AWS Lambda

An event-driven serverless service that runs code on demand

AWS Lambda is a serverless solution that helps you run code without provisioning and managing servers.
Lambda runs your code only when needed and automatically scales from a few to thousands of requests per second.
Additionally, AWS Lambda supports different programming languages and integrates with numerous AWS services and external applications.

Concepts

- **Function:** A resource where you can upload code to run on demand.
- **Trigger:** A configuration that invokes a Lambda function.
- **Event source:** An AWS service or a custom application that defines how Lambda should process the function code.

Benefits

- **Serverless architecture:** Takes care of all the underlying compute resources.
- **Scaling:** Automatically scales based on demand.
- **Pricing:** Pay for the compute time when the function is running.
- **VPC access:** Can access resources in a private Virtual Private Cloud (VPC).
- **Management:** No server management required.
- **Integration:** Easily integrates with other applications and AWS services.
- **Stateless functions:** Each Lambda function is independent, which enables high availability and consistent performance.
- **Opportunities:** Great for extract, transform, and load (ETL) operations, IoT data processing, variable workloads, and applications that need to run for a short period of time.

Use Cases

Scheduling Tasks

Automate periodic tasks or maintenance operations.

Web Application Backend

Use AWS Lambda functions to handle HTTP requests, process data, and interact with databases.

Real-time Processing

Process data as soon as it arrives from IoT devices and sensors or is uploaded to Amazon S3.

Chatbots

Capture data from Process user inputs or integrate with natural language processing services.