AWS Lab 05: Implementing Checks and Validations

Contents

Overview

In this lab, you will:

- Apply input validation rules in Terraform configurations.
- Implement precondition and postcondition checks to enforce constraints.
- Introduce AWS IAM policies and tag-based constraints on resources.
- Implement post-deployment validation checks to ensure compliance.

Before You Begin

Ensure you have completed Lab 0 before attempting this lab.

In your terminal, enter

```
cd /aws-tf-int/labs/05
```

Ensure all Terraform commands are executed in this directory.

Reference Documentation

Terraform Input Validation

Terraform Preconditions and Postconditions

AWS IAM Policies

AWS Tag Policies

Scenario

You are a Cloud Engineer responsible for enforcing naming and policy constraints in Terraform deployments. Your tasks involve:

- Applying preconditions (e.g., S3 bucket names must follow a naming convention).
- Using postconditions (e.g., checking the assigned IAM role post deployment).
- Enforcing AWS IAM Policies (e.g., only approved EC2 instance types can be used).
- Performing post-deployment Terraform data checks.

Step 1: Review Terraform Files

The lab consists of the following Terraform files:

- main.tf - The Terraform configuration
- variables.tf - Input variables with constraints

- terraform.tfvars - Default values for variables

Step 2: Check AWS IAM Policies & Resource Compliance

Before deploying resources, check for AWS IAM policies restricting actions.

List IAM Policies Attached to Your User/Role:

```
aws iam list-attached-user-policies --user-name YOUR_USER aws
iam list-attached-role-policies --role-name YOUR_ROLE
```

Step 3: Deploy the Configuration

Run the following Terraform commands:

```
terraform init

terraform plan

terraform apply

terraform output
```

Step 4: Test Validation Failures

Test: Invalid S3 Bucket Name Modify Terraform.tfvars:

```
s3_bucket_name = “Invalid_Bucket_Name!"
```

Run **terraform apply**

Expected error: S3 bucket names must be lowercase, globally unique, and follow naming conventions.

Step 5: Lab Clean-Up

Remove all deployed resources with **terraform destroy**