Dramatically Increase Database Performance, Protection, and Efficiency with Oracle ZFS Storage ZS4-4

You can dramatically increase database performance, protection, and efficiency by deploying the application-engineered Oracle ZFS Storage Appliances along with Oracle Database and Oracle Applications. Oracle's co-engineered hardware and software stack enables performance gains of up to 5x with Oracle Database while reducing storage costs by up to 40 percent and lowering overall risk.

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 workloads of your enterprise applications, and your requirements to protect data. The Oracle ZFS Storage ZS4-4 allows you to meet all these needs without breaking your budget. It delivers superior performance, exceptional efficiency, and reduced risk—all at an affordable cost.

Oracle ZFS Storage ZS4-4 is the industry's only network attached storage (NAS) system co-engineered with Oracle Database to provide optimized performance, simplified management, and container-level visibility for Oracle Database 12*c*. It offers nearly twice the performance of the previous generation appliances, enabling storage consolidation and improved performance across a variety of workloads.

Simplify IT and Reduce Costs

The application-engineered Oracle ZFS Storage Appliance brings unique benefits and business value through Hybrid Columnar Compression and Oracle Intelligent Storage Protocol. With Hybrid Columnar Compression, you can compress the size of your Oracle Database by 10x-50x, reduce storage requirements by up to 40 percent, and speed queries by up to 5x.

With Oracle Intelligent Storage Protocol, Oracle Database 12*c* automatically communicates critical tuning parameters to the storage appliance, enabling the storage to configure itself and reduce administration and provisioning time by up to 65 percent. This advanced automation also helps reduce human error. (See sidebar on page 2.)

Meet Higher Performance SLAs Within Budget

Oracle ZFS Storage Appliance is based on a unique, in-memory architecture that offers more DRAM than most vendors have flash, enabling 70 to 90 percent of IO requests to be serviced using DRAM. The architecture leverages an advanced multi-threaded SMP operating system that takes advantage of 120 CPU cores in the

ORACLE ZFS STORAGE APPLIANCE WITH ORACLE DATABASE
KEY BENEFITS

- Deliver performance gains of up to 5x while reducing storage costs by up to 40 percent using Hybrid Columnar Compression.

- Confidently deploy Oracle Database 12*c* by leveraging Oracle ZFS Storage Appliance's detailed per database and per pluggable-database visibility.

- Simplify IT and reduce management costs by automating up to 65 percent of database-related storage management tasks with Oracle Intelligent Storage Protocol.

- Improve service levels by more quickly identifying and resolving IO bottlenecks using ZS Analytics.

- Meet higher SLAs with industry-leading performance that is nearly twice that of previous generation Oracle ZFS Storage Appliances.

- Protect your data with Oracle ZFS Storage Appliance's exceptional backup and restore speed as well as its strong data-at-rest encryption.

- Use Oracle ZFS Storage Appliance's snaps and clones to quickly and efficiently create application development and test environments.

- Reduce risk by using a storage solution that has been engineered and tested to work together with Oracle Database and Oracle Applications.

Oracle ZFS Storage ZS4-4, powering extreme performance for mixed workloads and high-density virtualized environments. With nearly twice the performance of previous generation ZFS Storage ZS3-4 systems, the ZFS Storage ZS4-4 enables you to deliver higher service levels at lower cost.

ZS Analytics also helps increase service levels by enabling administrators to quickly find and fix IO bottlenecks using graphical analytics tools with complete visibility into the entire application stack, including pluggable databases in Oracle Database 12*c*. Container-level visibility for Oracle Database 12*c* also enables you to deliver predictable performance for each pluggable database in a consolidated environment. In addition, with the Oracle Enterprise Manager Plug-in for Oracle ZFS Storage Appliance, you can you monitor, manage, and provision all of your Oracle ZFS Storage Appliances across the enterprise from a single pane of glass.

Reduce Risk and Maximize Efficiency

As an enterprise-grade NAS storage solution with high availability features, Oracle ZFS Storage ZS4-4 is essential for keeping your business running 24/7 and protecting your data. Its extreme performance delivers peak sustained rates in excess of 29 TB/hr for backup and 40 TB/hr for restore—far superior to dedupe backup appliances in Oracle Database environments. In contrast to single-purpose backup appliances, Oracle ZFS Storage Appliances have more than enough power to handle multiple workloads, including the creation of snaps and clones for quickly setting up application development and test environments, or for performing data analytics on subsets of the backed up data. You can also leverage Hybrid Columnar Compression to compress Oracle Database data and maintain the compression throughout these secondary uses, saving storage space and reducing network load.

And to protect against the ever-increasing threat of data breaches, the ZFS Storage ZS4-4 offers optional data-at-rest encryption. It's easy to implement highly secure two-level AES 256-bit granular data encryption at the project, share, or LUN level.

Single Vendor Support for the Entire Stack

Oracle ZFS Storage Appliance has been co-developed, tested and tuned to work together with the Oracle stack, helping you avoid the typical challenges in getting a multi-vendor environment up and running and maintaining it over time. In addition, one phone call to Oracle gets you support for the entire stack, eliminating the need to trace issues to a specific system component before calling for support.

Learn More

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.

DYNAMIC AUTOMATION WITH ORACLE INTELLIGENT STORAGE PROTOCOL

Up to 65 percent of database-related storage management tasks can now be automated using Oracle Intelligent Storage Protocol, a unique capability within Oracle Database 12*c* that automatically configures and tunes the database storage environment without manual intervention. Oracle Intelligent Storage Protocol has been recently enhanced to deliver visibility into Oracle Database 12*c* container databases and pluggable databases in the storage. This greatly simplifies storage management and takes the guesswork out of tuning a consolidated storage environment.

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