

# CommVault Galaxy® Data Protection 7.0 for Oracle Database Systems

Simplified, Enterprise-Class Protection for Large-Scale Database and Associated Systems Deployments

## Key Benefits

- ▶ Simplified operations with guided recovery
- ▶ Dramatic recovery performance improvements
- ▶ Object-level recovery extracted from a full database backup
- ▶ Low-impact, high-performance backups that include database-aware compression
- ▶ Increased reliability by finding block-level errors when the backup is made—instead of when the recovery is needed
- ▶ Dramatically reduced disk and tape use
- ▶ Improved media handling with built-in tape tracking and rotation management
- ▶ Benefit from CommVault® core competencies for Oracle protection

*Easily add capabilities for protection, archive, replication and snapshot recovery, all managed from the same Unified Console.*

## The Business Challenge

Oracle database systems are at the core of key business operations and activities. Managing Oracle data is often the most critical part of an IT team's responsibility. This can also be one of the toughest tasks, as the complexities of managing Oracle data demand exacting core competency and knowledge of Oracle systems.

## The CommVault® Solution

CommVault Galaxy® data protection for Oracle systems is an enterprise-class, flexible solution that simplifies and automates many of the tasks associated with managing Oracle backup and recovery. RMAN integration and defined best practices based on CommVault® core competencies and Oracle experience help to minimize and eliminate recovery failures, significantly speed backup and restore performance, and minimize reliance on RMAN scripting. The CommVault solution is designed for fast, easy deployment with your existing infrastructure—so your time-to-better-backup can be days and not months.

## Increased Productivity

### For Oracle Administration

Duplicating and refreshing databases are frequent tasks, with many manual and tedious steps. These processes are also disruptive to using the database, because they slow down its performance. It is faster and easier to restore

backup copies to alternate systems and locations, and this approach eliminates any impact to production use of Oracle database systems.

CommVault Galaxy software offers simplified and flexible options for cloning and refreshing Oracle databases, using alternate disk and alternate Oracle nodes. CommVault software is integrated with RMAN to enable restored data to be connected to an alternate Oracle database node. CommVault one-step re-directed recovery also simplifies database cloning to another disk, and can be scheduled to run at any time. This dramatically simplifies the process of creating duplicate copies of Oracle data, for testing, staging and for other operational purposes.

### For Oracle Backup

Completing backup and recovery jobs is often the key challenge for backup administrators. Typically, much time can be wasted verifying that jobs have run—and completed—and then diagnosing the network, server or storage problem that disrupted operations.

CommVault Galaxy software provides advanced failover resume capabilities that help jobs to complete even when failures occur, along with comprehensive point-and-click reporting to make verification a snap.

## Key Capabilities

### ▶ Ultra-rapid deployment with existing infrastructure—

CommVault software is easy to install, configure and manage. Support for a wide range of UNIX, Linux and Windows platforms and Oracle versions makes it easier to maintain your Oracle environment.

### ▶ Web browser-based management—

Administrators and operators can manage Oracle data from virtually any location with web access.

### ▶ Fully configurable user-level security access levels—

Define and assign operational and management activities to different users and user groups.

### ▶ Simple-to-operate Oracle recovery—

Out-of-box simple, guided recovery for Oracle data that makes it easy for operators to handle recovery tasks.

### ▶ Preserved use of your Oracle recovery scripts—

If you have years of time invested in fine-tuning complicated recovery scripts, you can keep them and use them immediately with CommVault Galaxy software for RMAN recovery of Oracle databases. The CommVault Galaxy CLI “on demand” capability makes this easy and immediate.

### ▶ Automated archive log management—

Automatically preserve and prune Oracle log files to save on disk space, as part of the backup operation. Provides easy archive log recovery, with batch restore options when the total size of all the logs exceeds the disk space available.

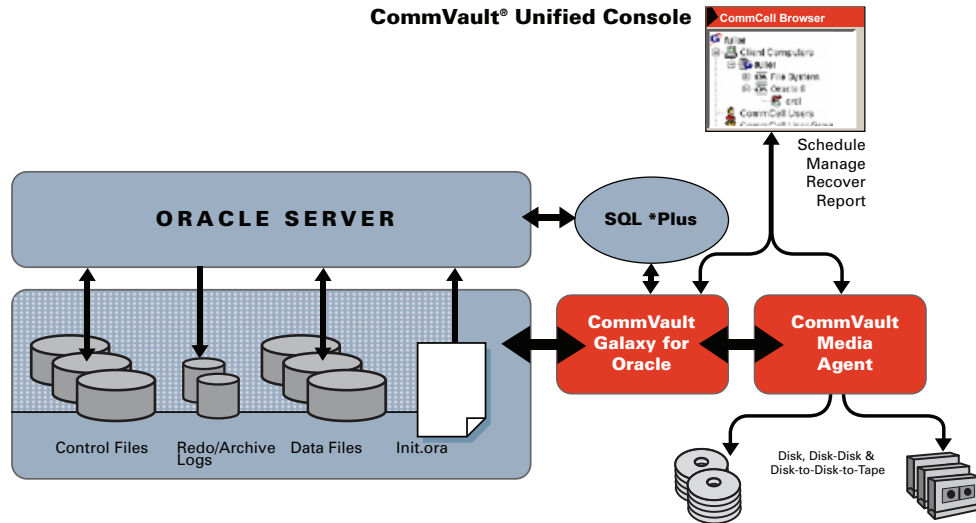
### ▶ Fine-tuned archive log control—

Backup and delete a range of archive log files by date, Log Sequence Number (LSN), System Change Number (SCN), or special format (using “LIKE” option) from selected destinations.

### ▶ Corrupt block detection during backup—

Best practices for managing Oracle backup are built right into the process, with corrective RMAN Block Recovery capabilities enabled.

## CommVault® Unified Console



## More Jobs Complete with CommVault Galaxy® Failover Resume

In the event that a CommVault Galaxy backup node (called a Media Agent) fails, alternate Agents can automatically resume backup and recovery jobs. Resume means that the job does not have to restart from the beginning, but resumes from the point of failure. This can be critical for finishing long jobs, and translates specifically into higher job success rates. CommVault Galaxy software also resumes jobs using alternative network connections when networks drop. CommVault Galaxy software uses this same capability to switch backup jobs to alternative tape drives when drives fail. The advanced design of CommVault Galaxy software preserves easy, one-step recovery even when backup copies span tapes.

## Point-and-Click Reporting

Reports that verify that backup jobs ran—and completed—along with recovery job history, tape tracking and rotation, operator and administrator audit tracking and other key metrics are available with easy point-and-click access right from the CommVault Unified Console. Reports can be saved, exported and attached to email for easy distribution. In the same point-and-click interface, reports can also be scheduled to be created and sent through email—without administrator assistance.

Reporting which includes analysis of the use of primary storage by Oracle production systems and secondary storage for Oracle backup

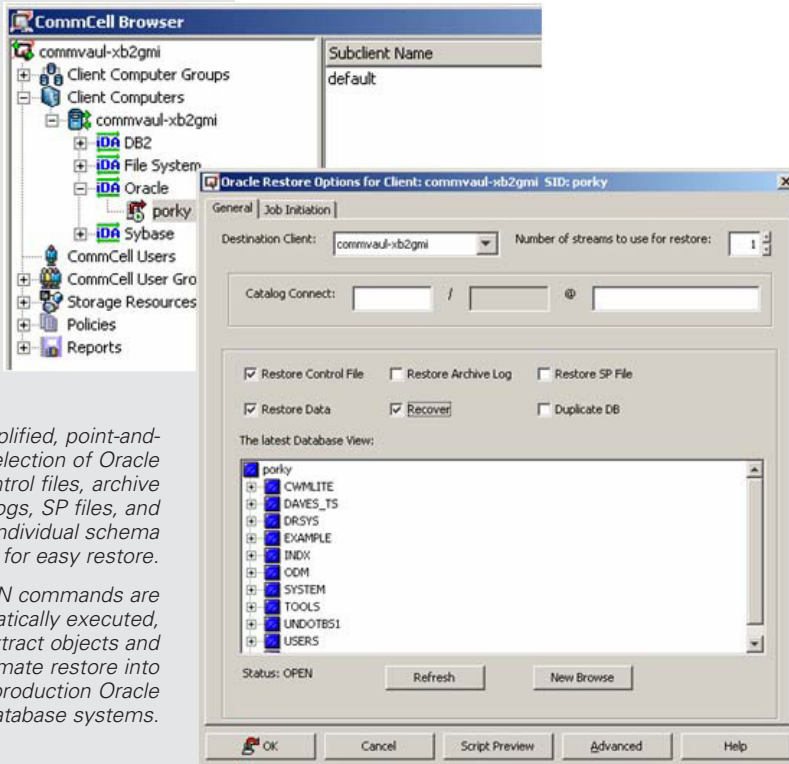
copies, is also available as an easy add-on to the CommVault Galaxy solution.

## Simplified, Guided Recovery

Oracle database recovery is not usually a simple process, but requires DBAs to understand the source of the problem, find the appropriate backup copies with the files that fix the problem, and typically also involve a multi-step recovery process of staging the restored files before applying them to the Oracle database to affect the fix. The Oracle logs may also need to be reset, which requires additional expertise to determine and then perform.

CommVault Galaxy data protection for Oracle systems makes it easy by providing a guided recovery process with one-step restore. The built-in recovery process automates these steps:

- ▶ Presents a simplified, point-and-click interface that enables easy selection of any Oracle object for recovery
- ▶ Provides push-button recovery initiation, with a one-step process that issues all Oracle commands required to enable the files to be restored back to the production Oracle environment without being staged
- ▶ Detects data files, control files, online redo logs, and parameter files needed for inclusion in the recovery
- ▶ Brings the Oracle database back online after the restore process is complete



*Simplified, point-and-click selection of Oracle control files, archive logs, SP files, and individual schema objects for easy restore.*

*RMAN commands are automatically executed, to extract objects and automate restore into production Oracle database systems.*

This simplified and guided process makes it easy for operators to handle day-to-day, object-level recovery operations for Oracle databases. The process of extracting objects from the full database backup is automated. Selecting to re-direct recoveries to alternate disk systems and with alternate Oracle nodes is included in this easy process, with simple point-and-click dialog box options. In addition, CommVault Galaxy software enables immediate use of RMAN recovery scripts that you may already have in place with your existing systems—so that you can also continue to perform more complex recovery tasks as easily as possible.

## **Faster Backup with Superior Disk-to-Disk Data Management**

CommVault Galaxy software is designed for disk-based data protection, with capabilities for managing data retention across tiers of disk built right in. Each backup Storage Policy defines when and how Auxiliary Copies of the original backup copy are made, and automatically prunes the original copy from disk for efficient space management. Auxiliary copies can also move data onto tape efficiently and automatically as part of this process.

## **Reduced Tape Use with Unique Spanning and Appending Capabilities**

Reduce the amount of tape required for the same amount of Oracle backup copies. Reduce the administrative overhead of tape management, by reducing their number significantly.

Typically, CommVault customers gain significant immediate reduction in tape using RMAN full backup copies. Customers then see additional gains when they add the use of RMAN incrementals.

Eliminate the added cost of third-party tape tracking software. Manage backup-to-tape, tape rotation, and restore all from the same CommVault Unified Console. Manage data retention and tape rotation policies with the same Storage Policy automation.

## Key Features and Benefits

### Features

### Benefits

<b>Span DR configurations with a single index</b>	Prevent index corruption and management challenges associated with trying to maintain two indexes across two “master” servers in a backup deployment. The unified CommVault approach applies a single, self-managing index that spans both sides of the DR deployment.
<b>Simple-to-operate Oracle recovery</b>	Out-of-box simple recovery for Oracle data and systems that makes it easy for operators to handle.
<b>Corrupt block detection when backup copy is made</b>	Learn best practices for Oracle data management operations, including: use of RMAN to spot inconsistent blocks when the backup is made—and correct them immediately with built-in RMAN Block Recovery. Avoid creating backups with inconsistent blocks, which are hidden until you try to restore the database.
<b>Increase backup and restore performance</b>	<p>Using the same infrastructure, reduce the time required to backup your Oracle data—without multiplexing. Dramatically speed recovery of Oracle databases from disk and tape.</p> <p>Multiplexing is still supported, if you choose to use it. When multiplexing is used to backup Oracle on UNIX, then restores streams are automatically multiplexed to deliver optimal performance.</p>
<b>One-Pass Restore</b>	Speeds restore of Oracle databases, including on multi-plexed backups.
<b>Comprehensive RMAN integration including clustered file systems, raw devices, and ASM</b>	Obtain proper security, efficiency and incremental backup support along with full backup copies. Avoid extra redo generated when the backup copy is made. Provides the coherency and supportability that only ASM support can offer.
<b>Oracle archive log management</b>	Automatically preserve and prune Oracle log files to save on disk space, as part of the backup operation. CommVault software is integrated with RMAN to ensure that the log file is preserved before the log file is removed from disk.
<b>Policy-driven data retention management</b>	With a single Storage Policy, manage the retention of Oracle full and incremental backup copies on disk and tape. Automated pruning of disk copies when secondary disk and/or tape copies are made.
<b>Multi-node failover built into the backup node operations</b>	In the event that a CommVault Galaxy backup node (called a Media Agent) fails, the backup and recovery jobs are resumed on alternate nodes. Resume means that the job does not restart from the beginning, but resumed from the point of failure. This can be critical for finishing long jobs, in particular.
<b>Alternate data path failover built in</b>	In the event that a network goes down, CommVault Galaxy backup and recovery jobs are resumed on alternate data paths.
<b>Out-of-place restore: Restore Oracle database on alternate node</b>	Integrated with RMAN to enable backup copies to be restored to an alternate Oracle database node.
<b>Re-directed restore: Restore Oracle data on alternate disk</b>	Integrated with RMAN to enable Oracle data to be restored in one-step to another disk. This can also be done using an alternate database node.
<b>Re-directed restore: Database cloning and duplication</b>	Easily create duplicate copies of Oracle data, for testing, staging and other operational purposes. This can be used for database refresh and for DR purposes at another site. The process is as simple as performing a restore operation.
<b>Oracle RAC Support</b>	Obtain all of the backup and recovery benefits described here, for RAC deployments.

## Key Features and Benefits (continued)

Features	Benefits
<b>Perform parallel backups across multiple RAC nodes</b>	Unlike other agents, this agent requires just one subclient and one storage policy per type used (i.e., data, log) along with a number of allocated streams to perform parallel backups. As such, you can load-balance your backups across all or selected nodes of your RAC database and thereby take advantage of the strengths of each node.
<b>Data path dynamically moves with the active RAC DLM connection</b>	Ensures that the data stream for creating backup copies and performing restores, is moved along with the DLM access point—effectively distributes the load across the RAC nodes. On supported platforms.
<b>Support for RMAN disk ratio</b>	Read data across disks and group them in a backup set, for Oracle or Oracle RAC protection.
<b>Automatic backup of Oracle control file</b>	<p>The control file contains metadata about the physical structure of the database including the location of all files, the current database state and system change number (SCN), as well as information about backups performed in RMAN. Oracle 9i and 10g systems provide the capability to configure autobackup of control files in RMAN so that they are automatically backed up along with the server parameter file during backup operations.</p> <p>The purpose of the control file autobackup is to provide a way to restore the backup repository contained in the control file when the control file is lost and the recovery catalog is either lost or was never used. You do not need a recovery catalog or target control file to restore the control file from autobackup. If you don't use the catalog database for Oracle backups, and the entire database and control file are lost, then a restore of the entire database with control files will fail unless you have enabled autobackup of control files in RMAN.</p>
<b>Offline backup</b>	Enables easy lights out protection of Oracle databases, by connecting to the database for offline backups using a pre-configured script that is selectable from the Unified Console interface.
<b>Control maximum corrupted data blocks</b>	When backing up a file containing corrupted data blocks, you can specify the maximum number of corrupted blocks CommVault Galaxy software will encounter in the database before stopping.
<b>Faster restores using reservation of resources</b>	Reserve drive and media in advance, to ensure fastest performance of Oracle restores.
<b>On Unix, improved restore from multiplexed backups</b>	Faster restore from multiplexed backup by automatically multiplexing data streams used during restore.
<b>For Oracle 10g systems, use of Flash Recovery Area</b>	Improved backup and restore using the Flash Recovery Area.
<b>Automatic validation of backup &amp; recovery for Oracle systems</b>	Validate backup and restore jobs by running a simulation beforehand to verify the availability of media and integrity of data needed to perform the backup or restore.
<b>Rapid install with capabilities that include silent and remote deployment options</b>	<p>CommVault software is easy to install, configure and manage. Support for a wide range of UNIX, Linux and Windows platforms and Oracle versions makes it easier to maintain your Oracle environment.</p> <p>Remote installation includes the capability to supply Windows client names, in addition to selecting from a list of known clients. Silent installation is available on UNIX, which avoids the need to reboot the server. Also on UNIX, re-linking Oracle with the SBT library is performed automatically, as part of the install process, using a pre-configured RMAN script.</p>

## Key Features and Benefits (continued)

### Features

### Benefits

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**Automatic preview of RMAN script before backup and restore**

Preview the backup and restore scripts that will be submitted to RMAN to back up or restore data on a client. Previewing the script before running a backup or restore is useful for identifying whether the current subclient configuration or selected restore options will yield the desired result in the script.

The script text can be previewed from the Subclient Properties and Restore Options dialogs, and provides the capability for you to copy the text from the display window for manual submission in RMAN, if desired.

**Backup data and archive logs from databases**

Protect and manage Oracle data with no impact on production use of Oracle database systems.

**Oracle stand-by database**

Create a “stand-by” database which can serve as a production database in the event of a disaster such as a hardware failure or data corruption on the primary database and then backup the “stand-by” database offloading backup IO from the primary database server.

## Additional Solutions for Oracle Systems

CommVault offers a *Singular* suite of data management software built on the same software platform so that all capabilities work together. This makes it easy to add capabilities when and how you need them. For Oracle systems, consider adding:

► **Continuous Data Replicator (CDR)**

- Remote Office Data Centralization and Protection
- Disaster Recovery
- Mount and Self-Restore of Replicated Data by Users

► **Quick Recovery™ Software**

- Higher Availability of Oracle Services Using Snapshot Recovery
- More Frequent Points in Time of Protection
- Faster Recovery Time

► **Resource Management**

- Monitor and anticipate primary storage growth requirements
- Monitor and anticipate secondary storage growth requirements

## System Requirements

<b>Oracle</b>	9.2.0, 10g, 10g R2, 9i RAC, 10g RAC
<b>Platforms</b>	AIX, HP-UX, Solaris, Microsoft Windows, Tru64, Red Flag Linux, Red Hat Linux, SuSE Linux

**Note:** System Requirements are subject to change. For up-to-date System Requirements including 32- and 64-bit systems support, please refer to product documentation on the CommVault website at <http://www.commvault.com>

## SIMPANA™ software suite

CommVault's Simpana™ suite of Data Protection, Archive, Replication, Resource Management and Search software is designed to work together seamlessly from the ground up, sharing a single code and common function set. This exclusive single-platform architecture enables unparalleled software efficiency, performance and reliability for unprecedented control over data growth, costs and risk.

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