CLOUD COMPUTING LAB

MINI PROJECT

TOPIC-Real Time Chat APP

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Abstract

1. The project aims to build a real-time chat application using AWS Lambda, WebSocket, and API Gateway services. The chat application will allow users to communicate with each other instantly, and they can send text and images through the application.

2. Users will be able to communicate with each other in real-time without the need for any additional software or hardware.

3. The project will help developers understand how to leverage AWS serverless technologies to build scalable and secure chat applications.

Introduction

1. This project aims to build a chat application using AWS Lambda, WebSocket, and API Gateway.

2. AWS Lambda is a serverless computing service that allows developers to run code without the need for managing servers

3. WebSocket is a protocol that provides full-duplex communication channels over a single TCP connection

4. Once logged in, they can create chat rooms, join existing chat rooms, and communicate with other users in real-time. The app will also allow users to send and receive files, images, and emojis.

5. The frontend will be built using React and will interact with the backend using API Gateway.

Problem Definition

The project aims to leverage the power of AWS Lambda, WebSocket, and API Gateway to create a serverless chat application that can scale easily and handle a large number of users and messages without incurring high costs. The application will provide users with real-time messaging capabilities, including the ability to create channels, join channels, and send messages. The serverless architecture of the application will also enable easy deployment and management, reducing the burden on developers.

Objective and Scope

Objective:

The objective of building a chat app using Lambda, WebSocket, and API Gateway on AWS is to create a scalable, reliable, and cost-effective solution for real-time communication between users. The chat app will allow users to create accounts, log in, and send messages to other users. The backend will be built using Lambda functions, which will handle user authentication, message storage, and communication between clients through WebSockets.

Scope:

The project scope includes the development of a backend serverless architecture using AWS Lambda, which would help in creating event-driven microservices. The chat app's user interface would be built using React and Hooks, providing a responsive and dynamic 6 user experience

Implementation Screenshots

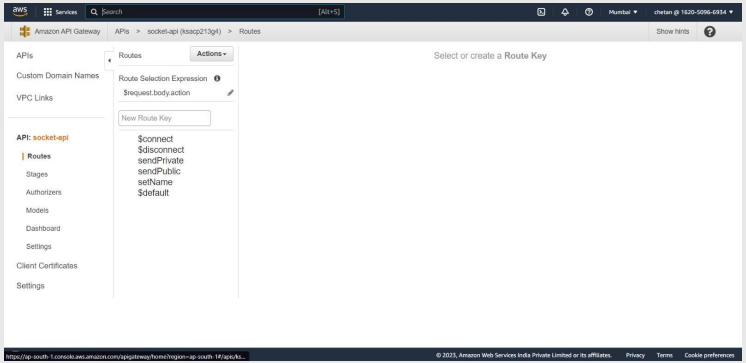
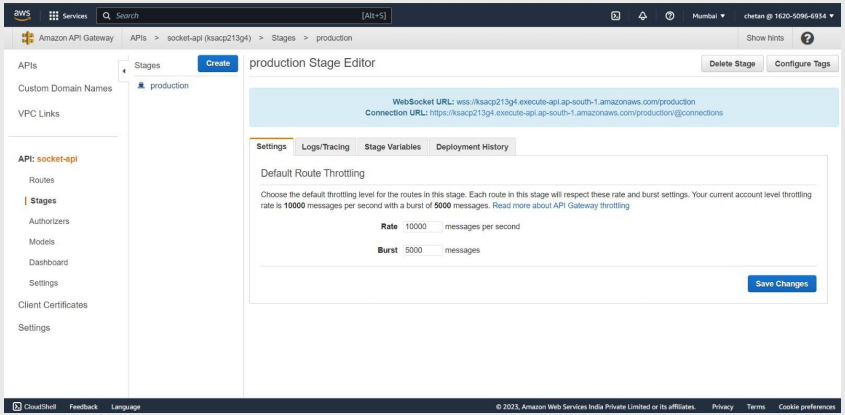


Figure 1: API Gateway

Figure 2: Production Stage



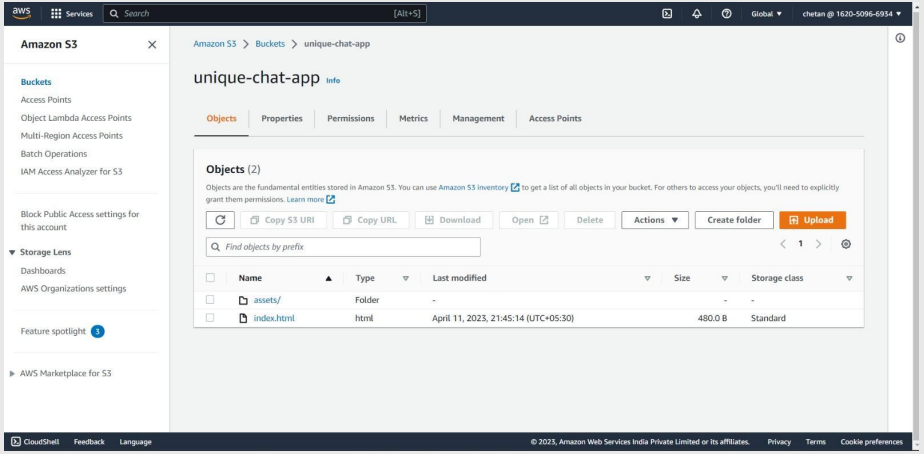
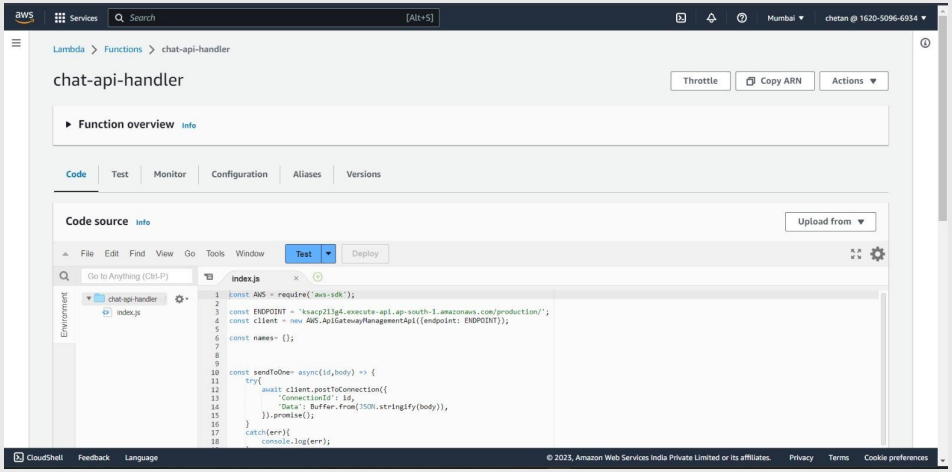


Figure 3: Bucket to Deploy Application

Figure 4: Chat API Handler



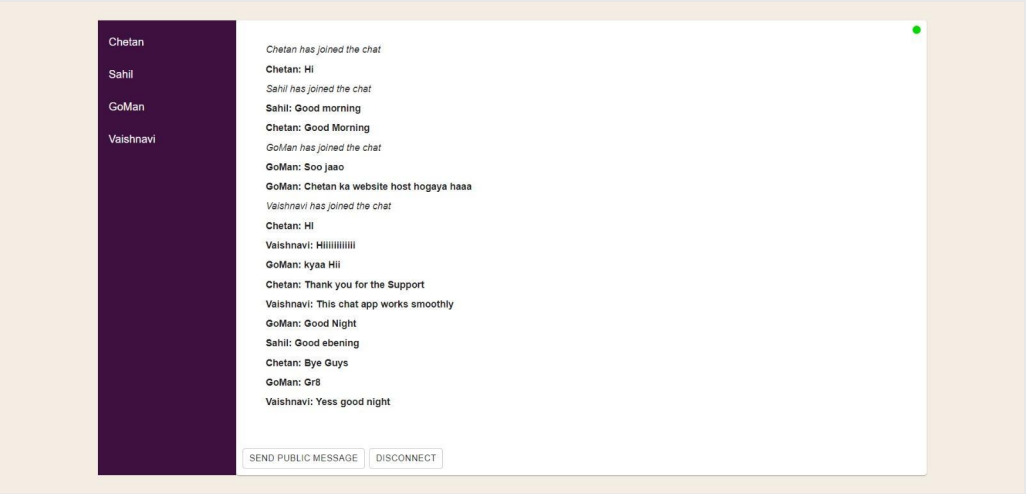


Figure 5: Real-Time Chat App

Conclusion

1. The project provides hands-on experience in using AWS services such as API Gateway, Lambda, and WebSocket.

2. The project provides experience in building a real-time chat application using modern technologies such as React, Node.js, and JavaScript.

3. The project provides experience in writing efficient and optimized code for a serverless architecture.

4. The project provides experience in testing and debugging a distributed application

5. The project helps in developing project management skills such as planning, organizing, and prioritizing tasks

Thank You