Launch an EC2 Instance as a web server using Terraform

Level: **Fundamental**

Amazon EC2 Amazon Web Services Terraform

Required Points	10
Lab Duration	00:45:00
Average Start time	Less than a minute

Start Lab →

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Lab Overview

Cloud Architect

Compute, Infrastructure

Lab Details

1. This lab walks you through the steps to launch and configure an EC2 instance using Terraform.

2. Duration: **45 minutes**

3. AWS Region: **US East (N. Virginia) us-east-1**

Introduction

What is EC2?

- AWS defines it as Elastic Compute Cloud.
- It's a virtual environment where "you rent" to have your environment created, without purchasing.
- Amazon refers to these virtual machines as Instances.
- Preconfigured templates can be used to launch instances. These templates are referred to as images. Amazon provides these images in the form of AMIs (Amazon Machine Images).
- Allows you to install custom applications and services.
- Scaling of infrastructure i.e., up or down is easy based on the demand you face.
- AWS provides multiple configurations of CPU, memory, storage etc., through which you can pick the flavor that's required for your environment.
- No limitation on storage. You can pick the storage based on the type of the instance that you are working on.
- Temporary storage volumes are provided, which are called Instance Store Volumes. Data stored in this gets deleted once the instance is terminated.
- Persistent storage volumes are available and are referred to as EBS (Elastic Block Store) volumes.
- These instances can be placed at multiple locations which are referred to as Regions and Availability Zones (AZ).
- You can have your Instances distributed across multiple AZs i.e., within a single Region, so that if an instance fails, AWS automatically remaps the address to another AZ.
- Instances deployed in one AZ can be migrated to another AZ.
- To manage instances, images, and other EC2 resources, you can optionally assign your own metadata to each resource in the form of tags.
- A Tag is a label that you assign to an AWS resource. It contains a key and an optional value, both of which are defined by you.

- Each AWS account comes with a set of default limits on the resources on a per-Region basis.
- For any increase in the limit you need to contact AWS.
- To work with the created instances, we use Key Pairs.

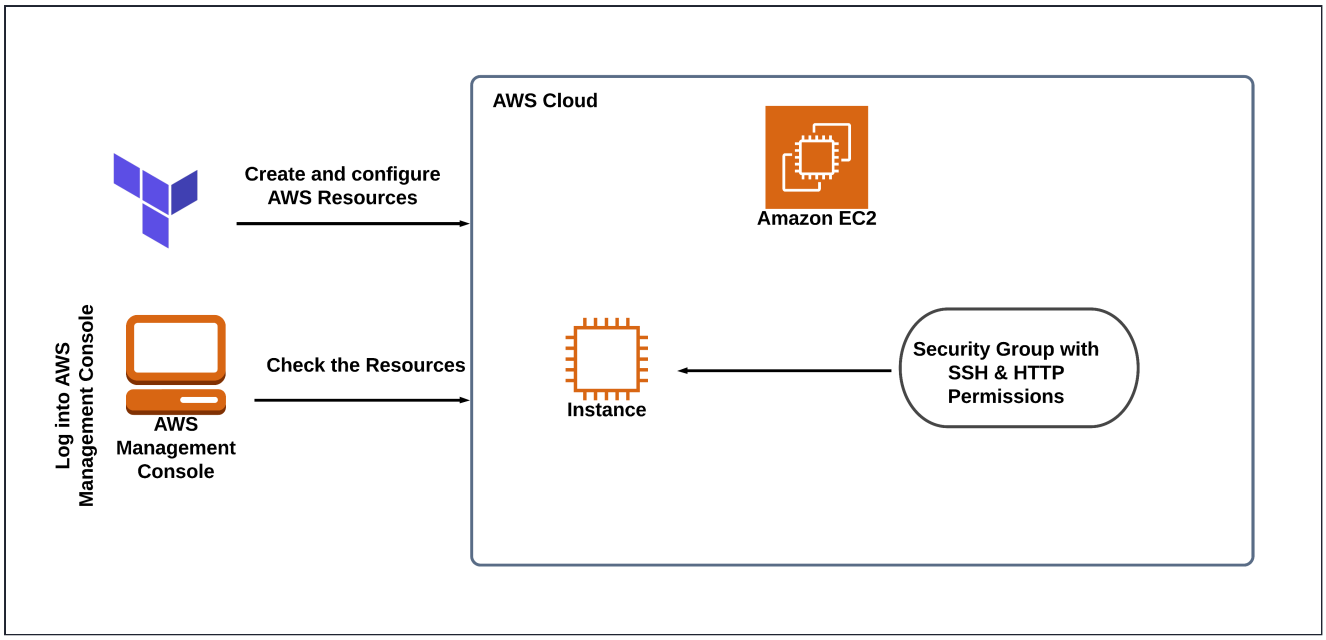
What is Terraform?

- It is an open-source IaaC (Infrastructure as a code) software tool where you define and create resources using providers in the declarative configuration language example JSON.
- With Terraform, You can package and reuse the code in the form of modules.
- It supports a number of cloud infrastructure providers such as AWS, Azure, GCP, IBM Cloud, OCI, etc.
- Terraform has four major commands:
    - terraform init
    - terraform plan
    - terraform apply
    - terraform destroy

Prerequisite

- Install Terraform in your local machine using this official guide by Hashicorp.
    - To install Terraform using CLI, use this guide https://learn.hashicorp.com/tutorials/terraform/install-cli
    - To install Terraform by downloading, use this guide https://www.terraform.io/downloads.html
- Download and Install Visual Studio code editor using this guide https://code.visualstudio.com/download

Architecture Diagram



Task Details

1. Sign in to the AWS Management Console
2. Setup Visual Studio Code.
3. Create a Variables file.
4. Create EC2 and its components in main.tf file
5. Create an Output file.
6. Confirm the installation of Terraform by checking the version.
7. Apply Terraform configurations.
8. Check the HTML page.
9. Check the resources in AWS Console.
10. Validation of the lab.
11. Delete AWS Resources.

Launching Lab Environment

1. To launch the lab environment, Click on the **Start Lab** button.
2. Please wait until the cloud environment is provisioned. It will take less than a minute to provision.
3. Once the Lab is started, you will be provided with **IAM user name**, **Password**, **Access Key**, and **Secret Access Key**.

Note : You can only start one lab at any given time