

# Dramatically Increase Database Performance and Efficiency with Oracle ZFS Storage Appliance



You can dramatically increase business agility and results by using Oracle ZFS Storage Appliance systems with Oracle Database. Oracle ZFS Storage Appliance is architected for the cloud and co-engineered with Oracle Database and the rest of Oracle's converged infrastructure stack to accelerate Oracle Database and applications, cloud-enable storage resources, increase multitenant security while reducing deployment risks, and lower your on-premises storage spend by up to 75 percent so you can invest in new revenue generating activities.

## ZFS STORAGE APPLIANCE KEY BENEFITS

- Architected for multitenant clouds with high security and performance
- High performance for all applications and Oracle Databases
- Deliver performance gains of up to 5x while reducing storage costs by up to 75 percent
- Support 24/7 operations with no single point of failure and rapid failover
- Efficiently consolidate legacy NAS systems with Oracle Multitenant in Oracle Database 12c and container-level visibility in the ZFS Storage Appliance
- Simplify IT and reduce management costs by automating up to 85 percent of Oracle Database related storage management tasks
- Improve service levels by quickly resolving DBA and application service issues using DTrace analytics  
Increase multitenant security with flexible per-share encryption
- Lower risk with a storage solution that has been co-engineered with Oracle Database and applications, and tested to work together
- Meet higher SLAs with industry-leading IO performance that is nearly 2x that of previous generation NAS systems

## Today's IT Challenges Require a New Approach to Storage

Let's face it. IT budgets aren't keeping pace with exponential data growth, the increasing transaction loads from enterprise databases, and the requirements of latency-sensitive applications. To meet these needs without breaking your budget, you need a storage solution that is architected for the cloud, delivers exceptional storage efficiency, superior database and application performance, and reduces risk—all at an affordable cost.

Oracle ZFS Storage Appliance delivers on all of these requirements. It is the industry's only network attached storage (NAS) system with container-level visibility for Oracle Database 12c and a direct communication path with Oracle Database so it can automatically adapt to its changing needs. The ZFS Storage Appliance also enables faster time to actionable intelligence on your data by supporting thousands of concurrent IO requests and offering nearly twice the performance of previous generation NAS systems. The combination of high performance, co-engineered communication with Oracle Database, and automated Oracle Database storage tuning make multitenant storage consolidation much easier and more efficient in cloud environments.

## Simplify IT and Reduce Costs

Oracle engineered storage solutions are co-developed with Oracle Database and applications to optimize performance and efficiency so you can meet business-critical IT requirements at dramatically lower costs. As part of the Oracle engineered storage portfolio, Oracle ZFS Storage Appliance is the only NAS solution that supports Oracle Database Hybrid Columnar Compression. With Hybrid Columnar Compression, you can compress the historical portion of your Oracle Database by 10x-50x, reducing average storage requirements by up to 75% and increasing query speed by up to 5x. To you this translates into savings in both upfront and ongoing costs.

The management of storage for Oracle Database environments is also simplified by automation through Oracle Automatic Storage Management and Oracle Intelligent

#### DYNAMIC AUTOMATION WITH ORACLE INTELLIGENT STORAGE PROTOCOL

Up to 85 percent of Oracle Database related storage management tasks can now be automated using Oracle Intelligent Storage Protocol, a unique capability within Oracle Database that gives DBAs the ability to configure and automatically tune the database storage environment without intervention by a storage administrator. Oracle Intelligent Storage Protocol has been recently enhanced to support automated management of container databases and pluggable databases in Oracle Database 12c. This greatly simplifies storage management and takes the guesswork out of tuning a consolidated storage environment.

Storage Protocol. Oracle Database automatically communicates critical tuning parameters to the storage appliance, enabling the storage to configure itself and reduce administration and provisioning time by up to 85 percent. (See sidebar on page 2.)

### Meet Higher SLAs Within Budgets

Offering industry-leading IO performance and nearly twice the performance of previous generation NAS systems, the Oracle ZFS Storage Appliance enables you to deliver higher service levels at lower cost. DTrace storage analytics also helps IT departments maintain high SLAs by helping administrators quickly find and fix IO bottlenecks using graphical analytics tools with complete visibility into the entire application stack, including pluggable databases in Oracle Database 12c. Container-level visibility for Oracle Database 12c also enables you to deliver predictable performance for each pluggable database in a consolidated environment.

### Support Cloud and Traditional IT

By running Oracle Database with Oracle storage, you are preparing your IT infrastructure for the delivery of cloud services. Oracle Database 12c is designed for the cloud with a new multitenant architecture that simplifies consolidation and delivers high density schema-based consolidation. However, getting the most out of Oracle Database 12c requires that the storage that supports it is also designed for the cloud. Oracle ZFS Storage Appliance is architected for the cloud and works with Oracle Database 12c to maximize the benefits of cloud services with co-engineered storage efficiency, performance optimizations, and multitenant security.

Oracle's complete cloud lifecycle management solution, Oracle Enterprise Manager, also enables you to quickly set up, manage, and support enterprise clouds as well as Oracle Database and traditional Oracle IT environments.

### Reduce Risk

As an enterprise-grade NAS storage solution with high availability features including no single point of failure and rapid failover, the Oracle ZFS Storage Appliance is essential for keeping your business running 24/7. Its NAS consolidation capabilities enable you to reduce the number of integration points in your data center, resulting in lower complexity, lower operational cost, and lower risk. And, by automating storage management for Oracle Database, it can also help reduce the chance of human error.





The Oracle ZFS Storage Appliance has been co-developed, tested and tuned with the Oracle Database and the complete Oracle converged infrastructure stack so you can avoid the typical challenges of getting a multi-vendor environment up and running and maintaining it over time. With one phone call to Oracle, you get you support for the entire stack, eliminating the need to trace issues to a specific system component before calling for support.



## CONTACT US

For more information about Oracle storage solutions for Oracle Database visit <http://www.oracle.com/storage/> or call +1.800.ORACLE1 to speak to an Oracle representative. .

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**Hardware and Software, Engineered to Work Together**

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