DATASTAX

EQUINIX

Use Case
Internet of Things / Persistent data store

Company
Equinix

Industry
Data Center Infrastructure Provider

Challenges
- Inability to handle massive volumes of network traffic data
- Latency issues with real-time streaming performance
- Limited holistic view into network traffic health analytics

Solution
- High performance and linear scale with flexible schema
- Seamless integration with Hadoop data lakes for holistic view
- 24x7x365 expert support

Results
- Superior scale without performance constraints and latency issues
- Visibility into application metrics maximizes value delivered to customers as well as return on investment of services
- Improved customers insights for stellar customer experience

INTERNET OF THINGS

EQUINIX DELIVERS HIGH PERFORMANCE TO MILLIONS OF BUSINESS APPS, OPTIMIZES CUSTOMER EXPERIENCE WITH DATASTAX

Equinix is the leading interconnection platform and colocation provider with more than 100 data centers across the globe. Powering millions of business applications with higher performance and reduced latency, Equinix provides its customers network monitoring solutions and data center infrastructures for various purposes including monitoring, troubleshooting and customer billing. To optimize customer experience and to provide more network traffic visibility to its customers, Equinix started to build applications and was looking for a database replacement to realize these goals.

The Challenge
Equinix has over 100 data centers across the globe and provides services to share Internet network exchanges. To guarantee optimal data center performance and network traffic health to its customers, Equinix aggregates streaming data from infrastructures for monitoring, troubleshooting and customer billing.

In 2013, approximately 90% of the U.S. Internet traffic flew through Equinix's platform. This mind-boggling volume and velocity of time-series data required the corresponding scale, real-time performance and continuous availability. It also raised Equinix's unique needs for a superior database capable of handling heavy write workloads, with cross-referencing and data aggregation.

Equinix concluded that reliance on relational database management systems (RDBMS) is limiting. The inflexibility of relational databases made it difficult to accommodate varying and growing data sets. Further, the inability to efficiently process real-time streaming data without constraining storage as well as compute resources created latency issues.

The Solution
With the requirements of scalability, continuous availability and performance in mind, Equinix started its search for new a database solution. Hadoop integration was important in order to provide deeper network health and data center performance analysis for their customers. After extensive total cost of ownership evaluation, Equinix selected DataStax Enterprise and Apache Cassandra™ over HBase for cost-effective scale, continuous availability architecture, superior write and read performance, and seamless integration with Hadoop.

"We developed a TCO calculator against Cassandra and HBase, and it was not even a close comparison. Cassandra won by a big margin and therefore was a clear choice for us."

Praveen Kumar
Sr. Manager of Emerging Technologies & Platform

"The greatest thing for us with Cassandra is ease of operation, which goes hand-in-hand with Cassandra's always-on node architecture" said Praveen Kumar, Sr. Manager of Emerging Technologies & Platform at Equinix. "Cassandra's peer-to-peer architecture guarantees no single point of failure to collect and store streaming data from infrastructure instruments and enables us to write and read from any node with minimal latency."

OpsCenter, DataStax's visual management and monitoring tool, eliminates complexity and provides Equinix visibility into its write-intensive operations. DataStax expert support assures Equinix that their mission critical applications are always covered.

The Results

With DataStax, Equinix has been able to unlock the value of streaming data that was impossible to even gather with relational systems. As a result, Equinix has been able to maximize the value delivered to customers and their own return on services.

In addition, as a heavily instrumented data center provider, it is imperative for Equinix to plan for power capacity, optimize resource consumption, and failures. Applications built on Cassandra, deliver insights on power consumption allows administrators plan for infrastructure and resource allocation.

As an example, during peak trading hours for Equinix's financial service customers , it is now possible to proactively monitor and improve operational efficiency by ingesting real-time data to a Cassandra cluster, previously a manual and time-consuming process with relational systems.

Today, 90 million records of network traffic data are collected and stored in Cassandra on a daily basis. Equinix leverages this information for better customer engagement by providing insights on network health and traffic analysis. "Cassandra simplifies and provides meaningful insight into operations," said Kumar, "more insights for our customers means they can proactively plan data center usage for peak times and during disasters like a hurricane. "

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About DataStax

DataStax, the leading provider of database software for cloud applications, accelerates the ability of enterprises, government agencies, and systems integrators to power the exploding number of cloud applications that require data distribution across datacenters and clouds, by using our secure, operationally simple platform built on Apache Cassandra™. With more than 500 customers in over 50 countries, DataStax is the database technology of choice for the world's most innovative companies, such as Netflix, Safeway, ING, Adobe, Intuit, Target and eBay. Based in Santa Clara, Calif., DataStax is backed by industry-leading investors including Comcast Ventures, Crosslink Capital, Lightspeed Venture Partners, Kleiner Perkins Caufield & Byers, Meritech Capital, Premji Invest and Scale Venture Partners. For more information, visit DataStax.com or follow us @DataStax.