**Task 1: Launch Your Amazon EC2 Instance**

1. In the **AWS Management Console** choose **Services**, choose **Compute** and then choose **EC2**.

1. Choose the **Launch instance** menu and select **Launch instance**.

**Step 1: Name and tags**

1. Give the instance the name Web Server.

**Step 2: Application and OS Images (Amazon Machine Image)**

1. Also keep the default **Amazon Linux 2023 AMI** selected.

**Step 3: Instance type**

1. In the *Instance type* panel, keep the default **t2.micro** selected.

**Step 4: Key pair (login)**

1. For **Key pair name - *required***, choose **vockey**.

**Step 5: Network settings**

1. Next to Network settings, choose **Edit**.

1. For **VPC**, select **Lab VPC**.

1. Under **Firewall (security groups)**, choose **Create security group** and configure:
   * **Security group name:** Web Server security group
   * **Description:** Security group for my web server
   * Under **Inbound security group rules**, notice that one rule exists. **Remove** this rule.

**Step 6: Configure storage**

1. In the *Configure storage* section, keep the default settings.

Amazon EC2 stores data on a network-attached virtual disk called *Elastic Block*

**Step 7: Advanced details**

1. Expand **Advanced details**.

1. For **Termination protection**, select **Enable**.

1. Scroll to the bottom of the page and then copy and paste the code shown below into the **User data** box:

#!/bin/bash

dnf install -y httpd

systemctl enable httpd

systemctl start httpd

echo '<html><h1>Hello From Your Web Server!</h1></html>' > /var/www/html/index.html

**Step 8: Launch the instance**

1. At the bottom of the **Summary** panel choose **Launch instance**

You will see a Success message.

1. Choose **View all instances**
2. Wait for your instance to display the following:
   * **Instance State:** *Running*
   * **Status Checks:** *2/2 checks passed*

**Task 2: Monitor Your Instance**

1. Choose the **Status checks** tab.

1. Choose the **Monitoring** tab.

1. In the **Actions** menu towards the top of the console, select **Monitor and troubleshoot** **Get system log**.
2. Scroll through the output and note that the HTTP package was installed from the **user data** that you added when you created the instance.
3. Choose **Cancel**.

1. Ensure **Web Server** is still selected. Then, in the **Actions** menu, select **Monitor and troubleshoot** **Get instance screenshot**.

1. Choose **Cancel**.

**Task 3: Update Your Security Group and Access the Web Server**

1. Ensure **Web Server** is still selected. Choose the **Details** tab.

1. Copy the **Public IPv4 address** of your instance to your clipboard.

1. Open a new tab in your web browser, paste the IP address you just copied, then press **Enter**.

1. Keep the browser tab open, but return to the **EC2 Console** tab.

1. In the left navigation pane, choose **Security Groups**.

1. Select **Web Server security group**.

1. Choose the **Inbound rules** tab.

The security group currently has no inbound rules.

1. Choose **Edit inbound rules**, select **Add rule** and then configure:
   * **Type:** *HTTP*
   * **Source:** *Anywhere-IPv4*
   * Choose **Save rules**

1. Return to the web server tab that you previously opened and refresh the page.

You should see the message *Hello From Your Web Server!*

**Task 4: Resize Your Instance: Instance Type and EBS Volume**

**Stop Your Instance**

1. On the **EC2 Management Console**, in the left navigation pane, choose **Instances** and then select the **Web Server** instance.

1. In the **Instance state** menu, select **Stop instance**.

1. Choose **Stop**

Your instance will perform a normal shutdown and then will stop running.

1. Wait for the **Instance state** to display: *Stopped*.

**Change The Instance Type and enable stop protection**

1. Select the Web Server instance, then in the **Actions** menu, select **Instance settings** **Change instance type**, then configure:
   * **Instance Type:** *t2.small*
   * Choose **Apply**
2. Select the Web Server instance, then in the **Actions** menu, select **Instance settings** **Change stop protection**. Select **Enable** and then **Save** the change.

**Resize the EBS Volume**

1. With the Web Server instance still selected, choose the **Storage** tab, select the name of the Volume ID, then select the checkbox next to the volume that displays.

1. In the **Actions** menu, select **Modify volume**.

The disk volume currently has a size of 8 GiB. You will now increase the size of this disk.

1. Change the size to: 10 **NOTE**: You may be restricted from creating Amazon EBS volumes larger than 10 GB in this lab.

1. Choose **Modify**

1. Choose **Modify** again to confirm and increase the size of the volume.

**Start the Resized Instance**

You will now start the instance again, which will now have more memory and more disk space.

1. In left navigation pane, choose **Instances**.

1. Select the **Web Server** instance.

1. In the **Instance state** menu, select **Start instance**.

**Task 5: Explore EC2 Limits**

1. In the AWS Management Console, in the search box next to **Services**, search for and choose Service Quotas

1. Choose **AWS services** from the navigation menu and then in the AWS services *Find services* search bar, search for ec2 and choose **Amazon Elastic Compute Cloud (Amazon EC2)**.

**Task 6: Test Stop Protection**

1. In the AWS Management Console, in the search box next to **Services**, search for and choose EC2 to return to the EC2 console.

1. In left navigation pane, choose **Instances**.

1. Select the **Web Server** instance and in the **Instance state** menu, select **Stop instance**.

1. Then choose **Stop**

1. In the **Actions** menu, select **Instance settings** **Change stop protection**.

1. Remove the check next to **Enable**.

1. Choose **Save**

1. Select the **Web Server** instance again and in the **Instance state** menu, select **Stop instance**.

1. Choose **Stop**

**Submitting your work**

1. To record your progress, choose **Submit** at the top of these instructions.