

Case Study: E-commerce and ERP Integration using AWS Cloud Microservices

Introduction

This integration is aimed at streamlining operations, and improving real time data exchange between platforms to enhance customer experience as well as operations for internal teams for a leading company in the EdTech space.

Objectives

- To enable near real time data flow between e-commerce and ERP.
- To implement scalable, maintainable, and cost effective solution.
- To automate deployment process using Infrastructure as Code (IaC).

Challenges

- Previously existing processes were prone to frequent errors, and based on infrastructure which required a lot of manual maintenance.
- Need for reliable synchronization between e-commerce and ERP.
- Ensuring robust solution which will guarantee continuity of operations.

Solutions

Architecture Overview

The solution involves serverless microservices architecture, with the following AWS services:

- **AWS Lambda:** Handles business logic and processing.
- **Amazon SQS:** Decouples services and manages message queues.
- **API Gateway:** Provides scalable endpoints for microservices.
- **DynamoDB:** Stores configuration and state data.

Integration Process

1. **Microservices Development:** Developed Lambda functions for specific tasks such as order processing, quote building, customer data management, and various third party integrations.
2. **Message Queuing:** Implemented SQS to ensure message delivery between services.
3. **API Endpoints:** Configured API Gateway for secure communication between BigCommerce webhooks and Lambda functions.
4. **Data Storage:** Used DynamoDB for storing data.
5. **CloudWatch:** Implemented essential for capturing microservices logs and troubleshooting.

Infrastructure as Code (IaC) Provisioning

- Used Terraform to script the entire infrastructure, allowing for version controlling and repeatable deployments.
- Enabled quick environment replication for testing and staging purposes.

Results

- Achieved real time data synchronization between BigCommerce and NetSuite.

- Reduced manual intervention and errors, leading to increased operational efficiency.
- Improved customer satisfaction through faster order processing and accurate inventory levels.

Conclusion

The integration project achieved success using AWS cloud microservices and Terraform to create a robust, scalable, and efficient link between the e-commerce and ERP platforms, setting new standard in operations for online selling and increasing the share of sales going through the e-comm by over 500%.