ORACLE DATA SHEET

Oracle Enterprise Manager 13*c* Snap Clone

ORACLE ENTERPRISE MANAGER 13c

Provisioning database copies for development, testing, and QA exercises can be a critical factor in delivering high-quality production applications and achieving faster time to market for new competitive applications. However, the database cloning process can often be time consuming, resource intensive and expensive – especially for large multi-terabyte databases. As a result, database copies and clones may not be created as often as required. Database cloning often requires the assistance and cooperation of system and storage administrators, complicating the process and increasing the delivery time. Enabling database administrators and QA engineers direct access to self-service cloning and taking advantage of underlying storage features can simplify the process and enable faster time to market for new applications.

IMPROVE THE EFFICIENCY AND AGILITY OF ADMINISTRATORS AND QA ENGINEERS WHILE REDUCING STORAGE-RELATED CAPEX

KEY FEATURES

- Works with all currently supported databases including Oracle Database 18c and Oracle Database 19c
- Support for Oracle Multitenant databases
- Rapid and space efficient cloning of large databases
- Support various storage vendors and configurations (SAN and NAS)
- Support for Exadata 'sparse diskgroup'
- Direct Cloning support for DBAs via admin workflow
- Self Service Portal access for non-DBAs
- Integrated lifecycle management (lineage and association tracking)
- "Data Refresh" capability to restore and access past instance

Database Cloning in Minutes

Enterprise Manager 13c Snap Clone instant database cloning allows administrators to create fully functional copies of databases using the capabilities of the underlying storage layer. Using a self-service model, users can clone the data within minutes instead of hours while keeping storage needs to a minimum. This technology is particularly useful for large scale functional testing on data that does not require extensive updates or changes. Using Snap Clone, the end user can easily create multiple snapshots of the database and "time travel" across these snapshots to access data from any point in time

Simpler Faster Database Cloning

Oracle Enterprise Manager provides the most comprehensive solution for rolling out an Oracle-based Database as a Service Cloud for users in an enterprise. Using Snap Clone, a feature within the Cloud Management Pack for Oracle Databases, administrators, QA engineers, and development staff can realize the following additional benefits when cloning Oracle databases:

- **Space efficiency:** Since new storage blocks are allocated only when updates are made to the copy, users can realize storage savings of over 90% (typically a few hundred kilobytes for a 1 terabyte database). In addition, because you are not copying the original block out of the way, there is no significant performance impact.
- **Time efficiency:** Because the snapshots are simply pointers, to restore data,

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we simply update the pointers to the original data again. This is faster than copying all the data back from the snapshot area over the original data, as in copy-on-write snapshots. So taking a snapshot completes in seconds, even for very large volumes. A typical terabyte database takes just a few minutes to clone.

- **Data Rewind:** Functional testers often need to go back to an earlier incarnation of a database. Using Snap Clone, users can create multiple copies for functional testing without consuming additional space. Enterprise Manager enables the self-service users to take multiple snapshots of the database as backups. The users can then easily restore from an earlier snapshot. Since the snapshot is only a thin copy, the backup and restore are almost instantaneous, typically a couple of minutes.

KEY BENEFITS

- Minutes to clone terabyte sized databases
- Potential storage savings of 90%
- Reduced administrative overhead
- Reduce DBA time by automating deployment of standard database configurations
- Reduce DBA time by automating cloning of large databases

Flexible Implementation for DBAs, Developers, and Quality Assurance Engineers

Snap Clone provides the built-in administrative and manageability capabilities to simplify the management of storage and provide greater flexibility and control for DBAs Developers, and QA Engineers.

- Powerful Administrative Workflow for DBAs: DBAs and administrators can easily access the powerful cloning capabilities delivered by Snap Clone. Enterprise Manager simplifies the registration of storage in context of the Test Master databases. Administrators can create clones from libraries of snapshots, backups and image copies, perform 'one-click' refresh of clones from the source, and have access to powerful data lifecycle workflow including integrated data masking, subsetting, patching and DB updates.
- **Self Service Provisioning and Service Catalog for non-DBAs:** An out-of-box self-service portal can quickly be configured to enable non-DBA users (e.g. functional testers or developers) to easily provision database clones with just a few clicks. Self-service users can be assigned specific roles which provide access to the service catalog contents and enforces governance via quotas for database resources, such as memory, CPU, and storage.
- **Best of Breed DB Manageability:** Enterprise Manager delivers complete manageability of database clones including performance management, lifecycle management, and compliance. For example, when cloning at a storage volume level, Sysadmin tools have little idea on the databases and applications that are consuming those volumes. From an inventory management, capacity planning and compliance perspective, it is important to track the storage association and lineage of the clones at the database level. Enterprise Manager provides this rich set of manageability features.

RELATED PRODUCTS

- Oracle Cloud Management Pack for Database delivers maximum benefits
- Oracle Database Lifecycle Management Pack

How Snap Clone Works

Snap Clone functionality is built on top of the Enterprise Manager Storage Management Framework (SMF) plugin. The SMF plugin provides the required layer of abstraction to shield DBAs and users from the nuances of the different storage systems. At the storage level, Snap Clone accesses underlying storage technologies, such as copy-on-write or similar technologies, to perform the required tasks. Snap Clone supports multiple options for using and interacting with storage:

- **NAS Storage**
  This method, currently certified for ZFS Storage Appliances, and NetApp Storage Appliances, enables storage administrators to register storage appliances with Enterprise Manager and then connect directly to the storage appliance to perform all required snapshot and clone operations. This approach provides an efficient and fault tolerant solution.
- **SAN Storage**
  Snap Clone provides the ability to create 'live' thin clones of databases on ASM on EMC storage. A live clone is not snapshot based but rather a live copy of the database, residing on copy-on-write storage technology that can be within the same or different cluster. Both single instance and RAC databases are supported. This functionality is currently certified on both EMC VMAX (with Time Finder VPSnap) and VNX storage appliances.
- **Filesystem Support**
  Snap Clone supports multiple file system protocols – including Solaris File System (ZFS File System), ACFS, and DNFS. These methods provide storage vendor agnostic solutions and can be used by a variety of storage vendors, are easy to setup, and work on all platforms.
- **Engineered Systems**
  Snap Clone on Exadata leverages "sparse diskgroups" and provides a fast, space-efficient snapshot database creation. Integration with Oracle Database Multitenant enables creation of DB snapshots with a single click. This approach has the advantages of retaining the benefits of all Exadata storage features – including smartscans, smart flash cache, and resource management. Non-container database cloning is also supported on Exadata.

Database Cloning and Continuous Data Refresh

Enterprise Manager provides complete cloning automation, including Snap Clone and full cloning, which can support a wide range of activities from performance testing to functional testing. All cloning services come integrated with data masking and the ability to change configuration and software versions. Cloud administrators can manage the complete life cycle of the source data including capturing data on demand as well as refreshing the data and creating new revisions of the profile.

Increase Cloning Efficiency and Reduce Storage Costs with Snap Clone

Snap Clone is a complete solution for enabling rapid creation of space efficient clones for large, multi-terabyte databases. Snap Clone supports Oracle Database versions 10g, 11g and 12c. As part of the Cloud Management Pack for Oracle Databases, it satisfies the needs of both IT and the end users, while helping to reducing storage costs.

Snap Clone is especially useful for creating clones of large, multi-Terabyte databases for the following purposes:

- Application upgrade testing – e.g., Oracle E-Business Suite upgrade to R12
- Functional testing – e.g., Test with production datasets
- Agile development – e.g., Maintain parallel streams of development on same dataset
- Data analysis and reporting – e.g., Analyze stock market trends on a daily basis

Snap Clone can fundamentally improve the efficiency and agility of administrators and QA Engineers while saving CAPEX on storage.