QATIP Intermediate
AWS Lab08
Deploying SQL on AWS

Contents

Part 1

Overview

This part of the lab deploys an AWS EC2 instance running SQL Server 2022 Standard using Terraform onto which a database backup will be restored. This simulates a simple option for migrating an on-premises databases into the cloud. You will be provided with terraform files that will generate errors. You are to remedy the issues and then successfully restore a provided database bak file.

By the end of this lab, you will:

- Define and configure an AWS Virtual Private Cloud (VPC).
- Create a subnet for the EC2 instance.
- Assign an Elastic IP and configure networking.
- Deploy a Windows-based EC2 instance with SQL Server 2022 Standard Edition.

- Implement security rules to allow RDP and SQL access.
- Upload and restore a sample database backup (demo.bak).

Before you begin

Ensure you have completed Lab0 before attempting this lab.

In the IDE terminal pane, enter the following command…

```
cd ~/environment/aws-tf-int/labs/08/EC2
```

This shifts your current working directory to labs/08/EC2. Ensure all commands are executed in this directory

Close any open files and use the Explorer pane to navigate the labs/08/EC2 folder.

Solution

There are no detailed step-by-step instructions for this lab. A solution can be at /aws-tf-int/labs/solutions/08/EC2 but try to use this only as a last resort if you are struggling.

Step 1: Create a key-pair

1. Go to the AWS Console

- Sign in to the AWS Console
- Select the **region** (top-right corner) where you plan to launch your EC2 instance (e.g. eu-west-2)

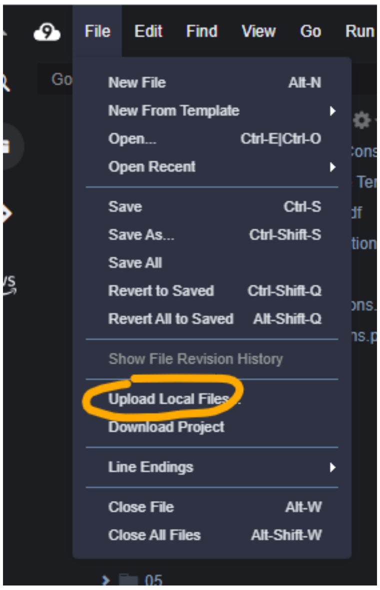
2. Create a key pair

- Go to: **EC2 > Key Pairs**
- Click **Create Key Pair**
- Give it a name like **my-sql-lab-key**
- Leave it as .pem format
- Click **Create Key Pair**

- **my-sql-lab-key.pem** will download to your local machine

3. Upload the pem file to Cloud9

Select the /aws-tf-in/labs/08/EC2 folder and then upload the pem file



4. Set secure permissions

Run **chmod 400 my-sql-lab-key.pem**

This makes sure only *you* can read the file (required for SSH/RDP security)

Step 2: Troubleshoot the terraform files

Go through the terraform init, plan and apply phases using the files provided to you. The goal is to deploy an ECS instance into its own VPC such that you can RDP to it from you local machine. At some point you will encounter an issue relating to network connectivity. Attempt to remedy the issue.

Step 3: Restore Database from Backup

Retrieve the **Public IP** from Terraform output.

In the AWS console, retrieve the administrator password, providing your pem.

On your local machine, Use **RDP** to connect to the EC2 instance:

Open **Remote Desktop (mstsc.exe)**.

Enable **Local Drives** access.

Enter the **Public IP** and log in using adminuser credentials.

Copy demo.bak from your local machine to C:\Backup\demo.bak on the EC2 instance.

Restore the database using **SQL Server Management Studio (SSMS)**:

```
RESTORE DATABASE Demo
FROM DISK = 'C:\backup\demo.bak'
WITH
 MOVE 'ReactSpringDB' TO 'C:\Program Files\Microsoft SQL
Server\MSSQL16.MSSQLSERVER\MSSQL\DATA\Demo.mdf',
 MOVE 'ReactSpringDB_log' TO 'C:\Program Files\Microsoft SQL
Server\MSSQL16.MSSQLSERVER\MSSQL\DATA\Demo.ldf',
 REPLACE,
 RECOVERY,
 STATS = 10;
```

Validate the restore by performing a query against the database

Step 4: Lab Cleanup

Remove all deployed resources: `terraform destroy -autoapprove`