

Solution Brief

NetApp Solutions for MongoDB

Maximize performance and reduce costs with high uptime

KEY FEATURES

Accelerate MongoDB Performance

- Deliver up to 11.4 million IOPS at 1ms latency in a cluster.
- Deliver consistent microsecond latency and sustained throughput.
- Remove network bottlenecks with high-speed connectivity of 32Gb FC and 100Gb Ethernet.

Reduce Operational Costs

- Increase cost-efficiency by 36% over direct-attached storage.
- Speed time to production with instant, space-efficient data clones for DevOps.
- Get simplified and automated storage provisioning, customized for MongoDB and designed for database administrators.

Achieve the Highest Levels of Cloud Integration and Availability

- Deploy MongoDB seamlessly in the public, private, and hybrid cloud—or in a combination.
- Provide zero RPO and low to zero RTO for mission-critical workloads and backup to the cloud.
- Maximize uptime with six-9s availability and encrypt data at rest.

The Challenge

Keep pace with and maintain control of exponential data growth

Today's IT applications, systems, and technology infrastructure generate data every millisecond of every day. Effectively leveraging the massive and growing amounts of data is mission critical for enterprise organizations. To cope with these vast amounts of ever-growing data, organizations are turning to NoSQL databases. Unlike traditional relational databases, NoSQL databases help meet the scalability and agility challenges of modern and third platform applications.

The Solution

Deploy MongoDB on NetApp storage and data management solutions

MongoDB is an open-source NoSQL database that companies of all sizes across all industries use, and for a wide variety of applications. These applications include business-critical operational applications for which low latency, high throughput, and continuous availability are crucial.

By deploying MongoDB on NetApp® technology, you get consistent microsecond response and backup and recovery from the cloud, helping you maintain the highest levels of performance and uptime. With the advanced fault recovery features and easy in-service growth capabilities of NetApp solutions, you can meet ever-changing business requirements. These systems can also help you build a high-performance, cost-efficient, and highly available analytics solution.

“When implemented for high-load MongoDB deployments, NetApp outranks commodity servers with internal storage against a number of criteria.”

Vladimir Starostenkov, R&D Engineer Altoros

“Anytime you can enable developers to self-service, you make them happy and speed up innovation, and NetApp provides that with their data management software.”

Database Administrator, Global Software Company

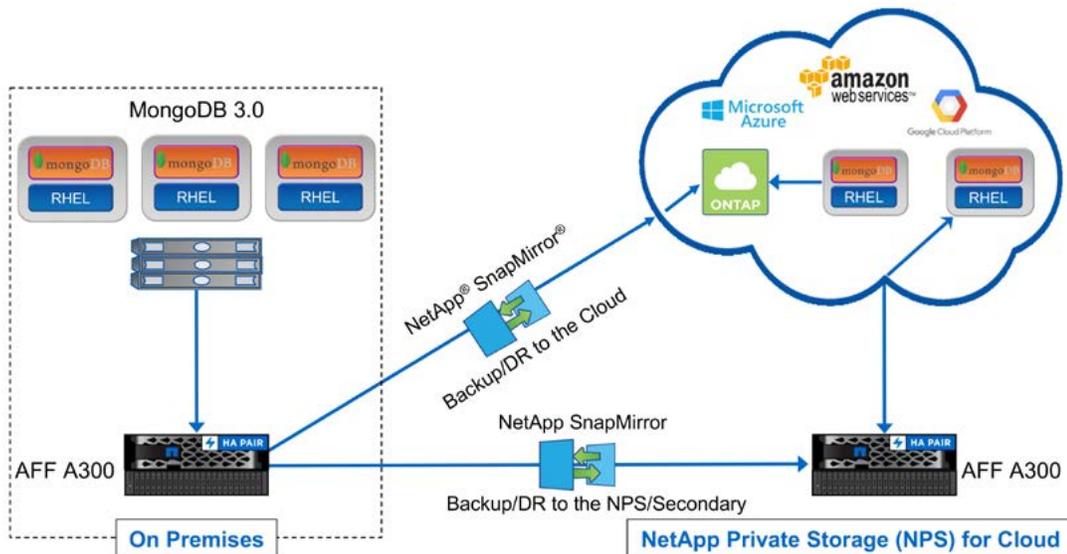


Figure 1) NetApp Data Fabric for MongoDB.

Accelerate MongoDB Performance

By delivering up to 11.4 million IOPS at 1ms latency in a cluster, NetApp has the fastest all-flash arrays that are built on a true unified scale-out architecture. As the industry's first all-flash arrays to provide both 100 Gigabit Ethernet (100GbE) and 32Gb FC connectivity together, AFF A-Series systems also support the NVMe/FC host connection, allowing customers to run 60% more workloads or cut the application response time by half.

Having been a leader in supporting high-capacity 15TB SSDs and multistream write (MSW) SSDs, AFF is leading again as the first all-flash system to support 30TB SSDs. You can further reduce your storage footprint with the high density of 2PB SSD storage in a 2U drive shelf and move toward an optimally efficient data center.

Reduce Operational Costs

NetApp systems are built with innovative inline data reduction technologies, including inline compression, inline deduplication, and inline data compaction. The inline efficiency that inline compression and deduplication achieve helps you minimize the flash storage that you need for MongoDB.

The inline storage efficiency technologies of NetApp deduplication and compression increase the effective capacity of SSDs, reducing your effective cost per gigabyte. Inline storage efficiencies also improve your system performance.

The NetApp SnapCenter framework has the flexibility to include MongoDB-specific quiesce and unquiesce scripts before and after a NetApp Snapshot™ backup is created. Only seconds are required to create the Snapshot backup. SnapCenter helps you manage remote replication of the entire environment to NetApp ONTAP® Cloud instances that run in Amazon Web Services (AWS). You can use the data that is replicated in AWS for disaster recovery and in development and testing environments.

Achieve the Highest Levels of Cloud Integration and Availability

Leverage the NetApp Data Fabric to move data securely across your choice of clouds—enabled by NetApp ONTAP Cloud software and NetApp Private Storage for the cloud. You also get the industry's most efficient and comprehensive Integrated Data Protection software suite, on the premises or in the cloud.

With NetApp Integrated Data Protection software, you get features and capabilities such as NetApp Snapshot copies, cloning, encryption, and both synchronous and asynchronous replication for backup and disaster recovery—all with near-zero performance impact. Synchronous replication with NetApp MetroCluster™ software delivers a zero recovery point objective (RPO) and low to zero recovery time objective (RTO) for your mission-critical workloads. And support for at-rest data encryption and an onboard key manager helps secure your data.

Simplify Data Management

The NetApp® OnCommand® Workflow Automation (WFA) for MongoDB is the industry's only multiple-data-center, end-to-end provisioning automation solution. It enables flexible deployment of MongoDB with Data Fabric for on-premises, hybrid cloud, and multicloud configurations. NetApp ONTAP® data management software deployed by using NetApp OnCommand WFA brings enterprise class data protection and data management to MongoDB.

NetApp WFA for MongoDB simplifies any deployment of NetApp ONTAP data management software for MongoDB by allowing a database administrator (DBA) or developer to provision storage in terms of database architecture and dataset size. It automatically implements best practices and simplifies provisioning for complex environments, such as multiple-data-center deployments. In addition, it fully supports both replica sets and sharded clusters. As a result, organizations that use

MongoDB can quickly respond to the changing needs of their customers. MongoDB environments can be configured much more quickly, which reduces the time required for the enterprise to begin monetizing data.

The NetApp WFA for MongoDB provides a guided process and an intuitive GUI for provisioning MongoDB. WFA turns storage provisioning into a self-service, policy-based effort. This simple and effective workflow enables the MongoDB DBA to easily provision MongoDB because the storage is provisioned per the provided input. Each workflow can be repeated as needed to deploy the desired MongoDB configuration.

NetApp AFF A-Series, SolidFire®, and EF-Series systems are MongoDB certified. With NetApp technology for MongoDB, you get faster time to insight, improved total cost of ownership, seamless integration with the cloud for data protection and scaling, and better availability and security than with commodity storage.

About MongoDB

MongoDB is the leading modern, general purpose database platform, designed to unleash the power of software and data for developers and the applications they build. For more information, visit www.mongodb.com.

About NetApp

NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation, and optimize their operations. For more information, visit www.netapp.com. #DataDriven