

Lab Exercise 5—Provisioning an S3 Bucket on AWS

Exercise Steps:

Step 1: Create a New Directory:

Create a new directory to store your Terraform configuration:

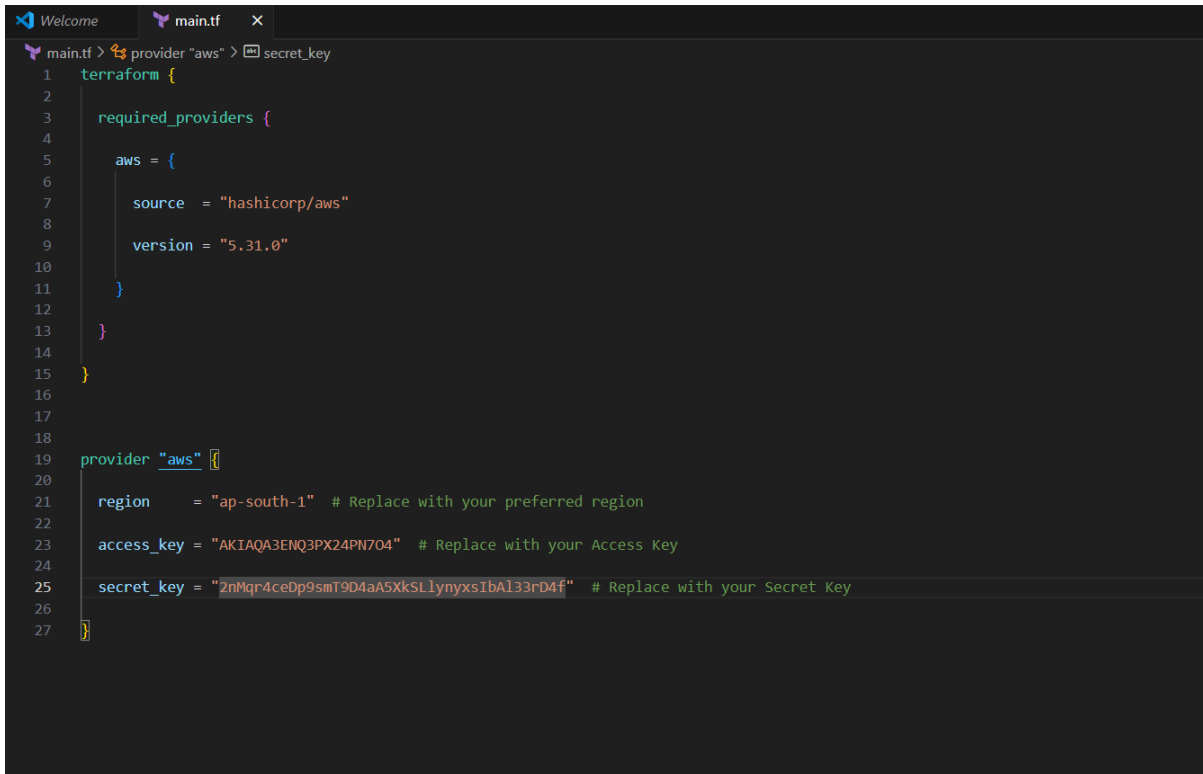
```
mkdir Terraform-S3-Demo
cd Terraform-S3-Demo
```

Step 2: Create the Terraform Configuration File (main.tf):

Create a file named main.tf with the following content:

```
terraform {
  required_providers {
    aws = {
      source = "hashicorp/aws"
      version = "5.31.0"
    }
  }
}

provider "aws" {
  region    = "us-east-1" # Replace with your preferred region
  access_key = "your IAM access key" # Replace with your Access Key
  secret_key = "your secret access key" # Replace with your Secret Key
}
```



```
1 terraform {
2
3   required_providers {
4
5     aws = {
6
7       source = "hashicorp/aws"
8
9       version = "5.31.0"
10
11     }
12
13   }
14
15 }
16
17
18
19 provider "aws" {
20
21   region = "ap-south-1" # Replace with your preferred region
22
23   access_key = "AKIAQA3ENQ3PX24PN704" # Replace with your Access Key
24
25   secret_key = "2nMqr4ceDp9smT9D4aA5XkSLlynyxsIbA133rD4f" # Replace with your Secret Key
26
27 }
```

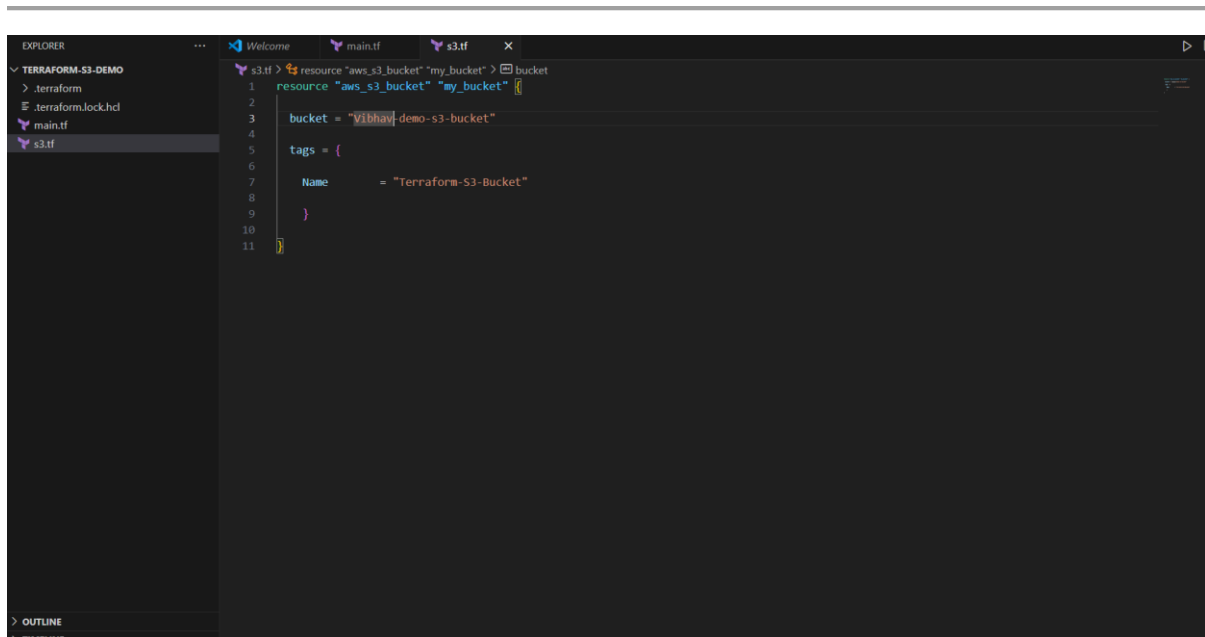
This file sets up the Terraform AWS provider.

Step 3: Create a Terraform Configuration File for the S3 Bucket (s3.tf):

Create another file named s3.tf with the following content:

```
resource "aws_s3_bucket" "my_bucket" {
  bucket = "my-demo-s3-bucket"
  tags = {
    Name = "Terraform-S3-Bucket"
  }
}
```

This file provisions an S3 bucket with a unique name using a random string suffix.



Step 4: Initialize Terraform:

Run the following command to initialize your Terraform working directory:

```
terraform init
```

```
C:\Users\Lenovo\OneDrive\Desktop\SPCM Lab\LAB 5\Terraform-S3-Demo>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.  
  
C:\Users\Lenovo\OneDrive\Desktop\SPCM Lab\LAB 5\Terraform-S3-Demo>
```

Step 5: Review the Plan:

Preview the changes Terraform will make:

```
terraform plan
```

Review the output to ensure it meets your expectations.

```
+ id = (known after apply)
+ object_lock_enabled = (known after apply)
+ policy = (known after apply)
+ region = (known after apply)
+ request_payer = (known after apply)
+ tags = {
  + "Name" = "Terraform-S3-Bucket"
}
+ tags_all = {
  + "Name" = "Terraform-S3-Bucket"
}
+ website_domain = (known after apply)
+ website_endpoint = (known after apply)

+ cors_rule (known after apply)
+ grant (known after apply)
+ lifecycle_rule (known after apply)
+ logging (known after apply)
+ object_lock_configuration (known after apply)
+ replication_configuration (known after apply)
+ server_side_encryption_configuration (known after apply)
+ versioning (known after apply)
+ website (known after apply)
}

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

Note: You didn't use the -out option to save this plan, so Terraform can't guarantee to take exactly these actions

C:\Users\Lenovo\OneDrive\Desktop\SPCM Lab\LAB 5\Terraform-S3-Demo>

Step 6: Apply the Changes:

Create the resources:

```
terraform apply
```

When prompted, type yes to confirm.

```
+ "Name" = "Terraform-S3-Bucket"
}
+ tags_all = {
+   "Name" = "Terraform-S3-Bucket"
+ }
+ website_domain = (known after apply)
+ website_endpoint = (known after apply)

+ cors_rule (known after apply)

+ grant (known after apply)

+ lifecycle_rule (known after apply)

+ logging (known after apply)

+ object_lock_configuration (known after apply)

+ replication_configuration (known after apply)

+ server_side_encryption_configuration (known after apply)

+ versioning (known after apply)

+ website (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_s3_bucket.my_bucket: Creating...
aws_s3_bucket.my_bucket: Creation complete after 2s [id=vibhav-demo-s3-bucket]

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

C:\Users\Lenovo\OneDrive\Desktop\SPCM Lab\LAB 5\Terraform-S3-Demo>
```

Step 7: Verify Resources:

1. Log in to your AWS Management Console.
2. Navigate to the **S3** dashboard.
3. Verify that the S3 bucket has been created with the specified configuration.

► Account snapshot - updated every 24 hours All AWS Regions

View Storage Lens dashboard

Storage lens provides visibility into storage usage and activity trends. Metrics don't include directory buckets. [Learn more](#)

General purpose buckets

Directory buckets

General purpose buckets (2) Info All AWS Regions

Refresh

Copy ARN

Empty

Delete

Create bucket

Buckets are containers for data stored in S3.

Find buckets by name

< 1 > ⚙

Name	AWS Region	IAM Access Analyzer	Creation date
<input type="radio"/> vibhav-demo-s3-bucket	Asia Pacific (Mumbai) ap-south-1	View analyzer for ap-south-1	January 17, 2025, 15:43:03 (UTC+05:30)
<input type="radio"/> vibhavbuckett	Asia Pacific (Mumbai) ap-south-1	View analyzer for ap-south-1	November 18, 2024, 15:34:10 (UTC+05:30)

Step 8: Cleanup Resources:

To remove the resources created, run the following command:

```
terraform destroy
```

When prompted, type yes to confirm.

```
- grant {
  - id = "68de3b12c6ff0d6cf1f5d2faeb66461bf1adf674208a08b575e577d5eb76f0d0" -> null
  - permissions = [
    - "FULL_CONTROL",
  ] -> null
  - type = "CanonicalUser" -> null
  # (1 unchanged attribute hidden)
}

- server_side_encryption_configuration {
  - rule {
    - bucket_key_enabled = false -> null

    - apply_server_side_encryption_by_default {
      - sse_algorithm = "AES256" -> null
      # (1 unchanged attribute hidden)
    }
  }
}

- versioning {
  - enabled = false -> null
  - mfa_delete = false -> 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_s3_bucket.my_bucket: Destroying... [id=vibhav-demo-s3-bucket]
aws_s3_bucket.my_bucket: Destruction complete after 0s

Destroy complete! Resources: 1 destroyed.

C:\Users\Lenovo\OneDrive\Desktop\SPCM Lab\LAB 5\Terraform-S3-Demo>

The screenshot shows the Amazon S3 console interface. On the left, there's a navigation sidebar with options like 'General purpose buckets', 'Directory buckets', 'Access Grants', 'Access Points', 'Object Lambda Access Points', 'Multi-Region Access Points', 'Batch Operations', 'IAM Access Analyzer for S3', 'Block Public Access settings for this account', and 'Storage Lens'. The main content area is titled 'General purpose buckets (1)' and includes a search bar 'Find buckets by name'. Below the search bar is a table listing the buckets. The table has columns for 'Name', 'AWS Region', 'IAM Access Analyzer', and 'Creation date'. One bucket is listed: 'vibhavbucket' in the 'Asia Pacific (Mumbai) ap-south-1' region, with a creation date of 'November 18, 2024, 15:34:10 (UTC+05:30)'. Above the table, there are buttons for 'Copy ARN', 'Empty', 'Delete', and 'Create bucket'. At the top of the console, there's a header with the AWS logo, a search bar, and the user's name 'Vibhav Khaneja'.

Name	AWS Region	IAM Access Analyzer	Creation date
vibhavbucket	Asia Pacific (Mumbai) ap-south-1	View analyzer for ap-south-1	November 18, 2024, 15:34:10 (UTC+05:30)