OpenLegacy

Generating microservices from mainframe in just 5 minutes

Taking Bank Leumi from copybook to microservices effortlessly

> Bank Leumi is a publicly traded Global 1000 bank as well as Israel's largest bank. Founded in 1902, the bank has a long record of modernization programs ranging from formal undertakings like OpenBanking to ad hoc offerings such as mobile bank branches (on trucks) in the 1950s.

Situation:

The Bank of Israel released a new OpenBanking regulation requirement

Approach:

Transform into an API-first organization to comply with regulations, shorten time-to-market (TTM) for new services, lower infrastructure costs, and support modern technologies

Technology:

- Amazon EKS Anywhere - on-prem cloud environment

- Apigee - API management platform

- Swagger – Open source API development toolkit

- OpenLegacy - connectivity with the mainframe to expose the legacy resources as microservices

The Challenge

Meeting new open banking regulations and shrinking the time-to-market (TTM) for new services were the bank's top priorities. To make it all happen, they needed an API-first approach that could develop and deploy a microservice from the mainframe CICS to the Amazon EKS Anywhere—in five minutes or less. Nicknamed "Copybook to Service in 5 Minutes" the project would allow the bank to accelerate development, while avoiding the costs of either using their current ESB or adding an additional integration layer on top of their legacy system.

In Bank Leumi's existing processes, all APIs and microservices were accompanied by matching manually created OpenAPI files, which were validated by the Swagger platform. These files were then used by Apigee to add security and validate the compliance of both the POST responses and the requests flowing through the system. Manually preparing an OpenAPI file for each API and microservice from the mainframe COBOL-based CICS was complex, time-consuming, and costly.

The Solution

A new automated process would create the microservice and accompanying OpenAPI file, and deploy them to the bank's cloud environment. Within five minutes, Apigee would receive the production API, and start sending requests.

OpenLegacy's Hub platform was designed to support exactly this type of scenario. The OpenLegacy CICS Adapter was customized to meet the unique requirements of the bank's mainframe systems. This quick, one-time effort was foundational to the entire solution. Also crucial was integrating a templated approval process for the OpenAPI files into the platform.

The first test for the new solution was the development of a login microservice, which included an automated script to drive the process, identify relevant legacy resources, and define the environments. The microservice was created and deployed seamlessly, in less than five minutes.

The end-to-end solution comprises two stages:

Stage 1: The creation and deployment phases, which includes the first flow

Stage 2: The production phase, which includes the second and third flows
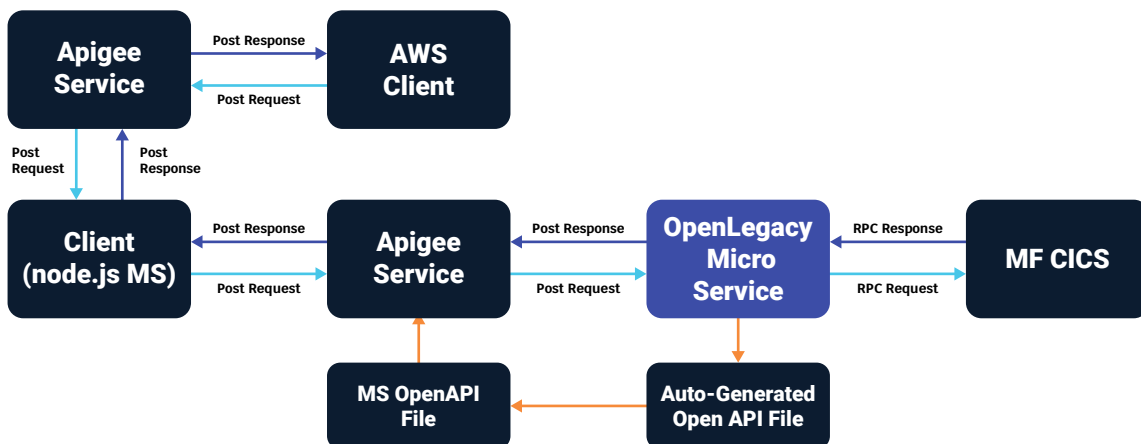
First Flow
OpenLegacy auto generates OpenAPI files into Apigee to publish the service. Bank's Swagger committee confirms the OpenAPI file.

Second Flow
Client sends request to Apigee and Apigee forwards the request to OpenLegacy microservice. Apigee validates conformity of request against OpenAPI file.

Third Flow
Response returns to client through Apigee. Apigee validates conformity of response against OpenAPI file.

The Result

OpenLegacy Hub's automation capabilities have streamlined Bank Leumi's entire microservice development process, and enabled them to meet new regulatory requirements. Now, the Hub automatically generates the service and its accompanying OpenAPI file, and makes them immediately available to Swagger and Apigee. Reaching the goal of launching new microservices within five minutes has already resulted in significant savings, improved operations, and a reduction of errors.

Building on their success, Bank Leumi has set out a new challenge: to create and deploy 25 new microservices—in just one week.

The smooth integration between Apigee and OpenLegacy has given Bank Leumi renewed confidence in their API-first paradigm. They've even opened their own Fintech service - Finteka – which provides outside vendors with real APIs that can be used to connect with the bank. For the Bank Leumi team, the future is definitely API-first.

"The strategy is to not leave behind the mainframe but to empower it. Elevating it to a modernized world is why we partnered with OpenLegacy and Apigee. They enable us to expose old legacy services and gain even further value from them without ditching them behind."

Eli Dotan
Group Manager, Middleware R&D
and Operations, Bank Leumi

About OpenLegacy

OpenLegacy offers a cloud-first legacy modernization platform. OpenLegacy Hub delivers high ROI with a simple, disruption-free, method to generate, extend and manage digital services from legacy systems to the cloud. Jumpstart and optimize your modernization journey and follow it through, no matter the chosen strategy.