Oracle Snap Management Utility for Oracle Database

A simpler, faster way to copy, clone, and manage your databases—and protect your business—using the Oracle ZFS Storage Appliance
Introduction

The questions keep coming. The IT Director wants to know why critical databases aren’t backed up more efficiently. The CIO wants to know why the cost of database management is still sky-high. The CEO wants to know why the launch date of an important new product was pushed back.

All too often, the root problem is the same: Current database management tools and processes are inefficient and resource-intensive. They make it difficult and expensive to create database snapshots, so backups are performed less frequently, increasing the risk of data loss or slow recovery from an outage. Development and test teams don’t have access to the database clones they need when they need them, increasing the risk of delayed projects and missed market windows. And the company finds that database management costs continue to rise while the productivity of database administrators (DBAs) and storage administrators remains flat.

Oracle has a better solution. The Oracle Snap Management Utility for Oracle Database simplifies, accelerates, and automates the process of copying, cloning, and protecting Oracle databases. It allows DBAs to do their jobs more effectively in less time, with greater flexibility and less dependence on storage administrators. By doing so, it helps reduce the company’s risk profile, speed up development and test efforts, and cut OpEx—without impacting performance.

Which brings up one more question: Why purchase third-party database tools and storage systems when a complete, seamlessly integrated, cost-effective solution is available directly from Oracle?

Snap Management Utility Overview

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

- A simple, fast, efficient way to create and manage snapshot-based copies and clones of Oracle databases stored on Oracle ZFS Storage Appliances—all through the DBA’s console
- Support for any Oracle 10g or 11g database deployed on an Oracle ZFS Storage Appliance
- Support for Oracle Solaris, Linux, and Windows clients and database hosts, for databases configured for NAS or SAN storage types
- Support for Oracle Real Application Clusters (RAC)

The Snap Management Utility combines the underlying snapshot, clone, and rollback capabilities of the Oracle ZFS Storage Appliance with standard host-side processing so all operations are consistent. With the Snap Management Utility, DBAs no longer need to be dependent on IT personnel to backup, restore, recover, or clone databases, allowing both DBAs and storage administrators to focus on their specialty while unburdening IT of time-consuming tasks.

The Snap Management Utility will also be able to work in conjunction with Oracle Data Guard to create a physical standby database that Oracle Data Guard can then use to ensure high availability, data
protection, and disaster recovery for enterprise data. Implementation of this capability is planned for post-initial releases.

At a Glance: Oracle ZFS Storage Appliances

The Oracle ZFS Storage Appliance product line delivers enterprise-class network attached storage (NAS) capabilities with Oracle integration, efficiency, and performance.

Each Oracle ZFS Storage Appliance comes with powerful data-protection and provisioning features, which simplify deployment, provide ongoing flexibility, and ensure data availability. The easy-to-use interface simplifies the task of managing data, applications, and day-to-day datacenter tasks. DTrace storage analytics provides key insights into business-critical storage workloads.

Oracle ZFS Storage Appliances provide robust application and data storage for Oracle Exadata, SPARC SuperCluster, and Oracle Exalogic Elastic Cloud engineered solutions. They also offer immediate benefits for customers using NAS for enterprise applications, virtualization, cloud, storage consolidation, and data protection.

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

Figure 2. Oracle ZFS Storage Appliance family
Simpler, Faster Snapshots

One key reason database copies and clones aren’t created as often as they could or should be is that the process is too time-consuming, resource-intensive, and expensive.

Through its tight integration with the Oracle ZFS Storage Appliance, the Snap Management Utility streamlines the copying and cloning process and makes it possible to create up-to-date snapshots of critical databases—painlessly—in just minutes. DBAs can create standby databases in one step.

These capabilities allow DBAs to increase the frequency and consistency of backups, providing a higher level of protection for critical data and improved recovery times in the event of an outage.

The Snap Management Utility also makes it possible for development and testing teams to gain access to the multiple database clones and permutations they need to perform their jobs faster and more efficiently, increasing the company’s ability to deliver new products on time and on budget.

Greater Flexibility and Control for DBAs

Another key issue with traditional database management tools and processes is that they can provide limited flexibility—both in their use and their capabilities.

The Snap Management Utility breaks down barriers that have constrained organizations from fully implementing efficient database management practices. First, it enables DBAs to manage and monitor database copying and cloning operations directly from their consoles—using either a command-line interface (CLI) or a point-and-click GUI—without assistance from storage administrators and in a consistent manner that complies with IT policies.

The Snap Management Utility also allows DBAs to automate key backup processes. They can quickly create or modify snapshot schedules with fine granularity. This capability can help increase both the frequency and consistency of backup operations across the enterprise.

Equally important, the Snap Management Utility provides versatility by supporting multiple hosts, clients, and platforms. For example, the first release supports the following:

- Databases: Oracle 10g, 11g, and Oracle RAC
- Operating systems: Oracle Linux, Red Hat Linux 5 and later, Solaris 10 & later, Windows 2008 and later
- Snapshot types: Online, offline, and standby
- Database cloning options: On the same application host using a single Oracle ZFS Storage Appliance; on a different application host using a single appliance; on an application host using a secondary appliance; or with refresh (standby database clone using Oracle Data Guard, capability planned for post-initial release)
- Clone application instances: Development, test, or standby
Higher Availability, Better Data Protection

The Oracle Snap Management Utility for Oracle Database complements the built-in availability and data protection features of Oracle ZFS Storage Appliances with capabilities that further increase data availability.

For example, the Snap Management Utility is “application aware.” It combines before and after processing from the application side with required operations on the storage side, ensuring no data loss and consistent backups. It will also allow DBAs to create a standby database in a single step, including setting up Oracle Data Guard to start replicating from the source to the standby database, helping to ensure business continuity in the event of a disaster or unexpected outage at the primary site.

For its part, the Oracle ZFS Storage Appliance line is specifically engineered to improve data protection, backup and recovery data services, and disaster recovery. For example, triple-parity RAID and triple mirroring provide industry-leading data protection and maximum data availability—even in the presence of multiple drive failures—allowing customers to minimize the risk of application outages and maintain performance. Built-in replication services create a copy of mission-critical data and applications between systems at remote locations, providing a rock-solid yet simple solution for backup and recovery as well as protection against catastrophic events. Built-in replication also reduces application recovery time in case of a complete system failure since business-critical data can be accessed from an online mirror.

Conclusion

For customers who are looking for a simpler, faster, more flexible way to copy, clone, and manage Oracle databases, Oracle has a smarter answer.

With the Oracle Snap Management Utility for Oracle Database, DBAs can perform their jobs more effectively in less time, with greater flexibility and less dependence on storage administrators. Storage administrators can shift their focus to other pressing activities. Businesses can cut the risk of lost data, speed up development and test efforts, and reduce operational expenses. And senior management can have something they never expected from a database management tool: Peace of mind.

Learn More

For additional information about the Oracle Snap Management Utility for Oracle Database and the Oracle ZFS Storage Appliance product line, visit www.oracle.com/goto/nas. Or call 1-800-ORACLE1 to speak to an Oracle representative.