Overall Problem Statement

Status In progress

Timing Sep 30, 2025 to Oct 3, 2025

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Welcome! In this lab, you'll embark on a practical journey to master one of the most popular tools in modern cloud development: the **Serverless Framework**. We'll move beyond theory and build a real, event-driven application on AWS.

Problem Statement

Imagine you're a backend developer at a fast-growing startup. Your team needs to build a new feature that can handle unpredictable traffic, scale automatically, and keep operational costs low. The traditional approach of provisioning servers, managing operating systems, and configuring load balancers is too slow and complex.

Your mission is to build this feature as a scalable, event-driven application using a serverless architecture. You will use the **Serverless Framework** as your primary tool. It will act as your Infrastructure as Code (IaC) command center, allowing you to define all your cloud resources—functions, APIs, databases, and message queues—in a single configuration file and deploy them with one command.

Learning Objectives 🎯

By the end of this lab, you will be able to:

- Configure a professional development environment for serverless projects.
- Explain the core concepts of the Serverless Framework, such as services, providers, functions, events, and resources.
- Write a `serverless.yml` file to define and configure AWS Lambda, API Gateway, DynamoDB, SQS, and SNS.
- Deploy, test, and monitor a multi-service serverless application on AWS.
- Cleanly remove all cloud resources managed by the framework.

Prerequisites ✅

Before you begin, please ensure you have the following:

- **An Active AWS Account:** You will need an account with administrative privileges to create and manage the resources in this lab. It is highly recommended to use a personal, development, or sandbox account, **not** a production environment.
- **Foundational AWS Knowledge:** You should have already completed introductory labs or possess a basic understanding of:
    - **IAM:** The difference between a user, a role, and a policy. You know what programmatic access keys are and why they are used.
    - **Lambda:** The basic concept of a Lambda function as a compute service that runs code in response to events.
- **Command Line Familiarity:** You should be comfortable opening a terminal or command prompt, navigating directories, and running basic commands.

Lab Roadmap 🗺️

Here's a quick overview of the activities we will complete:

- **Activity 1: Environment Setup:** First, we'll set up your local machine with all the necessary tools, including the AWS CLI and the Serverless Framework itself.
- **Activity 2: Core Concepts:** Next, we'll dive into the theory, understanding the "why" and "what" behind the Serverless Framework and its key abstractions.

- **Activity 3: Guided Project:** This is where the fun begins! You'll build a complete, multi-part serverless application with step-by-step guidance.
- **Activity 4: The Challenge:** Time to test your new skills. You will apply your knowledge to build a new service by writing your own serverless configuration.

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