

Case Study

A Global IT Service Provider, serving clients across 6 continents and with around 2 lacs employees, looking to influence revenue based on employee swipe-in/swipe-out data

Business Challenge

The customer is an IT services-based company where the employees' Time on Floor (ToF) and Time in Campus (TiC) values are critical in measuring business revenue. The customer was facing a one-day latency in processing 1.8 lakh+ employees' swipe-in and swipe out data from various controllers. Quite often extraction of data from the controllers was a manual pain-staking process.

The leadership also lacked good insights on all the data that was being collected through the sensors. They wanted to leverage this data to help with the betterment of their staff and provide proactive level of security to female employees.

Technical Requirements

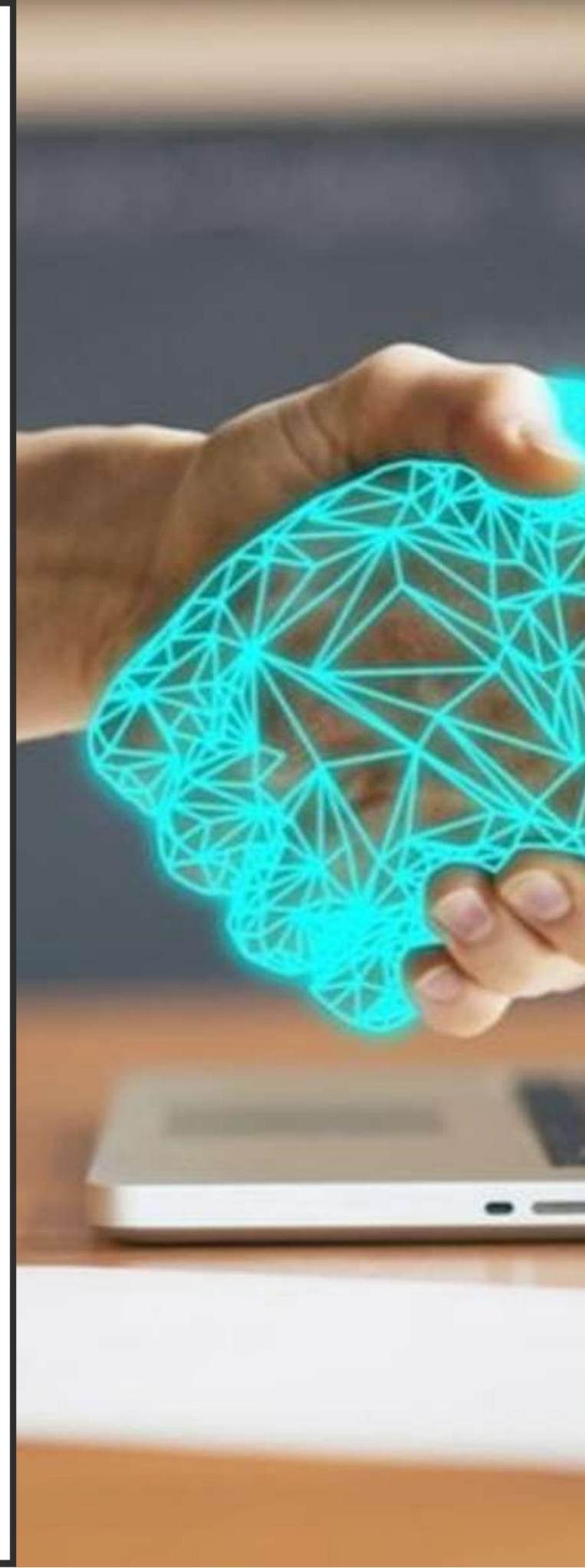
- AWS ML engine
- AWS Serverless Technologies
- SAP / Oracle integration
- Employee access data integration
- Visual Dashboard

Solution Strategy

The solution is built to process all swipe-in and swipe-out records in real time using the AWS services. The code for the solution is designed keeping in mind the best practices of product development, so that it is easily packaged and distributed to its customers, thereby increasing their business while using the same solution internally.

The solution was built to provide the following:

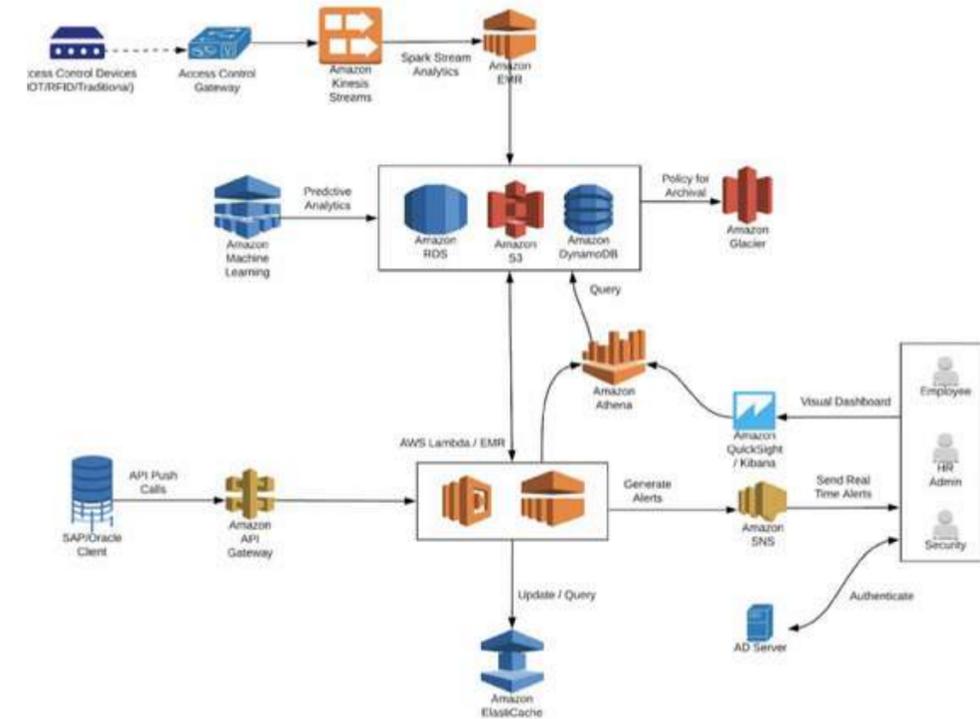
- Near real-time door swipe in/out data to be available to any employee on customer internal portals and mobile devices for Employee Time on Floor (ToF) and Employee Time in Campus (TIC)
- Maximum delay of 3-4 minutes from swipe to generate ToF and TIC reports
- Report display within 200 Millisecond of request
- Processing of **1.5 million swipes a day across 8000 controllers** located across India



The solution was built to provide the following:

- Allow Employees to manually override/edit Time in Campus timings
- 14 days data to be hot. Employee allowed to edit last 14 days TIC
- Employee can see 3 months of data (not real time but on demand)
- Instant notifications to managers and HR for
 - A woman employee is working alone on the floor
 - A woman employee is working alone but will be joined by 'N' employee(s)
 - A woman employee is leaving late
 - Swipe IN/OUT card reader is not working
- AWS QuickSight dashboards that provide the following intelligence
 - Woman employee shift trend analytics
 - Employees having low/high floor time
 - Number of times employees go out of the floor on an average
 - Average time spent by the employee out of the floor
 - Number of employees expected on campus over holiday/weekends

Solution Architecture Diagram



Solution Benefits

- A highly scalable and flexible solution using AWS Managed Services that provides faster ingestion and processing times of large volumes of data along with easy and secure integration capabilities with existing customer applications.
- Time on Floor (ToF) and Time in Campus (TiC) spent by an employee is the most crucial parameter generated. REAN Cloud design not just solved the immediate real-time availability of ToF and TiC but also included Machine Learning capabilities into the solution to provide additional reports such - alone woman on the floor, holiday schedules, etc.
- The system was improved to provide the employees with an option to quickly make edits to their erroneous attendance records due to tail-gating or malfunctioned sensors.
- Optimizations in infrastructure costs observed as the solution leveraged the use of serverless microservices technology along with AWS Managed Services for all components which are billed in a pay-as-you-go model.