

Quick Start Guide - Oracle RAC *iDataAgent*

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INTRODUCTION

The Oracle RAC iDataAgent works in conjunction with the Oracle RAC database to provide simplified end-to-end backup and recovery solutions for Oracle databases in your enterprise without using multiple subclients and storage policies. This Product allows you to load-balance Oracle backups and restores across multiple database nodes. The product can be used to perform both full system rebuilds and granular recovery of the data and logs.

KEY FEATURES

FULL RANGE OF BACKUP AND RECOVERY OPTIONS

The Oracle RAC iDataAgent provides the flexibility to backup the Oracle database in different environments. This is very essential since the Oracle database is always subject to constant changes.

You can perform a full or incremental backup of the entire database or individual datafiles/ tablespaces, or archive logs at any point of time. The following section describes the backups that can be performed in different environments.

OFFLINE BACKUP

When the database is shutdown and not available for use, you can perform a full backup of the database without the logs. This is especially used when the data is consistent and there are no transactions in the database.

ONLINE BACKUP

In cases, when you cannot bring down the database to perform an offline backup, you can use the online backup method. Here, you can perform full or incremental backups when the database is online and in ARCHIVELOG mode. This is very useful when you want to perform a point-in-time restore of the database.

You also have the facility the backup only the archive logs when the database is online. These logs can be applied to an online backup to recover the database to the current point-in-time.

You can also protect the non-database files and profiles using the appropriate File System iDataAgent.

SELECTIVE ONLINE FULL BACKUP

This iDataAgent allows you to backup and store copies of valid data from a source copy of a specific storage policy to all or one active secondary copy within a storage policy providing for a better tape rotation. An online full backup job is copied to a selective copy, if the full backup job cycle completes successfully thereby allowing you to select, store and protect your valuable data on a secondary copy for future restores in a more viable and economic mode.

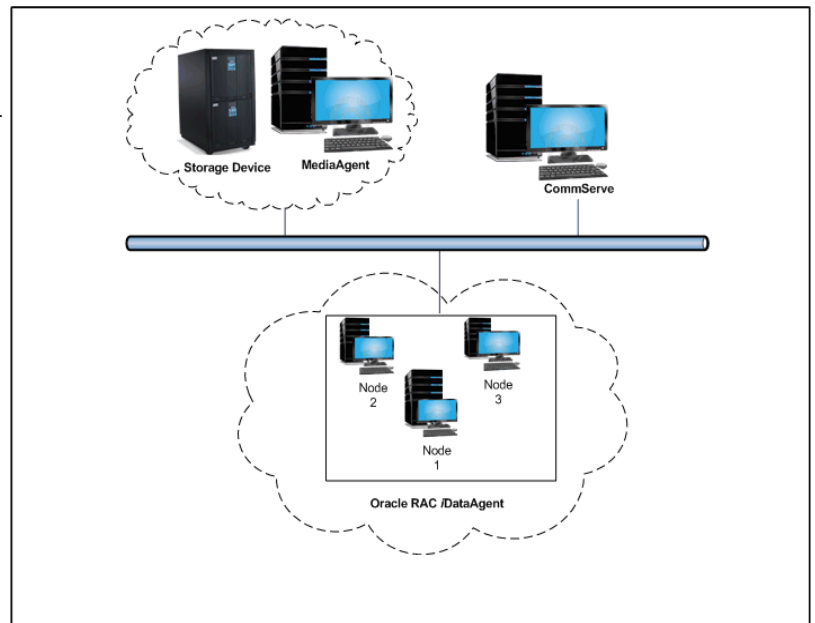
EFFECTIVE MANAGEMENT OF BACKUPS AND RESTORES

This iDataAgent allows you to group any desired number of Oracle iDataAgent instances under one or more Oracle RAC database logical entities. As such, Oracle backups and restores as well as other job types and functions (including Data Aging, Scheduling, Job Management) are all consolidated and easy to manage. This allows you to maintain your data irrespective of whether you add or remove Oracle iDataAgent instances from the RAC database.

WHERE TO GO NEXT

Install the Oracle RAC iDataAgent

Walks you through the process of installing the Oracle RAC iDataAgent.



RESOURCE ENHANCEMENT ON NODES FOR ACCELERATED BACKUPS AND RESTORES

You can configure various resources on your RAC nodes to enable specific node strengths. For example, you can configure a specific RAC node to involve multiple processors and therefore use more streams for a backup or restore.

BACKUP AND RECOVERY FAILOVERS

In the event that a MediaAgent used for the backup or recovery operation fails, it is automatically resumed on alternate MediaAgents. In such cases, the backup or restore job will not restart from the beginning, but will resume from the point of failure. This is especially useful for backups and restores of large amount of file system data.

In the event, that a network goes down, the backup and recovery jobs are resumed on alternate data paths. Similarly, in the event of a device failure, the jobs are automatically switched to alternate disk and tape drives.

Also, this iDataAgent automatically checks the status of each Oracle instance during a backup or restore and allocates RMAN channels only for the instances that are active. Therefore, even if a specific instance fails, the backup or restore will continue.

EFFICIENT JOB MANAGEMENT AND REPORTING

You can view and verify the status of backup and recovery operations from the Job Controller and Event Viewer windows within the CommCell Console. You can also track the status of the jobs using Reports, which can be saved and easily distributed. Reports can be generated for different aspects of data management. You also have the flexibility to customize the reports to display only the required data and save them to any specified location in different formats. For example, you can create a backup job summary report to view at-a-glance the completed backup jobs.

In addition, you can also schedule these reports to be generated and send them on email without user intervention.

BLOCK LEVEL DEDUPLICATION

Deduplication provides a smarter way of storing data by identifying and eliminating the duplicate items in a data protection operation.

Deduplication at the data block level compares blocks of data against each other. If an object (file, database, etc.) contains blocks of data that are identical to each other, then block level deduplication eliminates storing the redundant data and reduces the size of the object in storage. This way dramatically reduces the backup data copies on both the disk and tapes.

TERMINOLOGY

The Oracle documentation uses the following terminology:

RAC	A Real Application Cluster environment which allows multiple nodes in a clustered system to access a single database that resides on a shared storage location.
CLIENT	The computer in which the iDataAgent is installed and contains the data to be secured.
INSTANCE	The Oracle database to be used for the backup and restore operations.
SUBCLIENT	The Oracle data to be backed up.



New Features - Oracle RAC iDataAgent

NEW FEATURES FOR ORACLE RAC iDATAAGENT

COMMAND LINE INTERFACE

Oracle third party command line operations can now be executed from the Oracle Enterprise Manager application.

DATA PROTECTION OPERATIONS

- For Oracle and Oracle RAC iDataAgents, you can now assign tags to a specific backup operation in order to facilitate restore based on the assigned tag. For more information, [Learn more...](#)
- For archive log backups, you now have the facility to disable the log switch of current log files.
[Learn more...](#)
- Multiple copies of data or log backups are now supported from the CommCell Console.
[Learn more...](#)

DATA RECOVERY OPERATIONS

- You can now restore the control file and SP file from a specific backup piece from the CommCell Console. [Learn more...](#)
- Oracle archive log files can be restored based on tags from the CommCell Console. [Learn more...](#)
- Oracle RMAN scripts for backup and restore operations can now be viewed and edited from the CommCell Console. [Learn more...](#)
- When performing table level restore, you now have the facility to select the dependent and referenced tables of the selected tables for the restore operation. You can also choose to include triggers, constraints, indexes, grants, stored procedures, or other external parameters (such as COMPRESSION or PARALLEL) on the selected tables for the restore operation. [Learn more...](#)
- You can resubmit restore jobs from the Job History window without the need to reconfigure the job with the same options. If required, you can also modify the existing configuration and resubmit the job. [Learn more...](#)
- During Oracle restore operations, the restore and recover processes are run as separate RMAN run blocks and hence when resumed, the job is restarted from the last failed RMAN run block. [Learn more...](#)

NEW COMMCELL FEATURES SUPPORTED FOR ORACLE E RAC iDATAAGENT

DEPLOYMENT

INSTALL FROM THE COMMCELL CONSOLE

The software installation for this component can be initiated and managed from the CommCell Console, which facilitates the building of your CommCell and eliminates the need to manually install the software. Additionally, the installation of this component can be scheduled to occur at a time suitable for your environment. For more information, see [Install Software from the CommCell Console](#).

UNINSTALL FROM THE COMMCELL CONSOLE

This component can be uninstalled using the CommCell Console. The Uninstall Software utility allows you to quickly see a list of the software packages installed on the selected computer, from which you can then select the components to uninstall. With this, you can easily manage removing software components from client computers and MediaAgents in your CommCell without having to directly access each computer. For more information, see [Uninstall Components using the CommCell Console](#).

SCHEDULE POLICY

A data protection schedule policy can now be created for this specific agent. For more information, see [Agent-Specific Data Protection Schedule Policy](#).

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System Requirements - Oracle RAC iDataAgent

System Requirements | Supported Features

The following requirements are for the Oracle RAC iDataAgent:

APPLICATION/OPERATING SYSTEM		PROCESSOR
ORACLE 10G/11G (R1, R2 OR HIGHER) RAC DATABASES ON:		
AIX	AIX 7.1	Power PC (Includes IBM System p)
	AIX 6.1	Power PC (Includes IBM System p)
	AIX 5.3	Power PC (Includes IBM System p)
HP-UX	HP-UX 11i v3 (11.31)	PA-RISC
	HP-UX 11i v3 (11.31)	Itanium
	HP-UX 11i v2 (11.23)	Itanium
	HP-UX 11i v2 (11.23)	PA-RISC
LINUX	ORACLE LINUX	
	Oracle Linux 6.x with glibc 2.12.x	Intel Pentium, x64 or compatible processors
	Oracle Linux 5.x with glibc 2.5.x	Intel Pentium, x64 or compatible processors
	Oracle Linux 4.x with a minimum of glibc 2.3.4	Intel Pentium, x64 or compatible processors
	RED HAT ENTERPRISE LINUX/CENTOS	
	Red Hat Enterprise Linux/CentOS 6.x with glibc 2.12.x	Intel Pentium, Itanium, x64, Power PC (Includes IBM System p) or compatible processors
	Red Hat Enterprise Linux/CentOS 5.x with glibc 2.5.x	Intel Pentium, Itanium, x64, Power PC (Includes IBM System p) or compatible processors
	Red Hat Enterprise Linux/CentOS 4.x with a minimum of glibc 2.3.4	Intel Pentium, Itanium, x64, Power PC (Includes IBM System p) or compatible processors
	SUSE LINUX (SLES)	
	SuSE Linux 11.x with glibc 2.9.x and above	Intel Pentium, Itanium, x64, Power PC (Includes IBM System p) or compatible processors
	SuSE Linux 10.x with glibc 2.4.x	Intel Pentium, Itanium, x64, Power PC (Includes IBM System p) or compatible processors
SOLARIS	Solaris 11.x	x64, Sparc5 (or higher recommended)
	Solaris 10.x	x64, Sparc5 (or higher recommended)
WINDOWS	WINDOWS 2008	
	Microsoft Windows Server 2008 Editions with a minimum of Service Pack 1* *Core Editions not supported	All Windows-compatible processors supported
	WINDOWS 2003	
	Microsoft Windows Server 2003 Editions with a minimum of Service Pack 1	All Windows-compatible processors supported

HARD DRIVE

See System Requirements - Oracle iDataAgent

MEMORY

See System Requirements - Oracle iDataAgent

ORACLE EXADATA DATABASE MACHINE SUPPORT

Oracle Exadata Database Machine is supported on the following Oracle Database versions:

- Oracle 11g (11.1.0.7)
- Oracle 11g R2 (11.2.0.1 or higher)

SOLARIS ZONES/CONTAINERS SUPPORT

Data Protection of data residing on global and non-global zones is supported.

For a comprehensive list of supported components, see Unix Virtualization.

AIX LPAR/WPAR SUPPORT

Data protection on Logical Partitioning (LPAR) and Workload Partitioning (WPAR) is supported.

PERIPHERALS

DVD-ROM drive

Network Interface Card

MISCELLANEOUS

NETWORK

TCP/IP Services configured on the computer.

The Oracle iDataAgent must be installed and configured prior to configuring the Oracle RAC iDataAgent. For System Requirements and install information specific to the Oracle iDataAgent, refer to System Requirements - Oracle iDataAgent.

SELINUX

If you have SELinux enabled on the client computer, create the SELinux policy module as a root user before performing a backup. The SELinux Development package must be installed on the client.

To create an SELinux policy module, perform the following steps as user "root":

1. Create the following files in the `/usr/share/selinux/devel` directory:

File Name	Content of the File
<p><code><directory>/<file_name>.te</code></p> <p>where:</p> <p><code><directory></code> is <code>/usr/share/selinux/devel</code></p> <p><code><file_name></code> is the name of the Unix file, created to save the policy module statement. It is a good idea to use the same name for policy module and the file.</p> <p>For example: When you are creating a policy module for backup_IDA application, you can use the following file name: backup_IDA.te</p>	<p>The content of the file should be as follows:</p> <pre>policy_module(<name>,<version>) ##### where: <name> is the name of the policy module. You can give any unique name to the policy module, such as a process or application name. <version> is the version of the policy module. It can be any number, such as 1.0.0. For Example: While creating a policy module for the backup_IDA application, you can use the following content. policy_module(backup_IDA,1.0.0)</pre>
<p><code><directory>/<file_name>.fc</code></p> <p>where:</p> <p><code><directory></code> is <code>/usr/share/selinux/devel</code></p> <p><code><file_name></code> is the name of the Unix file, created to save the policy module statement. It is a good idea to use the same name for policy module and the file.</p> <p>For example: When you are creating a policy module for backup_IDA application, you can use the following file name: backup_IDA.fc</p>	<p>The content of the file should be as follows:</p> <p>Note that the following list of files is not exhaustive. If the process fails to launch, check <code>/var/log/messages</code>. Also, if required, add it to the following list of files.</p> <pre>/opt/<software installation directory>/Base/libCTreeWrapper.so -- gen_context (system_u:object_r:texrel_shlib_t,s0) /opt/<software installation directory>/Base/libCVMAGuiImplgso -- gen_context (system_u:object_r:texrel_shlib_t,s0) /opt/<software installation directory>/Base/libdb2locale.so.1 -- gen_context (system_u:object_r:texrel_shlib_t,s0) /opt/<software installation directory>/Base/libdb2osse.so.1 -- gen_context (system_u:object_r:texrel_shlib_t,s0) /opt/<software installation directory>/Base/libDb2Sbt.so -- gen_context (system_u:object_r:texrel_shlib_t,s0) /opt/<software installation directory>/Base/libdb2trcapi.so.1 -- gen_context (system_u:object_r:texrel_shlib_t,s0)</pre>

```

/opt/<software installation directory>/Base/libDrDatabase.so -- gen_context
(system_u:object_r:texrel_shlib_t,s0)
/opt/<software installation directory>/Base/libIndexing.so -- gen_context
(system_u:object_r:texrel_shlib_t,s0)
/opt/<software installation directory>/Base/libSnooper.so -- gen_context
(system_u:object_r:texrel_shlib_t,s0)

```

2. Create the policy file from command line. Use the following command. Ensure that you give the following commands in the `/usr/share/selinux/devel` directory.

```

[root]# make backup_IDA.pp
Compiling targeted backup_IDA module
/usr/bin/checkmodule: loading policy configuration from tmp/backup_IDA.tmp
/usr/bin/checkmodule: policy configuration loaded
/usr/bin/checkmodule: writing binary representation (version 6) to tmp/backup_IDA.mod
Creating targeted backup_IDA.pp policy package
rm tmp/backup_IDA.mod tmp/backup_IDA.mod.fc
[root]# semodule -i backup_IDA.pp
[root]#

```

3. Execute the policy module. Use the following command:

```

[root]# restorecon -R /opt/<software installation directory>

```

SELinux is now configured to work with this application.

DISCLAIMER

Minor revisions and/or service packs that are released by application and operating system vendors are supported by our software but may not be individually listed in our System Requirements. We will provide information on any known caveat for the revisions and/or service packs. In some cases, these revisions and/or service packs affect the working of our software. Changes to the behavior of our software resulting from an application or operating system revision/service pack may be beyond our control. The older releases of our software may not support the platforms supported in the current release. However, we will make every effort to correct the behavior in the current or future releases when necessary. Please contact your Software Provider for any problem with a specific application or operating system.

Additional considerations regarding minimum requirements and End of Life policies from application and operating system vendors are also applicable

Supported Features - Oracle RAC iDataAgent

System Requirements | Supported Features

The following table lists the features that are supported by this Agent.

FEATURE	SUB-FEATURE	SUPPORT	COMMENTS
ADVANCED BACKUP/ARCHIVE OPTIONS	Data tab - Catalog		
	Data tab - Create New Index		
	Data tab - Verify Synthetic Full		
	Job Retry tab	✓	
	Media tab - Allow other Schedule to use Media Set	✓	
	Media tab - Mark Media Full on Success	✓	
	Media tab - Reserve Resources Before Scan		
	Media tab - Start New Media	✓	
	Startup tab	✓	
	VaultTracking tab	✓	
	Comments	✓	Includes several additional options in the Backup Archive Logs, Delete Archive Logs, Custom RMAN Script, and Oracle Options tabs.
ADVANCED FILE SYSTEM IDATAAGENT OPTIONS	Automatic File System Multi-Streaming		
	On Demand Data Protection Operation		
	Restore by Jobs		
	Restore Data Using a Map File		
	Comments		
ALERTS AND MONITORING	Global Alerts	✓	
	Job-Based Alerts*	✓	
	Comments		
AUTOMATIC UPDATES	Automatic Updates	✓	
	Comments		
BACKUP/ARCHIVE OPTIONS	Differential Backup		
	Full Backup	✓	
	Incremental Backup	✓	
	Other Backup Types		
	Synthetic Full Backup		
	Comments		
BACKWARD COMPATIBILITY	Version 7	✓	
	Version 8	✓	
	Version 9		
	Comments	✓	Automatically upgraded with the Oracle iDataAgent. See: Upgrade Oracle RAC iDataAgent for more information.
BROWSE	Browse from Copy Precedence	✓	
	Browse the Latest Data	✓	
	Exclude Data Before	✓	
	Find		
	Full Backup Transparent Browse		
	Image Browse		
	No Image Browse		
	Page Size		
	Specify Browse Path		
	Specify Browse Time	✓	
	Subclient Browse	✓	

	Use MediaAgent		
	View All Versions		
	Comments		
CLUSTERING	Netware cluster		
	Unix Cluster		
	Windows - Microsoft Cluster (MSCS)		
	Windows - Non-Microsoft Cluster		
	Comments	✓	Oracle RAC uses its own clustering technology; therefore, it does not depend on operating system-level clusters.
COMMAND LINE INTERFACE	Command Line Interface	✓	
	Comments		
COMMAND LINE INTERFACE - SPECIFIC COMMANDS	Qcreate - Backup set/SubClient		
	Qcreate - Instance		
	Qdelete - Backup set/Subclient		
	Qdelete - Client/Agent	✓	
	Qlist globalfilter		
	Qmodify - instance		
	Qoperation - Backup		
	Qoperation - move		
	Qoperation - Restore		
	Comments		
COMMCELL MIGRATION	CommCell Migration		
	Comments		
CONTENT INDEXING	Offline Content Indexing		
	Comments		
DATA AGING	Basic Retention Rules	✓	
	Extended Retention Rules	✓	
	Unique Data Aging Rules	✓	
	Comments	✓	Extended Retention Rules are supported for offline/selective online fulls.
DATA CLASSIFICATION ENABLER	Data Classification Enabler		
	Comments		
DATA COMPRESSION	Client Compression	✓	
	Hardware Compression	✓	
	MediaAgent Compression	✓	
	Comments		
DATA ENCRYPTION	Data Encryption Support	✓	
	Third-party Command Line Encryption Support	✓	
	Comments		
DATA MULTIPLEXING	Multiplexing	✓	
	Comments		
DEDUPLICATION	MediaAgent Deduplication	✓	
	Source Deduplication	✓	
	Comments		
ERASE BACKUP/ARCHIVED DATA	Erase Data by Browsing		
	Erase Stubs		
	Comments		
GLOBAL FILTERS	Global Filters		
	Comments		
INSTALLATION	Custom Package		
	Decoupled Install		
	Remote Install		
	Restore Only Agents		
	Silent Install	✓	

	Comments		No software installation is required. See Deployment - Oracle RAC iDataAgent for more information.
INSTALLING 32-BIT COMPONENTS ON A MICROSOFT WINDOWS X64 PLATFORM	Install 32-bit On x64		
	Comments		
JOB RESTART - DATA PROTECTION	Not Restartable		
	Restarts from the Beginning		
	Restarts from the Beginning of the Database		
	Restarts from the Point-of-Failure	✓	
	Comments	✓	Third-party command line operations and selective online full backup jobs are Not Restartable . Offline backup jobs Restart from the Beginning .
JOB RESTART - DATA RECOVERY	Not Restartable		
	Restarts from the Beginning		
	Restarts from the Beginning of the Database		
	Restarts from the Point-of-Failure	✓	
	Comments		
LIST MEDIA	List Media Associated with a Specific Backup Set or Instance	✓	
	List Media Associated with Index		
	List Media Associated with Specific Files and/or Folders		
	List Media Associated with Specific Jobs		
	Comments		
MULTI INSTANCING	Multi Instance		
	Comments		
PRE/POST PROCESSES	Pre/Post Process with Data Protection and Recovery		
	Comments		
RESTORE/RECOVER/RETRIEVE DESTINATIONS	Cross-Application Restores (Different Application version)		
	Cross-Platform Restores - Different Operating System		
	Cross-Platform Restores - Same Operating System - Different Version	✓	
	In-place Restore - Same path/ destination - Same Client	✓	
	Out-of-place Restore - Different path/ destination	✓	
	Out-of-place Restore - Same path/ destination - Different Client	✓	
	Restore Data Using a Map File		
	Restore to Network Drive /NFS-Mounted File System		
	Comments		See Advanced Restore - Oracle RAC iDataAgent for this iDataAgent.
RESTORE/RECOVER/RETRIEVE OPTIONS	Automatic Detection of Regular Expressions		
	Filter Data From Recover Operations		
	Rename/ Redirect Files on Restore	✓	
	Restore Data Using Wildcard Expressions		
	Restore Data with Pre/Post Processes	✓	
	Restore from Copies	✓	
	Skip Errors and Continue		
	Use Exact Index		
	Use MediaAgent	✓	
	Comments		
RESTORE/RECOVER/RETRIEVE OVERWRITE OPTIONS	Overwrite Files		
	Overwrite if file on media is newer		

	Restore only if target exists		
	Unconditional Overwrite		
	Unconditionally overwrite only if target is a DataArchiver stub		
	Comments		
SCHEDULE POLICY	Agent Specific Data Protection Schedule Policy	✓	
	All Agent Types Schedule Policy	✓	
	Comments		
STORAGE POLICIES	Incremental Storage Policy*	✓	
	Standard Storage Policies	✓	
	Comments	✓	Incremental Storage Policy does not support Transaction Log backups for this agent.
STORAGE POLICY COPIES	Data Verification	✓	
	Job Based Pruning	✓	
	Manual Retention	✓	
	Mark Job Disabled	✓	
	Selective Copy	✓	
	Comments	✓	Selective Copy is supported for Selective Online and Offline Fulls.
SUBCLIENT POLICIES	SubClient Policy		
	Comments		
UPGRADE	Netware - Local		
	Unix - Remote (Push)		
	Unix/Linux/Macintosh - Local		
	Unix/Linux/Macintosh - Silent		
	Upgrade from CommCell Console		
	Windows - Local		
	Windows - Remote (Push)		
	Windows - Silent		
	Comments	✓	See Upgrade Oracle RAC iDataAgent
USER ADMINISTRATION AND SECURITY	Backup Set/Archive Set		
	Subclient		
	Comments		

Additional features are listed below:

Activity Control	Auxiliary Copy
CommCell Console	Deconfiguring Agents
GridStor	Languages
Log Files	MediaAgent
Operation window	QR Volume Creation Options
Robust Network Layer	Scheduling
SnapProtect Backup	Snapshot Engines
VaultTracker Enterprise	VaultTracker
Report Output Options	Restore/Recover/Retrieve - Other Options
Cloud Storage	Job Restart - Data Collection

Getting Started Deployment on Windows - Oracle RAC iDataAgent



WHERE TO INSTALL

Install the Oracle iDataAgent software on all the nodes of Oracle RAC which satisfy the minimum requirements specified in the System Requirements.

INSTALLATION

1. Log on to the client computer as Administrator or as a member of the Administrator group on that computer.

2. Run **Setup.exe** from the **Software Installation Package**.

If you are installing on Windows Server Core editions, navigate to Software Installation Package through command line, and then run **Setup.exe**.

3. Select the required language.

Click **Next**.

4. Select the option to install software on this computer.

The options that appear on this screen depend on the computer in which the software is being installed.

5. Select **I accept the terms in the license agreement**.

Click **Next**.

6. Expand **Client Modules** | **Backup and Recovery** | **Database** and then click **Oracle iDataAgent**.

Click **Next**.

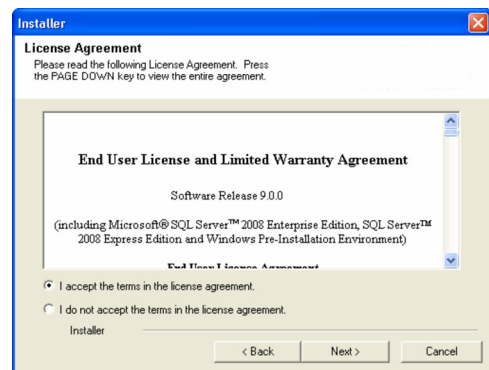
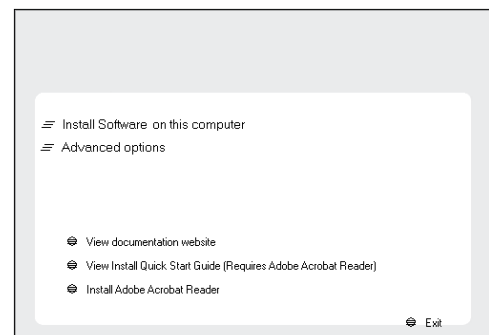
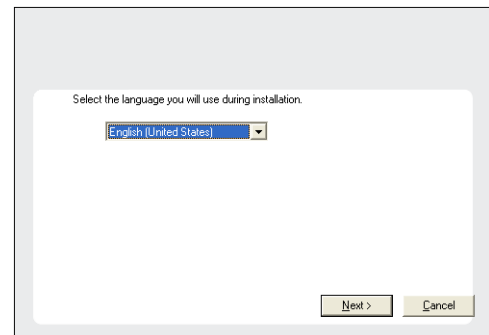
BEFORE YOU BEGIN

Download Software Packages

Download the latest software package to perform the install.

Verify System Requirements

Make sure that the computer in which you wish to install the software satisfies the System Requirements.



- If this computer and the CommServe is separated by a firewall, select the **Configure firewall services** option and then click **Next**.

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.

If firewall configuration is not required, click **Next**.

- Enter the fully qualified domain name of the **CommServe Host Name**.

Click **Next**.

Do not use space and the following characters when specifying a new name for the CommServe Host Name:

`\|`~!@#$%^&*()+=<>/?,[\{\}:"`

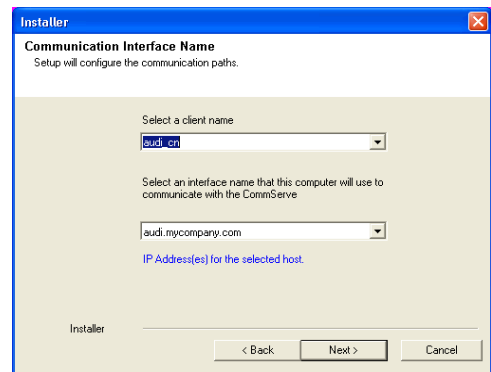
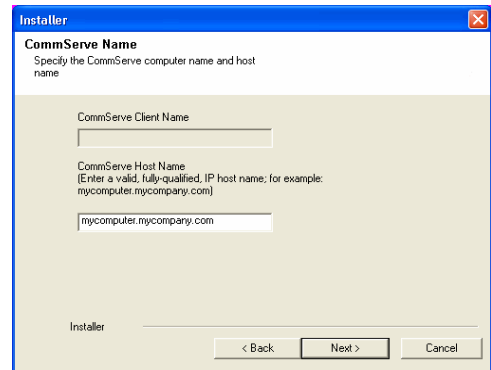
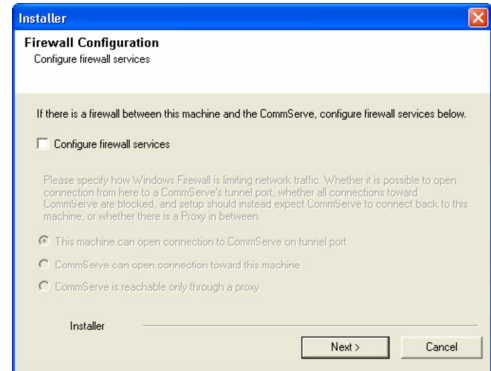
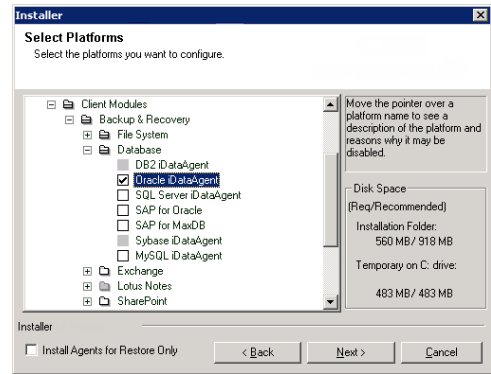
- Click **Next**.

- Select **Add programs to the Windows Firewall Exclusion List**, to add CommCell programs and services to the Windows Firewall Exclusion List.

Click **Next**.

This option enables CommCell operations across Windows firewall by adding CommCell programs and services to Windows firewall exclusion list.

It is recommended to select this option even if Windows firewall is disabled. This will allow the CommCell programs and services to function if the Windows firewall is enabled at a later time.



11. Verify the default location for software installation.

Click **Browse** to change the default location.

Click **Next**.

- Do not install the software to a mapped network drive.
- Do not use the following characters when specifying the destination path:

/ : * ? " < > | #

It is recommended that you use alphanumeric characters only.

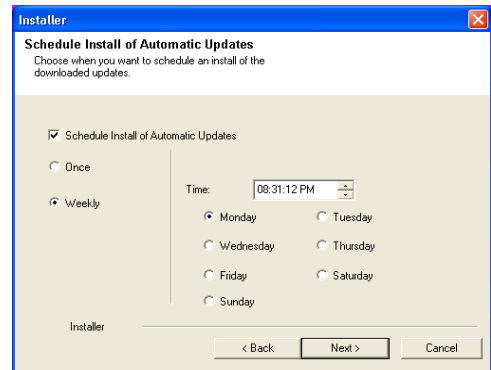
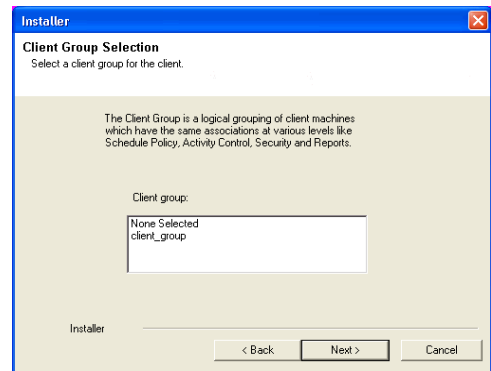
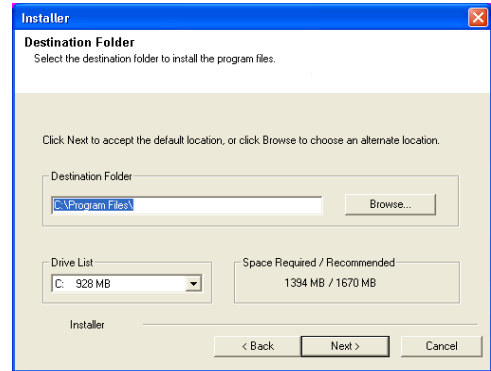
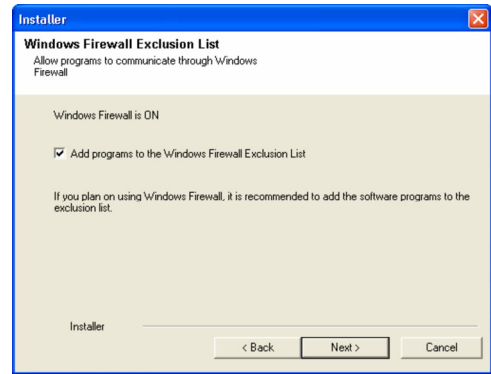
12. Select a Client Group from the list.

Click **Next**.

This screen will be displayed if Client Groups are configured in the CommCell Console.

13. Click **Next**.

14. Click **Next**.



15. Select a **Storage Policy** from the drop-down list.
Click **Next**.

If you do not have Storage Policy created, this message will be displayed.
Click **OK**.

You can create the Storage Policy later in step 22.

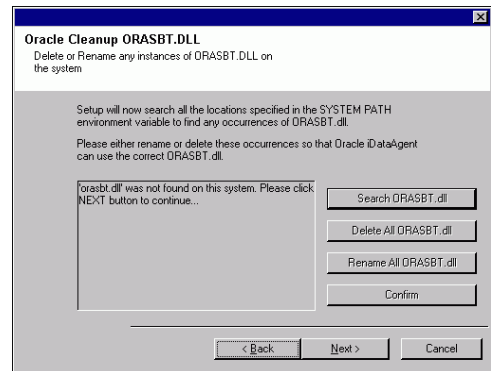
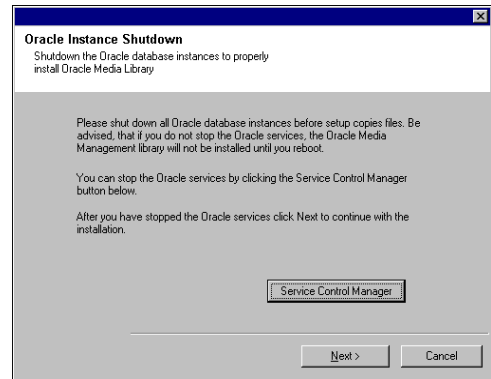
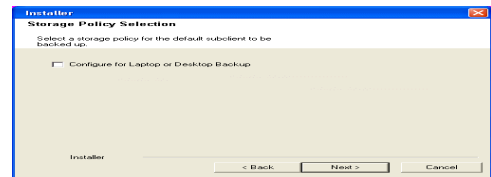
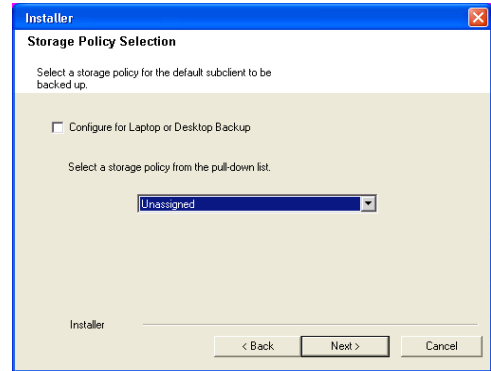
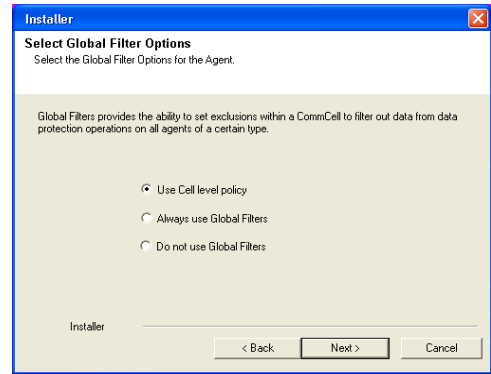
16. Click **Next**.

Stop the Oracle services by clicking the **Service Control Manager** button.

17. Click **Next**.

Click **Search ORASBT.dll** button to search for any existing ORASBT.dll file. If found, rename or delete the ORASBT.dll file.

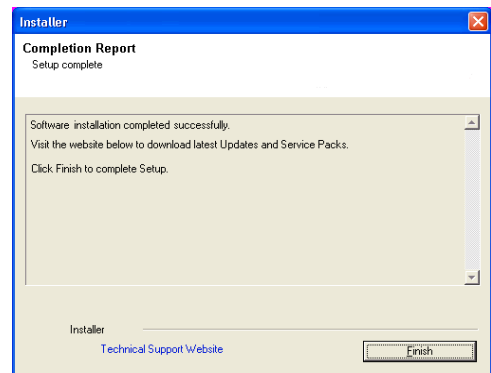
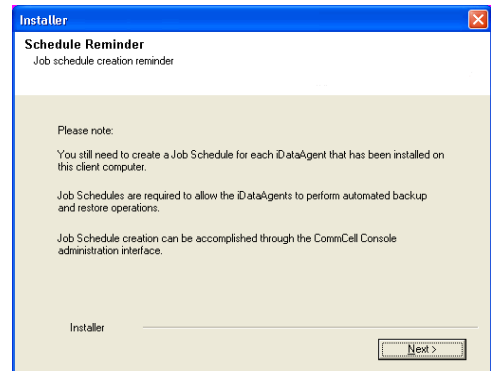
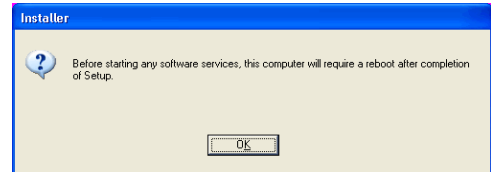
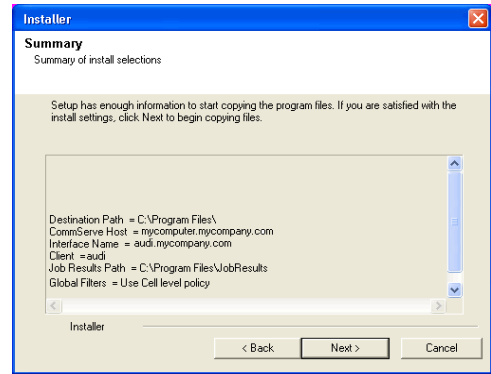
18. Click **Next**.



19. Click **OK**.

20. Click **Next**.

21. Click **Finish**.



If you already have a storage policy selected in step 15, proceed to the **Configuration** section.

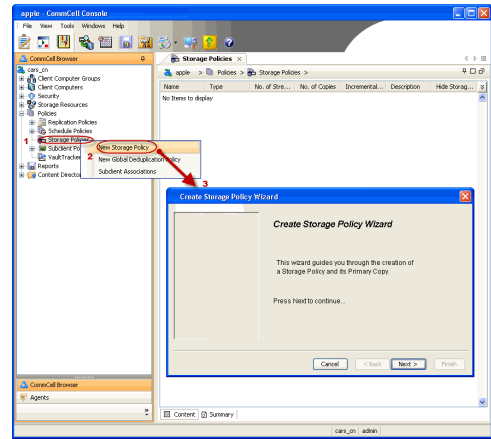
If you do not have Storage Policy created, continue with the following step.

22. Create a Storage Policy:

1. From the CommCell Browser, navigate to **Policies**.
2. Right-click the **Storage Policies** and then click **New Storage Policy**.
3. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
 - o Select the Storage Policy type as **Data Protection and Archiving** and click **Next**.
 - o Enter the name in the **Storage Policy Name** box and click **Next**.
 - o From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

Ensure that you select a library attached to a MediaAgent operating in the current release.

- From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
- For the device streams and the retention criteria information, click **Next** to accept default values.
- Select **Yes** to enable deduplication for the primary copy.
- From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.
Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.
- Review the details and click **Finish** to create the Storage Policy.



Getting Started Deployment on a UNIX Computer - Oracle RAC iDataAgent

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SKIP THIS PAGE IF YOU ARE NOT INSTALLING THIS AGENT ON A UNIX COMPUTER

WHERE TO INSTALL

Install the Oracle iDataAgent software on all the nodes of Oracle RAC which satisfy the minimum requirements specified in the System Requirements.

BEFORE YOU BEGIN

Download Software Packages

Download the latest software package to perform the install.

Verify System Requirements

Make sure that the computer in which you wish to install the software satisfies the System Requirements.

INSTALLATION

- Logon to the client computer as **root** or as a sudo user.
If you are installing the software using a sudo user account, make sure that sudo user account is configured on this computer. For more information, see FAQ - Install.
- On Unix machine, run the following command to mount the cd:
`mount -t iso9660,udf /dev/cdrom /mnt/cdrom`
Run the following command from the Software Installation Package or mount point:
`./cvpkgadd`
- The product banner and other information is displayed.
Press **Enter**.
- Read the license agreement. Type **y** and press **Enter**.
- Press **Enter**.
- Press **Enter**.
- If you have only one network interface, press **Enter** to accept the default network interface name and continue.
If you have multiple network interfaces, enter the interface name that you wish to use as default, and then press **Enter**.

The interface names and IP addresses depend on the computer in which the software is installed and may be different from the example shown.

Please select a setup task you want to perform from the list below:

Advance options provide extra setup features such as creating custom package, recording/replaying user selections and installing External Data Connector software.

- 1) Install data protection agents on this computer
- 2) Advance options
- 3) Exit this menu

Your choice: [1]

Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "fail-over" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server.

You now have a choice of performing a regular Calypso install on the physical host or installing Calypso on a virtual machine for operation within a cluster.

Most users should select "Install on a physical machine" here.

- 1) Install on a physical machine
- 2) Install on a virtual machine
- 3) Exit

Your choice: [1]

We found one network interface available on your machine. We will associate it with the physical machine being installed, and it will also be used by the CommServe to connect to the physical machine. Note that you will be able to additionally customize Datapipe Interface Pairs used for the backup data traffic later in the Calypso Java GUI.

Please check the interface name below, and make connections if necessary:

Physical Machine Host Name: [angel.company.com]

8. Press **Enter**.
- Please specify the client name for this machine.
- It does not have to be the network host name: you can enter any word here without spaces. The only requirement is that it must be unique on the CommServe.
- Physical Machine Client name: [angel]
9. Type the number associated with the **Oracle iDataAgent** and press **Enter**.
- Install Calypso on physical machine 172.19.99.62
- Please select the Calypso module(s) that you would like to install.
- [] 1) MediaAgent [1301] [CVGxMA]
 [] 2) UNIX File System iDataAgent [1101] [CVGxIDA]
 [] 3) Oracle iDataAgent [1204] [CVGxOrIDA]
- [a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]
- Enter number(s)/one of "a,n,r,q,d,>,<,>?" here:3
- Install Calypso on physical machine 172.19.99.62
- Please select the Calypso module(s) that you would like to install.
- [] 1) MediaAgent [1301] [CVGxMA]
 [] 2) UNIX File System iDataAgent [1101] [CVGxIDA]
 [X] 3) Oracle iDataAgent [1204] [CVGxOrIDA]
- [a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]
- Enter number(s)/one of "a,n,r,q,d,>,<,>?" here:d
10. A confirmation screen will mark your choice with an "X".
Type **d** for **Done**, and press **Enter**.
- Do you want to use the agents for restore only without consuming licenses? [no]
11. Press **Enter**.
- Installation Scripts Pack provides extra functions and latest support and fix performed during setup time. Please specify how you want to get this pack.
- If you choose to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet connectivity.
- 1) Download from the software provider website.
 2) Use the one in the installation media
 3) Use the copy I already have by entering its unix path
- Your choice: [1] 2
12. Type the appropriate number to install the latest software scripts and press **Enter**.
- Select **Download from the software provider website** to download the latest software scripts. Make sure you have internet access.
 - Select **Use the one in the installation media** to install the software scripts from the package or share from which the installation is currently being performed.
 - Select **Use the copy I already have by entering its unix path**, to specify the path if you have the software script in an alternate location.
- Keep Your Install Up to Date - Latest Service Pack
- Latest Service Pack provides extra functions and latest support and fix for the packages you are going to install. You can download the latest service pack from software provider website.
- If you decide to download it from the website now, please make sure you have internet connectivity at this time. This process may take some time depending on the internet connectivity.
- Do you want to download the latest service pack now? [no]
- Please specify where you want us to install Calypso binaries.
- It must be a local directory and there should be at least 176MB of free space available. All files will be installed in a "calypso" subdirectory, so if you enter "/opt", the files will actually be placed into "/opt/calypso".
- Installation Directory: [/opt]
13. Press **Enter**.
14. Press **Enter** to accept the default path.
- If you want to specify a different path, type the path and then press **Enter**.
 - If you want to install the software binaries to an NFS shared drive, specify the directory on which you have mounted the NFS file system and then press **Enter**.
- In order to make sure that the client computer has `read/write` access to NFS shared drive, review the steps described in `Installing Software Binaries to an NFS Shared Drive`.
- Do not use the following characters when specifying the path:
- !@#\$\$%^&*():/?\
15. Press **Enter** to accept the default location.
- Enter a path to modify the default location and press **Enter**.
 - All the modules installed on the computer will store the log files in this directory.
- Please specify where you want to keep Calypso log files.
- It must be a local directory and there should be at least 100MB of free space available. All log files will be created in a "calypso/Log_Files" subdirectory, so if you enter "/var/log", the logs will actually be placed into "/var/log/calypso/Log_Files".
- Log Directory: [/var/log]
16. Type **Yes** and press **Enter**.
- Most of Software processes run with root privileges, but some are launched by databases and inherit database access rights. To make sure that registry and log files can be

If you do not want to assign a group to software, type **no**, press **Enter** and proceed to step 18.

17. Type the **Group name** and then press **Enter**.

written to by both kinds of processes we can either make such files world-writeable or we can grant write access only to processes belonging to a particular group, e.g. a "calypso" or a "oinstall" group.

We highly recommend now that you create a new user group and enter its name in the next setup screen. If you choose not to assign a dedicated group to Software processes, you will need to specify the access permissions later.

If you're planning to backup Oracle DB you should use "oinstall" group.

Would you like to assign a specific group to Software?
[yes]

Please enter the name of the group which will be assigned to all Software files and on behalf of which all Software processes will run.

In most of the cases it's a good idea to create a dedicated "calypso" group. However, if you're planning to use Oracle iDataAgent or SAP Agent, you should enter Oracle's "oinstall" group here.

Group name: oinstall

REMINDER

If you are planning to install Calypso Informix, DB2, PostgreSQL, Sybase or Lotus Notes iDataAgent, please make sure to include Informix, DB2, etc. users into group "oinstall".

18. Type **d** for done with the selection and press **Enter**.

This screen is displayed if you do not assign any group to the software and type **no** in step 16.

Access Permissions for Other Users. Installer will assign full access rights to root user and its belonging group for all installed Calypso files and its processes. For any other users, you can specify the access permissions now. However, since you chose not to assign a dedicated group in previous step, make sure you specify sufficient access rights for other users if you are also planning to install Calypso agents involving third party software protection.

[X] 1) Allow read permission to other users
[X] 2) Allow write permission to other users
[X] 3) Allow execute permission to other users

a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]

Enter number(s)/one of "a,n,r,q,d,>,<,>," here: d

19. This prompt is relevant only when you install on Solaris. Press **Enter** to accept the default value for **Number of Streams**.

You can type the **Number of Streams** that you plan to run at the same time and then press **Enter**.

Number of Streams

IMPORTANT : Please read install document "Configure Kernel Parameters - Unix/Macintosh" from "Books Online" before you start configuring kernel parameters. Please enter the total number of streams that you plan to run at the same time. We need to make sure that you have enough semaphores and shared memory segments configured in /etc/system.

Number of streams [10]

20. Press **Enter** if you do not want the changes to be updated automatically.

- If you want the changes to be made automatically, type **Yes** and then press **Enter**.
- You will come across this prompt when you install the software on the earlier versions of Solaris.

We now need to modify the /etc/system configuration file on this computer. It is done to make sure that there will be enough shared memory and semaphores available for Calypso programs. Please review the changes below and answer "yes" if you want us to apply them to the /etc/system file. Otherwise, the installation will proceed, the changes will be saved to some other file, and you will have to apply them manually.

```
set shmsys:shminfo_shmmni=8570 (was 7930)
set shmsys:shminfo_shmseg=8420 (was 7780)
set semsys:seminfo_semmns=10320 (was 9680)
set semsys:seminfo_semmni=8570 (was 7930)
set semsys:seminfo_semm1=8570 (was 7930)
```

Do you want us to apply these changes now? [no]

21. Press **Enter**.

Changes saved into /etc/system.gal.1744

Press <ENTER> to continue.

22. Press **Enter**.

You will see this prompt if you have accepted the default **no** and pressed **Enter** in step 20.

Although a 'no' answer can be selected to this question during install, the user should make sure the min requirements (below) for shared memory are met, otherwise the backups may fail (the message in logs is 'could not start the pipeline').

```
set shmsys:shminfo_shmmax=4199304
set shmsys:shminfo_shmmin=1
set semsys:shminfo_shmmni=640
set semsys:shminfo_shmseg=640
set semsys:seminfo_semmns=640
set semsys:seminfo_semmni=640
set semsys:seminfo_semm1=640
set maxusers=256
```

Press <ENTER> to continue.

Every instance of Calypso should use a unique set of

23. Type a network TCP port number for the Communications Service (CVD) and press **Enter**.
Type a network TCP port number for the Client Event Manager Service (EvMgrC) and press **Enter**.
24. If you do not wish to configure the firewall services, press **Enter**.

If this computer is separated from the CommServe by firewall(s), type **Yes** and then press **Enter**.

For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.
25. Type the fully qualified CommServe host name and press **Enter**.

Ensure that the CommServe is accessible before typing the name; otherwise the installation will fail.
26. Press **Enter**.
27. Type the number associated with the Client Group and press **Enter**.

This screen will be displayed only if Client Groups are configured for the CommCell.
28. A confirmation screen will mark your choice with an "**X**".
Type **d** for done with the selection, and press **Enter** to continue.
29. Enter the number associated with the storage policy you want use and press **Enter**.

If you do not have Storage Policy created, this message will be displayed.
You may not be prompted for user input.

You can create the Storage Policy later in step 31.
30. Type **3** to the **Exit** option and press **Enter**.
The installation is now complete.
- network ports to avoid interfering with other instances running on the same machine.

The port numbers selected must be from the reserved port number range and have not been registered by another application on this machine.

Please enter the port numbers.
Port Number for CVD : [8400]
Port Number for EvMgrC: [8402]

Is there a firewall between this client and the CommServe? [no]

Please specify hostname of the CommServe below. Make sure the hostname is fully qualified, resolvable by the name services configured on this machine.

CommServe Host Name: mycommservice.company.com

Commcell Level Global Filters are set through Calypso GUI's Control Panel in order to filter out certain directories or files from backup Commcell-widely. If you turn on the Global filters, they will be effective to the default subclient. There are three options you can choose to set the filters.

1) Use Cell level policy
2) Always use Global filters
3) Do not use Global filters

Please select how to set the Global Filters for the default subclient? [1]

Client Group(s) is currently configured on CommServe cs.company.com. Please choose the group(s) that you want to add this client client.company.com to.
[] 1) Unix
[] 2) DR
[a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]
Enter number(s)/one of "a,n,r,q,d,>,<,>?" here: 1

Client Group(s) is currently configured on CommServe cs.company.com. Please choose the group(s) that you want to add this client client.company.com to.
[X] 1) Unix
[] 2) DR
[a=all n=none r=reverse q=quit d=done >=next <=previous ? =help]
Enter number(s)/one of "a,n,r,q,d,>,<,>?" here: d

Please select one storage policy for this IDA from the list below:

1) SP_StandAloneLibrary2_2
2) SP_Library3_3
3) SP_MagLibrary4_4

Storage Policy: [1]

There seem to be no Storage Policies configured on the CommServe. Before you can run any backups of this IDA, you will need to install a MediaAgent, create a Storage Policy and assign it to all subclients..

Adjusting modes and permissions of files
Successfully installed Calypso

Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "fail-over" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server.

Currently you have Calypso installed on physical node angel.company.com.

Now you have a choice of either adding another package to the existing installation or configure Calypso on a virtual machine for use in a cluster.

- 1) Add another package to angel.company.com
- 2) Install Calypso on a virtual machine
- 3) Exit

Your choice: [1] 3



If you already have a storage policy selected in step 29, proceed to the Configuration section.

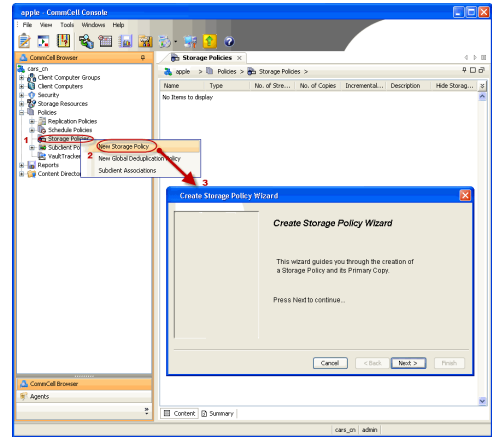
If you do not have Storage Policy created, follow the procedure given below.

31.

1. From the CommCell Browser, navigate to **Policies**.
2. Right-click the **Storage Policies** and then click **New Storage Policy**.
3. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
 - o Select the Storage Policy type as **Data Protection and Archiving** and click **Next**.
 - o Enter the name in the **Storage Policy Name** box and click **Next**.
 - o From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.
Ensure that you select a library attached to a MediaAgent operating in the current release.
 - o From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
 - o For the device streams and the retention criteria information, click **Next** to accept default values.
 - o Select **Yes** to enable deduplication for the primary copy.
 - o From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.

Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.

 - o Review the details and click **Finish** to create the Storage Policy.



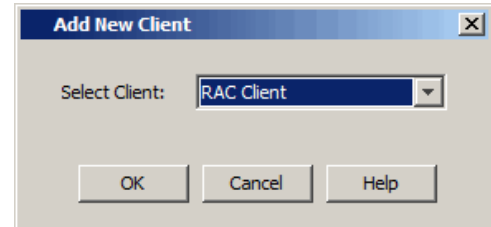
Getting Started Configuration - Oracle RAC iDataAgent

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CREATING A RAC CLIENT

After installing the Oracle iDataAgent on the nodes of the RAC, configure the Oracle RAC client using the following steps:

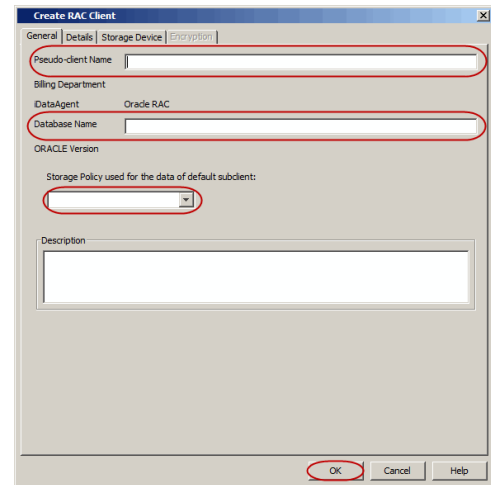
1. From the CommCell Console, right-click the **Client Computers** and then click **New Client**.
2. Select **RAC Client** from the client list and then click **OK**.



3.
 - In the **Pseudo-client Name** box, type a name for the RAC client.
 - In the **Database Name** box, type the name of the Oracle RAC database to which you are assigning this client.
 - From the **Storage Policy** list, select the storage policy used for the data of the default subclient.
 - Click **OK**.

To create a RAC client for Windows, go to step 6.

To create a RAC client for Unix, go to the next step.

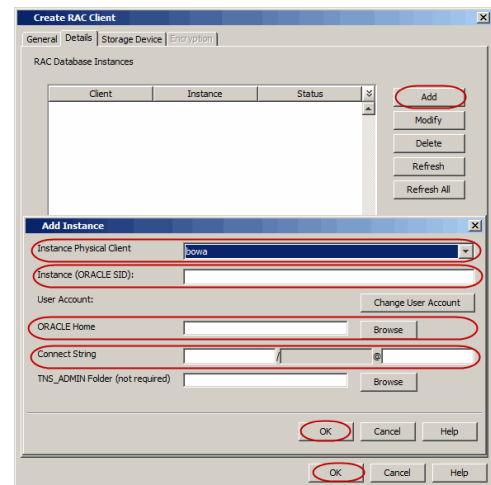


4. On Unix:
 - Click the **Details** tab.
 - Click **Add** to add an instance for RAC client.
 - From the **Instance Physical Client** list, select an Unix instance client containing the Oracle iDataAgent instances that you want to include in the Oracle RAC node.
 - In the **Instance (ORACLE SID)** box, type the name of the instance that you want to include in the Oracle RAC node.
 - In the **ORACLE HOME** box, type or click **Browse** to locate the Oracle application install path.
 - In the **Connect String** box, type the credentials to access the Oracle RAC database. Use SYS login i.e., sys/password@Service for Oracle RAC client. For example, sys/pwd12@orc14.
 - In the **TNS_ADMIN Folder**, type or click **Browse** to specify the path for TNS_Admin directory. Not that the TNS_admin path is automatically appended to the path of the \$ORACLE_HOME directory even if you do not specify the path.
 - Click **OK**.

Repeat this step for each Oracle iDataAgent instance that you want to include.

Once you have added the instances, go to step 6.

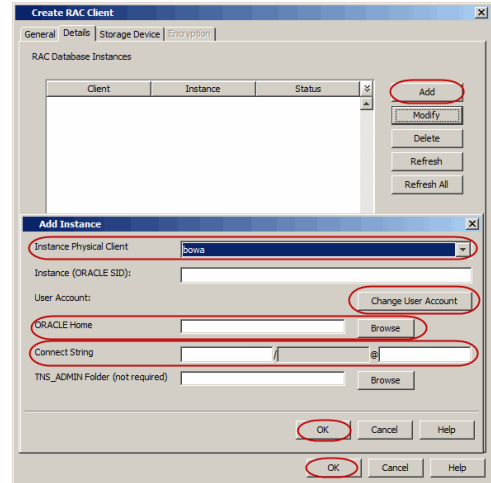
5. On Windows:
 - Click the **Details** tab.
 - Click **Add** to add an instance for RAC client.
 - From the **Instance Physical Client** list, select an Windows instance client containing the Oracle iDataAgent instances that you want to include in the Oracle RAC node.
 - Click **Change User Account** and type the Oracle user name and password credentials.
 - In the **ORACLE HOME** box, type or click Browse to locate the Oracle application



install path.

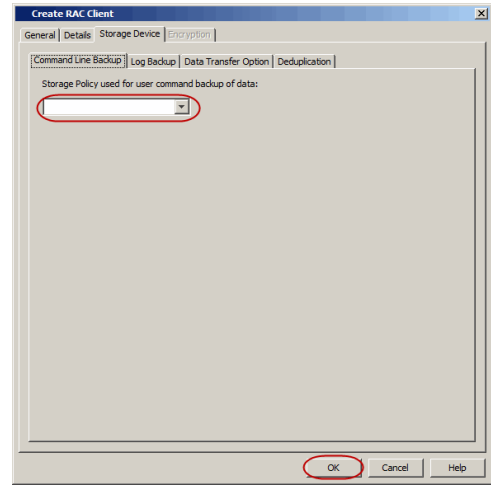
- In the **Connect String** box, type the credentials to access the Oracle RAC database. It is recommended to use SYS login i.e., `sys/password@Service` for Oracle RAC client. For example, `sys/pwd12@orc14`.
- In the **TNS_ADMIN** Folder, type or click Browse to specify the path for TNS_Admin directory. Not that the TNS_admin path is automatically appended to the path of the \$ORACLE_HOME directory even if you do not specify the path.
- Click **OK**.

Repeat this step for each Oracle iDataAgent instance that you want to include.



6.
 - Click the **Storage Device** tab.
 - In the **Storage Policy used for user command backup of data** box, select a storage policy name.
 - Click the **Logs Backup** tab.
 - In the **Storage Policy used for all Archive Log backups** box, select a storage policy name.
 - Click **OK**.

If you do not have a storage policy created, go to step 9 to create a storage policy.



7.
 - Click **Encryption** tab, if the encryption is enabled.
 - Type the Passphrase value.
 - Click **OK**.
8. After you configure all your instances as appropriate, click **OK**.

9. Create a Storage Policy:

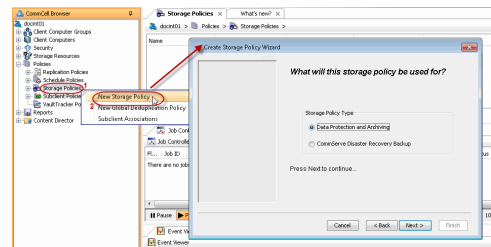
1. Click **Create Storage Policy**.
2. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
 - Select the Storage Policy type as **Data Protection and Archiving** and click **Next**.
 - Enter the name in the **Storage Policy Name** box and click **Next**.
 - From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.

Ensure that you select a library attached to a MediaAgent operating in the current release.

- From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
- For the device streams and the retention criteria information, click **Next** to accept default values.
- Select **Yes** to enable deduplication for the primary copy.
- From the **MediaAgent** list, click the name of the MediaAgent that will be used to store the Deduplication store.

Type the name of the folder in which the deduplication database must be located in the Deduplication Store Location or click the Browse button to select the folder and then click **Next**.

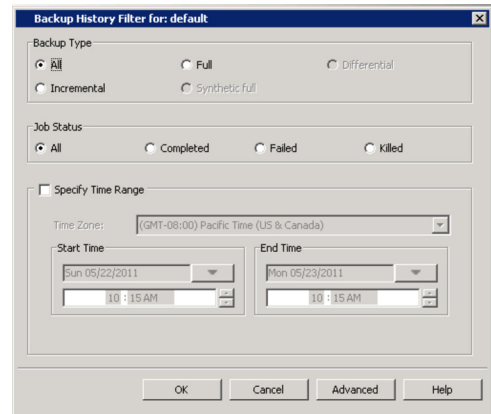
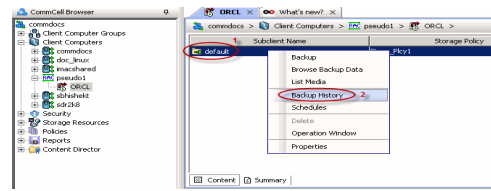
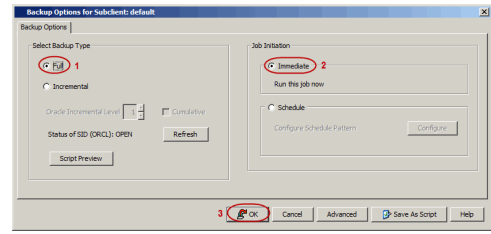
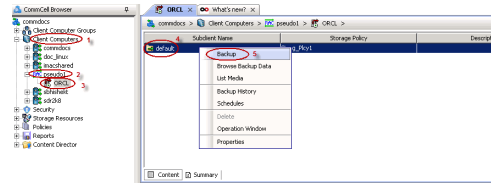
- Review the details and click **Finish** to create the Storage Policy.



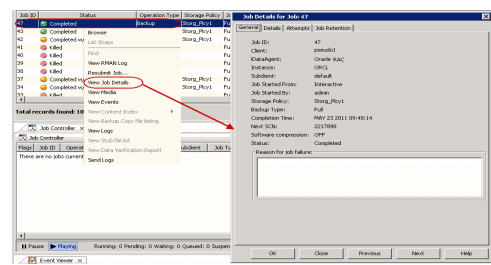
Getting Started Backup - Oracle RAC iDataAgent

WHAT GETS BACKED UP	WHAT DOES NOT GET BACKED UP
<p>Oracle database files that include datafiles (*.dbf) and control files (*.ctl)</p> <p>Archived redo logs</p> <p>Oracle Managed Files (OMF)</p> <p>Parameter files (SP File)</p>	<p>Oracle application files associated with the Oracle installation.</p> <p>Use the File System iDataAgent to back up the above mentioned components.</p>

- From the CommCell Browser, navigate to **Client Computers** | **<RAC Client>** | **<Instance>**.
 - Right-click the default subclient and click **Backup**.
- Click **Full** as backup type and then click **Immediate**.
 - Click **OK**.
- You can track the progress of the job from the **Job Controller** window of the CommCell console.
- Once the job is complete, view the job details from the **Backup History**. Right-click the **Subclient** and select **Backup History**.
- Click **OK**.



- Right-click the job to:
 - Browse the database that was backed up.
 - View RMAN Logs.
 - Resubmit the job.
 - View job details.
 - View media associated with the job.
 - View events associated with the job.
 - View or send the log file that is associated with the job.

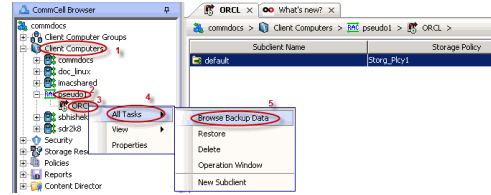


Getting Started Restore - Oracle RAC iDataAgent

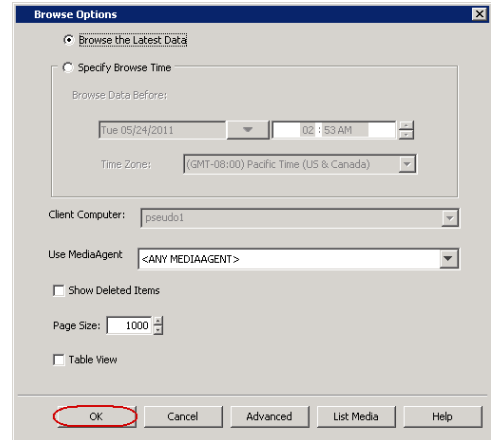
◀ Previous Next ▶

As restoring your backup data is very crucial, it is recommended that you perform a restore operation immediately after your first full backup to understand the process. The following section explain the steps for restoring a database.

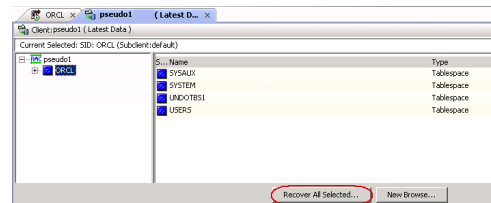
- From the CommCell Browser, navigate to **Client Computers | <RAC Client>**.
 - Right-click the **<Instance>**, point to **All Tasks**, and then click **Browse Backup Data**.



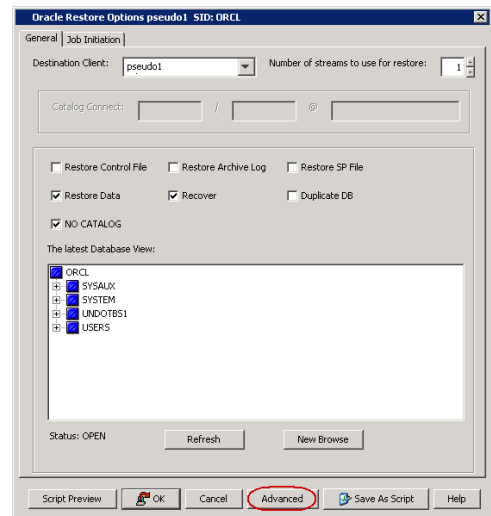
- Click **OK**.



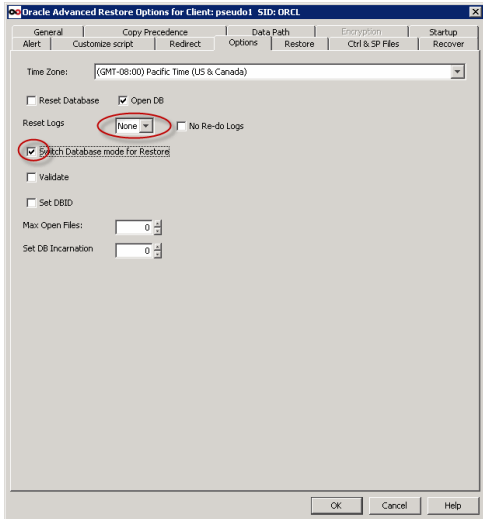
- In the right pane of the Browse window, click the **<Instance>** and select all the entities.
 - Click **Recover All Selected**.



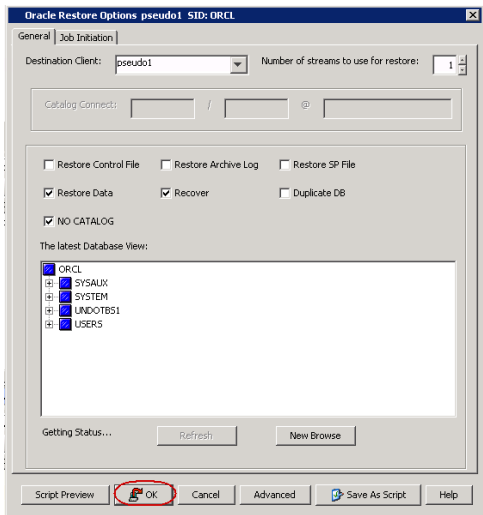
- Click **Advanced**.



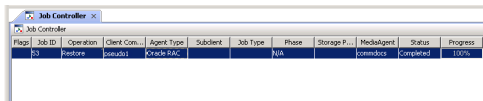
- Click the **Options** tab.
 - In the **Reset Logs** box, select **None**.
 - Select the **Switch Database mode for Restore** checkbox.
 - Click **OK**.



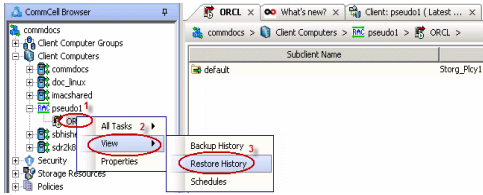
6. Click **OK**.



7. You can monitor the progress of the restore job in the **Job Controller**.



8. Once the restore job has completed, right-click the **<Instance>** and click **View | Restore History**.

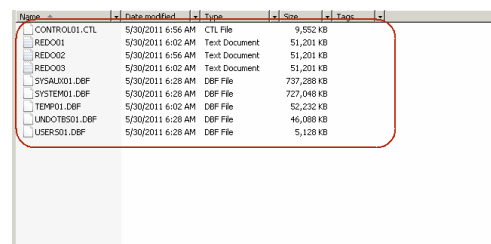
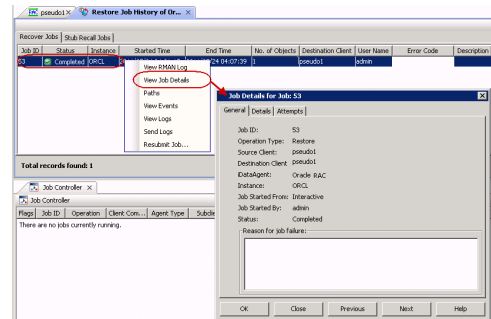
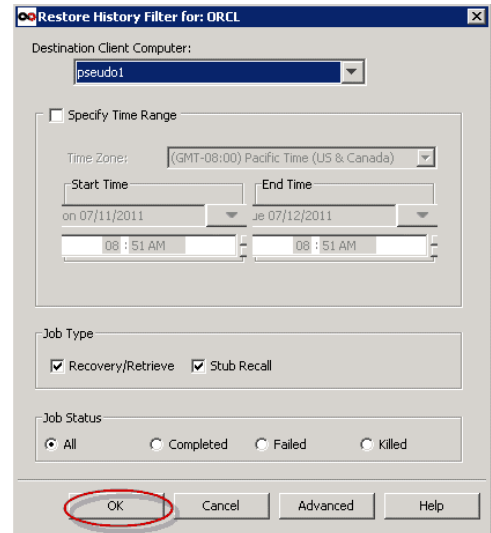


9. Click **OK**.

10. You can view the following details about the job by right-clicking the job:

- View Restore Items
You can view them as **Successful, Failed, Skipped** or **All**.
- View Job Details
- View Events of the restore job.
- View Log files of the restore job
- View Paths
- View RMAN Logs

11. Once the database is restored, verify that the restored database and log files are available in the original location.



CONGRATULATIONS - YOU HAVE SUCCESSFULLY COMPLETED YOUR FIRST BACKUP AND RESTORE.

If you want to further explore this Agent's features read the **Advanced** sections of this documentation.