

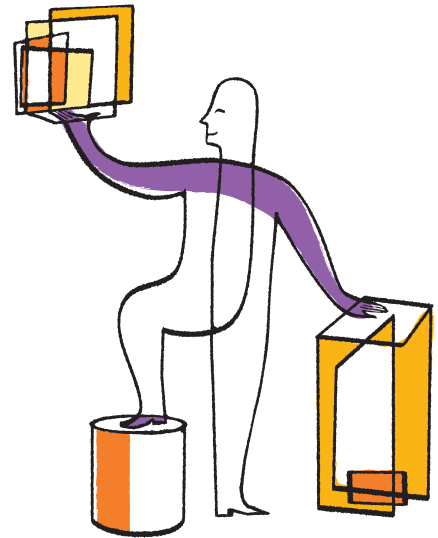


**NetApp®**

## *Solution Brief*

# NetApp Solution for Oracle Database

Accelerate business success in a data-driven  
world with efficiency and agility



### KEY BENEFITS

#### **Reduced Planned Downtime**

Experience nondisruptive operations with NetApp® clustered Data ONTAP® 8 during Oracle® storage infrastructure upgrades, maintenance, and load balancing.

#### **Superior Data Management Flexibility**

Simplify backup, DR, provisioning and cloning processes as well as dynamically balance data and network connections anywhere within the storage cluster.

#### **Record-Breaking Performance**

Optimize Oracle database performance and maximize revenue-generating transactions with intelligent storage caching.

#### **Industry-Leading Efficiency**

Clone multiple databases with little to no impact on performance and storage.

### **The Challenge**

Oracle databases drive business-critical applications and are key to the success of countless data-driven enterprises like yours. Your service goals include a responsive, uninterrupted experience for employees, customers, and partners accessing Oracle data. You need an infrastructure for Oracle that can deliver consistently high levels of performance, data availability, and data protection while meeting your operational cost guidelines.

Your database team needs a storage infrastructure that's responsive enough to facilitate, not inhibit database performance. In addition, the explosive growth of database instances and the critical data they house creates a variety of management challenges, from provisioning and cloning to backup and disaster recovery. Without automated management tools that integrate databases with underlying storage, DBAs can't respond to rapidly changing business needs.

Your storage teams are under pressure to provide an infrastructure that exceeds user expectations while driving out complexity and capital and operating inefficiencies. The infrastructure must remain up and running, meet performance and availability SLAs, and provide ample resources to accommodate rapidly expanding database environments without wasted capacity.

Together, your IT teams need a highly efficient, integrated solution to eliminate these issues and deliver superior IT services for Oracle databases.

### **The Solution**

Address your biggest database challenges with an agile data infrastructure. The NetApp solution for Oracle database delivers industry-leading storage, unprecedented scalability, continuous data access, and automated data management for immediate response to business opportunities.

# “Since moving the Oracle database to NetApp storage, we have saved time, money, and resources while improving the site’s reliability and scalability.”

**Rodrigo Benzaquen**  
System Administrator, MercadoLibre

NetApp has worked with Oracle for years, developing innovative, integrated solutions that reduce IT and business costs and complexity. NetApp leads the way with data storage offering compelling solutions for Oracle database.

## **Infinite scalability**

- Scalable performance flexibility to match changing database needs with NetApp Data ONTAP 8
- Assured nonstop performance and availability to keep production databases up and running with clustered Data ONTAP 8
- Optimized database transactions with synergy between Oracle partitions and NetApp Flash Cache™

## **Immortal operations**

- Eliminate planned downtime with transparent, nondisruptive mobility of applications and data
- Avoid unnecessary business database outages during storage maintenance operations by using clustered Data ONTAP with DataMotion™
- Match the scalability and availability characteristics of Oracle RAC at the storage layers

## **Intelligent management**

- Provide higher data availability with simple, reliable, and much faster disk-based backup and recovery for databases
- Experience efficient, affordable, and proven DR and business continuity solution
- Double DBA productivity with superior integrated Oracle recovery capabilities

## **Performance Agility**

Storage is the most important performance factor in database environments. 90% of database performance issues in both physical and virtual infrastructures can be traced to the storage tier. Your database storage needs to deliver sustained performance for multiple Oracle instances and quickly optimize I/O as peak workloads change to avoid business impact.

NetApp storage scales Oracle performance nondisruptively, without limits. The NetApp FAS series with Data ONTAP 8 offers a variety of innovations designed for multiprotocol, high-performance databases. For example, NetApp collaborated with

Oracle to design a Direct NFS (DNFS) connectivity solution for customers using the NFS protocol. DNFS provides the same performance and latency characteristics of FC/FCoE for Oracle databases. As a result, customers gain the flexibility to select or change their network connectivity model as their Oracle database infrastructure evolves.

NetApp Data ONTAP with DataMotion enables you to dynamically balance workloads to maintain or enhance performance to meet new database service levels. Ineffective load balancing often results in storage hotspots associated with overloaded volumes, which can dramatically affect database performance. Clustered Data ONTAP with DataMotion solves this issue effortlessly by transparently moving the affected volumes to different storage aggregates or nodes without affecting users or applications.

Low storage latency is critical for high-performance OLTP workloads. NetApp storage can reduce latency by a factor of 10 or more. You can also increase I/O throughput by 78% with NetApp Flash Cache, a deduplication-aware

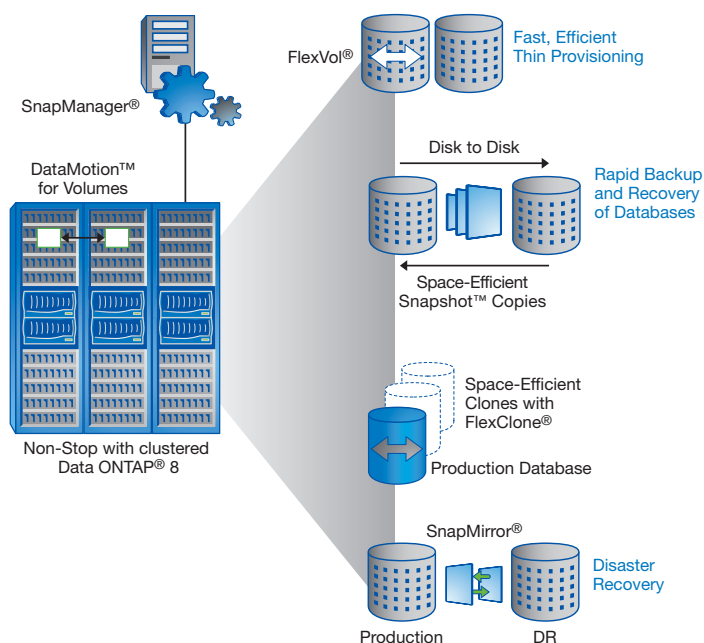


Figure 1) NetApp solution for Oracle database.

read cache for hot blocks of Oracle transaction data. Flash Cache provides a virtual storage tier without the additional cost and complexity of an additional physical storage tier. NetApp Flash Pool™ technology further enhances performance by enabling SSDs and HDDs to be pooled and automatically optimizes I/O by moving data across multiple tiers. Finally, to make sure individual databases get appropriate QoS from storage resources in multi-tenancy environments, NetApp provides FlexShare® capability to make sure Oracle database performance is not compromised by other storage activities.

The online nondisruptive capability of Data ONTAP 8 makes it a smart choice for a scalable storage platform for Oracle infrastructure.

### Eliminate Downtime with Nondisruptive Operations

NetApp clustered Data ONTAP 8 enables nondisruptive storage operations and scalability, providing an ideal 24/7 storage platform for your Oracle RAC database. The addition of transparent volume migration between

clustered storage systems results in zero impact or downtime to running databases, eliminating a potential weak link in your database infrastructure.

In addition to the nondisruptive operations of Data ONTAP 8, NetApp OnCommand® Insight Balance provides key performance indicators (KPIs), early warning signs of storage infrastructure contention, and guidance for resolution of issues to assist in maintaining availability SLAs.

### Backup, Recovery, and DR Simplicity

The time and expense related to backup and recovery in Oracle environments are growing. The challenge to DBAs is also increasing with the growing size and complexity of databases that must be managed and recovered more quickly. To remain competitive, DBAs and storage administrators must be able to complete backups and restores more quickly and reliably.

DBAs must minimize the chance of data loss and increase the availability of Oracle systems. The NetApp integrated data protection (IDP) solution, specifically designed for Oracle, can reduce DBA time by 50%. NetApp empowers storage teams and DBAs with access

to storage technologies and protection services powered by Snapshot™ technology, which enables fast, frequent backups and restores of large databases in a fraction of the time and space of traditional methods. NetApp IDP has become the fastest, easiest, and most efficient method to back up, recover, clone, and provide disaster recovery of Oracle databases.

### Achieve Your Goals with Industry-Leading Efficiency

NetApp enables maximum data storage and operational efficiencies while minimizing complexity and resources to drive down costs. NetApp efficiency technologies are driven by innovation, including Snapshot technology, FlexClone®, SnapMirror®, SnapVault®, Data ONTAP compression, FlexVol®, RAID-DP®, and Flash Cache.

An internal study showed how Flash Cache, which drives down the number of drives required for many workloads, achieved superior Oracle performance with 50% more available capacity, 66% less power, and 59% less rack space, driving down the overall TCO of NetApp storage.

In addition to storage efficiency, NetApp's core technologies make Oracle data management simple and time efficient. You can enable efficient thin provisioning and reallocation of Oracle storage with NetApp FlexVol. Leverage SnapManager® for Oracle and FlexClone to simplify and automate the database cloning and refresh process with practically no extra storage needed, no time-consuming approval loops, and in 97% less time. Customers such as Blackboard have reduced cloning process time for development and test environments from 37 hours down to just 1 hour.

The ability to do so much more with so much less physical storage is a strong competitive advantage of which NetApp customers are taking advantage to meet their efficiency goals with greater flexibility. Why manage complexity when you can eliminate it with NetApp?

### Partner for Success

NetApp Storage Design and Implementation Service for Oracle enables you to quickly and reliably achieve production readiness for your NetApp Oracle environment:

- Streamline your deployment for clustered Data ONTAP
- Implement quickly by using proven methodologies and best practices

- Lower risk with verification testing, documentation and post-implementation review
- Free up your internal resources so they can focus on other strategic projects

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### About NetApp

NetApp creates innovative storage and data management solutions that deliver outstanding cost efficiency and accelerate business breakthroughs. Discover our passion for helping companies around the world go further, faster at [www.netapp.com](http://www.netapp.com).

Go further, faster®



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