**Launch an EC2 Instance in a Virtual Private Cloud (VPC)**

**About this Hands-on Lab**

In this lab scenario, Alfredo of Alfredo’s Pizza is looking to set up a website to advertise his pizza shop. We are going to help him by getting the server primed and ready to host his website. During this lab, you’ll have the opportunity to explore and understand foundational and compute services provided by AWS. We will create a virtual private cloud (VPC), subnets across multiple Availability Zones (AZs), routes and an internet gateway, and more. These services are the foundation of networking architecture inside of AWS and cover concepts such as infrastructure, design, routing, and security.

**Learning Objectives**

Successfully complete this lab by achieving the following learning objectives:

**Create a VPC**

* Navigate to the VPC console.
* Create a VPC with the following values:
* my-vpc
* 10.0.0.0/16
* No IPv6 CIDR block
* Default tenancy

**Note:** Do not use the VPC Wizard to create your VPC; instead, configure your VPC from scratch.

**Create a Public Subnet**

* Build 1 public subnet for your VPC.
* Ensure you are assigning the valid CIDR blocks when creating your subnet.

**Create Routes and Configure Internet Gateway**

* + Automatically request a public IPv4 address for instances launched into the public subnet.
  + Enable auto-assign public IPv4 address.

**Tip:**

* In the navigation pane, choose Subnets.
* Select your subnet and choose Subnet Actions, Modify auto-assign IP settings.
* The Enable auto-assign public IPv4 address check box, if selected, requests a public IPv4 address for all instances launched into the selected subnet.
* Select or clear the check box as required, and then choose Save
  + Create internet gateway and attach to VPC.
  + Create a new route table to direct traffic in the public subnet.

**Note**: *You may notice there is already a default route table created for you associated with your main network. This route allows traffic from the 10.0.0.0/16 network to pass to other nodes within the network, but it does not allow traffic to go outside of the network, such as to the public internet. Each VPC you create by default is associated with this main route table; therefore, the main route table shouldn’t allow traffic out to the public internet, so we’ll create a new 1 specifically for public internet traffic.*

**Launch EC2 Instance in Subnet**

* Launch an EC2 instance in your subnet.
* Select Amazon Linux 2 AMI, 64-bit (x86), t2.micro.
* Create a new key pair.

**Access EC2 Instance**

* Connect to your newly created instance using a standalone SSH client.
* Install Apache Web Server and create an index.html page in the /var/www/html directory.
* Access the web application using the IPv4 Public IP of the instance you created.

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