

# ArangoDB vs mongoDB

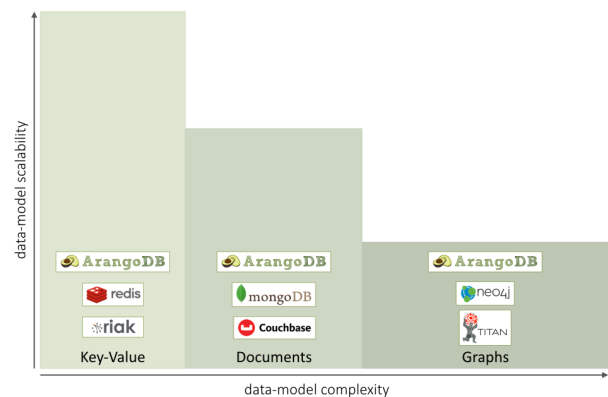
## What you can do with ArangoDB that you can not do with MongoDB

- ▶ **Multi-model:** Create arbitrary ad-hoc queries on data that is stored in different data-models. E.g. filtering all parts from an aircraft that are connected or developing a web shop with recommendation engine using one database for everything
- ▶ **Joins:** Use and scale joins over different collections and instances (scalability depends on use case)
- ▶ **Declarative Query Language:** Use ArangoDB's sql-like query language (AQL) for complex queries
- ▶ **Complex Transactions:** Use complex transactions to span multiple documents and collections, or to run aggregations. Complete Isolation in the cluster available (est. early 2016)
- ▶ **Extensibility:** Use existing or run your own data-centric microservices in a dedicated JavaScript framework within ArangoDB.  
With **ArangoDB's Foxx framework** users can build e.g. a production ready session service within 10 minutes.
- ▶ By reducing development effort and enabling data-model flexibility ArangoDB is designed for **fast development and easy scaling.**

## Scalability needs and ArangoDB

ArangoDB is cluster ready for document, key/value and even for graph-models. With ArangoDB 3.0 (est. Q1/2016) performant cluster usage for graphs will be further improved.

ArangoDB is perfectly suitable for high-availability, high-performance or any other use case a document store might be challenged with.



## Founders and Core Team

Both founders combined have more than 30 years of experience building high performance databases specifically designed for challenging use cases.

In projects for e.g. German Postal Service, DHL, Commerzbank and the New York Stock Exchange Frank and Claudius connected the dots to build a native multi-model database which can compete with pure document, key/value and graph databases.

*“We use ArangoDB and its flexible multi-model approach. What we found was ease of use and a stunning 50% less development effort by using ArangoDB's framework Foxx.”*

(Florian Krause, Head of development, About You, Otto Group)



# ArangoDB vs MongoDB

## High-Level Overview: MongoDB vs. ArangoDB

Feature	MongoDB	ArangoDB
Initial Release	2009	2012
Data-Model	document	multi-model (documents, graphs, key-value)
Data format	JSON/BSON	JSON
Written in	C++	C++
License	GNU AGPL / Commercial	Apache 2 / Commercial
Data Storage	mostly memory	mostly memory
Schema free	Yes schema validation ( > 3.2)	Yes schema validation possible via Foxx
Replication	Master/Slave	Master/Slave (V3.0 also Master/Master, Q1/16)
Sharding	yes	yes
Transactions	BASE	ACID
Multi-Collection Transactions	No	Yes
Extensibility	No (only V8 for map/reduce jobs)	Microservices framework Foxx based on Google V8*
Declarative Query Language	No	AQL One sql-like query language for all data-models
Joins	No (left-outer joins with 3.2)	Yes
Cluster ready	Yes	Yes**
Encryption	TLS/SSL	TLS/SSL
Authentication	Yes	Yes
Role-based access control***	Yes	Yes via Foxx framework
Auditing	Yes	No ArangoDB 3.0 (Q1 2016)

\* Easily create a REST API for data centric use cases and add any missing functionality

\*\* Advanced Sharding: with MongoDB you can remove and add nodes to an existing cluster. This feature isn't fully integrated in ArangoDB yet but will be available in ArangoDB 3.0 (early Q1 2016)

\*\*\* ArangoDB supports all basic security requirements. By using ArangoDB's Foxx microservice framework users can achieve very high security standards fitting individual needs



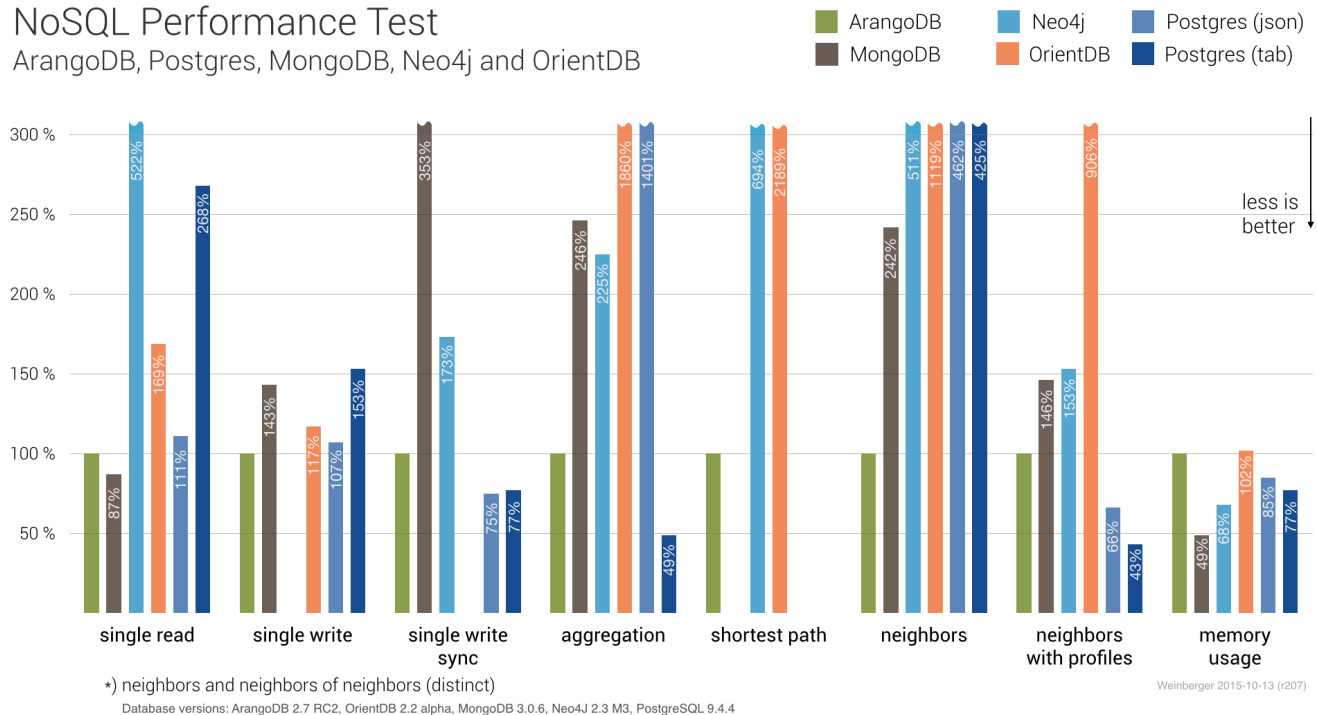
## Performance Benchmark of ArangoDB

The latest performance benchmarks are showing a competitive to surpassing performance of ArangoDB and its multi-model approach compared to other vendors with a single model (neo4j, MongoDB, PostgreSQL JSON) and multi-model as well (OrientDB). The complete benchmark test is open-source and investigated the performance of most common operations a database is performing like single read/write, single write sync, aggregation, shortest path, neighbors, neighbors with profiles and memory usage.

### Overall Results: Performance Benchmark (October 2015)

#### NoSQL Performance Test

ArangoDB, Postgres, MongoDB, Neo4j and OrientDB



For further information please find the detailed article of the benchmark here:

<https://www.arangodb.com/2015/10/benchmark-postgresql-mongodb-arangodb/>

All interested parties can find the open-source performance test on Claudius Weinberger's GitHub profile:

<https://github.com/weinberger/nosql-tests>