

# Intercontinental Exchange, Inc. (ICE): Powering the World's Traders with DataStax

The Atlanta, Georgia-based Intercontinental Exchange, Inc. (ICE), operates 12 regulated exchanges and 6 clearing houses worldwide, including the New York Stock Exchange (NYSE), which it bought in 2013. With data and intelligence offerings in areas from risk management to global derivatives to equities, the Fortune 500 company provides end-to-end risk management solutions to customers in financial and commodities markets.

## INDUSTRY:

Financial Services

## CHALLENGES:

- > Providing customers with accurate, secure, and timely data for their trading and risk management decisions
- > Maintaining applications performance through spikes in market data volumes
- > Ensuring a 24/7/365 application experience
- > Needing an operational data layer that provides real-time analytics and search capabilities

## SOLUTION:

- > DataStax Enterprise, the always-on data layer for real-time applications

## RESULTS:

- > Improved customer satisfaction with reliable, real-time trading information
- > 24/7/365 customer experience
- > Scaling to support constantly growing data and application users

## THE CHALLENGE

ICE's main goal is to provide trusted and reliable up-to-the-second financial data to traders, risk managers, brokers, and investors to help enable them to make better trading and risk management decisions, develop trading strategies, and meet compliance obligations. It deals with massive amounts of extremely volatile financial data, and it needed to put in place tools designed to help ensure that this volatile data is safe, accurate, timely, and easily accessible to its customers.

Keeping these requirements in mind, ICE embarked on the journey to identify a data management solution for two new business-critical applications: 1) derivatives and 2) bonds. The derivatives application processes data for various types of instruments, including foreign exchange, futures, commodities options, and equities, while the bonds application processes bond-specific data such as price, yield, maturity date, and coupon rates. Both applications give customers access to the information they require to help make certain data driven decisions.

To provide the information customers need, such as real-time trends and/or historical performance on these instruments, these applications must maintain a high degree of reliability and peak performance throughout the trading day and be able to process large volumes of data. So ICE's requirements for these applications around scalability, performance, and security were extremely high. Application uptime was a top consideration to avoid any impact to our customers across the globe.



We (ICE Data Services) compile quotes from almost every market in the world in near real-time and create synthetic products leveraging DataStax Enterprise (DSE). Our ability to deliver key, reliable, real-time data products enables our customers to continuously calculate risk, accurately price assets, and power their mission critical financial platforms.”

- Steve Hirsch, Chief Data Officer,  
ICE and NYSE

## THE SOLUTION

ICE's stated business objective is to find new technologies to help its customers seamlessly access global markets and information. In line with this objective, ICE needed a data layer that could handle the large volume of real-time data coming from new and varying sources for its business-critical derivatives and bonds applications.

ICE looked at different data management solutions and selected DataStax Enterprise (DSE), built on the best distribution of Apache Cassandra™, for its distributed, scalable capabilities to power both types of applications.

In DSE, ICE found an enterprise-grade data layer that was not only extremely easy to deploy and manage but also provided key enterprise capabilities such as real-time search and analytics. DSE also provided the security and data governance capabilities that ICE desired. The world-class support offered by DataStax was another major factor in selecting DSE.

“For ICE, we need to provide information to the customer as to what kind of trade happened, when it happened and where it happened, and this needs to occur in real time at massive scale. For such use cases, a distributed, scalable data layer like DataStax Enterprise that remains always on is a very good fit,” said Ajit Singh, Director of Data Technology Platforms at ICE.

## THE RESULTS

**ICE currently runs DSE in multiple physical data centers, with 25 nodes handling a few terabytes of transactional data per day.**

Even with a constantly growing number of users and data, DSE, thanks to its linear scalability and multi-data center replication capabilities, has been designed to give ICE the ability to deliver powerful applications that can store massive volumes of data consistently without the concern of constant downtime or performance degradation.

“DataStax helps us easily scale our environments as we grow beyond the capabilities of a traditional cluster of database servers and to scale without being limited by our database software,” said Steve Hirsch, Chief Data Officer at ICE.

With DSE's real-time analytics and search capabilities, ICE can quickly gain visibility into all the data such as “ticks”, pricing trends, projected pricing, and other attributes pertinent to a specific instrument. This allows customers to query and search for the changes in real time and get instant insights to apply to their trading and investment decisions.

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DataStax-powered applications have enabled ICE to provide its customers with seamless, real-time access to information that is relevant to them, regardless of the data volume and variety, thereby empowering them to make more informed trade decisions. That's the power of a unified operational data layer.

### ABOUT DATASTAX

DataStax powers the Right-Now Enterprise with the always-on, distributed cloud database, built on Apache Cassandra™ and designed for hybrid cloud. The foundation for real-time applications at massive scale, DataStax Enterprise makes it possible for companies to exceed expectations through consumer and enterprise applications that provide responsive and meaningful engagement to each customer wherever they go. Our product also gives businesses full data autonomy, allowing them to retain control and strategic ownership of their most valuable asset in a hybrid cloud world. We help more than 400 of the world's leading brands across industries transform their businesses through right-now applications focused on enterprise optimization and customer experience. For more information, visit [DataStax.com](https://DataStax.com) and follow us on @DataStax.