Case Study: Internet of Things (IoT)
Multinational Appliances Manufacturer

tectonic
INSIGHT TO ACTION

Facts:

Industry: Appliances Manufacturer

Revenues: $112 billion

60,000 employees, worldwide

Sells more than 50 million products to customers in more than 150 countries

Global leader in home appliances such as refrigerators, dishwashers, washing machines, cookers, vacuum cleaners, air conditioners and small domestic appliances

Background

This manufacturer launched a connected appliance project recently with one type of connected product (air conditioner). This AC produces telemetry data, which includes authoritative/identifying diagnostic code unique to each appliance. This allows appliance users to connect to their connected AC unit using their mobile device, to monitor and control their connected device.

Challenges

The connected appliance solution is deployed on IBM cloud. DB2:

- A 30-table, single database schema sourced in single DB2 server instance on the IBM Cloud
- Exponential data growth forecast – from <1 GB a day to 50GB a day

The data will be permanently deleted from the IBM cloud every 3 months (90 days), but the manufacturer would like to retain this data for internal analysis. The company also plans to add additional connected devices. This company engaged with Tectonic to analyze requirements, assess technologies and to provide a solution architecture and implementation plan for a minimum viable product, which can be implemented in 4-6 weeks.

Solution

The core requirement of this sustainable data project was to design and implement a quick sustainable solution to copy and retain all data from the IBM cloud and also to provide efficiency analysis for the manufacturer's business and analyst teams, providing data with up to a 24-hour latency. As a result, the manufacturer's team took the implementation plan and performed a successful technology validation, leveraging the following technologies: Google Cloud Platform (Compute Engine, Cloud Storage and Big Query), Talend (for ETL) and QlikView (for visualizations and client dashboards).

Outcome

Tectonic developed architectural guidance, deployment patterns, and practices for the implementation of this manufacturer's sustainable solution:

- All data copied from the IBM Cloud to the Google Cloud, before it was permanently deleted from IBM Cloud, at 90-day intervals
- Data was then loaded from Google Cloud Platform to Google BigQuery, where standard queries were developed
- QlikView dashboards were then populated with query results and rendered within seconds.
- Data integrity was maintained from source (IBM Cloud) to destination (QlikView dashboard which displays data from Google Big Query), with a set of standard queries that served as test cases to validate data correctness

Analysis of the telemetry data from connected appliances, and when joined with other company data, provided insights into appliance usage and diagnostics by several different dimensions, for instance:

- What is the average temperature setting for the device?
- How many times has the door been opened before it failed?
- Where is the device in the household and is there opportunity to upsell for higher level maintenance contracts and/or accessories?

Platform Powered By: Google Cloud Platform