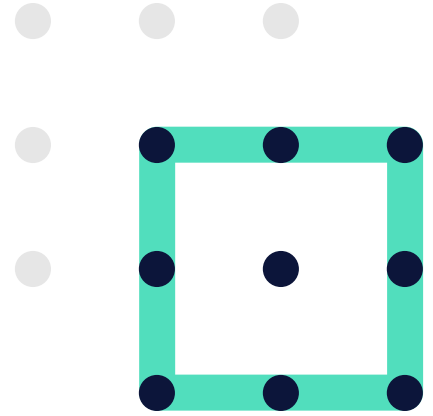


DATASHEET



Why a NoSQL Database Is the Best Choice for Your Modern Applications

A Comparison of NoSQL to Relational Database Management Systems





The crossover from relational data management to NoSQL is not as hard as you think. Support your modern applications with a future-proof data layer—take the leap with DataStax and trade up from your relational data layer.

Future-Proof Your Data Platform with NoSQL

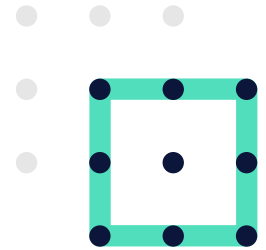
Your data platform should deliver continuous availability, on-demand scalability, and provide real-time contextual data at scale—it's the difference between today's successful modern applications and those that fail. Relational database management systems have struggled to keep up with the wave of modernization, leading to the rise of NoSQL as the most viable database option for highly available and distributed modern applications.

Trade Up Your Database and Stay Ahead of Your Data Demands

A NoSQL database like DataStax Enterprise (DSE) can be complementary to an existing relational database management system (RDBMS) or a replacement for your business applications. Top application requirements that indicate a NoSQL fit:

- **Indestructible**
Provide an indestructible data platform for your modern applications with 100% proven uptime and support for today's data demands. [Learn the difference](#) between relational systems and Apache Cassandra™ and the types of use cases it can solve. This content is applicable to database developers, database administrators, and architects.
- **Intelligent**
Apps that provide a personalized experience and become part of a person's everyday life need an intelligent data platform. NoSQL outclasses legacy, single-workload databases designed 40 years ago. [Applications built on DSE](#) can get you contextual, personalized insights simply and in real time.
- **Agile Scalability**
With a NoSQL data platform, apps can pivot and expand data models, manage massive data volumes, and scale out at a moment's notice. DSE powers multi-workloads, multi-model app demands, and has the ability to support applications across on-premises, hybrid, and multi-cloud deployments. There are a number of ways to move existing data into Cassandra, either on a one-time only or continual basis. [This information](#) will help guide you in migrating data from an RDBMS to Cassandra.
- **Future-Proof**
Apps that are built to evolve under the hardest set of circumstances need a future-proof data platform that never cries "uncle" no matter how much data or number of users is thrown at it. DSE will give you the ability to [scale your database platform](#) to support any number of apps and manage data for trillions of events in real time.





Modern Application Requirements that Drive Your Decision

Relational and NoSQL Capabilities Compared

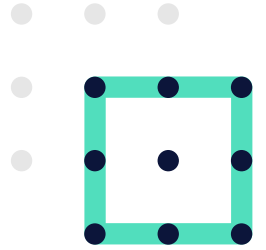
Relational Databases

- Master-slave architecture
- Moderate velocity data
- Data coming in from one/few locations
- Primarily structured data
- Always strongly consistent
- Complex/nested transactions
- Protect uptime via failover/log shipping
- High availability
- Deploy app central location/one server
- Primarily write data in one location
- Primary concern: scale reads
- Scale up for more users/data
- Maintain data volumes with purge
- Transaction workloads
- One data center or cloud region
- Relational data

NoSQL Databases

- Masterless architecture
- High velocity data (time-series data from devices, sensors, etc.)
- Data coming in from disperse geographic locations/many locations
- Structured, with semi-unstructured
- Tunable consistency (eventual to strong)
- Lightweight/simple transactions
- Protect uptime via distributed and fault-tolerant architecture
- Continuous availability
- Deploy app everywhere/many servers/any cloud/microservices/serverless
- Write data everywhere/anywhere
- Scale writes and reads
- Scale out for more users/data
- High data volumes; retain forever; horizontal scalability without boundaries
- Mixed workloads of transactions and analytics
- Multi-data center, multi-cloud region, or hybrid cloud
- Multi-model (tabular, key/value, document, graph)





Conclusion

Only an indestructible, agile, intelligent, and future-proof modern data platform is capable of delivering your data anywhere, in real time, all the time, no matter what your applications demand. The question is not if, but when and how, you'll need to migrate and modernize your applications to meet your data and business demands.

DataStax Enterprise (DSE) was natively built to deploy modern applications in hybrid cloud environments and to consume time series and sensor-based information faster than any other database. Based on Cassandra, DSE provides a contextual, always-on, real-time data management platform which can grow to unlimited scale. The platform is complemented by DSE Search, which provides real-time indexing, DSE Analytics, which delivers streaming and batch processing, and DSE Graph, which enables users to derive powerful insights from graph data.

[Learn More](#)

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