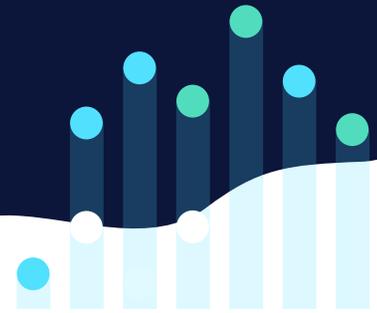


Locstat Powers IoT Solutions with DataStax Enterprise



THE CHALLENGE

Headquartered in Cape Town, South Africa, Locstat connects and orchestrates multiple IoT sources of information to deliver graph powered next-generation advanced complex event processing and a common operating picture for any defined geographical location.

The company fills a niche market in the IoT industry by providing deep analysis and predictive analytics on the sensor data IoT devices provide to companies. Built on open source products, Locstat needed a solution that could push analytical time from two to three weeks down to minutes to generate the graphs used in their analytics. They also needed a database cloud solution that could support big data and scalability.

THE SOLUTION

Locstat chose DataStax Enterprise (DSE) as its database and data layer, DSE Graph to power their graph imaging, and DSE Analytics to power their solution set.

Locstat uses both geospatial and real-time rules engine engineering in its products and solutions for customers across government, defense, safety and security, mining, finance, and

retail industries. Using DSE, they built a rules engine that can not only query inline transactions, but image all of the sensor data streaming into the environment, and then provide dashboard functionality where the end user can see in real time what's going on in the environment. In addition, they store and write sensor data very quickly. "The only real database that can manage that is DataStax," said Ryno Goosen, Chief Technology Officer and Managing Director, Locstat. "Machine learning is an important element of it because you want to look at predictive maintenance, especially on your sensor side. If your sensors go down, you'll also want to look at patterns and trends in your data."

Locstat values DataStax's integrated services and solutions.

"With DataStax, you can move into the cloud, or private cloud, and the pain of migrating to public clouds is totally removed because you've got a pre-configured solution that you can use," said Goosen. "We build on top of those elements, and if we had to manage them it would become a very costly exercise. By having our solution in the cloud, it's the edge that we have above tier-one cloud service providers because it is very difficult for them to compete. That is a huge advantage for us playing in these markets."

For illustration, Goosen shared a Geotrellis generated heat map with flight data from aircraft and flight patterns around the Cape Town International Airport. In this example, data is stored in Cassandra and then pushed through Apache Spark and visualized

USE CASE:

Database, analytics, graph

INDUSTRY:

IoT/Data Analysis

CHALLENGES:

- Scale millions of data and sensor transactions per day
- Provide real-time graph imaging for critical risk management services
- Deliver deep analysis of multi-sensor data points

SOLUTION:

- DataStax Enterprise (DSE), the active everywhere database built on Apache Cassandra™ and designed for hybrid cloud
- DSE Graph
- DSE Analytics

RESULTS:

- Deep analysis in real time
- Millions of transactions analyzed per day
- Zero downtime that builds customer trust and reliability

ABOUT LOCSTAT:

Headquartered in Cape Town, South Africa, Locstat connects and orchestrates multiple IoT sources of information to deliver graph powered next-generation advanced complex event processing and a common operating picture for any defined geographical location. The company fills a niche market in the IoT industry by providing deep analysis and predictive analytics on the sensor data IoT devices provide to companies. Built on open source products, Locstat needed a solution that could push analysis time from two to three weeks down to minutes to generate the graphs used in their analytics. They also needed a cloud database solution that could support big data, scale, and handle analyzing millions of data points per day.

using Geotrellis in a Cesium spatial interface. According to Goosen, this visualization enables the ability to, “layer flight patterns in real time automatically in the application and select alternative spatial maps when you want additional context layers in the background of the application.”

THE RESULTS

Powered by DataStax and other open source solutions, Locstat is able to provide its clients with innovative IoT solutions, such as geospatial risk management for a marine mining company that uses ships to extract minerals from the sea bed. This customer is able to set up Locstat to provide a risk early-warning zone around the ship that moves with the vessel. The system provides information on other vessels and craft entering the ship’s vicinity and triggers alerts if those vessels reach a certain threshold. Daily reports let them track which vessels pose risk to their ships. Locstat also provides this risk management solution for aircraft and drone surveillance vendors.

The company also helps combat copper cable theft by analyzing incident reports, remote sensors, proximity to impoverished areas, transportation hubs, and scrap metal dealer locations to predict higher likelihood for copper theft. They have helped specialist security company Amahlo Consulting reduce copper theft for one of their clients over a three-year period by up to 68%.

They also work in fraud prevention helping to analyze more than 25 million data transactions and four million financial transactions per day for a financial services customer. DSE powers their ability to manage high volume data and analytics, with the ability to scale and the reliability of zero downtime.

WHAT’S NEXT?

“At this stage, we’re focusing on the South African market and Southern Africa. But our expansion plans are to go into the UK, Europe, and then to the US within the next two to five years,” said Goosen.

ABOUT DATASTAX

DataStax helps companies compete in a rapidly changing world where expectations are high and new innovations happen daily. DataStax is an experienced partner in on-premises, hybrid, and multi-cloud deployments and offers a suite of distributed data management products and cloud services. We make it easy for enterprises to deliver killer apps that crush the competition.

More than 400 of the world’s leading enterprises including Capital One, Cisco, Comcast, Delta Airlines, eBay, Macy’s, McDonald’s, Safeway, Sony, and Walmart use DataStax to build modern applications that can be deployed across any cloud. For more information, visit www.DataStax.com and follow us on Twitter [@DataStax](https://twitter.com/DataStax).

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