Oracle Snap Management Utility for Oracle Database

ORACLE
ZFS STORAGE APPLIANCE

Efficiently back up, clone, and restore Oracle Database on Oracle ZFS Storage Appliance with Oracle Snap Management Utility for Oracle Database.

KEY BUSINESS BENEFITS

• Rapid DevOps provisioning for Oracle Database

• Less storage consumption with each developer having individual database instance

• Logical backups from snapshots

• Improved DBA productivity with automated backup/restore and cloning processes

• Ability for DBAs to independently manage their own nonproduction environments

• Reduced risk

• Cost savings

KEY FEATURES

• Virtually unlimited number of database backups/copies/clones

• Fast restore/rollback to any point in time

• Rapid thick and thin cloning of databases

• Automated refresh of existing clones based on the latest production data

• One-step provisioning of a copy/clone

• Built-in scheduler and policy management for automated backups

• Hot and cold database backups

With Oracle Snap Management Utility for Oracle Database, database administrators can directly perform the critical functions necessary to ensure data is secure and accessible, and thereby reduce their dependence on storage administrators while increasing overall business productivity and saving costs.

Overview

Information stored in Oracle Database forms the backbone on which many corporations rely to run their business-critical applications. Database administrators are responsible for ensuring data protection and data availability on a 24/7 basis, quickly restoring access in the event of data corruption or any other failure, and providing fast and up-to-date database copies to maintain an agile DevOps environment. Today, many database administrators lack efficient management tools and rely on storage administrators to successfully accomplish all these tasks.

Oracle Snap Management Utility for Oracle Database is a standalone management tool specifically engineered to work with Oracle ZFS Storage Appliance. It provides the following:

• A simple, fast, efficient, and automatic way for DBAs to logically back up, restore, clone, and provision from backup Oracle Database instances that are stored on Oracle ZFS Storage Appliance—all through a browser-based user interface

• One-step provisioning of database copies to accelerate development and test environments

• Support for any Oracle Database 11*g* or later database deployed on Oracle ZFS Storage Appliance, an Oracle Active Data Guard standby database, or any primary storage backed up to Oracle ZFS Storage Appliance via a standard Oracle Recovery Manager (Oracle RMAN)—a feature of Oracle Database— image copy

• Support for Oracle Solaris, Oracle Linux, and Microsoft Windows clients and database hosts, for databases configured for NAS or SAN storage types

• Support for Oracle Real Application Clusters One Node and Oracle Real Application Clusters (Oracle RAC)

Oracle Snap Management Utility for Oracle Database combines the underlying snapshot, clone and rollback, and replication capabilities of Oracle ZFS Storage Appliance with standard host-side processing so all operations are always in a consistent state.
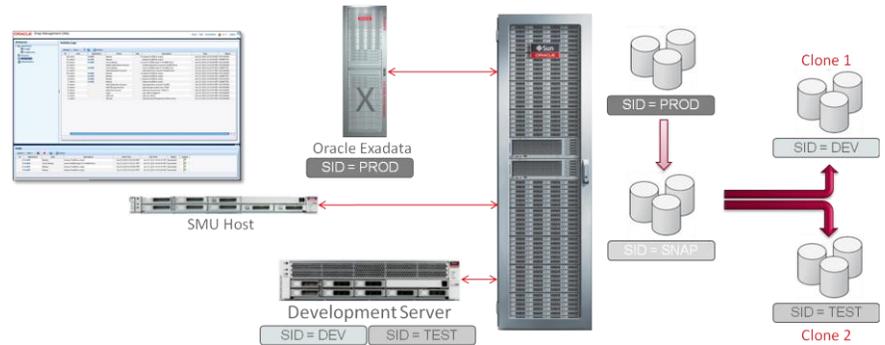
ORACLE

Figure 1. High-level view of the Oracle Snap Management Utility for Oracle Database architecture

Simplified Management

Oracle Snap Management Utility for Oracle Database breaks down barriers that constrain organizations from fully implementing efficient database protection management practices. Database backups and copies are not created as often as they should be because the process is too time consuming, resource intensive, and expensive.

With Oracle Snap Management Utility for Oracle Database, Oracle Database administrators can automate key backup processes, as well as copy, provision, and restore databases, using either a command-line interface (CLI) or a point-and-click browser-based user interface (BUI), without assistance from storage administrators and in a consistent manner that complies with IT policies. DBAs can quickly create or modify backup schedules with fine granularity with the database in online or offline state, manage and monitor database copying and provisioning operations using a single-step process, and restore to any specified point in time.

Logical Data Protection

Oracle Snap Management Utility for Oracle Database complements the built-in availability and data protection features of Oracle ZFS Storage Appliance. Utilizing an appliance's space-efficient and high-performance snapshot technology, DBAs can create unlimited logical backups of their databases. Because creating logical backups is a fast process and does not take significant space, DBAs can set a high number of backups—up to a minute apart—to set points of recovery in case of data corruption or any other catastrophic event to the primary Oracle Database instance.

DBAs are able to restore their Oracle Database instance to a full previous state, within minutes, to any specific snapshot in the backup schedule or to any SCN, time stamp, or sequence number between those snapshots. In addition, logical backups are always in a consistent restorable state because of the tight design integration between Oracle Database and Oracle Snap Management Utility for Oracle Database. This ensures no data loss and provides higher protection and availability of Oracle Database instances.

Efficient DevOps

Frequently, database copies are not created as often as they are required for rapid application development, quality assurance, reporting, and training purposes. The key reason is that the process is too time consuming, uses valuable physical storage space, and requires the intervention of other IT resources, making it an expensive proposition. Today's agile application DevOps organizations have focused staff who rapidly create Oracle Database-based applications in a dynamic, on-the-fly manner. In many cases, modern DevOps environments require the rapid provisioning of databases and storage, and space-saving copy-on-write technology, so that all developers can have their own database instance.

With Oracle Snap Management Utility for Oracle Database and Oracle ZFS Storage Appliance, the creation of multiple up-to-date database copies is space-efficient and a quick process. Full or thin clones can be provisioned with one simple action, with all Oracle Database, database host, and storage processes centrally automated. Oracle Snap Management Utility for Oracle Database automates more than 88 percent of the steps required, so that in a single step, a database copy can be provisioned to any development or testing team anywhere in the world. Development and testing teams are able to perform their jobs faster and more efficiently, increasing the company's ability to meet its business objectives, such as delivering new products on time and on budget. These clones can take only seconds to deploy, and data in developer databases can be refreshed for the latest production data in an automated fashion.

Oracle ZFS Storage Appliance for Oracle Database Storage

Oracle Snap Management Utility for Oracle Database is specifically engineered to work with Oracle ZFS Storage Appliance, an enterprise storage system that offers extreme performance and efficiency for Oracle Database storage along with a rich set of data services. It provides native support for the Hybrid Columnar Compression feature of Oracle Database, enabling DevOps groups to work directly from Oracle ZFS Storage Appliance, while significantly reducing storage capacity requirements. Oracle ZFS Storage Appliance is based on a massive dynamic random access memory (DRAM) and flash cache architecture and multithreaded symmetric multiprocessing (SMP) operating system that power leading database performance. It is also engineered for high availability, offering dual-controller configurations and remote replication for disaster recovery.

ORACLE SNAP MANAGEMENT UTILITY FOR ORACLE DATABASE

Feature	Details
Supported models	Oracle ZFS Storage ZS3 and ZS4 appliances and Oracle's Sun Storage 7000 Unified Storage Systems
License	Single license per Oracle ZFS Storage Appliance controller (two-node cluster requires two licenses)
Protocol support	File level: NFS/dNFS; block level (Oracle Automatic Storage Management, a feature of Oracle Database): iSCSI
Clone type	Primary or physical standby
Maximum number of snapshots	Virtually unlimited (limited only by physical system capacity)
Maximum number of clones	Virtually unlimited (limited only by physical system capacity)
Automatic backup scheduler	Yes
Network connectivity support	1 GbE, 10 GbE, InfiniBand
Oracle ZFS Storage Appliance operating system	2011.1.5 and later; 2013.1.4 and later required for clone copy and REST client support
User interface	CLI: SSH-based, batching/scripting; BUI: Java, browser access
Oracle Database versions supported	Oracle Database 11*g* and Oracle Database 12*c*
Clustering option	Single-instance, Oracle Real Application Clusters One Node, and Oracle RAC
Backup type	Online (hot), offline (cold), and standby backups
Database host operating system	Oracle Solaris 10 and Oracle Solaris11, Oracle Linux 6 and Oracle Linux 7, Windows Server 2008 R2 and 2012 R2
Oracle RMAN support	Yes
Ability to provision Oracle Database with Hybrid Columnar Compression	Yes
Automatic conversion	Single instance to Oracle RAC, and vice versa. Provision to a different host operating system