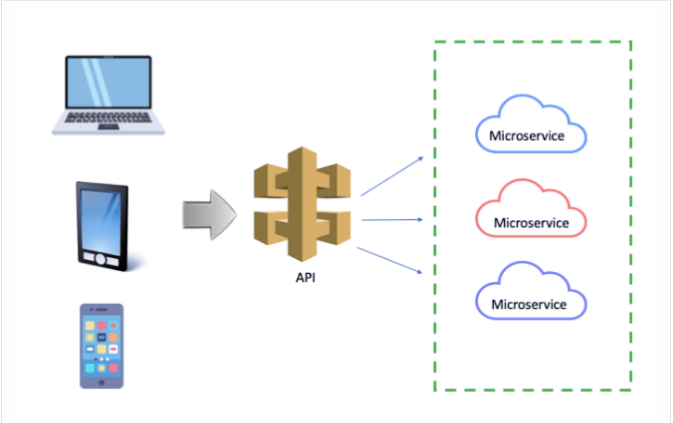
# API Gateway

## What is API Gateway?




*API Gateway*

API stands for Application Program Interface. Basically, the API defines how device components can communicate with each other.

The API Gateway is responsible for routing, design, and interface transfer requests. All application requests first go through the API gateway. It then sends a message to the correct microservice. The API Gateway can also process a request by invoking several microservices and aggregating the output.


## API Gateway in AWS

API Gateway

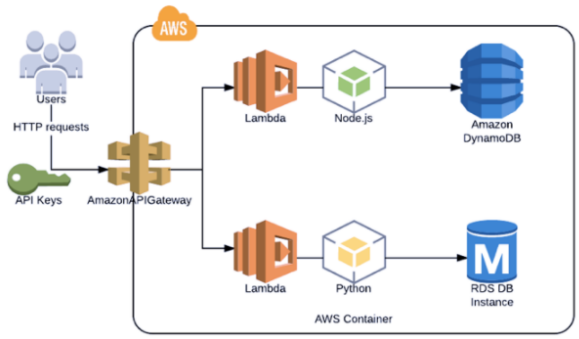
Amazon API Gateway is an AWS service for creating, publishing, maintaining, monitoring, and securing REST, HTTP, and WebSocket APIs at any scale.

APIs act as the "front door" for applications to access data, business logic, or functionality from your backend services. Using API Gateway, you can create RESTful APIs and WebSocket APIs that enable real-time two-way communication applications.

Amazon API Gateway offers 3 options to create RESTful APIs, HTTP APIs, REST APIs, and WebSocket APIs.

- **HTTP API:** HTTP APIs are optimized for building APIs that proxy to AWS Lambda functions or HTTP backends, making them ideal for serverless workloads. They do not currently offer API management functionality.
- **REST API:** REST APIs offer API proxy functionality and API management features in a single solution. REST APIs offer API management features such as usage plans, API keys, publishing, and monetizing APIs.
- **WebSocket API:** WebSocket APIs maintain a persistent connection between connected clients to enable real-time message communication such as chat apps and streaming dashboards.

## Lambda and API Gateway




As we mentioned in previous lessons, you can trigger Lambda function in different ways. But the most common usage is to set the API Gateway as a Lambda function trigger. And usually, the Lambda function triggers the other AWS resources as you see into the picture above. So, you are able to create a fully automated environment with Lambda and API Gateway combination.

So, to realize this architecture first, we need to create a Lambda function and then we integrated it to the API Gateway like in the example videos seen below.

**1. Creating a simple Lambda Function:**


**2. Integrating the Lambda Function to the API Gateway:**