Conestoga

Scripting and Automation

PROG8830 - Winter 2025 - Section 1

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Lab 09

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Terraform Functions Implementation Report

Github: https://github.com/Appigle/terraform-lab09

We implemented two key functions: ***coalesce*** from the Collection Functions category and ***replace*** from the String Functions category.

Implementation Details

1. Coalesce Function

Fallback values for instance type selection are set in the aws_instance resource block. This allows flexible configuration and ensures a reliable default is used when no specific type is provided.

Code Example:

```
instance_type = coalesce(var.instance_type, "t3.micro")
```

2. Replace Function

Simple naming rules are used for instances and IAM profiles. This helps keep all resource names in the same patterns. It makes the system easier to use and manage.

Code Example:

```
name = replace(lower("nginx-server-${i + 1}-${local.environment}"), "-", "_")
```

Challenges and Solutions

The main challenge was keeping everything working with old settings when making changes. This was solved by keeping the old default values, setting the new instance_type variable to null by default, and making sure the new naming rules didn’t break any existing resource links.

The implementation gave us some useful tips for real working configuration. Default values can be handled well with collection functions. String functions help keep names consistent. The setup that used those functions works better in different environments.

Screenshots

```
aws_lb.nginx: Creation complete after 3m13s [id=arn:aws:elasticloadbalancing:us-east-1:703192026881:loadba
lancer/app/nginx-lb/ea6afbefb0f01e64]
aws_lb_listener.front_end: Creating...
aws_lb_listener.front_end: Creation complete after 0s [id=arn:aws:elasticloadbalancing:us-east-1:703192026
881:listener/app/nginx-lb/ea6afbefb0f01e64/1742f42e280a91d8]

Apply complete! Resources: 24 added, 0 changed, 1 destroyed.

Outputs:

environment = "PROD"
load_balancer_dns = "nginx-lb-371858931.us-east-1.elb.amazonaws.com"
security_group_rule_count = 2
webserver_public_ips = {
  "nginx1" = "107.21.164.102"
  "nginx2" = "54.224.83.193"
}
➜  PROG8830-G1-LAB08 git:(lab09) ✗ date
Wed Apr  2 15:58:12 EDT 2025
➜  PROG8830-G1-LAB08 git:(lab09) ✗ eas build -p ios --profile preview
```