# Working with EC2 Instance

## **Introduction**

In this hands-on lab, we will create and interact with an EC2 instance. The lab covers EC2 requirements, the choices available with creating EC2 instances, and the provisioning process itself.

## **Solution**

Log in to the live AWS environment using the credentials provided. Make sure you're in the N. Virginia (us-east-1) region throughout the lab.

[Here are the instructions](https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/putty.html) on how to connect to EC2 using PuTTY on Windows.

### **Create a Default VPC**

1. Navigate to **VPC** > **Your VPCs**.
2. Select **Actions** then **Create Default VPC** from the dropdown. You do not want to click **Create VPC**.
3. Click **Create**.
4. Click **Close**

### **Create an EC2 Instance**

1. Navigate to **EC2** > **Instances**.
2. Click **Launch Instance**.
3. On the AMI page, select the **Amazon Linux 2 AMI**.
4. Click on the checkbox next to **t3.micro** to select it, and click **Next: Configure Instance Details**.
5. On the Configure Instance Details- page:
   * Network: Leave default
   * Subnet: Leave no preference
   * Auto-assign Public IP: **Enable**
   * Tenancy: **Shared**
6. Expand Advanced details, and paste the following into the user data box:

#!/bin/bash

yum update -y

yum install -y httpd

yum install -y wget

chkconfig httpd on

cd /var/www/html

service httpd start

1. Click **Next: Add Storage**, and then click **Next: Add Tags**.
2. On the Add Tags page, select **Add Tag** then add the following:
   * Key: **Name**
   * Value: **LAB1**
3. Click **Next: Configure Security Group**.
4. On the Configure Security Group page, click **Create a new security group**, and set the following values:
   * Security group name: **labSG**
   * Description: **labSG**
5. Click **Add Rule**, and set the following values:
   * Type: **HTTP**
   * Source: **My IP**
6. Click **Review and Launch**, and then **Launch**.
7. In the key pair dialog, select **Create a new key pair**.
8. Give it a Key pair name of "ec2lab".
9. Click **Download Key Pair**, and then **Launch Instances**.
10. Click **View Instances**, and give it a few minutes to enter the running state.

### **Manage the EC2 Instance**

1. Once the instance is fully created, check the checkbox next to the instance called **LAB1**
2. Ensure that the Description tab is selected.
3. Locate the instance's public DNS (IPv4), and select the icon next to it to copy it to the clipboard.
4. Paste it into a new browser tab to preview it, which should result in a functioning website.

#### **Connect to the EC2 Instance (Windows Putty or Linux)**

1. Open a terminal session and change to your downloads directory where the key pair file should be saved (e.g., cd Downloads).
2. In the terminal, run the following to change the permissions on the key pair:

chmod 400 ec2lab.pem

1. On the EC2 instances page, with the Cat-Hall-o-Fame instance still selected, click **Connect**.
2. Copy the ssh connection string, listed under Example, and paste it into the terminal window to connect to the instance.
3. Enter yes at the prompt.
4. In the AWS console, note the IPv4 public IP of the instance.
5. Right-click the instance, hover over **Instance State**, and select **Reboot**.
6. In the dialog, click **Yes, Reboot**. Give it a minute or so.
7. Note if the IPv4 public IP changes. (It should stay the same.)
8. Right-click the instance, hover over **Instance State**, and select **Stop**.
9. In the dialog, click **Yes, Stop**. Give it a minute or so.
10. Note the IP. (Once it's fully stopped, the IP will disappear.)
11. Right-click the instance, hover over **Instance State**, and select **Start**.
12. In the dialog, click **Yes, Start**. Give it a minute or so.
13. Note the IP. (A new IP should appear.)
14. Right-click the instance, hover over **Instance State**, and select **Stop**.
15. In the dialog, click **Yes, Stop**. Give it a few minutes to fully stop.
16. Once it's stopped, right-click the instance, hover over **Instance Settings**, and select **Change Instance Type**.
17. Change the instance type to **t3.small**, and click **Apply**.
18. Right-click the instance, hover over **Instance State**, and select **Start**.

## **Conclusion**

Congratulations on completing this lab!