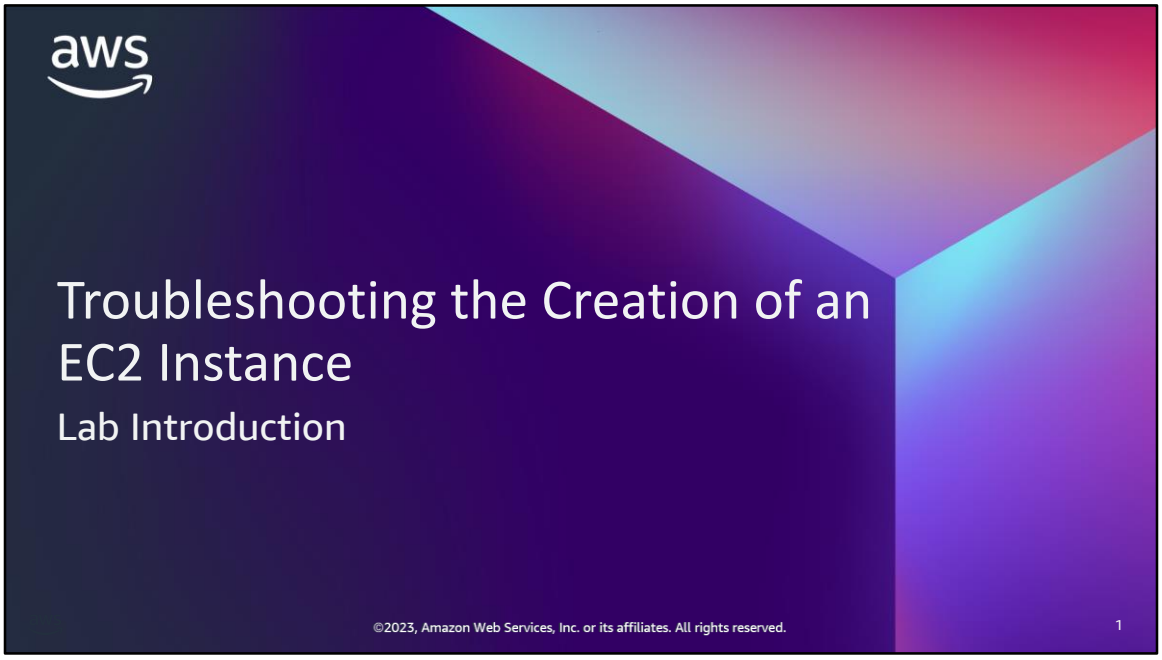

Troubleshooting the Creation of an EC2 Instance

Lab Introduction

Business need: Ability to order online

Nikhil:

Yesterday, Olivia was in the café to get a cake. She had to wait for a while because there was a line of customers ahead of her. What if we could let customers place an order ahead of time so that they could pick up their order without waiting?

Sofía:

Yes, that's a great idea! We should update our website to offer customers the ability to place an online order. Let's talk to Frank and Martha about it.

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Nikhil shares with Sofía that a customer had to wait for some time to make a purchase because there was a line in the café. He has the idea of giving customers the ability to place a pick-up order so that they don't have to wait.

Sofía is enthusiastic about the idea and proposes updating the café website to offer online ordering.

After hearing Nikhil and Sofía's proposal, the owners (Frank and Martha) support creating an online ordering feature on the website.

Technical requirements

Nikhil and Sofía consult with Mateo about how they can update the website to offer online ordering. Mateo suggests that they use a Linux, Apache, MariaDB, PHP (LAMP) stack to implement their solution, which includes the following:

- A Linux instance
- An Apache web server
- A MariaDB relational database
- A PHP language interpreter

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Mateo explains to Nikhil and Sofía that with the addition of the online ordering capability, the café website will no longer be static. Therefore, it should not be hosted on Amazon Simple Storage Service (Amazon S3). Instead, the website will require a web server to run server-side code and a database to store order data. Mateo recommends using a LAMP stack. LAMP stands for Linux, Apache, MariaDB, and PHP and represents a popular combination of open-source technologies that support running dynamic web applications.

Solution deployment issues

Sofía:

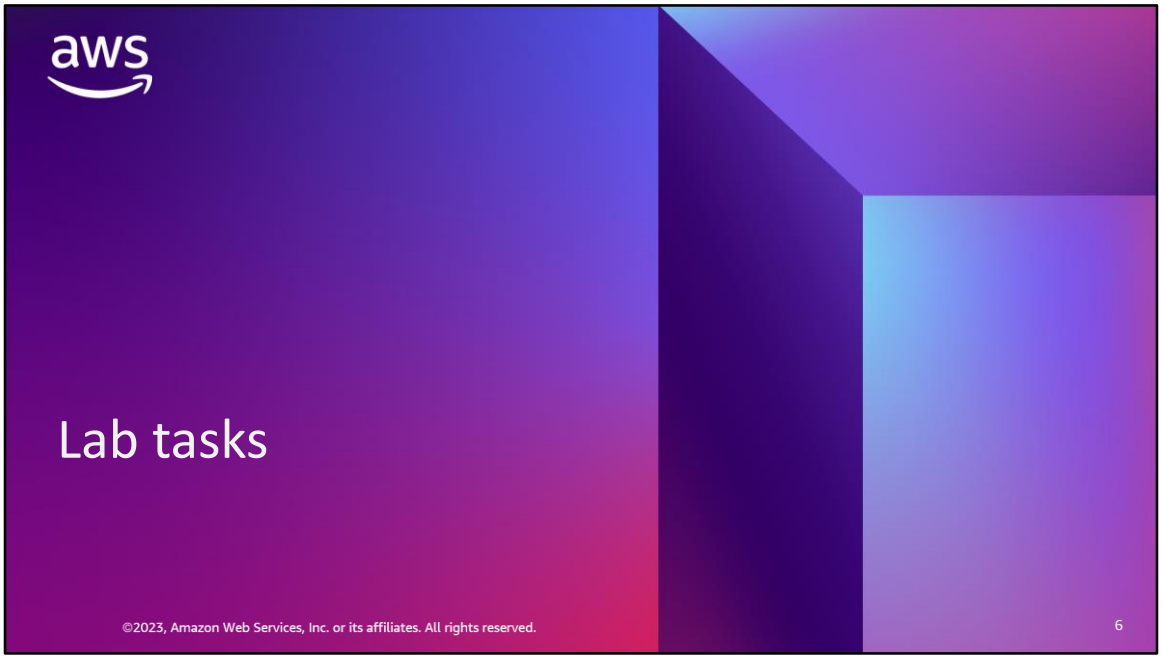
I ran into some problems deploying the LAMP stack and the updated application. I used a user data script so that the deployment would be repeatable, but something went wrong.

Nikhil:

OK, let's troubleshoot it together.

Sofía updated the code for the café application and created a user data script to deploy the application and the LAMP stack on an Amazon Elastic Compute Cloud (Amazon EC2) instance. However, the deployment failed and generated some errors.

Sofía and Nikhil decide to troubleshoot the deployment together.



Lab tasks

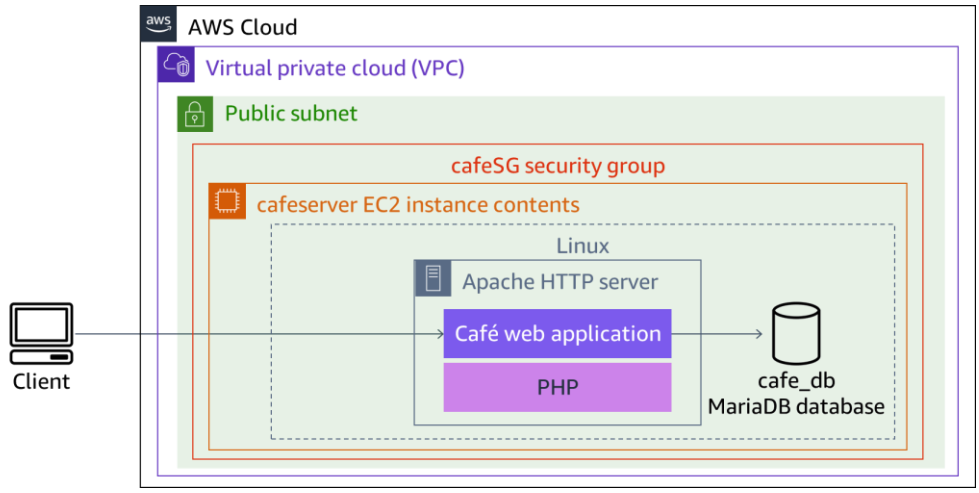
Lab tasks overview

In this lab, you will perform the following tasks:

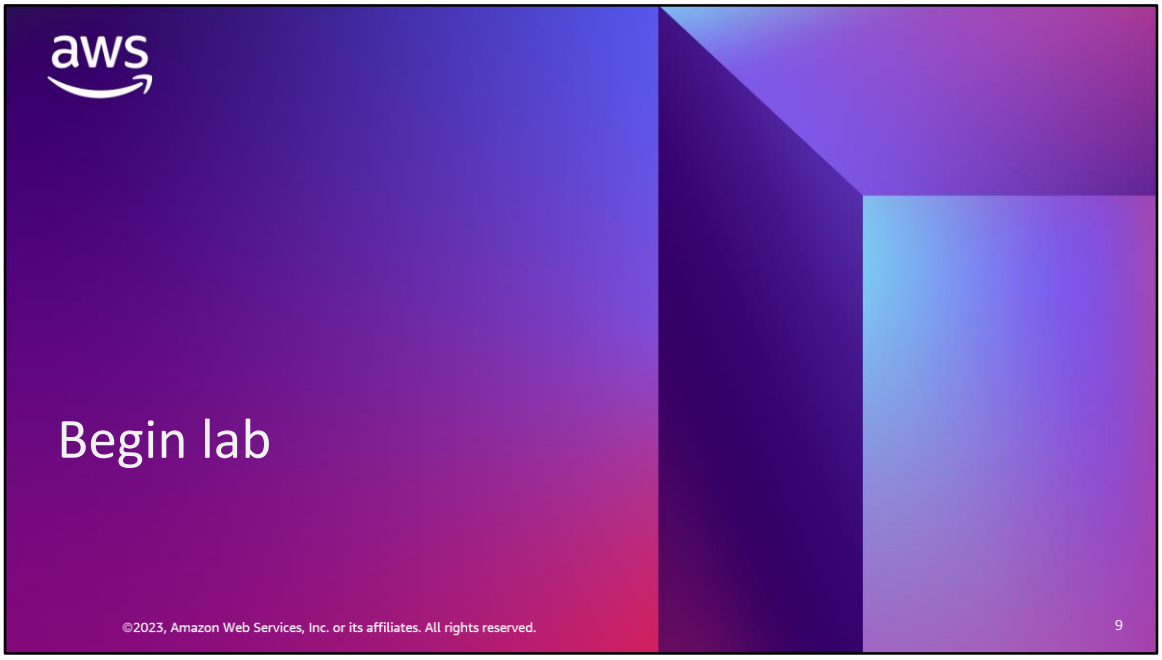
- Connect to an Amazon Elastic Compute Cloud (Amazon EC2) instance where you can run AWS Command Line Interface (AWS CLI) commands.
- Configure the AWS CLI environment.
- Launch an EC2 instance by using the AWS CLI, and deploy a LAMP stack and the updated café application on the instance by using user data.
- Troubleshoot and correct deployment issues.
- Verify the functionality of the website.

In this lab, you take on the roles of Nikhil and Sofía and troubleshoot the deployment of the updated café application that supports online orders. This slide lists the high-level tasks that you perform in this lab.

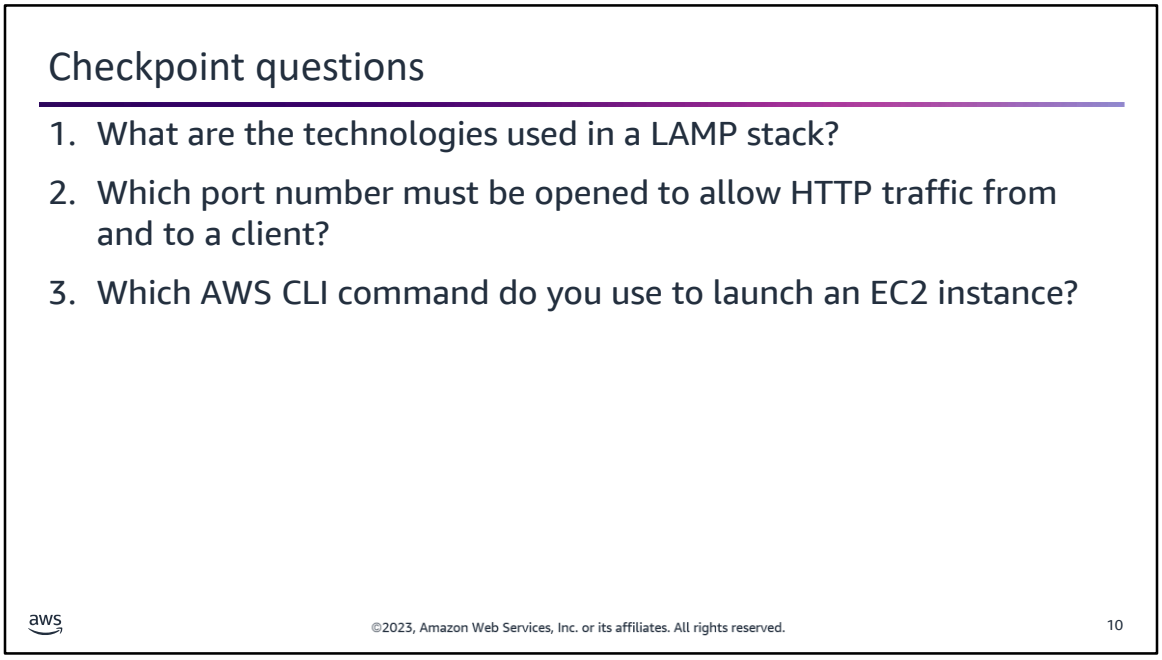
Café application deployment architecture



The dynamic café web application runs on a Linux EC2 instance named **cafeserver** inside a virtual private cloud (VPC) in the AWS Cloud. The instance is located in a public subnet and is secured by a security group named **cafeSG**. The café web application runs on a LAMP stack. Specifically, the code for the application runs inside an Apache HTTP server and uses PHP programs to build the application's user interface and access a MariaDB MySQL database named **cafe_db**.



You can now begin the lab. Ask your instructor for help if you need it.

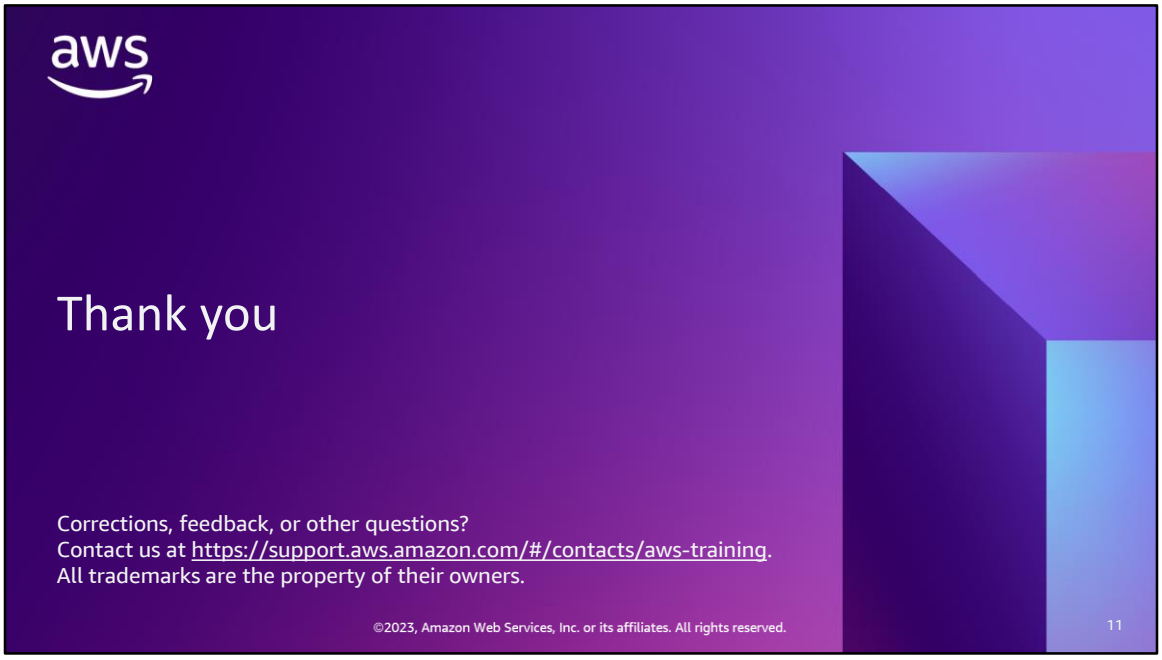


The answers to the questions are as follows:

1. What are the technologies used in a LAMP stack?
   The technologies used in a LAMP stack are Linux, Apache HTTP Server, MariaDB relational database, and PHP.

2. Which port number must be opened to allow HTTP traffic from and to a client?
   Port 80 must be opened to allow traffic from and to a client.

3. Which AWS CLI command do you use to launch an EC2 instance?
   You use the aws ec2 run-instances AWS CLI command to launch an EC2 instance.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