

# COUCHBASE ARCHITECTURAL ADVANTAGES

Comparing Couchbase vs. MongoDB™ for business-critical applications

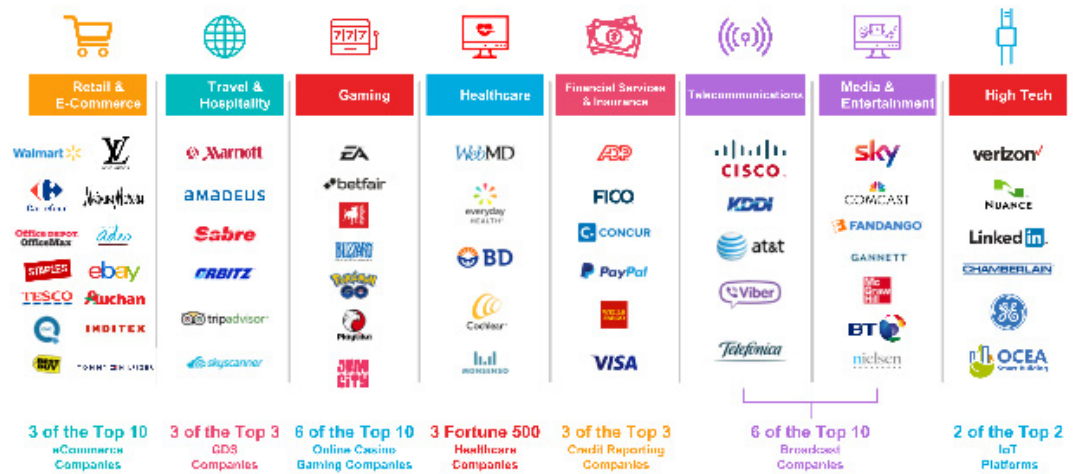


## Couchbase key advantages

- Fully featured SQL for JSON database
- No hassle scale out
- Consistent performance at any scale – even when adding microservices
- Always-on, edge-to-cloud
- Global deployment with low write latency

## Architecting for performance, scale, and flexibility

The Couchbase NoSQL document database and key-value store was purposefully designed to meet the requirements of today's business-critical applications. As user bases inevitably explode, new regulations come into effect and evolve, and security breaches surprise at any time, the core DNA of Couchbase lies in a flexible and adaptable architecture, focused on performance, scalability, flexibility, adaptability, and simplicity. Today Couchbase is adopted across all industries, in the largest enterprises, for their most business-critical applications.



## Limitations of MongoDB for business-critical applications

Unlike Couchbase, which was designed as a clustered and replicated distributed database, MongoDB's architecture is rooted in a single-server data management tool that eschews enterprise features, such as out-of-the-box security and reliability, for ease of use on a laptop or VM.

Major enterprises like American Express in India, nonprofit Kars4Kids, and babysitting app Sitter, all chose MongoDB for ease of use, but have had to deal with highly publicized breaches of sensitive personal information stored in MongoDB. Or when it came to scaling MongoDB in production, Epic Games, with their incredibly popular game Fortnite, disillusioned their users after several days of downtime.

That said, MongoDB has been widely used for POCs and helped showcase the power of NoSQL, but has not adapted its architecture to address the requirements of business-critical applications. While numerous improvements have been made over the years (bolting on replication, changing storage engines, improving out-of-the-box security, etc.), all were done without addressing their fundamental architectural shortcomings.

## centrica

"We wanted to go down the NoSQL route ... Couchbase was fast, reliable, and it offered the capability of managing everything in-house."

- Centrica

**STAPLES**

Chose Couchbase to simplify its B2B catalog management with N1QL and JSON, scaling to 1.6B rules



Chose Couchbase for bidirectional replication and 24/7 service availability



Chose Couchbase for bidirectional replication and performance at scale



Chose Couchbase in order to scale to 1M ops/sec and billions of records with zero downtime



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	Couchbase	MongoDB™
<b>Fully featured SQL for JSON database</b>	Declarative query language (N1QL) extends SQL and SQL++ open standards to support JSON and nested data structures	Proprietary and procedural query API and aggregation framework offers limited expressive power and poor performance
<b>No hassle scale out</b>	Application behavior unchanged on 1-node development laptop to multi-node production deployment	Different behavior and functionality between single node and sharded environments, forcing application changes
<b>Consistent performance at any scale - even when adding microservices</b>	Multi-dimensional scaling enables independent scaling and workload isolation of different services	Different workloads compete for the same resources, resulting in noisy neighbor problems
<b>Always-on, edge-to-cloud</b>	Architected as a scale-out distributed database across physical, virtualized, container, and public cloud environments	Capabilities such as global tables, functions, and mobile sync only available to Atlas and Stitch users
<b>Global deployment with low write latency</b>	A flexible high-performance replication backbone across datacenters and edge devices	Master-slave architecture with a single master is poorly designed to support highly distributed data

### Choose Couchbase to future-proof your database strategy

MongoDB provides a long list of checkbox features, but many fail to work in concert with each other, leading to a database that cannot scale, perform, nor adapt to meet today's enterprise requirements. Ultimately, MongoDB is best suited for flexible data access where low latency, high throughput, multiple access patterns, geographic replication, or offline access are not required.

Couchbase, on the other hand, is routinely used for caching layers, sources of truth, and systems of record across high-scale as well as high-flexibility use cases, including offline-first applications. By design, Couchbase is accessed and managed through a consistent set of APIs, and scaled, upgraded, and diagnosed as a single unit, making Couchbase a complete database platform that not only addresses the needs of today, but offers the flexibility to adapt to the needs of tomorrow.

### Learn more

To learn more, contact your Couchbase sales representative today or visit:  
[www.couchbase.com/mobile](http://www.couchbase.com/mobile) | [www.couchbase.com/downloads](http://www.couchbase.com/downloads)

### About Couchbase

Unlike other NoSQL databases, Couchbase provides an enterprise-class, multicloud to edge database that offers the robust capabilities required for business critical applications on a highly scalable and available platform. As a distributed cloud-native database, Couchbase runs in modern dynamic environments and on any cloud, either customer-managed or fully managed as-a-service. Couchbase is built on open standards, combining the best of NoSQL with the power and familiarity of SQL, to simplify the transition from mainframe and relational databases. For more information, visit [www.couchbase.com](http://www.couchbase.com).