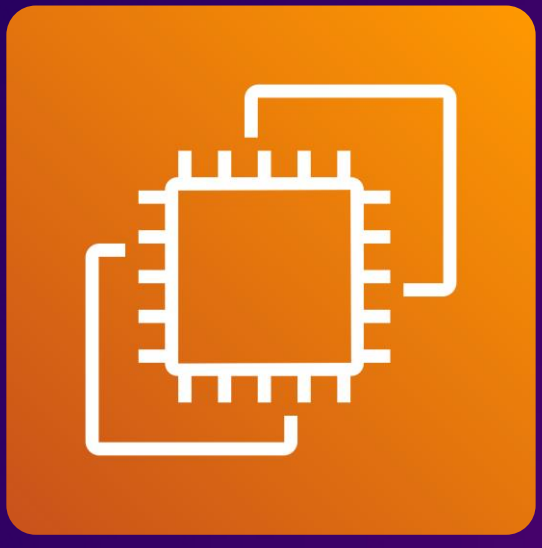
AWS re:Start
CHALLENGE LAB

Amazon EC2 Instances Exercise



WEEK 9

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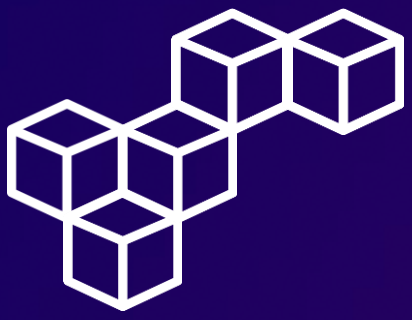


Overview

Your Challenge

Create an Amazon Linux EC2 instance to run a web application:

- Use the AWS Management Console to launch the instance.
- Use an Amazon Linux Amazon Machine Image (AMI) and a T3 instance type with a size that is smaller than medium.
- Launch the instance in a new virtual private cloud (VPC) and a new subnet, and auto-assign the instance's public IPv4 address.
- While you are creating your instance, in the user data, install and start the httpd service as your web server. Give write permission to users to the web server's document root directory (/var/www/html).
- Use a General Purpose SSD (gp2) volume type for the root volume.
- Configure the instance, and create the necessary resources so that you can connect to it by using Secure Shell (SSH).
- Capture a screenshot of the EC2 instance's system log showing that the httpd service was successfully installed.

To test your web server, deploy the web page in the following steps to your web server.

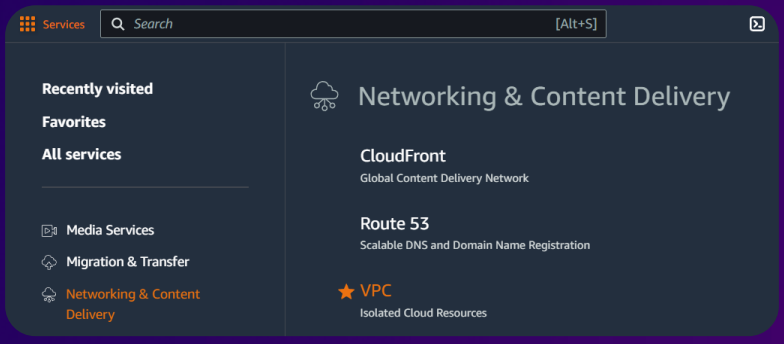
- Use EC2 Instance Connect to connect to your EC2 instance.
- Create a sample HTML file and save it as projects.html
- Place this file in the /var/www/html directory of your EC2 instance.
- Open a web browser, and navigate to this sample webpage.
- Capture a screenshot showing that the page was successfully returned and displayed.

Task 1

Configure a new VPC

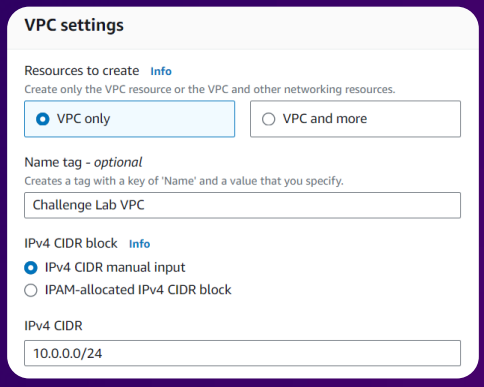
Step 1: Access the AWS Management Console

Open the AWS Management Console, and select VPC.



Step 2: Create a new VPC

Navigate to the **Your VPCs** section, select Create VPC, and create a new virtual private cloud (VPC).



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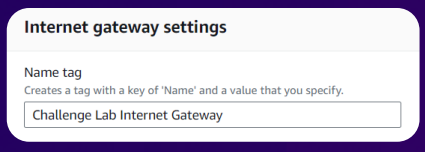
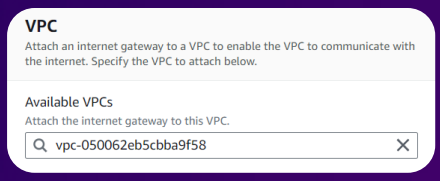
Task 1

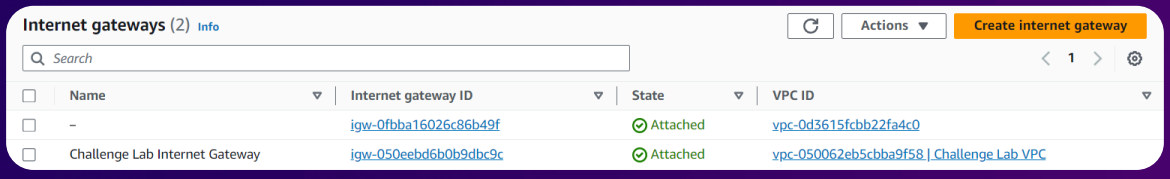
Configure a new VPC

Step 3: Create an internet gateway

Navigate to the **Internet gateways** section, select Create internet gateway, create a new internet gateway, and attach it to the new VPC.

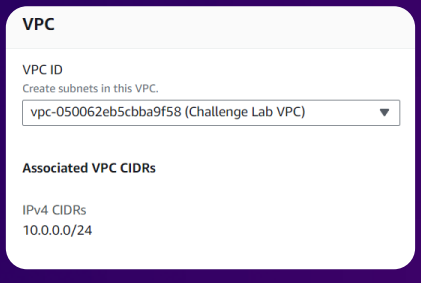


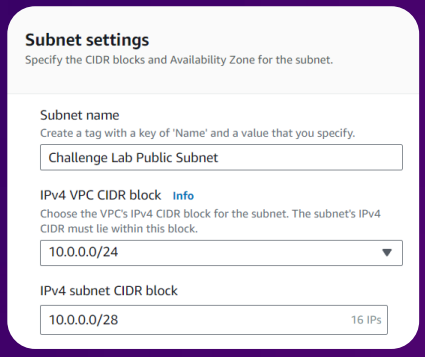




Step 4: Create a public subnet

Navigate to the **Subnets** section, select Create subnet, and create a new public subnet.





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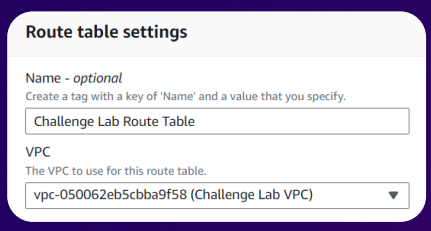
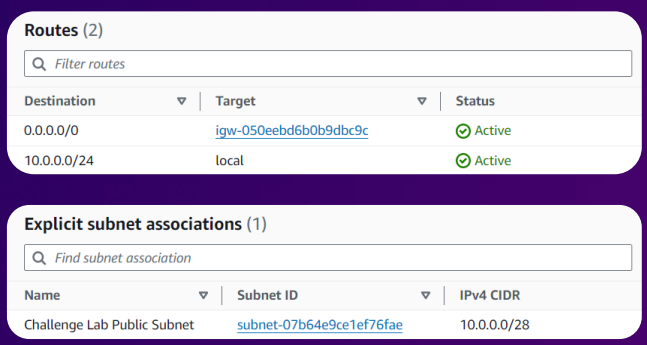
Task 1

Configure a new VPC

Step 5: Create a route table

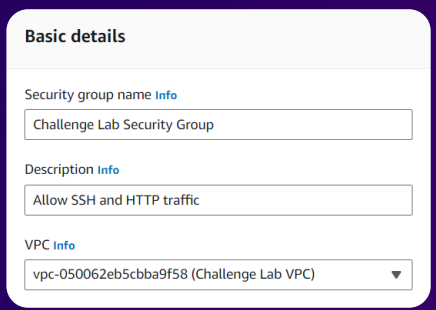
Navigate to the **Route tables** section, select Create route table, create a new route table, add a route to direct internet traffic to the internet gateway, and explicitly associate the new route table to the new public subnet.

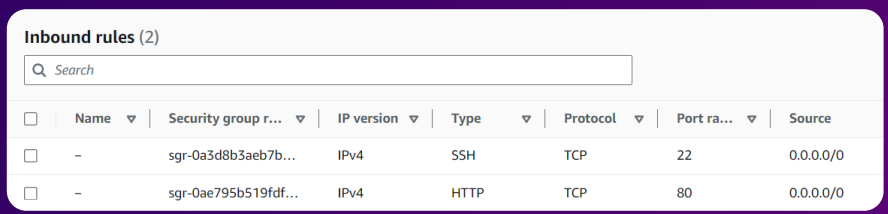




Step 6: Create a security group

Navigate to the **Security groups** section, select Create security group, create a new security group, and add inbound rules to allow SSH and HTTP traffic.





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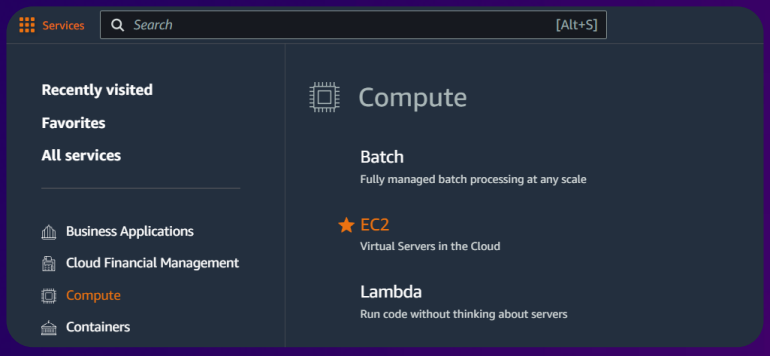
Task 2

Launch an EC2 instance

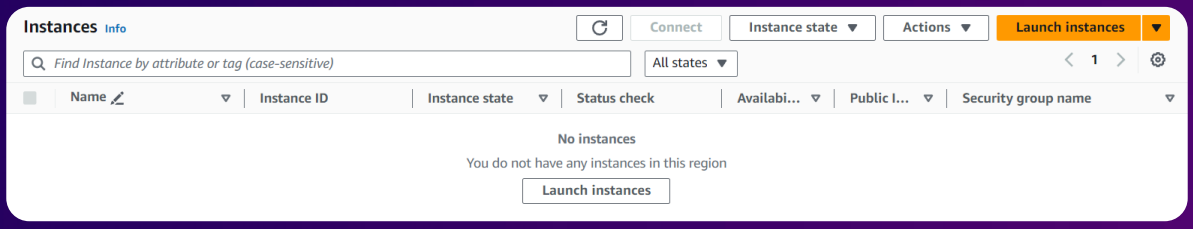
Step 1: Access the EC2 Management Console

In the AWS Management Console, select EC2.



Step 2: Launch an instance

Navigate to the **Instances** section, and select Launch instances.



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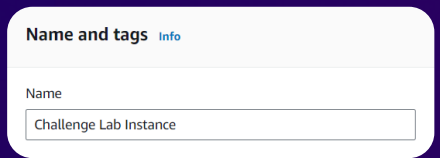
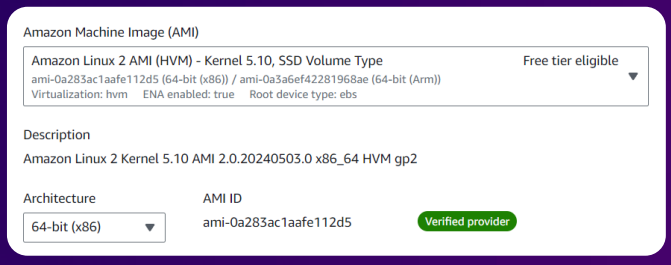
Task 2

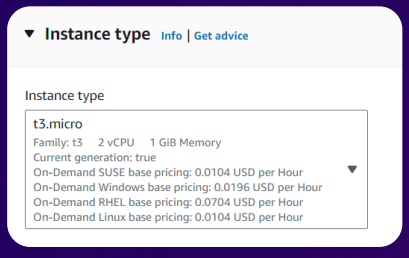
Launch an EC2 instance

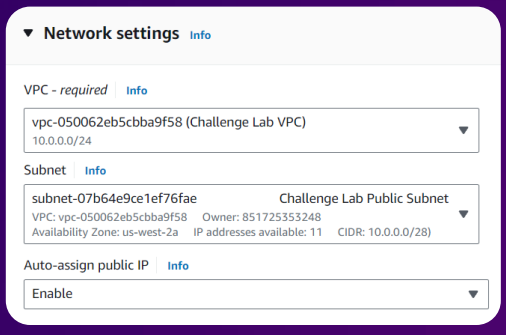
Step 3: Set up the instance

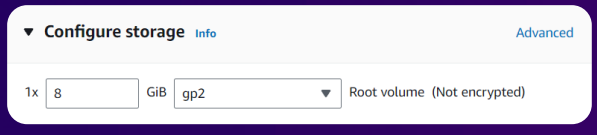
Use the following parameters to configure the instance settings.

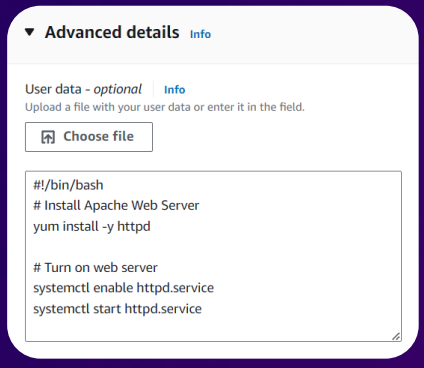


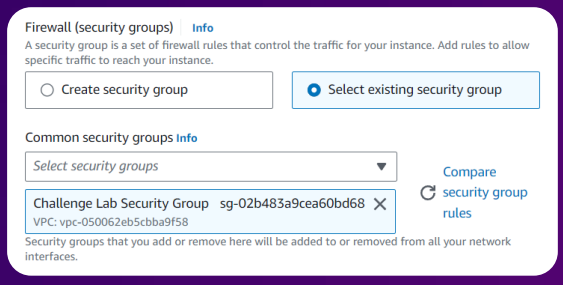












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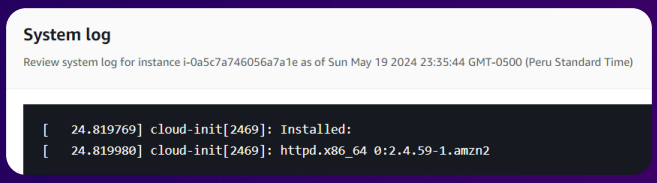
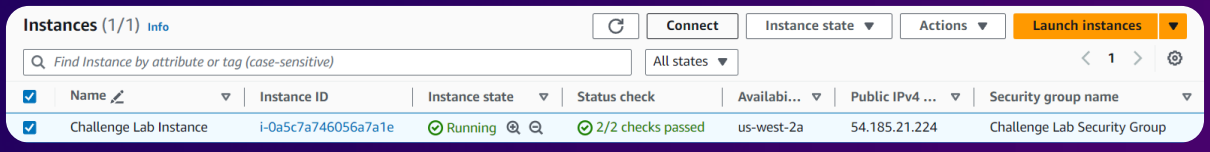
Task 3

Test your web server

Step 1: Review instance creation

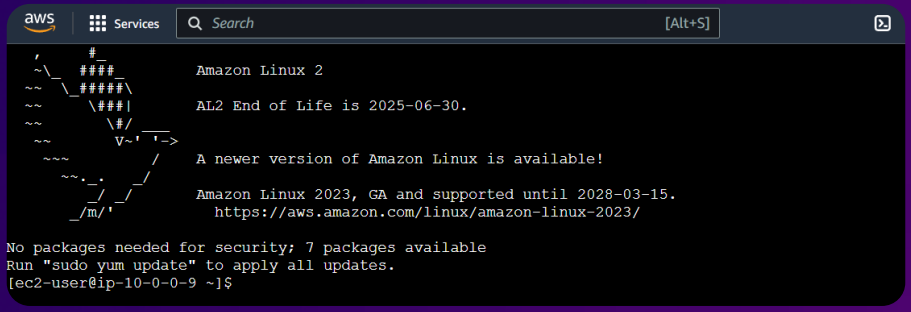
Navigate to the **Instances** section, review the EC2 instance's **System log** showing that the httpd service was successfully installed. Then, select the instance and choose Connect.





Step 2: Connect to the instance

Connect to the new instance using EC2 Instance Connect.



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Task 3

Test your web server

Step 3: Create an HTML file

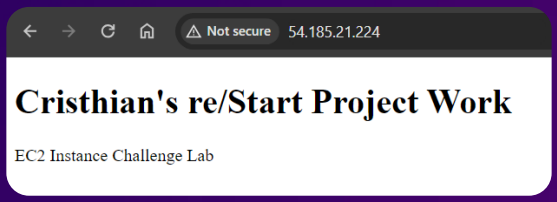
Use a text editor to create an HTML file using the following HTML code, place the file in the /var/www/html directory, and give write permission to users to the web server's document root directory (/var/www/html).

```
<!DOCTYPE html>
<html>
<body>
<h1>Cristhian's re/Start Project Work</h1>
<p>EC2 Instance Challenge Lab</p>
</body>
</html>
~
```

```
[ec2-user@ip-10-0-0-9 ~]$ sudo vi projects.html
[ec2-user@ip-10-0-0-9 ~]$ sudo cp projects.html /var/www/html/index.html
[ec2-user@ip-10-0-0-9 ~]$ sudo chmod 755 /var/www/html/
[ec2-user@ip-10-0-0-9 ~]$
```

Step 4: Review the webpage

Use the public IPv4 address of the instance to access your webpage. The page was successfully returned and displayed.



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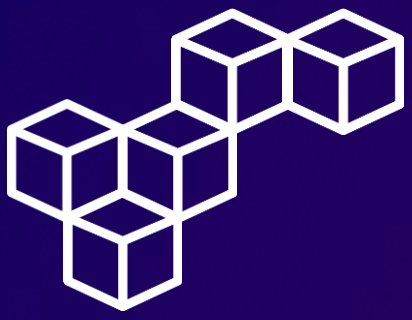

Conclusions

Configuring a VPC

Properly configuring a VPC with public subnets, route tables, an internet gateway, and security groups is essential for allowing public access to a web server instance.

Launching an EC2 instance

Launching an EC2 instance provides scalable compute resources, essential for deploying and managing applications in the cloud.

User Data Scripts

Using user data scripts automates the initial setup of EC2 instances, enabling efficient and consistent configuration upon launch.

The httpd service

The httpd service, part of the Apache HTTP Server, is crucial for serving web content and managing web server functionalities.

The /var/www/html/ directory

The /var/www/html/ directory is the default document root for Apache, where web files are stored and served to users.

aws re/start

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