Case study

Next Generation Travel Record Platform

LTIMindtree partnered with a major travel management company to build their next-generation travel record platform.

Client

The client is a leading travel management company operating in over 100 countries with a key focus on corporate business travel. They deliver comprehensive insights and services with respect to the corporate travel of their customers' employees.

Challenges

The client's travel record system interfaced with various Global Distribution Systems (GDS) to access passenger trip details. This data, once received from the GDS, could be stored in the client's travel record system for a very short time. Every new request for data access from the GDS is chargeable per request, and hence, accrued a large cost, considering the volume of transactions our client processed each day. Moreover, the existing travel record system had technical limitations and wasn't able to store comprehensive trip data. The client was also not able to share this data with their corporate customers, who wanted to analyze their employee travel spends over long periods across geos.

Thus, a new travel platform was required to integrate data from all GDS, normalize it and store it for a defined duration. This would then become a repository of trip records across all regions close to real time. This single source of truth would then feed data into all products and services of the client, giving the travel counselors a clear picture of traveler data across channels/geos/GDS.

LTIMindtree Solution

A modern and scalable architecture for the new travel record platform was defined according to the future needs of the client. The application is highly scalable and available for the growing volume of transactions, allowing for highly configurable business rules. This platform became one of the key elements of core infrastructure that feeds information into all booking channels (mobile, online, travel counselor point of sale), products, and services. This allowed our client to realize the vision of delivering consistent service across this multi-channel platform, wherever their customers are, and whatever method they choose to engage with their products/services.

Highlights of the Solution

1. Partnered with the client to conceptualize and architect a high-availability solution, leveraging open source and multiple new technologies.
2. Micro-services-based architecture to leverage flexibility, auto scaling, and containerization.
3. NoSQL-based database design to allow faster reads/writes.
4. Performant, scalable, fault tolerant, stable, and Cloud-ready architecture.

The new travel record platform captured, normalized, stored, and distributed global data to clients' products and services, as well as 3rd party vendors and clients via outbound web services. It became the single source of transactional data. First; the data was captured from the GDS or accepted inbound from 3rd party vendors (i.e. Airbnb, Trainline etc.), and business logic was applied to enrich it. After this, it was then stored and maintained on the platform for a year.

The platform also included enhanced features, allowing advanced search capability of past/present/future trips, regardless of the booking channel or GDS. This provided the travelers/travel managers/travel counselors a single source of accurate,reliable, and real-time data across all channels and activities. This data could be shared with corporate customers, near real time, to track employee travel spends and policy compliance over long periods across geos.

Benefits

1. Real time processing - instantaneous data transmission in milliseconds (~30 minutes in existing travel record system).
2. Ability to offer new and improved business assets and capabilities to partners.
3. Real time data transmission to all products, 3rd party vendors and clients via outbound web services.
4. Ability to sustain exponential volume growth to support business expansions via onboarding of new clients and partners.
5. Better B2B integration offerings via API.
6. Data retention –12 months of stored information (5 days on the existing system).

Technologies used

1. Java Micro-services.
2. WSO2 Enterprise Service Bus.
3. API Gateway APIGEE.
4. Database architecture Cassandra.
5. Development Tools - GitHub, Jenkins, Maven, Nexus, sonarQube.