (known after apply)
      + gateway_id = ""
      + ipv6_cidr_block = ""
      + local_gateway_id = ""
      + max_tf_workers = ""
      + network_interface_id = ""
      + transit_gateway_id = ""
      + vpc_endpoint_id = ""
      + vpc_peering_connection_id = ""
    },
    + {
      + name = "GFG-Route-Table"
      + tags_all = {
        + "Name" = "GFG-Route-Table"
      }
      + vpc_id = (known after apply)
    }
  ]
}

# aws_route_table_association.gfg-rta will be created
+ resource "aws_route_table_association" "gfg-rta" {
  + id = (known after apply)
}

Plan: 3 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

```

```
Enter a value: yes
aws_vpc.gfg-vpc: Creating...
aws_vpc.my_vpc: Creating...
aws_vpc_gfg_vpc: Creation complete after 8s [id=vpc-0c01532c43be18e57]
aws_internet_gateway.gfg-gw: Creating...
aws_subnet.gfg-subnet: Creating...
aws_security_group.gfg-sgi: Creating...
aws_vpc_my_vpc: Creating... [10s elapsed]
aws_internet_gateway.gfg-gw: Creation complete after 4s [id=igw-0a9d0b30ef67521b9]
aws_route_table.gfg-rt: Creating...
aws_subnet.gfg-subnet: Creation complete after 4s [id=subnet-0d663bf0f7f0408c]
aws_route_table.gfg-rt: Creation complete after 3s [id=rtb-0c181d33e170df4fb]
aws_route_table_association.gfg-rta: Creating... [10s elapsed]
aws_vpc_my_vpc: Creation complete after 19s [id=vpc-07654e85b420a8607]
aws_subnet.gfg-subnet: Creating...
aws_subnet_my_subnet[0]: Still creating... [10s elapsed]
aws_subnet_my_subnet[1]: Still creating... [10s elapsed]
aws_subnet_my_subnet[0]: Creation complete after 13s [id=subnet-0f079a494cabcf1a]
aws_subnet_my_subnet[1]: Creation complete after 13s [id=subnet-0719d1cd9653a1227]

Apply complete! Resources: 9 added, 0 changed, 0 destroyed.

abbishhekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-vpc
$ |

```

```
MinGW64/c/Users/abhis/Documents/terraform/dir1/terraform-vpc
apply complete! Resources: 9 added, 0 changed, 0 destroyed.

$ terraform destroy
aws_vpc.vpc Refreshing state... [id=vpc-0c01532c43be18e57]
aws_vpc.vpc: Refreshing state... [id=vpc-07654e85b420a8607]
aws_internet_gateway.gfg-gw: Refreshing state... [id=igw-0a9d0b30ef67521b9]
aws_subnet.gfg-subnet: Refreshing state... [id=subnet-0d63b3fdff0408c]
aws_security_group.gfg-sg: Refreshing state... [id=sg-01f064b48cf1a]
aws_route_table.gfg-rt: Refreshing state... [id=rtb-01c81d33e170d4f5b]
aws_subnet.my_subnet[1]: Refreshing state... [id=subnet-0719dcd653a1227]
aws_route_table.gfg-rt: Refreshing state... [id=rtb-01c81d33e170d4f5b]
aws_route_table_association.gfg-rta: Refreshing state... [id=rtbassoc-07695ea4576bba3f9]

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_internet_gateway.gfg-gw will be destroyed
- resource "aws_internet_gateway" "gfg-gw" {
    - arn           = "arn:aws:ec2:us-east-1:654654208598:internet-gateway/igw-0a9d0b30ef67521b9" -> null
    - id           = "rtb-01c81d33e170d4f5b" -> null
    - owner_id     = "654654208598" -> null
    - tags         = {
        - Name = "gfg-IG"
    } -> null
    - tags_all     = {
        - Name = "gfg-IG"
    } -> null
    - vpc_id       = "vpc-0c01532c43be18e57" -> null
}

# aws_route_table.gfg-rt will be destroyed
- resource "aws_route_table" "gfg-rt" {
    - arn           = "arn:aws:ec2:us-east-1:654654208598:route-table/rtb-01c81d33e170d4f5b" -> null
    - id           = "rtb-01c81d33e170d4f5b" -> null
    - propagating_vgws = [] -> null
    - route {
        - carrier_gateway_id   = ""
        - destination_bridge   = "0.0.0.0/0"
        - core_network_arn     = ""
        - destination_prefix_list_id = ""
        - egress_only_gateway_id = ""
        - gateway_id           = "igw-0a9d0b30ef67521b9"
        - ip_address            = ""
        - ip_prefix_cidr        = ""
        - local_gateway_id     = ""
        - nat_gateway_id       = ""
        - network_interface_id = ""
        - transit_gateway_id   = ""
        - vpc_endpoint_id      = ""
        - vpc_peering_connection_id = ""
    }
} -> null
- tags         = {
```

```
MinGW64/c/Users/abhis/Documents/terraform/dir1/terraform-vpc
}

# aws_vpc.my_vpc will be destroyed
resource "aws_vpc" "my_vpc" {
    - arn           = "arn:aws:ec2:us-east-1:654654208598:vpc/vpc-07654e85b420a8607" -> null
    - cidr_block    = "10.0.0.0/16" -> null
    - default_network_acl_id = "acl-0e3afbf83b3e794a" -> null
    - default_route_table_id = "rtb-0b9azc0a08af7656c" -> null
    - default_subnet_gateway_group_id = "sg-014ab0df0b0b9d1" -> null
    - dhcp_options_id      = "dhcp-0ab0c0408c7bc84" -> null
    - enable_dns_hostnames = true -> null
    - enable_dns_support   = true -> null
    - enable_network_address_metrics = false -> null
    - id             = "vpc-07654e85b420a8607"
    - instance_tenancy = "default" -> null
    - ipv6_maxmask_length = 0 -> null
    - main_route_table_id = "rtb-0b9azc0a08af7656c" -> null
    - owner_id       = "654654208598" -> null
    - tags          = {
        - "Name" = "MyVPC"
    } -> null
    - tags_all      = {
        - "Name" = "MyVPC"
    } -> null
}
```

Plan: 0 to add, 0 to change, 9 to destroy.

Do you really want to destroy all resources?
Terraform will destroy all your managed infrastructure, as shown above.
There is no undo. Only 'yes' will be accepted to confirm.

Enter a value: yes

```
aws_route_table_association.gfg-rta: Destroying... [id=rtbassoc-07695ea4576bba3f9]
aws_subnet.my_subnet[1]: Destroying... [id=subnet-0719dcd653a1227]
aws_subnet.my_subnet[0]: Destroying... [id=subnet-0f0079a494ca8c1a]
aws_security_group.gfg-sg: Destroying... [id=sg-01f064b48cf1a]
aws_route_table.gfg-rt: Destruction complete after 3s
aws_subnet.gfg-subnet: Destroying... [id=subnet-0d63b3fdff0408c]
aws_route_table.gfg-rt: Destroying... [id=rtb-01c81d33e170d4f5b]
aws_subnet.my_subnet[0]: Destruction complete after 3s
aws_vpc.my_vpc: Destroying... [id=vpc-0c01532c43be18e57]
aws_security_group.gfg-sg: Destruction complete after 4s
aws_subnet.gfg-subnet: Destruction complete after 1s
aws_route_table.gfg-rt: Destruction complete after 2s
aws_internet_gateway.gfg-gw: Destroying... [id=igw-0a9d0b30ef67521b9]
aws_vpc.my_vpc: Destruction complete after 3s
aws_internet_gateway.gfg-gw: Destruction complete after 3s
aws_vpc.gfg-vpc: Destroying... [id=vpc-0c01532c43be18e57]
aws_vpc.gfg-vpc: Destruction complete after 4s
```

Destroy complete! Resources: 9 destroyed.

```
abhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-vpc
$ clear
```

EXPERIMENT-9

```
MINGW64:/c/Users/abhis/Documents/terraform/dir1/terraform-ec2-for-each
terraform {
  required_providers {
    aws = {
      source = "hashicorp/aws"
      version = "5.31.0"
    }
  }
  provider "aws" {
    region = "us-east-1"
    access_key = "AKIAZQ3DOPJL163GMSTH"
    secret_key = "iWlerIzwX3LA+F7PsZJSDD0hq4ZAiVqfC4KpDK1"
  }
  variable "instances" {
    description = "Map of EC2 instances with settings"
    default = {
      "instance1" = {
        ami = "ami-0440d3b780d96b29d"
        instance_type = "t2.micro"
      },
      "instance2" = {
        ami = "ami-0c7217cdde317cfec"
        instance_type = "t2.micro"
      },
      "instance3" = {
        ami = "ami-0f9c44e98edf38a2b"
        instance_type = "t2.micro"
      }
    }
  }
  resource "aws_instance" "ec2_instances" {
    for_each = var.instances
    ami           = each.value.ami
    instance_type = each.value.instance_type
    tags = {
      Name = "EC2-Instance-${each.key}"
    }
  }
}
main.tf [unix] (10:38 21/02/2024)
"main.tf" [unix] 38L, 762B
26.29 Al
```

```
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-ec2-for-each
$ vi main.tf
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-ec2-for-each
$ terraform apply
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.ec2_instances["instance1"] will be created
+ resource "aws_instance" "ec2_instances" {
  + ami           = "ami-0440d3b780d96b29d" = (known after apply)
  + 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)
  + 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" = (known after apply)
  + ipv4_address_count      = (known after apply)
  + ipv6_addresses          = (known after apply)
  + key_name                = (known after apply)
  + 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)
  + private_ip                = (known after apply)
  + public_dns                = (known after apply)
  + public_ip                 = (known after apply)
  + secondary_private_ips    = (known after apply)
  + security_groups          = (known after apply)
  + source_dest_check         = true
  + spot_instance_request_id = (known after apply)
  + subnet_id                 = (known after apply)
  + tags                      = {
```

```
# MinGW64/c/Users/abhis/Documents/terraform/dir1/terraform-ec2-for-each
# aws_instance.ec2_instances["instance2"] will be created
resource "aws_instance" "ec2_instances" {
  + ami                                = "ami-0c7217ccde317cfec"
  + 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)
  + get_password_data                  = (known after apply)
  + 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                           = (known after apply)
  + 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_ip                         = (known after apply)
  + public_dns                          = (known after apply)
  + public_ip                           = (known after apply)
  + secondary_private_ips              = (known after apply)
  + security_groups                   = (known after apply)
  + spot_dest_check                   = true
  + spot_instance_request_id           = (known after apply)
  + subnet_id                          = (known after apply)
  + tags                               = {
    + "Name" = "EC2-Instance-instance2"
  }
  + tags_all                           = {
    + "Name" = "EC2-Instance-instance2"
  }
  + tenancy                            = (known after apply)
  + user_data                           = (known after apply)
  + user_data_base64                   = (known after apply)
  + user_data_replace_on_change        = false
  + vpc_security_group_ids              = (known after apply)
}

# aws_instance.ec2_instances["instance3"] will be created
```

14°C Haze 10:41 ENG IN 21-02-2024

```
# MinGW64/c/Users/abhis/Documents/terraform/dir1/terraform-ec2-for-each
# aws_instance.ec2_instances["instance3"] will be created
resource "aws_instance" "ec2_instances" {
  + ami                                = "ami-0f9c44e98edf38a2b"
  + 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)
  + get_password_data                  = (known after apply)
  + 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                           = (known after apply)
  + 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_ip                         = (known after apply)
  + public_dns                          = (known after apply)
  + public_ip                           = (known after apply)
  + secondary_private_ips              = (known after apply)
  + security_groups                   = (known after apply)
  + spot_dest_check                   = true
  + spot_instance_request_id           = (known after apply)
  + subnet_id                          = (known after apply)
  + tags                               = {
    + "Name" = "EC2-Instance-instance3"
  }
  + tags_all                           = {
    + "Name" = "EC2-Instance-instance3"
  }
  + tenancy                            = (known after apply)
  + user_data                           = (known after apply)
  + user_data_base64                   = (known after apply)
  + user_data_replace_on_change        = false
  + vpc_security_group_ids              = (known after apply)
}
```

14°C Haze 10:41 ENG IN 21-02-2024

```

MINGW64/c/Users/abhis/Documents/terraform/dir1/terraform-ec2-for-each
+ public_ip
+ secondary_private_ips
+ security_group_ids
+ source_dest_check
+ spot_instance_request_id
+ subnet_id
+ tags
  + "Name" = "EC2-Instance-instance3"
}
tags_all = {
}
+ tenancy
+ user_data
+ user_data_base64
+ user_data_replace_on_change
+ vpc_security_group_ids
}

Plan: 3 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
only 'yes' will be accepted to approve.

Enter a value: yes

aws_instance.ec2_instances["instance1"]: Creating...
aws_instance.ec2_instances["instance2"]: Creating...
aws_instance.ec2_instances["instance3"]: Creating...
aws_instance.ec2_instances["instance01"]: Still creating... [10s elapsed]
aws_instance.ec2_instances["instance02"]: Still creating... [10s elapsed]
aws_instance.ec2_instances["instance03"]: Still creating... [10s elapsed]
aws_instance.ec2_instances["instance04"]: Still creating... [20s elapsed]
aws_instance.ec2_instances["instance05"]: Still creating... [20s elapsed]
aws_instance.ec2_instances["instance06"]: Still creating... [30s elapsed]
aws_instance.ec2_instances["instance07"]: Still creating... [30s elapsed]
aws_instance.ec2_instances["instance08"]: Still creating... [30s elapsed]
aws_instance.ec2_instances["instance09"]: Creation complete after 30s [id=i-092528d3a561baab]
aws_instance.ec2_instances["instance10"]: Creation complete after 40s [id=i-019778f7f8ad49f58]
aws_instance.ec2_instances["instance11"]: Still creating... [40s elapsed]
aws_instance.ec2_instances["instance12"]: Still creating... [50s elapsed]
aws_instance.ec2_instances["instance13"]: Creation complete after 52s [id=i-07079b45c239b6974]

Apply complete! Resources: 3 added, 0 changed, 0 destroyed.

AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-ec2-for-each
$ vi main.tf
AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1/terraform-ec2-for-each
$ |

```

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4
EC2-Instance-instance1	i-019778f7f8ad49f58	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a	ec2-54-145-46
EC2-Instance-instance2	i-07079b45c239b6974	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a	ec2-3-80-40-1
EC2-Instance-instance3	i-092528d3a561baab	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a	ec2-18-208-21

```

MINGW64/c/Users/abhis/Documents/terraform/dirl/terraform-ec2-for-each
  - http_tokens           = "optional" -> null
  - instance_metadata_tags = "disabled" -> null
}

- private_dns_name_options {
  - enable_resource_name_dns_a_record = false -> null
  - enable_resource_name_dns_aaaa_record = false -> null
  - hostname_type                  = "ip-name" -> null
}

- root_block_device {
  - delete_on_termination = true -> null
  - device_name          = "dev/sda1" -> null
  - encrypted             = false -> null
  - iops                  = 100 -> null
  - tags                 = [{} -> null]
  - throughput            = 0 -> null
  - volume_id              = "vo1-0125cbcbaad8137b63" -> null
  - volume_size            = 30 -> null
  - volume_type            = "gp2" -> null
}
}

Plan: 0 to add, 0 to change, 3 to destroy.

Do you really want to destroy all resources?
Terraform will destroy ALL your managed infrastructure, as shown above.
There is no undo. Only 'yes' will be accepted to confirm.

Enter a value: yes

aws_instance.ec2_instances["instance3"]:
  Destroying... [id=i-07079b45c239b6974]
aws_instance.ec2_instances["instance1"]:
  Destroying... [id=i-092528d3a5611baab]
aws_instance.ec2_instances["instance2"]:
  Destroying... [id=i-019778f7f8ad49f58]
aws_instance.ec2_instances["instance0"]:
  Still destroying... [id=i-019778f7f8ad49f58, 10s elapsed]
aws_instance.ec2_instances["instance1"]:
  Still destroying... [id=i-092528d3a5611baab, 10s elapsed]
aws_instance.ec2_instances["instance0"]:
  Still destroying... [id=i-092528d3a5611baab, 10s elapsed]
aws_instance.ec2_instances["instance1"]:
  Still destroying... [id=i-092528d3a5611baab, 20s elapsed]
aws_instance.ec2_instances["instance3"]:
  Still destroying... [id=i-07079b45c239b6974, 20s elapsed]
aws_instance.ec2_instances["instance2"]:
  Still destroying... [id=i-019778f7f8ad49f58, 20s elapsed]
aws_instance.ec2_instances["instance0"]:
  Still destroying... [id=i-019778f7f8ad49f58, 30s elapsed]
aws_instance.ec2_instances["instance1"]:
  Still destroying... [id=i-092528d3a5611baab, 30s elapsed]
aws_instance.ec2_instances["instance3"]:
  Destruction complete after 35s
aws_instance.ec2_instances["instance0"]:
  Destruction complete after 35s
aws_instance.ec2_instances["instance2"]:
  Still destroying... [id=i-019778f7f8ad49f58, 40s elapsed]
aws_instance.ec2_instances["instance1"]:
  Destruction complete after 45s

destroy completed! Resources: 3 destroyed.

AbhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dirl/terraform-ec2-for-each
$ |

```

The screenshot shows a Windows desktop environment. At the top, there is a terminal window titled 'MINGW64/c/Users/abhis/Documents/terraform/dirl/terraform-ec2-for-each'. It displays the Terraform destroy command and its execution, showing three instances being terminated. Below the terminal is the taskbar with various icons. The main focus is a web browser window displaying the AWS CloudWatch Instances page for the 'us-east-1' region. The page lists three terminated t2.micro instances, each with a unique ID and terminated status. To the right of the browser, the system tray shows the date and time as '21-02-2024 10:45 AM'.

Name	Instance ID	Instance State	Instance Type	Status Check	Alarm Status	Availability Zone	Public IPv4 DNS
EC2-Instance-i...	i-019778f7f8ad49f58	Terminated	t2.micro	-	View alarms	us-east-1a	-
EC2-Instance-i...	i-07079b45c239b6974	Terminated	t2.micro	-	View alarms	us-east-1a	-
EC2-Instance-i...	i-092528d3a5611baab	Terminated	t2.micro	-	View alarms	us-east-1a	-

EXPERIMENT-10

```
MINGW64:/c/Users/abhis/Documents/terraform/dir1/terraform-rds
$ abhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1
$ mkdir terraform-rds
$ cd terraform-rds
$ abhishekPandey@Groot9798 MINGW64 ~/Documents/terraform/dir1
$ terraform init
Initializing the backend...
Initializing provider plugins...
- Finding providers with version matching "5.31.0"...
- Installing hashicorp/aws v5.31.0...
- Installed hashicorp/aws v5.31.0 (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.

$ terraform apply
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_db_instance.My-RDS will be created
+ resource "aws_db_instance" "My-RDS" {
    + allocated_storage = 10
    + apply_immediately = false
    + arn = (known after apply)
    + auto_minor_version_upgrade = true
    + availability_zone = (known after apply)
    + backup_retention_period = (known after apply)
    + backup_target = (known after apply)
    + backup_type = (known after apply)
    + ca_certificate_identifier = (known after apply)
    + character_set_name = (known after apply)
    + copy_tags_to_snapshot = false
    + db_name = "upesdb"
}

Plan: 1 to add
$ 15°C Sunny 21:45 22-02-2024 ENG IN 13:46
```

```
MINGW64:/c/Users/abhis/Documents/terraform/dir1/terraform-rds
terraform {
  required_providers {
    aws = {
      source  = "hashicorp/aws"
      version = ">5.31.0"
    }
  }

  provider "aws" {
    region     = "us-east-1"
    access_key = "AKIAZQ3DOPJL163GMSTH"
    secret_key = "iWLeP1ZwX3LA+F/Pz2JSJD0hq4ZAivqjC4kp0K1"

    resource "aws_db_instance" "My-RDS" {
      allocated_storage = 10
      db_name          = "upesdb"
      engine           = "mysql"
      engine_version   = "5.7"
      instance_class   = "db.t2.micro"
      username          = "pandey"
      port              = "3306"
      parameter_group_name = "default.mysql5.7"
      skip_final_snapshot = true
    }
  }
}

main.tf (unix) (13:35 22/02/2024)
main.tf (unix) 24L, 49/B
$ 15°C Sunny 21:22 A1 21:22 A1 22-02-2024 ENG IN 13:46
```

```

MinGW64/c/Users/abhis/Documents/terraform/dir1/terraform-rds

storage_throughput = (known after apply)
tags.all = (known after apply)
timezone = (known after apply)
username = "pandey"
vpc_security_group_ids = (known after apply)

}

Plan: 1 to add, 0 to change, 0 to destroy.

Do you want to perform these actions?
Terraform will perform the actions described above.
Only 'yes' will be accepted to approve.

Enter a value: yes

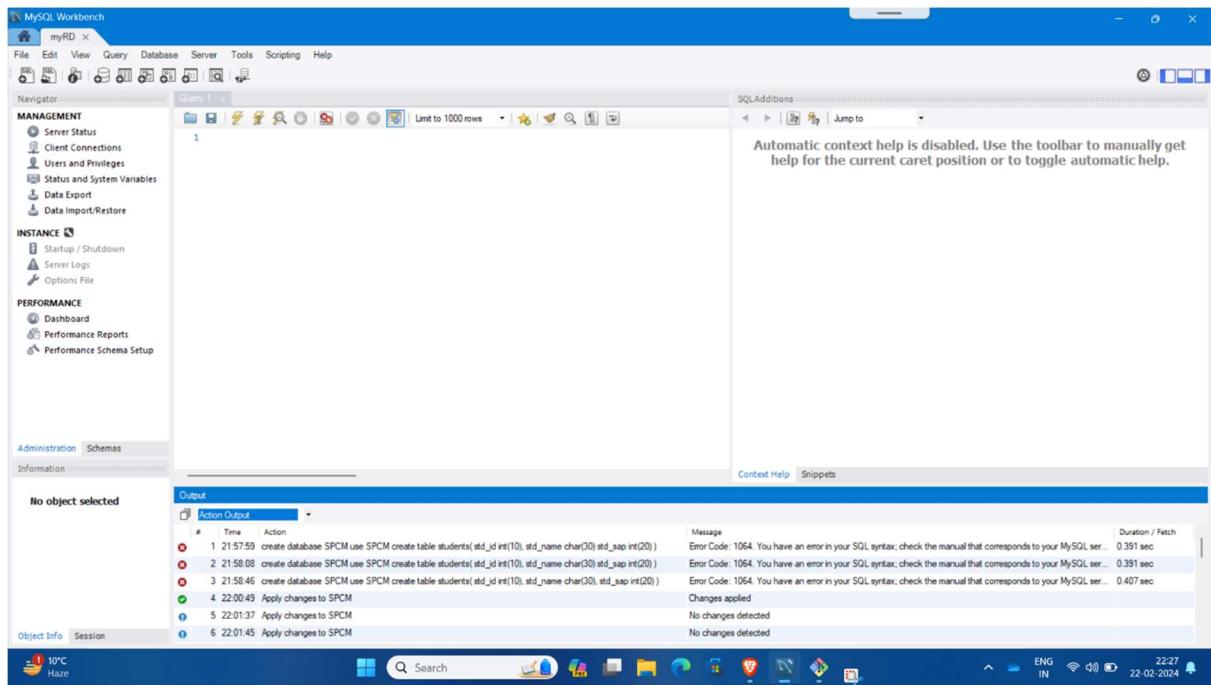
aws_db_instance.My-RDS: Creating...
aws_db_instance.My-RDS: Still creating... [0s elapsed]
aws_db_instance.My-RDS: Still creating... [20s elapsed]
aws_db_instance.My-RDS: Still creating... [30s elapsed]
aws_db_instance.My-RDS: Still creating... [40s elapsed]
aws_db_instance.My-RDS: Still creating... [50s elapsed]
aws_db_instance.My-RDS: Still creating... [1m0s elapsed]
aws_db_instance.My-RDS: Still creating... [1m10s elapsed]
aws_db_instance.My-RDS: Still creating... [1m20s elapsed]
aws_db_instance.My-RDS: Still creating... [1m30s elapsed]
aws_db_instance.My-RDS: Still creating... [1m40s elapsed]
aws_db_instance.My-RDS: Still creating... [1m50s elapsed]
aws_db_instance.My-RDS: Still creating... [2m0s elapsed]
aws_db_instance.My-RDS: Still creating... [2m10s elapsed]
aws_db_instance.My-RDS: Still creating... [2m20s elapsed]
aws_db_instance.My-RDS: Still creating... [2m30s elapsed]
aws_db_instance.My-RDS: Still creating... [2m40s elapsed]
aws_db_instance.My-RDS: Still creating... [2m50s elapsed]
aws_db_instance.My-RDS: Still creating... [3m0s elapsed]
aws_db_instance.My-RDS: Still creating... [3m10s elapsed]
aws_db_instance.My-RDS: Still creating... [3m20s elapsed]
aws_db_instance.My-RDS: Still creating... [3m30s elapsed]
aws_db_instance.My-RDS: Still creating... [3m40s elapsed]
aws_db_instance.My-RDS: Still creating... [3m50s elapsed]
aws_db_instance.My-RDS: Still creating... [4m0s elapsed]
aws_db_instance.My-RDS: Still creating... [4m10s elapsed]
aws_db_instance.My-RDS: Still creating... [4m20s elapsed]
aws_db_instance.My-RDS: Still creating... [4m30s elapsed]
aws_db_instance.My-RDS: Still creating... [4m40s elapsed]
aws_db_instance.My-RDS: Still creating... [4m50s elapsed]
aws_db_instance.My-RDS: Still creating... [5m0s elapsed]
aws_db_instance.My-RDS: Still creating... [5m10s elapsed]
aws_db_instance.My-RDS: Still creating... [5m20s elapsed]
aws_db_instance.My-RDS: Still creating... [5m30s elapsed]
aws_db_instance.My-RDS: Still creating... [5m40s elapsed]
aws_db_instance.My-RDS: Still creating... [5m50s elapsed]
aws_db_instance.My-RDS: Still creating... [6m0s elapsed]
aws_db_instance.My-RDS: Still creating... [6m10s elapsed]
aws_db_instance.My-RDS: Creation complete after 6m12s [id=db-TVPK5BAZZCB3FIYFUTRSH7UAF4]

Apply complete! Resources: 1 added, 0 changed, 0 destroyed.

```

15°C Sunny 13:47 22-02-2024 ENG IN VPN N. Virginia AbhishekPandey900

DB identifier	Status	Role	Engine	Region & AZ	Size	Recommendations
terraform-20240222080751214100000001	Available	Instance	MySQL Community	us-east-1f	db.t2.micro	



The screenshot shows the AWS RDS console. The left sidebar includes options like Dashboard, Databases, Query Editor, Performance insights, Snapshots, Exports in Amazon S3, Automated backups, Reserved instances, Proxies, Subnet groups, Parameter groups, Option groups, Custom engine versions, Zero-ETL integrations, Events, and Event subscriptions. The main area shows a list of databases under the Databases section. One database, named "myd", is selected. The "Summary" tab is active, displaying details such as DB identifier (myd), Status (Available), Role (Instance), Engine (MySQL Community), CPU usage (3.13%), Class (db.t3.micro), Current activity (2 Connections), and Region & AZ (us-east-1f). Other tabs include Connectivity & security, Monitoring, Logs & events, Configuration, Zero-ETL integrations, Maintenance & backups, and Tags.