Administration Guide - SAP for MAXDB iDataAgent

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INTRODUCTION

Calypso software provides a simplified end-to-end data protection for large scale SAP environments. It helps deliver a robust and comprehensive backup and recovery with significant speed performance and efficient use of disk and tape drives. It also assists you in full system rebuilds and eliminates recovery failures.

KEY FEATURES

The SAP iDataAgents offers the following key features:

FULL RANGE OF BACKUP AND RECOVERY OPTIONS

The SAP agents provide the flexibility to backup the SAP for Oracle database in different environments. This is very essential since SAP data is always subject to constant changes.

You can perform a full or incremental backup of the entire database or individual data files/ table spaces, 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 *i*DataAgent 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.

SNAPPROTECT BACKUP

SAP for Oracle *i*DataAgent works in conjunction with hardware snapshot engines to create a point-in-time snapshot of the data to be used for various data protection operations. This is an efficient way of backing up live data and it facilitates frequent point-in-time backups and faster recovery time.

COMMAND LINE SUPPORT

Data protection and recovery operations can be initiated from the SAP command line as per SAP requirements. The iDataAgent is fully integrated with the

Oracle database using BRTOOLS and with the SAP MAXDB database through DBM CLI, a database management tool provided by SAP and supports backup and restore operations of database and parameter files using BACKINT interface from SAP Command Line.

In addition to SAP command line, you can also perform data protection and recovery operations from the command line interface using qcommands. You also have the facility to save the operations as a script file and execute them from the command line at a later point of time.

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 on large SAP databases.

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.

EFFICIENT JOB MANAGEMENT AND REPORTING

You can view and verify the status of SAP 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. Y

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 SAP documentation uses the following terminology:

-	
CLIENT	The computer in which the <i>i</i> DataAgent is installed and contains the data to be secured.
INSTANCE	The SAP for Oracle database to be used for the backup and restore operations.
SUBCLIENT	The SAP data to be backed up.
DBM CLI	DBM CLI (DBM Command Line Interface) is a Database Management Tool supplied with every SAP MAXDB that is used to perform backup and restore operations.
BACKINT	Backint is an interface program that allows DBM CLI to communicate with SAP MAXDB using streams/pipes to perform backup and restore operations.

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System Requirements - SAP for MAXDB iDataAgent

System Requirements Supported Features

The following requirements are for the SAP for MAXDBiDataAgent:

	ATION/OPERATING SYSTEM	PROCESSOR
SAF MAAI	ATV 7.1	Power PC (Includes IPM System p)
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)	Itanium
	HP-UX 11i v3 (11.31)	PA-RISC
	HP-UX 11i v2 (11.23)	PA-RISC
	HP-UX 11i v2 (11.23)	Itanium
LINUX	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

CLUSTER - SUPPORT

The software can be installed on a Cluster if clustering is supported by the above-mentioned operating systems.

For information on supported cluster types, see Clustering - Support.

HARD DRIVE

WINDOWS

111 MB minimum of hard disk space for software/ 498 MB recommended

100 MB of additional hard disk space for log file growth

725 MB of temp space required for install or upgrade (where the temp folder resides)

UNIX

220 MB minimum of hard disk space for software

MEMORY

16 MB RAM minimum required beyond the requirements of the operating system and running applications

Swap space = 2*RAM size

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

The File System *i*DataAgent will be automatically installed during installation of this software, if it is not already installed. For System Requirements and install information specific to the File System *i*DataAgents, refer to:

- System Requirements AIX File System *i*DataAgent
- System Requirements HP-UX File System iDataAgent
- System Requirements Linux File System iDataAgent
- System Requirements Solaris File System iDataAgent

NETWORK

TCP/IP Services configured on the computer.

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

backup_IDA application, you can use the following file name:	(system_u:object_r:texrel_shlib_t,s0)
backup_IDA.fc	<pre>/opt/<software directory="" installation="">/Base/libdb2osse.so.1 gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>
	<pre>/opt/<software directory="" installation="">/Base/libDb2Sbt.so gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>
	<pre>/opt/<software directory="" installation="">/Base/libdb2trcapi.so.1 gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>
	<pre>/opt/<software directory="" installation="">/Base/libDrDatabase.so gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>
	<pre>/opt/<software directory="" installation="">/Base/libIndexing.so gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>
	<pre>/opt/<software directory="" installation="">/Base/libSnooper.so gen_context (system_u:object_r:texrel_shlib_t,s0)</software></pre>

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

Getting Started - Deploying on Windows



The SAP for MaxDB iDataAgent is used to protect SAP for MaxDB databases. Follow the steps given below to install the SAP for MaxDB iDataAgent.

INSTALLATION

The software can be installed using one of the following methods:

METHOD 1: INTERACTIVE INSTALL

Use this procedure to install directly on Windows client computer.

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

Use this procedure to remotely install on Windows client computer.

METHOD 1: INTERACTIVE INSTALL

- **1.** Run **Setup.exe** from the **Software Installation Disc** on Windows client computer where the SAP application resides.
- 2. Select the required language.

Click Next.

3.	Select the	option t	o install	software	on t	this (computer
J.	Jelect the	option t	0 mstan	Solumate	011 0		computer

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

	- Install Cofference on this accounting	
	Advanced options	
	View documentation website	
	View Install Quick Start Guide (Requires Adobe Acrobat Reader)	
	Install Adobe Acrobat Header	
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< Back Next >

Cancel

BEFORE YOU BEGIN

System Requirements

Download Software Packages

Select the language you will use during installation

Download the latest software package to perform the install.

Next > Cancel

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

Click **Next**.

Select I accept the terms in the license agreement.

5. Expand Client Modules | Backup & Recovery | Database and select SAP for MaxDB.

Click Next.

4.

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- Click **YES** to install Microsoft .NET Framework package.
 - This prompt is displayed only when Microsoft .NET Framework is not installed.
 - Once the Microsoft .NET Framework is installed, the software automatically installs the Microsoft Visual J# 2.0 and Visual C++ redistributable packages.
- 7. 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**.

8.	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:

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

9. Click Next.

6.

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

Ξ Δ		u want to config	ure.			
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nstaller

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.

 $\label{eq:click} Click \ \textbf{Browse} \ to \ change \ the \ default \ location.$

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.
14.	Click	Next

In staller.	
Mindows Firmer	L Evolution List
Allow programs to con	mmunicate through Windows
Firewall	
Windows Firewa	II is ON
🔽 Add program	s to the Windows Firewall Exclusion List
If you plan on us exclusion list.	ing Windows Firewall, it is recommended to add the software programs to the
Installer	
	< Back Next > Cancel
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Click Next to accept	at the default location, or click Browse to choose an alternate location.
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15. Select a Storage Policy. Click Next.

If you do not have Storage Policy created, this message will be displayed. Click ${\bf OK}.$

You can create the Storage Policy later in step 20.

 Enter the location to create SAP MAXDB Config Files. You can Click **Browse** to select the location. Click **Next**.

17. Click Next.

Installer
Select Global Filter Options
Select the Global Filter Uptions for the Agent.
Global Filters provides the ability to set exclusions within a CommCell to filter out data from data protection operations on all agents of a certain type.
 Use Cell level policy
C Always use Global Filters
C Do not use Global Filters
Installer
< Back Next > Cancel
Installer
Storage Policy Selection
Salast a storage policy for the default substant to be
backed up.
Configure for Laptop or Desktop Backup
Select a storage policy from the pull-down list.
Installer
Installer
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Eacked up.
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Installer < Back Next > Cancel
Installer
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Files.
Places select the Destination folder (with no spaces in the directory yame) needed to
locate the configuration files needed for the external Backup interface and click (Next) or click (Browse) to choose the location
- SAP MAX DB Config Files Path
D'Mavdb
Drive List Space Required / Recommended
leat-lear
<back next=""> Cancel</back>
Installer
Summary
Summary of install selections
Setup has enough information to start copying the program files. If you are satisfied with the install settings, click Next to begin copying files.
Destination Path = C\Program Files\
Commission and a mycomputer.mycompany.com Interface Name = audi mycompany.com
Client = audi Job Besults Path = C:\Program Files\JobBesults
Global Filters = Use Cell level policy
Installer

19. Click Finish.



If you already have a storage policy selected in step 15, click the **Next** button available on the bottom of the page to proceed to the **Configuration** section.

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

- 20. 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:
 - Select the Storage Policy type as Data Protection and Archiving and click Next.
 - $\circ~$ 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**.
- $\circ\;$ For the device streams and the retention criteria information, click Next to accept default values.
- $\circ~$ 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.

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

1. From the CommCell Browser, select Tools | Add/Remove Software | Install Software.



2. Click Next.

3. Select Windows. Click Next.

4. Select Manually Select Computers. Click Next.

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Pile view Tools	
Browse & Recover	
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Click Next to continue.	
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5. Enter the fully qualified domain name of the Windows client computer where the MaxDB database resides.

For example: apple.domain.company.com

The SAP for MaxDB iDataAgent will be installed on this client computer.

Click Next.

6. Click Next.

 Specify UserName and Password of the computer. Click Next.

8. Select SAP for MaxDB. Click Next. Installer Enter the host names of the computers Please enter the host names of the computers, one per line (apple.domain.company.com) Import from File Import From Active Directory Select from existing clients <Back Next > Save As Script Finish Cancel Help Inetallor Select Software Cache To use current Client or Client Group Software Cache settings, click Next. To override Software Cache settings check Override Software Cache and select the Software Cache to be used. Override Software Cache <Back West> Save As Script Finish Cancel Help X Enter Account Information The specified account should have administrative access to the computer. If you are installing multiple clients, the user should have access to all clients. User Name: Example:domain\username Password: Confirm Password: < Back Next > Save As Script Finish Cancel Help J L. herePoit. SharePoit. Mitent Inder Nine C t Point iDataAgent Indexing and Search Content Indexing <gack ______Save An Script ______Cancel ________

9. Click Next.

10. Type the SAP MASDB Configuration Path. Click Next.

11. Click Next.

12. Select Immediate. Click Next.

13. Click Finish.

Enter Recommended Settings for the selected Software
Recommended Settings
Client Groups
Available: Selected:
PgSQL Add >
/ Demove
Add All >>
<< Remove All
Global Filters Use Cell level policy
Configure For Laptop Backups
Storage Policy to use
Subclient Policy to use
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- 14. You can track the progress of the job from the **Job Controller** or **Event Viewer** window.
- **15.** Once the job is complete, right-click the **CommServe** computer, click **View** and then click **Admin Job History**.

16. Select Install/Upgrade/Remove Software. Click OK.

- **17.** You can view the following details about the job by right-clicking the job:
 - Items that succeeded during the job
 - Items that failed during the job
 - Details of the job
 - Events of the job
 - Log files of the job



Getting Started - Deploying in a Global Zone or Unix Servers

< Previous Next >

WHERE TO INSTALL

Install the software directly on the computer hosting the global zone or the Unix Server that you wish to protect. Make sure the computer satisfies the minimum requirements specified in the System Requirements.

It is recommended to install the software on the global zone to protect non-changing or static data on non-global zones. If the data is dynamic or contains application data, install the software on the non-global zone.

Use the following steps to install the SAP for MaxDB iDataAgent on the following:

- Global Zone or a Solaris Server
- Any other supported Unix Server

INSTALLATION

The software can be installed using one of the following methods:

METHOD 1: INTERACTIVE INSTALL

Use this procedure to install the software directly on Unix client computer.

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

Use this procedure to remotely install the software on Unix client computer.

If your computer is 64-bit, see Install Unix Agents on 64-bit Platform for step-by-step

METHOD 1: INTERACTIVE INSTALL

- Run the following command from the Software Installation Disc: ./cvpkgadd
- The product banner and other information is displayed.
 Press Enter.
- 3. Read the license agreement. Type y and press Enter.

If your computer is 32-bit, press Enter.

Press Enter.

RELATED TOPICS

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

Firewall

Provides comprehensive information on firewall.

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]

This machine supports both 32 bit and 64 bit binaries. By default, we will install 32 bit binary set that has full support for all the modules included in this package. Please note that 64 bit binary set currently only support limited modules.

1) All platform (32 bit)

2) FS and MA only (64 bit)

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 "failover" 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

6. Press Enter.

procedure.

5.

7. 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.

NOTES

- The interface name and IP addresses depend on the computer in which the software is installed and may be different from the example shown.
- 8. Press Enter.

9. Type the appropriate number to install SAP for MaxDB iDataAgent. A confirmation screen will mark your choice with an "X".

Type d for Done, and press Enter.

10. Press Enter.

11. Type the appropriate number to install the latest software scripts and press Enter to continue.

NOTES

• Select Download from the software provider website to download the latest software scripts from your software provider website.

Make sure you have internet connectivity when you are using this option.

- Select **Use the one in the installation media**, to install the software scripts from the disc or share from which the installation is 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.

12. Press Enter.

provider website. If you decide to download it from the website now, please make sure you have internet connectivity at this time. connectivity. Do you want to download the latest service pack now? [no] Please specify where you want us to install Calypso 13. Press Enter to accept the default path and continue, or binaries. Enter a path to modify the default path and press Enter. NOTES • Do not use the following characters when specifying the path: Installation Directory: [/opt] !@#\$%^&*():/?\ Press Enter to accept the default location for the log files and continue, or 14. Please specify where you want to keep Calypso log files. Enter a path to modify the default location and press Enter. 100MB of free space available. All log files will be created in a "calypso/Log_Files" subdirectory, so if you NOTES

• All the modules installed on the computer will store the log files in this directory.

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]

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]

Please select the module(s) that you would like to

- install. 1) MediaAgent [1301] [CVGxMA]
- ProxyHost iDataAgent [1102] [CVGxProxyIDA]
-] 3) Documentum iDataAgent [1126] [CVGxDctmIDA]] 4) Oracle iDataAgent [1204] [CVGxOrIDA]

- 5 SAP for Oracle [1205] [CVGxOcSAP]
 6 SAP for MaxDB [1206] [CVGxSAPMAXDB]
 7 Informix iDataAgent [1201] [CVGxIfIDA]
- 8) Sybase iDataAgent [1202] [CVGxSybIDA] 9) DB2 iDataAgent [1207] [CVGxDB2]
- 10) MySQL iDataAgent [1208] [CVGxMySQL] 11) PostGres iDataAgent [1209] [CVGxPostGres]
- 12) Lotus Notes Database iDataAgent [1051]
- [CVGxLndhTDA]
- [] 13) Lotus Notes Document iDataAgent [1052]
- [CVGxLndocIDA]

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

Enter number(s)/one of "a,n,r,q,d,>,<,?" here: 6</pre>

Do you want to use the agents for restore only without consuming licenses? [no]

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

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

This process may take some time depending on the internet

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".

It must be a local directory and there should be at least enter "/var/log", the logs will actually be placed into "/var/log/calypso/Log_Files".

		Log Directory: [/var/log]
15.	Туре no . NOTES • If entering Yes , go to Step 17.	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 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 "dba" 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 "dba" group.
		Would you like to assign a specific group to Software? [yes]
16.	Type d for done.	Access Permissions for Other Users
		Installer will assign full access rights to root user and its belonging group for all installed Software 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 Software 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:
17.	If you indicated Yes in Step 15., you will be prompted for the group name that must be used to launch processes.	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.
	Enter the group name and then press Enter.	In most of the cases it's a good idea to create a
	NOTESSee your Unix systems administrator for assistance in creating a user group.	dedicated "calypso" group. However, if you're planning to use Oracle iDataAgent or SAP Agent, you should enter Oracle's "dba" group here.
		Group name: dba
		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 "dba".
18.	Type a network TCP port number for the Communications Service (CVD) and press $\ensuremath{\textbf{Enter}}$.	Every instance of Calypso should use a unique set of network ports to avoid interfering with other instances running on the same machine.
	Type a network TCP port number for the Client Event Manager Service (EvMgrC) and press Enter .	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 : [8600]
		Port Number for EvMgrC: [8602]
19.	If this computer and the CommServe is separated by a firewall, type Yes and then press Enter .	Is there a firewall between this client and the CommServe? $[\ensuremath{no}]$
	For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.	
	If you do not wish to configure the firewall services, type No and then press Enter .	
20.	Type the fully qualified domain name for CommServe Host Name and press Enter .	Please specify hostname of the CommServe below. Make sure the hostname is fully qualified, resolvable by the name
	NOTESEnsure that the CommServe is accessible before typing the name; otherwise the	services configured on this machine. CommServe Host Name:
	installation will fail.	
21.	Press Enter .	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.

Page 19 of 89

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 Type the number of a Client Group and press Enter. 22. cs.company.com. Please choose the group(s) that you want A confirmation screen will mark your choice with an "X". Type **d** for done with the to add this client client.company.com to. The selected group(s) will be marked (X) and can be deselected if you selection, and press Enter to continue. enter the same number again. After you are finished with NOTES the selection, select "Done with the Selection". • This screen will be displayed only if Client Groups are configured for the CommCell. [] 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: 2</pre> Enter the number corresponding to the storage policy through which you want to back Please select one storage policy for this IDA from the 23. list below: up the External Data Connector and press Enter. 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 If you do not have Storage Policy created, this message will be displayed. CommServe. Before you You may not be prompted for user input. can run any backups of this IDA, you will need to install a MediaAgent, create a Storage Policy and assign it.. You can create the Storage Policy later in step 25. 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" 24. Type 3 to the Exit option and press Enter. belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one The installation is now complete. 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 Currently you have Calypso installed on physical node stone.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 stone.company.com 2) Install Calypso on a virtual machine 3) Exit Your choice: [1]

If you already have a storage policy selected in step 23, click the Next button available on the bottom of the page to proceed to the Configuration section.

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

25.

3

- 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:
 - 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.
 - 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.
- $\circ\;$ For the device streams and the retention criteria information, click Next to accept default values.
- $\circ~$ 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 ${\bf Next}.$

 $\,\circ\,$ Review the details and click Finish to create the Storage Policy.

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

1. From the CommCell Browser, select Tools | Add/Remove Software | Install Software.

2. Click Next.

3. Select Unix and Linux. Click Next.

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4. Select Manually Select Computers. Click Next.

Enter the fully qualified domain name of the computer in which you wish to install.
 For example: apple.domain.company.com
 The SAP for MaxDB *i*DataAgent will be installed on this client computer.

6. Click Next.

Click Next.

7. Specify UserName and Password of client computer. Click Next.

Select how to discover the computers for installing the software
Manualy select computers Software will be installed only on the calented let of computers
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Computers will be discovered when the job runs.
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8. Select SAP for MaxDB . Click Next.

- 9.
- Select **Client Group** from **Available** and click **Add**. Do not add more than one Client Group.
- Select a **Storage Policy** from the drop-down list. Click **Next**.

10. Type the SAP MaxDB Configuration Path. Click Next.

11. Click Next.

12. Select Immediate. Click Next.

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13. Click Finish.

- 14. You can track the progress of the job from the **Job Controller** or **Event Viewer** window.
- 15. Once the job is complete, right-click the **CommServe** computer, click **View** and then click **Admin Job History**.

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Please Select When To Run The Job
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(Immediate
Run this job now
◯ Schedule
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Installer
Summary
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scipt.
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Select Type Of Client Discovery: Manually select computers
Client Authentication for Job
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Password: ****
Password: **** Instal Page Instal Page
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II Pause Playing

Pause Playing Info

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16. Select Install/Upgrade/Remove Software. Click OK.

Admin Job History Filter		
Job Type		1
() All	🔿 Data Aging	C Export Media
 Auxiliary Copy 	O Inventory	O Disaster Recovery Backup
O Data Verification	Offline Content Indexing	🔵 Erase Media
C Erase Backup/Archived Data	O Drive Validation	O Drive Cleaning
Stamp Media	Install/Remove Updates	O Download/Copy Software
Install/Upgrade/Remove Software	Disk Library Maintenance	SRM Reports/Actions
O Information Management	O CommCell Export	O CommCell Import
O Media Refreshing	O Recover Store	
Specify Time Range		
Time Zone: (GMT-05:00) E	astern Time (US & Canada)	×
Start Time	End Time	
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92 98	aw Logs	
Se	nd Logs	×
Total records count : 9		

Items that succeeded during the jobItems that failed during the job

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

• Details of the job

17.

- Events of the job
- Log files of the job

Previous Next >

Getting Started - Deploying in a Non-Global Zone

< Previous Next >

WHERE TO INSTALL

Install the software on each of the non-global zones where you have application data.

It is recommended to install the software on the global zone to protect non-changing or static data on non-global zones. If the data is dynamic or contains application data, install the software on the non-global zone.

INSTALLATION

The software can be installed using one of the following methods:

METHOD 1: INTERACTIVE INSTALL

Use this procedure to install the software directly on Unix client computer.

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

Use this procedure to remotely install the software on Unix client computer.

METHOD 1: INTERACTIVE INSTALL

1. Mount the installation disc on the non-global zone.

mkdir <Non-Global Zone root location>/<Non-Global Zone local directory> mount -F lofs <Global zone software Install Disc mount point> <Non-</pre>

Global Zone root location>/<Non-Global Zone local directory>

Connect to Non-Global Zone terminal

2. Run the following command from the Software Installation Disc: ./cvpkgadd

The product banner and other information is displayed.
 Press Enter.

4. Read the license agreement. Type y and press Enter.

5. Press Enter.

If your computer is 32-bit, press **Enter**.

If your computer is 64-bit, see Install Unix Agents on 64-bit Platform for step-by-step procedure.

7. Press Enter.

6.

RELATED TOPICS

System Requirements

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

Firewall

Provides comprehensive information on firewall.

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]

This machine supports both 32 bit and 64 bit binaries. By default, we will install 32 bit binary set that has full support for all the modules included in this package. Please note that 64 bit binary set currently only support limited modules.

1) All platform (32 bit)

2) FS and MA only (64 bit)

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.

8. 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.

NOTES

- The interface name and IP addresses depend on the computer in which the software is installed and may be different from the example shown.
- 9. Press Enter.
- 10. Type the appropriate number to install **SAP for MaxDB** iDataAgent. A confirmation screen will mark your choice with an "X".

Type **d** for **Done**, and press **Enter**.

Press Enter. 11.

12. Type the appropriate number to install the latest software scripts and press **Enter** to continue.

NOTES

 Select Download from the software provider website to download the latest software scripts from your software provider website.

Make sure you have internet connectivity when you are using this option.

- Select Use the one in the installation media, to install the software scripts from 2) Use the one in the installation media the disc or share from which the installation is 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.

Press Enter. 13.

14.

15.

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 GUT Please check the interface name below, and make

We found one network interface available on your machine. We will associate it with the physical machine being

connections if necessary:

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

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]

Please select the module(s) that you would like to install.

1) MediaAgent [1301] [CVGxMA]

1) Install on a physical machine 2) Install on a virtual machine

3) Exit

Your choice: [1]

-] 2) ProxyHost iDataAgent [1102] [CVGxProxyIDA]] 3) Documentum iDataAgent [1126] [CVGxDctmIDA]
- 4) Oracle iDataAgent [1204] [CVGxOrIDA] 5) SAP for Oracle [1205] [CVGxOrSAP] 6) SAP for MaxDB [1206] [CVGxSAPMAXDB]

- 7) Informix iDataAgent [1201] [CVGxIfIDA]
 8) Sybase iDataAgent [1202] [CVGxSybIDA]
- 9 DB2 iDataAgent [1207] [CVGxDB2]
 10) MySQL iDataAgent [1208] [CVGxMySQL]
- 11) PostGres iDataAgent [1209] [CVGxPostGres]
- | 12) Lotus Notes Database iDataAgent [1051]
- [CVGxLndbIDA]] 13) Lotus Notes Document iDataAgent [1052]
- [CVGxLndocIDA]

[a=all n=none r=reverse g=guit d=done >=next <=previous ? =help]

Enter number(s)/one of "a,n,r,q,d,>,<,?" here: 6</pre>

Do you want to use the agents for restore only without consuming licenses? [no]

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 The second second and the second seco connectivity.

1) Download from the software provider website.

3) Use the copy I already have by entering its unix path Your choice: [1] 2

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]

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

Enter a path to modify the default location and press Enter.

Press Enter to accept the default location for the log files and continue, or

Press Enter to accept the default path and continue, or

Enter a path to modify the default path and press Enter.

NOTES

	• All the modules installed on the computer will store the log files in this directory.	"/var/log/calypso/Log_Files".
		Log Directory: [/var/log]
16.	Type no. NOTES • If entering Yes, go to Step 18.	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 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 "dba" 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 "dba" group.
		Would you like to assign a specific group to Software? [yes]
17.	Type d for done.	Access Permissions for Other Users
		Installer will assign full access rights to root user and its belonging group for all installed Software 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 Software 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
		<pre>[a=all n=none r=reverse q=quit d=done >=next <=previous ? =help] Enter number(s)/one of "a,n,r,q,d,>,<,?" here:</pre>
18.	If you indicated Yes in Step 16., you will be prompted for the group name that must be used to launch processes.	Please enter the name of the group which will be assigned to all Software files and on behalf of which all Software
	Enter the group name and then press Enter .	processes will run.
	NOTESSee your Unix systems administrator for assistance in creating a user group.	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 "dba" group here.
		Group name: dba
		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 "dba".
19.	Type a network TCP port number for the Communications Service (CVD) and press Enter .	Every instance of Calypso should use a unique set of network ports to avoid interfering with other instances running on the same machine.
	Type a network TCP port number for the Client Event Manager Service (EvMgrC) and press Enter .	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 : [8600]
		Port Number for EvMgrC: [8602]
20.	If this computer and the CommServe is separated by a firewall, type Yes and then press Enter .	Is there a firewall between this client and the CommServe? [no]
	For firewall options and configuration instructions, see Firewall Configuration and continue with the installation.	
	If you do not wish to configure the firewall services, type No and then press Enter .	
21.	Type the fully qualified domain name for CommServe Host Name and press Enter .	Please specify hostname of the CommServe below. Make sure
	NOTES	the hostname is fully qualified, resolvable by the name services configured on this machine.
	 Ensure that the CommServe is accessible before typing the name; otherwise the installation will fail. 	CommServe Host Name:

22. Press Enter.

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 Type the number of a Client Group and press Enter. 23. cs.company.com. Please choose the group(s) that you want A confirmation screen will mark your choice with an "X". Type **d** for done with the to add this client client.company.com to. The selected group(s) will be marked (X) and can be deselected if you selection, and press Enter to continue. enter the same number again. After you are finished with NOTES the selection, select "Done with the Selection". • This screen will be displayed only if Client Groups are configured for the CommCell. [] 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: 2</pre> Enter the number corresponding to the storage policy through which you want to back Please select one storage policy for this IDA from the 24. up the External Data Connector and press Enter. 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 If you do not have Storage Policy created, this message will be displayed. CommServe. Before you You may not be prompted for user input. can run any backups of this IDA, you will need to install a MediaAgent, create a Storage Policy and assign it.. You can create the Storage Policy later in step 26. 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" 25. Type 3 to the Exit option and press Enter. belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one The installation is now complete. 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 Currently you have Calypso installed on physical node stone.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 stone.company.com 2) Install Calypso on a virtual machine 3) Exit

Your choice: [1]

If you already have a storage policy selected in step 24, click the Next button available on the bottom of the page to proceed to the Configuration section.

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

- 26.
- 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:
 - 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.
 - 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.
- $\circ\;$ For the device streams and the retention criteria information, click Next to accept default values.
- $\circ~$ 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 ${\bf Next}.$

 $\,\circ\,$ Review the details and click Finish to create the Storage Policy.

METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

1. From the CommCell Browser, select Tools | Add/Remove Software | Install Software.

2. Click Next.

3. Select Unix and Linux. Click Next.

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4. Select Manually Select Computers. Click Next.

Enter the fully qualified domain name of the computer in which you wish to install.
 For example: apple.domain.company.com
 The SAP for MaxDB *i*DataAgent will be installed on this client computer.

6. Click Next.

Click Next.

7. Specify UserName and Password of client computer. Click Next.

Installer	
Select how to discover the computers for i	nstalling the software
Manualy select computers Software will be installed only on the selected list of	computers
Automatically discover computers	
Computers will be discovered when the job runs.	
< Back Next > Save As Scrip	Finish Cancel Help
Installer	X
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Please enter the host names of the computers	ne
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	Select from existing clients
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8. Select SAP for MaxDB . Click Next.

- 9.
- Select **Client Group** from **Available** and click **Add**. Do not add more than one Client Group.
- Select a **Storage Policy** from the drop-down list. Click **Next**.

10. Type the SAP MaxDB Configuration Path. Click Next.

11. Click Next.

12. Select Immediate. Click Next.

mtaler
Select Package(s) to install
Content Modules
Badup & Recovery
Windows File System Data/gent
Image Level Procyticst DataAgent Artise Directory ExtraOperation
File System IXDMP Restore Enabler Trave Level Chesterer
Data Protection Manager Data Violation Manager Store Constraints
Die zweinigen: Oracle DataAgent
Step for Oracle
- 102 SAP for MaxCB - Sybase DataAgent
MySQL DataAgent Documentum Agent
Contemport
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13. Click Finish.

- You can track the progress of the job from the ${\bf Job}\ {\bf Controller}$ or ${\bf Event}\ {\bf Viewer}$ 14. window.
- Once the job is complete, right-click the ${\bf CommServe}$ computer, click ${\bf View}$ and then click ${\bf Admin \ Job \ History}.$ 15.

Installer
Please Select When To Run The Job
Job Indadon
(Immediate
But this inh new
Schedule
Configure Schedule Pattern Configure
< Back (Next >) Save As Script Finish Cancel Help
Installer 🛛
Summary
Please verify all the selected options and click Finish to run the job immediately or click Save As Script to save the job options as a
script.
Salest Type Of Installation: Univ and Linux
Select Type Of Client Discovery: Manually select computers
Reuse Active Directory credentials: No
Client Authentication for Job
User Name: root
Fassword,
ilistali Filigo
Install Indates: Ve:
Install Updates: Yes Reboot (if required): No
Install Updates: Yes Robot (if required): No Kill Browser Processes (if required): No
Install Identes: Yes Reboot (di required): No Kill Browser Processes (di required): No Ignore Running Jobs: No Stop Orach Services (di required): No
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Pause Playing Info

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16. Select Install/Upgrade/Remove Software. Click **OK**.

Admin Job History Filter		
Job Type		
O Al	🔿 Data Aging	C Export Media
Auxiliary Copy	O Inventory	O Disaster Recovery Backup
O Data Verification	Offline Content Indexing	🔵 Erase Media
C Erase Backup/Archived Data	O Drive Validation	O Drive Cleaning
Stamp Media	O Install/Remove Updates	O Download/Copy Software
Install/Upgrade/Remove Software	Disk Library Maintenance	SRM Reports/Actions
O Information Management	O CommCell Export	O CommCell Import
Media Refreshing	O Recover Store	
Specify Time Range		
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92 98	w Content Index w Logs	
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Total records count : 9		

Items that succeeded during the jobItems that failed during the job

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

• Details of the job

17.

- Events of the job
- Log files of the job

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Getting Started - SAP for MaxDB Configuration

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CONFIGURATION

Once the SAP for MaxDB iDataAgent is installed, you need to configure an Instance and associate the SAP MaxDB database with the iDataAgent to facilitate backups. Each instance references a MaxDB database.

The following sections provide the necessary steps required to create and configure these components for a first backup of a MAxDB database.

- 1. • From the CommCell Browser, navigate to Client Computers |<Client> | SAP for MaxDB.
 - Right-click SAP for MaxDB | All Tasks and click New Instance.
- 2.
- Enter the Instance name in SAP MaxDB Instance text field
 - Enter a description about the instance.

Saplab Grifie System Grifie Shares Grifie Shares	
Creating New Instance	
General Details Storage Device Encryption Client Computer: saplab DetaAgent: SAP for MAX DB SAP MAX DB Instance: 551 Description	
OK Cancel	Help

з. Click the Storage Device tab, and then click Command Line Backup tab to select the storage policy for backups from the list of existing storage policies.



5. Click **OK** to save the instance.

6. Configure the backup device:

Configure the backup device as a medium and define the path for stream/pipe that is used for the storage media.

For Windows Client :

Log in to the database and run the following command from the dbm client interface:

dbmcli -d <database name> -u <UserName,Password>

Enter the commands for defining the path of stream/pipe.

Windows pipes must be specified in the form \\. \pipe\[pipe name]

Example:

dbmcli -d cert1 -u DBM,DBM wherein cert1 = Database name DBM, DBM = UserName, Password

medium_put BackData2\mem1 \\.\pipe\pipe mem1 PIPE DATA 0 0 NO NO '' BACK For Unix Client:

Log in to the database using the following command from dbm client interface: dbmcli -d <database name> -u <UserName,Password>

Enter the adjacent commands for defining the path of stream/pipe.

You can specify any file path as a pipe and create the pipes in the operating system.

7. Associate the SAP MAXDB database:

For Windows Client :

Run the command from the dbm client interface to associate the SAP MAXDB database with the product software.

For Unix Client:

- Run the commands from dbm client interface to associate the SAP MAXDB database with the product software.
- Configure the shared library path in the .profile file from the root directory.

8. Configure the parameter file:

Ensure to include the CVInstanceName parameter name followed by the name of the instance. Include the CVClientName parameter, followed by the name of the client. Also, ensure to set the number of streams for the backup. For Selective Online Full Backups, include the selectiveOnlineFull parameter in the parameter file and set the parameter value to **1** to enable a selective online full backup from the client. To disable this capability, set the parameter value to **0**.

For Windows Client:

The parameter file is located under the SAP MAXDB config file directory that you provide during installation.

For Unix Client

The parameter files is located under the

medium put BackPages2\mem1

\\.\pipe\pipe_mem3 PIPE PAGES 0 0 NO NO '' BACK

medium_put BackLog\mem1

\\.\pipe\pipe_mem5 PIPE LOG 0 0 NO NO '' BACK

medium_put CompleteF\mem1

\\.\pipe\pipe_mem5 PIPE File 0 0 NO NO '' BACK

-- wherein BackData2,BackPages2,BackLog,CompleteF = backup devices

Example:

bird:/opt/sdb# dbmcli -d cert1 -u DBM,DBM

wherein cert1 = Database name

DBM, DBM = UserName, Password

medium put BackData2\mem1

/space/sdb/data/cert1/files/pipe_mem1 PIPE DATA 0 0
NO NO '' BACK

medium put BackPages2\mem1

/space/sdb/data/cert1/files/pipe_mem3 PIPE PAGES 0 0
NO NO '' BACK

medium_put BackLog\mem1

/space/sdb/data/cert1/files/pipe_mem5 PIPE LOG 0 0
NO NO '' BACK

medium put CompleteF\mem1

/space/sdb/data/cert1/files/complete FILE DATA 0 0 YES

-- wherein BackData2,backPages2,BackLog,CompleteF = backup devices

dbm_configset -raw BSI_ENV

\<software install path>\SapMaxDbAgent\backint.conf

dbm configset -raw BSI ENV

/<software install path>/SapMaxDbAgent/backint.conf dbm_configset -raw set_variable_0 LD_LIBRARY_PATH= /<software install path>/Base dbm configset -raw set variable 1 SHLIB PATH=

/<software install path>/Base

For AIX and HP-UX:

SHLIB PATH=/<software install path>

/Base:/<software install path>/Base64

export SHLIB PATH

For Linux and Solaris:

LD LIBRARY PATH=/<software install path>

/Base:/<software install path>/Base64

export LD_LIBRARY_PATH

For Example:

numstreams (Modify "numstreams" for Multiple streams
backup)

- 1
- CvInstanceName

Instance001

CvClientName

magnum_SN

SelectiveOnlineFull

(To Enable Selective Online Full give its value as 1. To disable
<software_install_folder>/SapMaxDbAgent.

0)

1

 $\texttt{CV_restCopyPrec}$ (To enable a restore from a secondary copy,

add the $\texttt{CV_restCopyPrec}$ parameter followed by the copy precedence number to <code>2</code>)

2

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Getting Started - SAP for MAXDB Backup

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PERFORM A BACKUP

After configuring your Instance, BACKINT interface, and parameter file, you are ready to perform your first backup.

WHAT GETS BACKED UP

The SAP for MAXDB iDataAgent backs up the following types of data:

- All the database files.
- Log Files.
- Configuration Files which include Parameter files (param file).

WHAT DOES NOT GET BACKED UP

The SAP for MaxDB iDataAgent does not backup the MaxDB application files associated with the MaxDB installation.

The following section provides step-by-step instructions for running your first full backup:

PERFORM OFFLINE (COLD) FULL BACKUP

```
1. Open the DBM Command line Interface and verify the status of the database.
```

```
#> dbmcli -d CERT1 -u dbm,dbm -uUTL
dbmcli on CERT1>db_state
OK
State
ADMIN
```

2. For offline backup, MAXDB should be in admin (cold) state. If DB is not in this mode, execute the following command

#> dbmcli -d CERT1 -u dbm,dbm db cold

- 3. Type the command to execute the offline full backup
 - #> dbmcli -d CERT1 -u dbm,dbm -uUTL -c backup start BackData2 Migration

4. The backup should complete without any errors.

ok

Return Code 0

PERFORM ONLINE (WARM) FULL BACKUP

1. Open the DBM Command line Interface and verify the status of the database.

```
#> dbmcli -d CERT1 -u dbm,dbm -uUTL
dbmcli on CERT1>db_state
OK
State
ONLINE
```

2. For online backup, MAXDB should be in online (warm) state. If DB is not in this mode, execute the command

#> dbmcli -d < DBsid > -u dbm,dbm db_warm

3. Type the command to execute the online full backup

dbmcli -d CERT1 -u dbm,dbm -uUTL -c backup_Start BackData2 Recovery

The backup should complete without any errors.

ok

Return Code 0

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Getting Started - SAP for MaxDB Restore

Open the DBM Command line Interface and verify the status of the database.

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#> dbmcli -d CERT1 -u dbm,dbm -uUTL

PERFORMING A RESTORE

1.

It is recommended that you perform a restore operation immediately after your first full backup to understand the process.

You can perform a basic restore operation to restore and recover an entire database. The following section provides step-by-step instructions for running your first basic restore:

dbmcli on CERT1>db state OK State ADMIN 2. MAXDB should be in admin (cold) state to perform a basic restore operation. If the #> dbmcli -d CERT1 -u dbm,dbm db cold database is in online (warm) mode, execute the command. # dbmcli -d CERT1 -u dbm,dbm -uUTL Type the command to check all backup IDs. The command should return OK. з. dbmcli on CERT1>backup ext ids get BackData2 OK dbmcli on CERT1>backup_ext ids list Type the command to list all the External Backup ID's. The command should return 4. OK and display a list of all External Backup ID's. ОK END AVAILABLE|CERT1 SAP 0 46 /space/sdb/data/cert1/files /pipe mem1|DATA MIGRATION|2005-11-05 16:11:49| AVAILABLE|CERT1 SAP 0 46 /space/sdb/data/cert1/files /pipe mem2|DATA MIGRATION|2005-11-05 16:11:49| dbmcli on CERT1> 5. Type the command to execute the restore of entire database. recover_start BackData2 DATA ExternalBackupID "CERT1 SAP 0 46 /space/sdb/data/cert1/files/pipe_mem1, CERT1 SAP 0 46 /space/sdb/data/cert1/files/pipe mem2" dbmcli on CERT1>exit The restore should complete without any errors. OK You can monitor the progress of the restore job in the Job Controller or Event 🛕 Canin Cell Broviser 💈 Job Controller ()] 6. ą Viewer window of the CommCell Console. Job Controle 900 ComMet B & Clert Computer Groups B & Clert Computers Clert Co... Agent Type Subclent Job Type Green Computers Green

🧃 defaultBackupSet

Event Vever

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|| Pause || Playing Ruming: 1 Pending: 0 Walting: 0 Queued: 0 Suspended: 0 Total Jobs: 1 Job Streams: 1 High Waltermark: 100

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7. Once the restore job has completed, right-click the entity (e.g. agent, instance) and click **View** | **Restore History**.

If the entity chosen is the client computer, click **View** | **Job History**.

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 Do Controller

 Fl...
 Job ID

 Operation
 Client Co...

 Agent Type
 ...
 Destination Client Computer: All Clients ~ Specify Time Range Start Time End Time /ed 11/10/2010 🔹 nu 11/11/2010 🗨 03 1 46 AM -03 : 46 AM Job Type Recovery/Retrieve Stub Recall Job Status 📀 All ○ Completed ○ Failed 🔘 Killed ОК Cancel Advanced Help

8. Click OK.

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.

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Advanced - SAP for MAXDB Configuration

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Registering the Client with SAP SLD

Modifying an Instance

Deleting an Instance

UNDERSTANDING THE COMMCELL CONSOLE

The SAP for MAXDB $i \mbox{DataAgent}$ uses the following CommCell Console component to perform backup and restore operations from the Command Line.

Instance - defines the SAP for MAXDB database to be backed up.



CONFIGURING MULTIPLE STREAMS FOR BACKUPS AND RESTORES

When running multiple stream database backups and restores for the SAP for MAXDB *i*DataAgent, you should define the path for each stream/pipe that is used for the storage media. Multiple streams can be configured for database backups only.

Command Line Operations Log On to the CommServe

Log Off from the CommServe

Configure Instances

CONFIGURING MULTIPLE STREAMS ON WINDOWS CLIENT

1.	Log in to the database and run the following command from the dbm client interface:	Example:
	dbmcli -d <database name=""> -u <username,password></username,password></database>	dbmcli -d cert1 -u DBM,DBM
		wherein cert1 = Database name
		DBM, DBM = UserName, Password
2.	Enter the commands for defining the path of stream/pipe.	medium_put BackData2\mem1
	Windows pipes must be specified in the form \\. \pipe\[pipe name]	\\.\pipe\pipe_mem1 PIPE DATA 0 0 NO NO '' BACK
		medium_put BackData2\mem2
		<pre>\\.\pipe\pipe_mem2 PIPE DATA 0 0 NO NO '' BACK</pre>
		<pre>medium_put BackPages2\mem1</pre>
		<pre>\\.\pipe\pipe_mem3 PIPE PAGES 0 0 NO NO '' BACK</pre>
		medium_put BackPages2\mem2
		\\.\pipe\pipe_mem4 PIPE PAGES 0 0 NO NO '' BACK
		medium_put BackLog\meml
		\\.\pipe\pipe_mem5 PIPE LOG 0 0 NO NO '' BACK
		medium_put CompleteF\mem1
		\\.\pipe\pipe_mem5 FILE DATA 0 0 YES ''

CONFIGURING MULTIPLE STREAMS ON UNIX CLIENT

1.	Log in to the database using the following command from dbm client interface:	Example:
	dbmcli -d <database name=""> -u <username,password></username,password></database>	bird:/opt/sdb# dbmcli -d cert1 -u DBM,DBM
		wherein cert1 = Database name
		<pre>DBM, DBM = UserName, Password</pre>
2.	Enter the adjacent commands for defining the path of stream/pipe.	medium_put BackData2\mem1
	You can specify any file path as a pipe and create the pipes in the operating system.	/space/sdb/data/cert1/files/pipe_mem1 PIPE DATA 0 0 NO NO '' BACK
		medium_put BackData2\mem2
		/space/sdb/data/cert1/files/pipe_mem2 PIPE DATA 0 0 NO NO '' BACK

medium put BackPages2\mem1

/space/sdb/data/cert1/files/pipe_mem3 PIPE PAGES 0 0
NO NO '' BACK

medium put BackPages2\mem2

/space/sdb/data/cert1/files/pipe_mem4 PIPE PAGES 0 0
NO NO '' BACK

medium_put BackLog\mem1

/space/sdb/data/cert1/files/pipe_mem5 PIPE LOG 0 0
NO NO '' BACK

medium_put CompleteF\mem1 /

<code>space/sdb/data/cert1/files/complete FILE DATA 0 0 YES</code>

REGISTERING THE CLIENT IN SAP SLD

Once installed, you may register the client iDataAgent software in the SAP Software Landscape Directory (SLD) as recommended by SAP.

This is an optional procedure that can be run on any SAP for MAXDB client and can be used to register any other client if needed.

1.	On Windows Client:	<pre>backint <-f createsldxml> <short_client_name> <maxdb></maxdb></short_client_name></pre>	
	Create an XML File using the backint program. The backint program needs to be run from a command prompt in the base directory as the domain administrator.	Example:	
		backint -f createsldxml racer maxdb	
	On Unix Client:	[root@flyhat3 iDataAgent]#	
	Create an XML File using the backint program. The backint program needs to be run	/Base/cvprofile	
	as a root user and in the <idataagent> directory.</idataagent>	[root@flyhat3 iDataAgent]#	
		/SapMaxDbAgent/backint -f createsldxml racer maxdb	
2.	Make sure that the Java JRE version 1.5 and above is accessible.	# java -version	
		java version "1.5.0_21"	
		Java(TM) 2 Runtime Environment,	
		Standard Edition (build 1.5.0_21-b01)	
		Java HotSpot(TM)	
		64-Bit Server VM (build 1.5.0_21-b01, mixed mode)	
3.	Run the adjacent command.	java -cp sldreg.jar sldreg	
	A return code of 200 implies a successful registration of SAP for Oracle client racer in	<pre><sld_host_name> <port_number></port_number></sld_host_name></pre>	
	the SLD.	<user_name> <password> <xml_file></xml_file></password></user_name>	
		Example:	
		# java -cp	
		sldreg.jar sldreg 155.56.49.26 80	
		3rd_party isvconnect08 racer_maxdb.xml	

Retcode:200

COMMAND LINE OPERATIONS

You can add, modify, or delete several configurable properties for the SAP for MAXDB iDataAgent from the command line interface.

Command line configuration enables you to:

- configure the same properties across multiple clients simultaneously.
- reuse the same configurations for additional entities.

The following sections describe the available command line configurations:

LOG ON TO THE COMMSERVE

To run command line operations you must first login to the CommServe as follows:

• From Command prompt, navigate to <Software_Installation_Directory>/Base and run the following command:

qlogin -cs <commserve name> -u <user name>

• For example, to log on to CommServe 'server1' with username 'user1':

qlogin -cs server1 -u user1

CONFIGURE INSTANCES

CREATE AN INSTANCE

Execute the following command from the <Software_Installation_Directory>/Base folder after substituting the parameter values.

qoperation execscript -sn QS_CreateSAPMAXDBInstance.sql -si client_name -si instance_name -si cmd_storage_policy For example:

qoperation execscript -sn QS_CreateSAPMAXDBInstance.sql -si client1 -si instance1 -si sp1

MODIFY AN INSTANCE

- 1. Download the ModifyInstance_Template.xml file and save it on the computer from where the command will be executed.
- 2. Execute the following command from the <Software_Installation_Directory>/Base folder after substituting the parameter values.

qoperation execute -af ModifyInstance_Template.xml -dataBackupStoragePolicy/storagePolicyName xxxxx

DELETE AN INSTANCE

- 1. Download the deleteInstance_Template.xml file and save it on the computer from where the command will be executed.
- 2. Execute the following command from the <Software_Installation_Directory>/Base folder after substituting the parameter values.

qoperation execute -af deleteInstance_Template.xml -instanceName xxxxx -clientName xxxxx

LOG OFF FROM THE COMMSERVE

Once you have completed the command line operations, you can logout from the CommServe using the following command:

qlogout -cs commserve

For example, to log out from the CommServe 'Server1'.

qlogout -cs Server1

MODIFYING AN INSTANCE

Certain properties of Agents and Instances can be modified to accommodate changes to your configuration, data, or desired backup behavior.

It is recommended that that you do not modify the properties of an instance when a job is in progress for that specific instance. If a job is in progress, either wait for the job to complete or kill the job from the Job Controller.

The following table describes the properties that can be configured from these levels.

OPTION	DESCRIPTION	RELATED TOPICS
Change Storage Policies	You might need to modify the storage policies in any of the following situations:	Refer to Storage Policies.
	 To include a different media for the backup operation. 	
	 To use a storage policy with a different retention criteria. 	
	You can change the storage policies for command line backup from the instance level.	
	1. From the CommCell Browser, right-click the SAP for MAXDB Instance and click Properties .	
	2. Click Storage Device tab.	
	3. Click Command Line Backup tab and select from the list of existing storage policies for command line backups.	
	4. Click OK to save your settings.	
Configure Data Transfer Options	You can efficiently configure the available resources for transferring data secured by data protection operations from the subclient level. This includes the following:	Refer to Data Compression and Network Bandwidth Throttling.
-	• Enable or disable Data Compression either on the client or the MediaAgent.	
	• Configure the transfer of data in the network using the options for Network Bandwidth Throttling and Network Agents .	
	You can configure the data transfer options.	
	1. From the CommCell Browser, right-click the subclient.	
	2. Click Properties.	
	3. Click Storage Device.	
	4. Click Data Transfer Option tab.	
	5. Choose the appropriate software compression option for this subclient.	
	6. Select Throttle Network Bandwidth and set the required bandwidth.	
	7. Click OK.	
Configure Deduplication	You can establish the options for deduplication on the instance. It indicates whether deduplication for the instance is enabled or disabled, and if enabled whether the signature	Refer to Deduplication

	generation (a component of deduplication) is performed on the client or MediaAgent computer.	
	If client-side deduplication is enabled, then this preference is overridden and signature generation is performed on the client by default. You can perform only block level	
	deduplication for this iDataAgent.	
	1. Click the Instance Properties and select Storage Device tab.	
	2. Click Deduplication tab.	
	3. Select one of the following:	
	 On Client - to enable signature generation on the client computer. 	
	 On Media Agent - to enable signature generation on the MediaAgent computer. 	
	• No Deduplication - to disable deduplication for the instance.	
	4. Click OK to save your settings.	
View Data Paths	You can view the data paths associated with the primary storage policy copy of the selected storage policy. You can also modify the data paths including their priority from the instance level.	
	1. From the CommCell browser, right-click the Instance .	
	2. Click Properties.	
	3. Click Storage Device.	
	4 Select Storage Policy from the dron-down menu	
	5 Click Data Paths	
Configure Activity	You can enable backup and restore operations from the agent and Instance level. However,	Refer to Activity Control.
Control	you can enable restore operations only from the agent level.	,
	1. From the CommCell browser, right-click the Instance.	
	2. Click Properties.	
	3. Click Activity Control, select or clear option(s) as desired.	
	4. Click OK.	
Configure User Security	You can configure user security from the agent or instance level.	Refer to User Administration
	You can perform the following functions:	and Security.
	• Identify the user groups to which this CommCell object is associated.	
	Associate this object with a user group.	
	Disassociate this object from a user group.	
	1. From the CommCell browser, right-click the Instance.	
	2. Click Properties .	
	3. Click Security.	
	 Select the appropriate user groups to which you want to associate to the CommCell object from the Available Groups pane, and then move the user group to the Associated Groups pane. 	
	5. Click OK .	
Enable/Disable Data Encryption	You can enable data encryption from the instance level. Encryption must be enabled at the client level prior to configuring any instances residing on that client.	Refer to Data Encryption.
	1. From the CommCell browser, right-click the Instance.	
	2. Click Properties.	
	3. Click Encryption.	
	4 Select the desired encryption	
	5 Click OK	
View Software Version	The Version tab, at the Agent level displays the software version and post-release service	
and Installed Updates	packs and updates installed for the component.	
	1. From the CommCell browser, right-click the agent.	
	2. Click Properties .	
	3. Click Version.	
	4. Click OK .	
CommCell Configuration Report	The CommCell Configuration Report provides the properties of the CommServe, MediaAgents, clients, agents, and storage policies within the CommCell based on the selected filter criteria.	Refer to CommCell Configuration.
	1. From the CommCell browser, click Reports icon.	
	2. Select CommCell Configuration.	
	3. Click Run.	

DELETING AN INSTANCE

The following sections describe the steps involved in deleting an instance or subclient.

When you delete an instance or backupset, the associated data is logically deleted and you can no longer access the corresponding data from CommCell Console for recovery purposes.

Refer to the troubleshooting article on Recovering Data Associated with Deleted Clients and Storage Policies for information on how to recover data if you accidentally delete an entity.

DELETE AN INSTANCE

Consider the following before deleting an instance:

- When you delete a specific instance all job schedules and job histories that pertain to any of the levels within the deleted instance are deleted.
- You cannot delete an instance if it is being backed up. Attempts to delete an instance under such conditions cause the deletion to fail. If a backup is in
 progress, either wait for the backup to complete or kill the backup job using the Job Manager. Once the backup is no longer in progress, you can delete the
 instance level.
- You cannot delete an instance if there is only one instance present for an agent. To delete the final instance, you must remove the agent software from the client computer.
- 1. From the CommCell Browser, right-click the instance that you want to delete, click All Tasks and then click Delete.
- 2. Click Yes to confirm the deletion. (Clicking No cancels the deletion and retains the node.)
- 3. Type the requested phrase in the Enter Confirmation Text dialog box and click OK. This should delete the instance.

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Advanced - SAP for MAXDB Backup

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FULL BACKUP

RELATED TOPICS

Job Management Provides comprehensive information on managing jobs.

A full backup contains the backup of an entire database. The full backup becomes a baseline to which subsequent incremental backups are applied should data restoration be requested.

PERFORMING AN OFFLINE (COLD) FULL BACKUP

1	Open the DBM Command line Interface and verify the status of the database.	<pre>#> dbmcli -d CERT1 -u dbm,dbm -uUTL dbmcli on CERT1>db_state OK State ADMIN</pre>
2.	Ensure that the database is in admin (cold) state.	#> dbmcli -d CERT1 -u dbm,dbm db_cold
	If not, execute the command to bring the database to admin (cold) state.	
3.	Type the command to execute the offline full backup	#> dbmcli -d CERT1 -u dbm,dbm -uUTL -c
		backup_start BackData2 Migration
	The backup should complete without any errors.	ok
		Return Code 0

PERFORMING ONLINE (WARM) FULL BACKUP

1.	Open the DBM Command line Interface and verify the status of the database.	<pre>#> dbmcli -d CERT1 -u dbm,dbm -uUTL dbmcli on CERT1>db_state OK State ONLINE</pre>	
2.	Ensure that the database is in online (warm) state.	<pre>#> dbmcli -d < DBsid > -u dbm,dbm db_warm</pre>	
	If not, execute the command to bring the database to online (warm) state.		
3.	Type the command to execute the online full backup	# dbmcli -d CERT1 -u dbm,dbm -uUTL -c	
		backup_Start BackData2 Recovery	
	The backup should complete without any errors.	ok	
		Return Code 0	

INCREMENTAL BACKUPS

An incremental backup contains only data that is new or has changed since the last backup, regardless of the type. On average, incremental backups consume far less media and place less of a burden on resources than full backups. To streamline the backup process and to optimize the time and resources, you can run incremental backups.

PERFORMING AN OFFLINE (COLD) INCREMENTAL BACKUP

1.	Open the DBM Command line Interface and verify the status of the database.	#>	dbmcli	-d CERT1	-u dbm,dbm	-uUTL
		dbm	cli on	CERT1>db	state	
		OK				

State

		ADMIN
2.	Create a table and add records.	#> sdbfill CERT1
	Usage example:	append 1000000 2000000 10000 0 a DBA DBA
	sdbfill <dbname> init create append check delete [<from> <to></to></from></dbname>	2000000,
	[<transactionlength> [<sleepbeforecommit> [q a b</sleepbeforecommit></transactionlength>	finale commit at 1999999
	[dba dbapassword]]]]]	1000000 rows inserted successfully.
3.	Ensure that the database is in admin (cold) state.	#> dbmcli -d CERT1 -u dbm,dbm db_cold
	If not, execute the command to bring the database to admin (cold) state.	
4.	Type the command to execute the offline incremental backup	#> dbmcli -d <dbsid> -u dbm,dbm -uUTL -c</dbsid>
		backup_start BackPages migration
	The backup should complete without any errors.	ok
		Return Code 0

PERFORMING AN ONLINE (WARM) INCREMENTAL BACKUP

1	Open the DBM Command line Interface and verify the status of the database	#> dbmcli =d CEPT1 =u dbm
÷.		#> dbmcii -d CERII -d dbm,
		dbm -uUTL
		dbmcli on CERT1>db_state
		OK State ONLINE
2.	Create a table and append the data in the table.	#> sapdbfill append 1000000 2000000 10000 0 a DBA
	Usage example:	DBA
	sdbfill <dbname> init create append check delete [<from> <to></to></from></dbname>	
	[<transactionlength> [<sleepbeforecommit> [q a b</sleepbeforecommit></transactionlength>	
	[dba dbapassword]]]]]	
3.	Ensure that the database is in online (warm) state.	<pre>#> dbmcli -d CERT1 -u dbm,dbm db_warm</pre>
	If not, execute the command to bring the database to online (warm) state.	
4.	Type the command to execute the online incremental backup	#> dbmcli -d <dbsid> -u dbm,dbm -uUTL -c</dbsid>
The b		backup_start BACKPages recovery
	The backup should complete without any errors.	ok
		Return Code 0

SELECTIVE ONLINE FULL BACKUPS

An auxiliary copy operation or a data protection operation copies valid data from a source copy of a specific storage policy to all or one active secondary copy within a storage policy. These secondary copies can be either synchronous or selective copies. A selective copy allows you to copy the backup data selectively from a source copy to the secondary copy, providing for better tape rotation.

During a data protection operation that creates an inline copy, only those backups from the primary copy that meet certain criteria will be copied to a selective copy. You can define a selective copy to be time-based, automatically selected, or automatically not selected on the primary copy.

Selective copy will copy the selective Online Full backups along with their linked jobs.

ENABLE/DISABLE BACKUPS USING SELECTIVE COPY

• To enable backups using selective copy for SAP for MAXDB from the CommCell Console, execute the following command in the CommServe SQL database: insert into gxglobalparam values ('ForceSAP_longRetention', '1')

Include the SelectiveOnlineFull parameter in the param file and set the parameter value to 1 to enable backups using selective copy from the client.

- To disable the selective copy feature, execute the following command:
 - delete from gxglobalparam where name = 'ForceSAP_longRetention'

set the parameter value to 0 $\,\,{\rm to}\,\,$ disable this capability.

Keep in mind that selective copies can be time-based. For an overview, see Time Based Selective Copies.

The following examples enable you to understand the various scenarios under which an online full backup job can be copied to selective copies:

EXAMPLE 1

Successful completion of an online full backup cycle requires the successful completion of a full data and corresponding configuration backup job followed eventually by a full log and corresponding configuration backup job. (A single job will be initiating for data/logs with a corresponding configuration file.) As such, the shortest successful cycle can be illustrated as follows:

DATA, CONFIG, FULL (pass) --> First, A full backup with data and configuration files (backint.conf and parameter file) is successfully completed.

LOG, CONFIG, FULL (pass) ---> Next, A Log backup with configuration files (backint.conf and parameter file) is successfully completed.

In this example, each required job has completed successfully within the full backup cycle. Therefore, the online full data backup job (along with all the other jobs in the cycle) will be copied to a selective copy.

EXAMPLE 2

A full backup cycle can include other backup job types (e.g., incremental backup jobs). If the full backup cycle is successful, these jobs are also copied to a selective copy. This includes incremental backup jobs within the cycle:

DATA, CONFIG, FULL (pass) --> First, a full backup with data and configuration files (backint.conf and parameter file) is successfully completed.

DATA, CONFIG, INCR (pass)--> Next, an Incremental backup with configuration files (backint.conf and parameter file) is successfully completed.

LOG, CONFIG, FULL (fail) --> However, if a Log backup that is performed after a successful incremental backup failed. This will not constitute as an online full backup cycle.

DATA, CONFIG, INCR (pass)--> A full backup with data and configuration files (backint.conf and parameter file) is successfully completed.

LOG, CONFIG, FULL (pass) --> On the second attempt after another incremental backup, a Log backup with configuration files (backint.conf and parameter file) is successfully completed.

In this example, the first attempt at running the configuration job for the full log backup job failed; however, the second attempt succeeded and therefore completed a successful cycle. As a result, each job (total of five) within the cycle will be copied to a selective copy. This includes the one configuration job that failed.

EXAMPLE 3

A full backup cycle is started before a full online backup cycle completes:

DATA, CONFIG, FULL (pass)--> First, a full backup with data and configuration files (backint.conf and parameter file) is successfully completed.

DATA, CONFIG, INCR (pass)-->Next, an Incremental backup with configuration files (backint.conf and parameter file) is successfully completed.

DATA, CONFIG, FULL (pass)--> However, before a log backup can be taken to complete the full cycle, another full backup with data and configuration files is successfully completed. As such, none of the backup jobs in the first cycle can be copied to a selective copy.

In this example, you need to run a log backup after the successful incremental backup to complete the online full cycle. Only after a full successful cycle, each job within the cycle will be copied to a selective copy.

ARCHIVE LOG BACKUPS

Log backups are useful when you want to recover database transactions that have been lost due to an operating system or disk failure. You can apply these logs to an online backup in order to recover a database.

Full backups generally includes both the data and logs. However, you can also take backups of the logs only. You need to take the first backup operation on the instance will include the entire database (data and logs) when the database is online.

1	Open the DBM Command line Interface and verify the status of the database.	<pre>#> dbmcli -d CERT1 -u dbm,dbm -uUTL dbmcli on CERT1>db_state OK State ADMIN</pre>
2.	Ensure that the database is in online (warm) state.	<pre>#> dbmcli -d CERT1 -u dbm,dbm db_warm</pre>
	If not, execute the command to bring the database to online (warm) state.	
3.	Type the command to execute the log backup	#> dbmcli -d CERT1 -u dbm,dbm -uUTL -c
		backup_start BackLog
	The backup should complete without any errors.	ok
		Return Code 0

AUTOMATIC LOG BACKUPS

When you activate automatic log backups, the log entries are regularly backed up.

1.. Create a FILE medium for Auto log backup. Auto log backup cannot use PIPE medium. Auto Log Backup cannot use a PIPE Medium. The location of the log_version should be in a different volume from where the log segments are located. Only then, the Auto Log Backups can automatically clear up the log segments.

dbmcli on certl>medium put AutoLog /space/sdb/data/cert1/files/log version FILE AUTO 0 0 NO NO ''BACK OK

2. Enable Auto Log in the database and assign the FILE medium for it.

dbmcli on cert1>autolog_on AutoLog OK

If you enable Auto log backups, you cannot perform regular log backups. Hence,

disable the Auto log backups when you need to perform regular log backups.

OFFLINE FULL BACKUPS

Type the command to perform a full offline Auto log backup.

[root@sappg54 sdb]# dbmcli dbm -uUTL -c backup_start	-d CERT1 -u dbm, BackData2 Migration
OK .	
Returncode	0
Date	20101202
Time	00232908
Server	sapclient.company.com
Database	CERT1
Kernel Version	Kernel 7.7.04
Build	028-123-194-355
Pages Transferred	8616
Pages Left	0
Volumes	2
Medianame	BackData2
Location	/space/sdb/data/cert1/files/pipe mem2
Errortext	
Label	DAT 00000003
Is Consistent	true
First LOG Page	22115
Last LOG Page	
DB Stamp 1 Date	20101202
DB Stamp 1 Time	00232825
DB Stamp 2 Date	
DB Stamp 2 Time	
Page Count	8574
Devices Used	2
Database ID	sanclient company com CERT1 20101202 231525
May Head Data Page	0
Convertor Page Count	11
CONVELLET raye Count	$\pm \pm$

INCREMENTAL BACKUPS WHILE THE DATABASE IS IN COLD MODE

Type the command to perform an incremental Auto log backup while the database is in a cold mode.

```
[root@sappg54 sdb]# dbmcli -d CERT1 -u dbm,dbm
dbmcli on CERT1>db cold
OK
____
dbmcli on CERT1>quit
OK
___
[root@sappg54 sdb]# dbmcli -d CERT1 -u dbm,dbm -uUTL -c backup_start BackPages2 Migration
OK
Returncode
                        0
                       20101202
Date
                       00233902
Time
Server
                       sapclient.company.com
Database
                       CERT1
Kernel Version
                       Kernel
                                 7.7.04 Build 028-123-194-355
Pages Transferred
                       4104
                       0
Pages Left
Volumes
                        2
Medianame
                       BackPages2
                       /space/sdb/data/cert1/files/pipe_mem4
Location
Errortext
Label
                       PAG_00000004
Is Consistent
                       true
                       32999
First LOG Page
Last LOG Page
DB Stamp 1 Date
                        20101202
DB Stamp 1 Time
                        00233730
DB Stamp 2 Date
DB Stamp 2 Time
                       4055
Page Count
Devices Used
                       2
Database ID
                       sapclient.company.com:CERT1_20101202_231525
Max Used Data Page
                       0
                       20
Converter Page Count
```

STAGING AUTOLOG VERSION FILES TO PIPES

First, verify the log sequence order before performing a backup on the logs. For example, If the logs generated were 2,3,4,5,6 (2 to 6), auto log backup will start 5 backup jobs. In general, 1 job is initiated for each log version file.

Type the command for staging log version files and perform an Auto log backup.

```
[root@sappg54 data]# cd cert1/files
[root@sappg54 files] # pwd
/space/sdb/data/cert1/files
[root@sappg54 files]# ls
archive_stage log_version.002 log_version.003 log_version.004 log_version.005 log version.006
[root@sappg54 files]# dbmcli -d CERT1 -u dbm,dbm
dbmcli on CERT1>archive stage BackLog AutoLog FNL 2-6 NOVERIFY
OK
Processed Stage Files
                        5
                        177274880
Bytes processed
Deleted Stage Files
                        5
Remaining Stage Files
                        0
dbmcli on CERT1>quit
```

INCREMENTAL BACKUPS WHILE THE DATABASE IS IN A WARM MODE:

Type the command to perform an incremental Auto log backup while the database is in a warm mode.

```
Append some more data:
[root@sappg54 files]# sdbfill CERT1 append 1000000 2000000 10000 0 a DBA DBA
2000000, final commit at 1999999
1000000 rows inserted successfully.
Run Incremental Backup
[root@sappg54 files]# dbmcli -d CERT1 -u dbm,dbm -uUTL -c backup_start BackPages2 Recovery
OK
                        0
Returncode
Date
                        20101203
                        00003409
Time
                        sapclient.company.com
Server
Database
                        CERT1
Kernel Version
                        Kernel
                                  7.7.04 Build 028-123-194-355
Pages Transferred
                        8368
Pages Left
                        0
Volumes
                        2
Medianame
                        BackPages2
Location
                        /space/sdb/data/cert1/files/pipe mem4
Errortext
                        PAG 00000005
Label
Is Consistent
                        true
                        43902
First LOG Page
Last LOG Page
                        20101203
DB Stamp 1 Date
DB Stamp 1 Time
                        00003409
DB Stamp 2 Date
DB Stamp 2 Time
                        8324
Page Count
Devices Used
                        2
                        sapclient.company.com:CERT1 20101202 231525
Database ID
Max Used Data Page
                        0
Converter Page Count
                        20
```

PERFORMING FULL BACKUPS WHILE THE DATABASE IS IN ONLINE (WARM) MODE

Type the command to perform a full Auto log backup in warm status:

```
[root@sappq54 files]# dbmcli -d CERT1 -u dbm,dbm -uUTL -c backup Start BackData2 Recovery
OK
Returncode
                        Ο
                        20101203
Date
Time
                        00003741
                        sapclient.company.com
Server
Database
                        CERT1
                                  7.7.04 Build 028-123-194-355
Kernel Version
                        Kernel
Pages Transferred
                        8608
Pages Left
                        0
Volumes
                        2
```

Medianame	BackData2
Location	/space/sdb/data/cert1/files/pipe mem2
Errortext	—
Label	DAT_00000006
Is Consistent	true
First LOG Page	43903
Last LOG Page	
DB Stamp 1 Date	20101203
DB Stamp 1 Time	00003741
DB Stamp 2 Date	
DB Stamp 2 Time	
Page Count	8574
Devices Used	2
Database ID	sapclient.company.com:CERT1_20101202_231525
Max Used Data Page	0
Converter Page Count	20

STAGING AUTO LOG VERSION FILES TO PIPES

Backup of Logs:

Now the Logs that need to be backed up were only 7 & 8.

```
[root@sappg54 files]# pwd
/space/sdb/data/cert1/files
[root@sappg54 files]# ls
archive_stage log_version.007 log_version.008
[root@sappg54 files]# dbmcli -d CERT1 -u dbm,dbm
dbmcli on CERT1>archive_stage BackLog AutoLog FNL 7-8 NOVERIFY
OK
Processed Stage Files
                        2
                        70909952
Bytes processed
Deleted Stage Files
                        2
Remaining Stage Files
                        0
___
```

dbmcli on CERT1>

STAGING AUTOLOG VERSION FILES TO PIPES

Backup Logs again

Now Log files generated were 9, 10, 11. so the syntax would need 9-11

```
[root@sappg54 files]# pwd
/space/sdb/data/cert1/files
[root@sappg54 files]# ls
archive_stage log_version.009 log_version.010 log_version.011 pipe_mem6_out
[root@sappg54 files]# dbmcli -d CERT1 -u dbm,dbm
dbmcli on CERT1>archive_stage BackLog AutoLog FNL 9-11 NOVERIFY
OK
Processed Stage Files 3
Bytes processed 106364928
Deleted Stage Files 3
Remaining Stage Files 0
----
dbmcli on CERT1>
```

MANAGING JOBS

Once you initiate the backup operation, a backup job is generated in the Job Controller on Commcell Console. A single job ID will be generated in Job Controller. You can view the progress and details of the job through Job Controller.

You can view the specific historical information about the job once the job is completed from the client computer, iDataAgent, or instance level in the CommCell Console.

CONTROL JOBS

The Kill control option to terminate a job is available for this iDataAgent in the Job Controller window:

- This control can be applied to:
- All jobs in the Job Controller.
- All selected jobs in the Job Controller providing you have the correct security associations at the proper level for each job selected.

- All data protection operations running for a particular client or client/agent.
- All data protection operations running for a particular MediaAgent.

You can Kill a job from the Job Controller of the CommCell Console.

- 1. Right-click the job and select Kill.
- Click Yes when the confirmation prompt appears if you are sure you want to kill the job. The job status may change to Kill Pending for a few moments while the operation completes. Once completed, the job status will change to Killed and it will be removed from the Job Controller window after five minutes.

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Advanced - SAP for MAXDB Restore

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CHOOSING RESTORE TYPES

When restoring SAP for MAXDB data, it is important to consider the backup type that was originally performed.

The following table illustrates the types of restores available for each backup type:

BACKUP TYPE	RESTORE LEVEL	NOTES
Offline Backup	Restore Entire Database	Since the database is offline and is consistent, there is no need for logs.
	Recover Database	
Online Backup	Restore Entire Database	
	Restore Logs	
Selective Online Full Backup	Restore Entire Database	
	Restore Logs	
Log backup	Restore Logs	

CHOOSING THE RESTORE DESTINATION

By default, this iDataAgent restores data to the client computer from which it originated; this is referred to as an in-place restore. You can also restore the data to another client computer in the CommCell. Keep in mind the following considerations when performing such restores:

- The destination client must reside in the same CommCell as the client whose data was backed up.
- Note that when you perform restores other than in-place restores, the restored data assumes the rights (i.e., permissions) of the parent directory.

The following section enumerates the types of restore destinations that are supported by this iDataAgent.

IN-PLACE RESTORE

When restoring data, the SAP for MAXDB iDataAgent provides the facility to restore the data to the same path/destination on the client computer from which the data originated; this is referred to as an in-place restore.

OUT-OF-PLACE RESTORE

You can also restore data to a different client computer in the CommCell using the same path/destination. This can include restoring either individual data or the entire database to another computer.

Keep in mind the following considerations when you perform out-of-place restores:

- The destination client must reside in the same CommCell as the client whose data was backed up.
- The destination client should have the same SID name as the source client.
- When you perform an out-of-place restore, the restored data assumes the rights (i.e., permissions) of the parent directory.

RESTORING TO A DIFFERENT CLIENT (CROSS MACHINE RESTORE)

In cases when the original client computer is damaged, you need to restore the SAP for MAXDB database to a different host. This is called a cross-machine restore. Whenever you perform such a restore, ensure that the destination machine has sufficient disk space to accommodate the restored database.

Prior to performing a cross-machine restore, perform the following:

RELATED TOPICS

Capabilities and Required Actions Provides comprehensive information on licensing.

- 1. Build a secondary (destination) client computer, and assign a different name to this computer. Both the source client computer and the destination client computer must have the same operating system.
- 2. Install the SAP for MAXDB software on the destination client. On the destination client, create the database and volume that are identical to those on the source client. Ensure that the database is in ADMIN mode.
- 3. Install the SAP for MAXDB iDataAgent on the destination client and configure the database instance on the CommServe.
- 4. Define a backup medium on the destination computer using the medium_put command.
- 5. In the parameter file, include the srccrossclient parameter followed by the name of the source client. For example:

srccrossclient

magnum.company.com

6. If the dbm.knl and dbm.ebf catalog files do not exist on the destination client and if the source client is still available, copy these files if they are available. Otherwise, restore these files manually by using the Backint interface.

For example:

a. Get the full set of backup job IDs. Specifically, create an input file called **file1.txt**. Ensure that the contents of the file is #NULL, and run an inquiry to get a list of backups. For example:

backint -u -f inquire -t file -p param -l file1.txt

b. Using the last job ID to get the catalog files, create an input file called **file2.txt**, and include the last job ID in the file (e.g., **SAP_0_28**). Then execute the following command:

backint -u -f inquire -t file -p param -i file2.txt

c. Restore the catalog files. Specifically, create an input file called file3.txt. Include contents similar to the following in the file:

SAP_0_28 d:\maxdb\sdb\data\wrk\CLDB\dbm.ebf

SAP_0_28 d:\maxdb\sdb\data\wrk\CLDB\dbm.knl

Then, execute the following command to restore the dbm.knl and dbm.ebf catalog files:

backup backint -u -f restore -t file -p param -i inp3.txt

7. Perform the required data and log restores to the destination client by using the following command:

backup_ext_ids_get BACKData2

backup_ext_ids_list

Activate the database and recover the full backup. Use a comma to separate each ID specified.

db_activate RECOVER BACKData2 DATA ExternalBackupID "... , ..."

Then, restore from the incremental backups.

recover_start BackPages2 PAGES ExternalBackupID "... , ..."

Then, restore all the logs.

recover_start BackLog LOG ExternalBackupID "..."

recover_replace BackLog ExternalBackupID "..."

recover_replace BackLog ExternalBackupID "..."

recover_ignore

SAME OPERATING SYSTEM - DIFFERENT VERSION

Restoring data associated with different versions of the operating system is supported. For example, you can restore file system data secured from a Windows 2000 client computer to a client computer with Windows 2003, or Solaris 7 to Solaris 8, etc. If you plan to do a full system restore on a Windows 2003 Server with an x64 platform, use an SAP for MAXDB *i*DataAgent for backup on x64 platform. You cannot do a full system restore on an x64 platform if you are using SAP for MAXDB *i*DataAgent for 32bit platform.

RESTORING TO A DIFFERENT CLIENT WITH DIFFERENT DATABASE NAME (CROSS MACHINE RESTORE)

In cases when the original client computer is damaged, you need to restore the SAP for MAXDB database to a different host. This is called a cross-machine restore. Whenever you perform such a restore, ensure that the destination machine has sufficient disk space to accommodate the restored database.

Prior to performing a cross-machine restore, perform the following:

- 1. Build a secondary (destination) client computer, and assign a different name to this computer. Both the source client computer and the destination client computer must have the same operating system.
- 2. Install the SAP for MaxDB software on the destination client. Ensure that the SAP for MaxDB software version is same for the source and destination client.
- 3. On the destination client, create the database and volume that are identical to those on the source client. Ensure that the database is in ADMIN mode.
- 4. Install the SAP for MaxDB iDataAgent on the destination client and configure the database instance on the CommServe.
- 5. Define a backup medium on the destination computer using the **medium_put** command.
- 6. In the parameter file, add the parameters srcCrossClient and srcCrossDbName followed by the name of the source and destination clients: For example:

srcCrossClient sybserver5 srcCrossDbName CERT1

- 7. From the CommCell Console, configure an instance for the destination client. For step-by-step instructions, see Getting Started SAP MaxDB iDataAgent Configuration.
- 8. From the source client, execute the following backups using the given commands:

B1 – FULL ONLINE BACKUP

Execute the following command to perform a full online backup:

```
sybserver5:/opt/sdb/data/cert1/data # dbmcli -d CERT1 -u dbm,dbm -uUTL
dbmcli on CERT1>db_state
OK
State
ADMIN
sybserver5:/opt/sdb/data/cert1/data # dbmcli -d CERT1 -u dbm,dbm -uUTL -c backup_start BackData2 Migration
OK
Returncode 0
Date 20130808
Time 00104536
Server sybserver5
Database CERT1
Kernel Version Kernel 7.8.02 Build 021-121-242-175
Pages Transferred 432
Pages Left 0
Volumes 2
Medianame BackData2
Location /opt/sdb/data/cert1/files/pipe mem2
Errortext
Label DAT 00000018
Is Consistent true
First LOG Page 26520
Last LOG Page
DB Stamp 1 Date 20130808
DB Stamp 1 Time 00104449
DB Stamp 2 Date
DB Stamp 2 Time
Page Count 393
Devices Used 2
Database ID sybserver5:CERT1 20130723 163654
Max Used Data Page 0
Converter Page Count 12
```

B2 - INCREMENTAL BACKUP IN COLD (OFFLINE) MODE

Execute the following command to perform an incremental backup in cold (offline) mode:

```
sybserver5:/opt/sdb/data/cert1/data # dbmcli -d CERT1 -u dbm,dbm -uUTL
dbmcli on CERT1>db state
OK
State
ADMIN
___
sybserver5:/opt/sdb/data/cert1/data # dbmcli -d CERT1 -u dbm,dbm -uUTL -c backup start BackPages2 Migration
OK
Returncode 0
Date 20130808
Time 00105614
Server sybserver5
Database CERT1
Kernel Version Kernel 7.8.02 Build 021-121-242-175
Pages Transferred 4024
Pages Left 0
Volumes 2
Medianame BACKPages2
Location /opt/sdb/data/cert1/files/pipe mem4
Errortext
Label PAG 00000019
Is Consistent true
First LOG Page 37186
Last LOG Page
DB Stamp 1 Date 20130808
DB Stamp 1 Time 00105612
DB Stamp 2 Date
DB Stamp 2 Time
```

```
Page Count 3971
Devices Used 2
Database ID sybserver5:CERT1_20130723_163654
Max Used Data Page 0
Converter Page Count 12
```

B3 - BACKUP OF LOGS

Execute the following command to perform backup of logs:

```
sybserver5:/opt/sdb/data/cert1/data # dbmcli -d CERT1 -u dbm,dbm db_warm
OK
sybserver5:/opt/sdb/data/cert1/data # dbmcli -d CERT1 -u dbm,dbm -uUTL -c backup_start BackLog
OK
Returncode 0
Date 20130808
Time 00110905
Server sybserver5
Database CERT1
Kernel Version Kernel 7.8.02 Build 021-121-242-175
Pages Transferred 10824
Pages Left 0
Volumes 1
Medianame BackLog
Location /opt/sdb/data/cert1/files/pipe mem5
Errortext
Label LOG 00000005
Is Consistent
First LOG Page 26290
Last LOG Page 37186
DB Stamp 1 Date 20130807
DB Stamp 1 Time 00183022
DB Stamp 2 Date 20130808
DB Stamp 2 Time 00105612
Page Count 10803
Devices Used 1
Database ID sybserver5:CERT1 20130723 163654
```

Max Used Data Page Converter Page Count

B4 - INCREMENTAL BACKUP IN WARM (ONLINE) MODE

Execute the following command to perform an incremental backup in warm (online) mode:

```
sybserver5:/opt/sdb/data/cert1/data # dbmcli -d CERT1 -u dbm,dbm -uUTL -c backup start BackPages2 Recovery
OK
Returncode 0
Date 20130808
Time 00111617
Server sybserver5
Database CERT1
Kernel Version Kernel 7.8.02 Build 021-121-242-175
Pages Transferred 8288
Pages Left 0
Volumes 2
Medianame BACKPages2
Location /opt/sdb/data/cert1/files/pipe_mem4
Errortext
Label PAG 00000020
Is Consistent true
First LOG Page 48088
Last LOG Page
DB Stamp 1 Date 20130808
DB Stamp 1 Time 00111617
DB Stamp 2 Date
DB Stamp 2 Time
Page Count 8240
Devices Used 2
Database ID sybserver5:CERT1 20130723 163654
Max Used Data Page 0
Converter Page Count 18
```

B5 - FULL BACKUP IN WARM (ONLINE) MODE

Execute the following command to perform a full backup in warm (online) mode:

sybserver5:/opt/sdb/data/cert1/data # dbmcli -d CERT1 -u dbm,dbm -uUTL -c backup_Start BackData2 Recovery OK Returncode 0 Date 20130808 Time 00112006 Server sybserver5 Database CERT1

```
Kernel Version Kernel 7.8.02 Build 021-121-242-175
Pages Transferred 8664
Pages Left 0
Volumes 2
Medianame BackData2
Location /opt/sdb/data/cert1/files/pipe_mem2
Errortext
Label DAT_00000021
Is Consistent true
First LOG Page 48089
Last LOG Page
DB Stamp 1 Date 20130808
DB Stamp 1 Time 00112005
DB Stamp 2 Date
DB Stamp 2 Time
Page Count 8622
Devices Used 2
Database ID sybserver5:CERT1 20130723 163654
Max Used Data Page 0
Converter Page Count 18
```

B6 – BACKUP OF LOGS

Execute the following command to perform backup of logs:

sybserver5:/opt/sdb/data/cert1/data # dbmcli -d CERT1 -u dbm,dbm -uUTL -c backup_start BackLog OK Returncode 0 Date 20130808 Time 00112600 Server sybserver5 Database CERT1 Kernel Version Kernel 7.8.02 Build 021-121-242-175 Pages Transferred 10832 Pages Left 0 Volumes 1 Medianame BackLog Location /opt/sdb/data/cert1/files/pipe_mem5 Errortext Label LOG_00000006 Is Consistent First LOG Page 37187 Last LOG Page 48089 DB Stamp 1 Date 20130808 DB Stamp 1 Time 00111435 DB Stamp 2 Date 20130808 DB Stamp 2 Time 00112005 Page Count 10815 Devices Used 1 Database ID sybserver5:CERT1 20130723 163654 Max Used Data Page Converter Page Count

B7 – BACKUP OF LOGS AGAIN

Execute the following command to perform backup of logs again:

sybserver5:/opt/sdb/data/cert1/data # dbmcli -d CERT1 -u dbm,dbm -uUTL -c backup_start BackLog

```
OK
Returncode 0
Date 20130808
Time 00112910
Server sybserver5
Database CERT1
Kernel Version Kernel 7.8.02 Build 021-121-242-175
Pages Transferred 10832
Pages Left 0
Volumes 1
Medianame BackLog
Location /opt/sdb/data/cert1/files/pipe mem5
Errortext
Label LOG_00000007
Is Consistent
First LOG Page 48090
Last LOG Page 58990
DB Stamp 1 Date 20130808
DB Stamp 1 Time 00112828
DB Stamp 2 Date 20130808
DB Stamp 2 Time 00112846
Page Count 10815
Devices Used 1
Database ID sybserver5:CERT1_20130723_163654
```

Max Used Data Page Converter Page Count

9. To get the catalog files for backup IDs, copy the dbm.knl and dbm.ebf files from the source client to the destination client.

```
[root@sybserver2 wrk]# scp root@sybserver5.commvault.com:/opt/sdb/data/cert1/wrk/dbm.ebf .
[root@sybserver2 wrk]# scp root@sybserver5.commvault.com:/opt/sdb/data/cert1/wrk/dbm.knl .
[root@sybserver2 wrk]# cat dbm.ebf
5203AF100003|DAT 000000018|CERT1 1023362 78302 /opt/sdb/data/cert1/files/pipe mem1|DATA MIGRATION|2013-08-08
10:45:36|BACK|0||BackData2|vftPipe|NO|0|8|M|/opt/sdb/data/cert1/files/pipe mem1|0|
5203AF100003|DAT 000000018|CERT1 1023362 78302 /opt/sdb/data/cert1/files/pipe_mem2|DATA MIGRATION|2013-08-08
5203B18C0010|PAG 000000019|CERT1 1023362 78308 /opt/sdb/data/cert1/files/pipe mem3|PAGES MIGRATION|2013-08-08
10:56:14|BACK|0||BACKPages2|vftPipe|N0|0|8|M|/opt/sdb/data/cert1/files/pipe_mem3|0|
5203B18C0010|PAG 000000019|CERT1 1023362 78308 /opt/sdb/data/cert1/files/pipe mem4|PAGES MIGRATION|2013-08-08
10:56:14|BACK|0|BACKPages2|vftPipe|N0|0|8|M|/opt/sdb/data/cert1/files/pipe_mem4|1|
5203B4910012|LOG_000000005|CERT1 1023362_78322 /opt/sdb/data/cert1/files/pipe_mem5|LOG RECOVERY |2013-08-08
11:09:05|BACK|0||BackLog|vftPipe|N0|0|8|S|/opt/sdb/data/cert1/files/pipe mem5|0|
5203B6410015|PAG_000000020|CERT1 1023362_78327 /opt/sdb/data/cert1/files/pipe_mem3|PAGES MIGRATION|2013-08-08
11:16:17|BACK|0||BACKPages2|vftPipe|N0|0|8|M|/opt/sdb/data/cert1/files/pipe mem3|0|
5203B6410015|FAG 000000020|CERT1 1023362 78327 /opt/sdb/data/cert1/files/pipe mem4|PAGES MIGRATION|2013-08-08
11:16:17|BACK|0|BACKPages2|vftPipe|N0|0|8|M|/opt/sdb/data/cert1/files/pipe_mem4|1|
5203B7250017|DAT_000000021|CERT1 1023362_78331 /opt/sdb/data/cert1/files/pipe_mem1|DATA MIGRATION|2013-08-08
11:20:06|BACK|0||BackData2|vftPipe|NO|0|8|M|/opt/sdb/data/cert1/files/pipe_mem1|0|
5203B7250017|DAT_000000021|CERT1 1023362_78331 /opt/sdb/data/cert1/files/pipe_mem2|DATA MIGRATION|2013-08-08
11:20:06|BACK|0||BackData2|vftPipe|N0|0|8|M|/opt/sdb/data/cert1/files/pipe_mem2|1|
5203B8880019|LOG_000000006|CERT1 1023362 78333 /opt/sdb/data/cert1/files/pipe_mem5|LOG_RECOVERY |2013-08-08
11:26:00|BACK|0||BackLog|vftPipe|N0|0|8|5|/opt/sdb/data/cert1/files/pipe_mem5]0|
5203B946001C|LOG_000000007|CERT1 1023362_78335 /opt/sdb/data/cert1/files/pipe_mem5|LOG RECOVERY |2013-08-08
11:29:10|BACK|0||BackLog|vftPipe|NO|0|8|S|/opt/sdb/data/cert1/files/pipe_mem5|0|
```

10. From the destination client, execute the following restores using the given commands:

DB_ACTIVATE DATABASE TO THE FIRST FULL BACKUP (B1)

Execute the following command to activate database to the first full backup:

dbmcli on cert2>db activate recover BackData2 DATA ExternalBackupID "CERT1 1023362_78302 /opt/sdb/data/cert1/files/pipe_mem1,CERT1 1023362_78302 /opt/sdb/data/cert1/files/pipe_mem2" OK Returncode 0 Date 20130808 Time 00084709 Server sybserver5 Database CERT1 Kernel Version Kernel 7.8.02 Build 021-121-242-175 Pages Transferred 424 Pages Left 0 Volumes 2 Medianame BackData2 Location /opt/sdb/data/cert2/files/pipe mem2 Errortext Label DAT 00000018 Is Consistent true First LOG Page 26520 Last LOG Page DB Stamp 1 Date 20130808 DB Stamp 1 Time 00104449 DB Stamp 2 Date DB Stamp 2 Time Page Count 393 Devices Used 2 Database ID sybserver5:CERT1 20130723 163654 Max Used Data Page 0 Converter Page Count 12

RESTORE OF THE INCREMENTAL BACKUP (B2)

Execute the following command to restore from an incremental backup:

dbmcli on cert2>recover_start BackPages2 PAGES ExternalBackupID "CERT1 1023362_78308 /opt/sdb/data/cert1/files/pipe_mem3,CERT1 1023362_78308 /opt/sdb/data/cert1/files/pipe_mem4" OK Returncode 0 Date 20130808 Time 00084940 Server sybserver5 Database CERT1 Kernel Version Kernel 7.8.02 Build 021-121-242-175 Pages Transferred 4016 Pages Left 0 Volumes 2 Medianame BACKPages2

```
Location /opt/sdb/data/cert2/files/pipe_mem3
Errortext
Label PAG_00000019
Is Consistent true
First LOG Page 37186
Last LOG Page
DB Stamp 1 Date 20130808
DB Stamp 1 Dite 00105612
DB Stamp 2 Date
DB Stamp 2 Date
DB Stamp 2 Time
Page Count 3971
Devices Used 2
Database ID sybserver5:CERT1_20130723_163654
Max Used Data Page 0
Converter Page Count 12
```

RESTORE OF THE LOG BACKUP (B3)

Execute the following command to restore from the log backup:

dbmcli on cert2>recover start BackLog LOG ExternalBackupID "CERT1 1023362 78322 /opt/sdb/data/cert1/files/pipe mem5"

OK Returncode -8020 Date 20130808 Time 00085125 Server sybserver5 Database CERT1 Kernel Version Kernel 7.8.02 Build 021-121-242-175 Pages Transferred 10824 Pages Left 0 Volumes 1 Medianame BackLog Location /opt/sdb/data/cert2/files/pipe mem5 Errortext Label LOG 00000005 Is Consistent First LOG Page 26290 Last LOG Page 37186 DB Stamp 1 Date 20130807 DB Stamp 1 Time 00183022 DB Stamp 2 Date 20130808 DB Stamp 2 Time 00105612 Page Count 10803 Devices Used 1 Database ID sybserver5:CERT1_20130723_163654 Max Used Data Page Converter Page Count

RESTORE OF THE LOG BACKUP (B6)

Execute the following command to restore from the log backup:

dbmcli on cert2>recover replace BackLog ExternalBackupID "CERT1 1023362 78333 /opt/sdb/data/cert1/files/pipe mem5"

OK Returncode -8020 Date 20130808 Time 00085327 Server sybserver5 Database CERT1 Kernel Version Kernel 7.8.02 Build 021-121-242-175 Pages Transferred 10832 Pages Left 0 Volumes 1 Medianame BackLog Location /opt/sdb/data/cert2/files/pipe_mem5 Errortext Label LOG 00000006 Is Consistent First LOG Page 37187 Last LOG Page 48089 DB Stamp 1 Date 20130808 DB Stamp 1 Time 00111435 DB Stamp 2 Date 20130808 DB Stamp 2 Time 00112005 Page Count 10815 Devices Used 1 Database ID sybserver5:CERT1_20130723_163654 Max Used Data Page Converter Page Count

RESTORE OF THE LOG BACKUP (B7)

Execute the following command to restore from the log backup again:

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dbmcli on cert2>recover replace BackLog ExternalBackupID "CERT1 1023362 78335 /opt/sdb/data/cert1/files/pipe mem5" OK Returncode -8020 Date 20130808 Time 00085545 Server sybserver5 Database CERT1 Kernel Version Kernel 7.8.02 Build 021-121-242-175 Pages Transferred 10832 Pages Left 0 Volumes 1 Medianame BackLog Location /opt/sdb/data/cert2/files/pipe mem5 Errortext Label LOG 00000007 Is Consistent First LOG Page 48090 Last LOG Page 58990 DB Stamp 1 Date 20130808 DB Stamp 1 Time 00112828 DB Stamp 2 Date 20130808 DB Stamp 2 Time 00112846 Page Count 10815 Devices Used 1

Devices Used 1 Database ID sybserver5:CERT1_20130723_163654 Max Used Data Page Converter Page Count

COMPLETION OF RESTORES

Run the following command after the restore is complete:

dbmcli on cert2>recover ignore OK Returncode 0 Date 20130808 Time 00085545 Server sybserver5 Database CERT1 Kernel Version Kernel 7.8.02 Build 021-121-242-175 Pages Transferred 10832 Pages Left 0 Volumes 1 Medianame BackLog Location /opt/sdb/data/cert2/files/pipe_mem5 Errortext Label LOG_00000007 Is Consistent First LOG Page 48090 Last LOG Page 58990 DB Stamp 1 Date 20130808 DB Stamp 1 Time 00112828 DB Stamp 2 Date 20130808 DB Stamp 2 Time 00112846 Page Count 10815 Devices Used 1 Database ID sybserver5:CERT1_20130723_163654 Max Used Data Page Converter Page Count

CHECK DATABASE

Verify the database after the restore:

dbmcli on cert2>db_state
OK
State
ONLINE
dbmcli on cert2>quit
OK
[root@sybserver2 log]# sdbfill CERT2 check 0 3000000 10000 0 a DBA DBA
Checking table 'sdbfill'.
Fetched first (0 0.000000 0.000000)
table 'sdbfill' is OK.

11. Now, execute the following commands for another round of restores.

DB_ACTIVATE DATABASE TO THE FULL BACKUP (B5)

Execute the following command to activate database to the full backup:

dbmcli on cert2>db_activate recover BackData2 DATA ExternalBackupID "CERT1 1023362_78331 /opt/sdb/data/cert1/files/pipe_mem1,CERT1 1023362_78331 /opt/sdb/data/cert1/files/pipe_mem2"

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OK Returncode 0 Date 20130808 Time 00092027 Server sybserver5 Database CERT1 Kernel Version Kernel 7.8.02 Build 021-121-242-175 Pages Transferred 8656 Pages Left 0 Volumes 2 Medianame BackData2 Location /opt/sdb/data/cert2/files/pipe_mem2 Errortext Label DAT 00000021 Is Consistent true First LOG Page 48089 Last LOG Page DB Stamp 1 Date 20130808 DB Stamp 1 Time 00112005 DB Stamp 2 Date DB Stamp 2 Time Page Count 8622 Devices Used 2 Database ID sybserver5:CERT1_20130723_163654 Max Used Data Page 0 Converter Page Count 18

RESTORE OF THE LOG BACKUP (B6)

Execute the following command to restore from the log backup:

dbmcli on cert2>recover_replace BackLog LOG ExternalBackupID "CERT1 1023362_78333 /opt/sdb/data/cert1/files/pipe_mem5" OK Returncode -8020 Date 20130808 Time 00092417 Server sybserver5 Database CERT1 Kernel Version Kernel 7.8.02 Build 021-121-242-175 Pages Transferred 10832 Pages Left 0 Volumes 1 Medianame BackLog Location /opt/sdb/data/cert2/files/pipe mem5 Errortext Label LOG 00000006 Is Consistent First LOG Page 37187 Last LOG Page 48089 DB Stamp 1 Date 20130808 DB Stamp 1 Time 00111435 DB Stamp 2 Date 20130808 DB Stamp 2 Time 00112005 Page Count 10815 Devices Used 1 Database ID sybserver5:CERT1 20130723 163654

Max Used Data Page Converter Page Count

RESTORE OF THE LOG BACKUP (B7)

Execute the following command to restore from the log backup again:

dbmcli on cert2>recover_replace BackLog ExternalBackupID "CERT1 1023362_78335 /opt/sdb/data/cert1/files/pipe_mem5" OK

Returncode -8020 Date 20130808 Time 00092538 Server sybserver5 Database CERT1 Kernel Version Kernel 7.8.02 Build 021-121-242-175 Pages Transferred 10832 Pages Left 0 Volumes 1 Medianame BackLog Location /opt/sdb/data/cert2/files/pipe mem5 Errortext Label LOG_00000007 Is Consistent First LOG Page 48090 Last LOG Page 58990 DB Stamp 1 Date 20130808

```
DB Stamp 1 Time 00112828
DB Stamp 2 Date 20130808
DB Stamp 2 Time 00112846
Page Count 10815
Devices Used 1
Database ID sybserver5:CERT1_20130723_163654
Max Used Data Page
Converter Page Count
```

COMPLETION OF RESTORES

Run the following command after the restore is complete:

```
dbmcli on cert2>recover ignore
OK
Returncode 0
Date 20130808
Time 00092538
Server sybserver5
Database CERT1
Kernel Version Kernel 7.8.02 Build 021-121-242-175
Pages Transferred 10832
Pages Left 0
Volumes 1
Medianame BackLog
Location /opt/sdb/data/cert2/files/pipe_mem5
Errortext
Label LOG 00000007
Is Consistent
First LOG Page 48090
Last LOG Page 58990
DB Stamp 1 Date 20130808
DB Stamp 1 Time 00112828
DB Stamp 2 Date 20130808
DB Stamp 2 Time 00112846
Page Count 10815
Devices Used 1
Database ID sybserver5:CERT1_20130723_163654
Max Used Data Page
Converter Page Count
```

CHECK DATABASE

Verify the database after the restore:

[root@sybserver2 log]# sdbfill CERT2 check 0 3000000 10000 0 a DBA DBA Checking table 'sdbfill'. Fetched first (0 0.000000 0.000000) table 'sdbfill' is OK.

RESTORING A FULL BACKUP

At times, if the database gets corrupted, you might need to restore the entire database and recover it back to the current state. However, in order to recover a database, you will also need to restore the logs. You can perform a restore operation to restore and recover an entire database. You can restore the database in-place or out-of-place using the same path/destination.

1.	Open the DBM Command line Interface and verify the status of the database.	#> dbmcli -d CERT1 -u dbm,dbm -uUTL
		dbmcli on CERT1>db_state
		OK
		State
		ADMIN
2.	MAXDB should be in admin (cold) state to perform a basic restore operation. If the database is in online (warm) mode, execute the following command.	#> dbmcli -d CERT1 -u dbm,dbm db_cold
3.	Type the following command to check all backup IDs. The command should return	# dbmcli -d CERT1 -u dbm,dbm -uUTL
	ОК.	dbmcli on CERT1>
		backup_ext_ids_get BackData2
		ок
4.	Type the following command to list all the External Backup ID's. The command should return OK and display a list of all External Backup ID's.	dbmcli on CERT1>
		backup_ext_ids_list
		ок
		END
5.	Type the following command to execute the restore of entire database.	For Unix:
		dbmcli on CERT1>recover_start

BackData2 DATA
ExternalBackupID
"CERT1 SAP_1020127_8514
/space/sdb/data/cert1/files/pipe_mem3,
CERT1 SAP_1020127_8514
/space/sdb/data/cert1/files/pipe_mem4"
For Windows:
dbmcli on CERT1>recover_start
BackData2 DATA
ExternalBackupID
"CERT1 SAP_1011379_351
<pre>\\.\pipe\pipe_mem1,</pre>
CERT1 SAP_1011379_351
\\.\pipe\pipe_mem2"
dbmcli on CERT1>exit
OK

6. The restore should complete without any errors.

RESTORING INCREMENTAL BACKUP

Use the following steps to restore an incremental backup:

1.	Open the DBM Command line Interface and verify the status of the database.	#> dbmcli -d CERT1 -u dbm,dbm -uUTL
		dbmcli on CERT1>db_state
		OK
		State
		ADMIN
2.	Type the command to check for all backup IDs. The command should return OK.	# dbmcli -d CERT1 -u dbm,dbm -uUTL
		dbmcli on CERT1>
		backup_ext_ids_get BackData2
		OK
3.	Type the command to list all the External Backup ID's. The command should return	dbmcli on CERT1>
	OK and display a list of all External Backup ID's.	backup_ext_ids_list
		OK
		END
4.	Type the command to execute the restore of an incremental backup	For Unix:
		dbmcli on CERT1>recover_start
		BackPages2 PAGES ExternalBackupID
		"CERT1 SAP_1020127_8514
		/space/sdb/data/cert1/files/pipe_mem3,
		CERT1 SAP_1020127_8514
		/space/sdb/data/cert1/files/pipe_mem4"
		For Windows:
		dbmcli on CERT1>recover_start
		BackPages2 PAGES ExternalBackupID
		"CERT1 SAP_1011379_352
		<pre>\\.\pipe\pipe_mem3,</pre>
		CERT1 SAP_1011379_352
		\\.\pipe\pipe_mem4"
5.	The restore should complete without any errors.	dbmcli on CERT1>exit
		OK

Restoring Logs

Use the following steps to restore the logs:

1.	Open the DBM Command line Interface and verify the status of the database.	#> dbmcli -d CERT1 -u dbm,dbm -uUTL	
		dbmcli on CERT1>db_state	
		ок	
		State	
		ADMIN	
2.	Type the command to verify all backup IDs. The command should return OK.	# dbmcli -d CERT1 -u dbm,dbm -uUTL	
		dbmcli on CERT1>	
		backup_ext_ids_get BackData2	
		ок	
3.	Type the command to list all the External Backup ID's. The command should return	dbmcli on CERT1>	
	OK and display a list of all External Backup ID's.	backup_ext_ids_list	
		ок	
		END	
4.	Type the commands to restore the logs.	For Unix:	
4.	Type the commands to restore the logs.	For Unix: dbmcli on CERT1>recover_start	
4.	Type the commands to restore the logs.	For Unix: dbmcli on CERT1>recover_start BackLog LOG ExternalBackupID	
4.	Type the commands to restore the logs.	For Unix: dbmcli on CERT1>recover_start BackLog LOG ExternalBackupID "CERT1 SAP_1020127_8509	
4.	Type the commands to restore the logs.	For Unix: dbmcli on CERT1>recover_start BackLog LOG ExternalBackupID "CERT1 SAP_1020127_8509 /space/sdb/data/cert1/files/pipe_mem5"	
4.	Type the commands to restore the logs.	For Unix: dbmcli on CERT1>recover_start BackLog LOG ExternalBackupID "CERT1 SAP_1020127_8509 /space/sdb/data/cert1/files/pipe_mem5" For Windows:	
4.	Type the commands to restore the logs.	<pre>For Unix: dbmcli on CERT1>recover_start BackLog LOG ExternalBackupID "CERT1 SAP_1020127_8509 /space/sdb/data/cert1/files/pipe_mem5" For Windows: dbmcli on CERT1>recover_replace</pre>	
4.	Type the commands to restore the logs.	<pre>For Unix: dbmcli on CERT1>recover_start BackLog LOG ExternalBackupID "CERT1 SAP_1020127_8509 /space/sdb/data/cert1/files/pipe_mem5" For Windows: dbmcli on CERT1>recover_replace BackLog ExternalBackupID</pre>	
4.	Type the commands to restore the logs.	<pre>For Unix: dbmcli on CERT1>recover_start BackLog LOG ExternalBackupID "CERT1 SAP_1020127_8509 /space/sdb/data/cert1/files/pipe_mem5" For Windows: dbmcli on CERT1>recover_replace BackLog ExternalBackupID "CERT1 SAP_1011379_353</pre>	
4.	Type the commands to restore the logs.	<pre>For Unix: dbmcli on CERT1>recover_start BackLog LOG ExternalBackupID "CERT1 SAP_1020127_8509 /space/sdb/data/cert1/files/pipe_mem5" For Windows: dbmcli on CERT1>recover_replace BackLog ExternalBackupID "CERT1 SAP_1011379_353 \\.\pipe\pipe_mem5"</pre>	
4.	Type the commands to restore the logs. The restore should complete without any errors.	<pre>For Unix: dbmcli on CERT1>recover_start BackLog LOG ExternalBackupID "CERT1 SAP_1020127_8509 /space/sdb/data/cert1/files/pipe_mem5" For Windows: dbmcli on CERT1>recover_replace BackLog ExternalBackupID "CERT1 SAP_1011379_353 \\.\pipe\pipe_mem5" dbmcli on CERT1>exit</pre>	

RESTORING AUTOMATIC LOGS

Use the following steps to restore automatic log backups:

PREPARE FOR RESTORES

Type the command to acquire the backup ID's:

```
[root@sappg54 files]# dbmcli -d CERT1 -u dbm,dbm
dbmcli on CERT1>backup_ext_ids_get BackData2
OK
dbmcli on CERT1>backup_ext_ids_list
OK
END
AVAILABLE|CERT1 SAP xxxxxxx 8506 /space/sdb/data/cert1/files/pipe mem1|DATA MIGRATION|2010-12-02 23:13:45|
AVAILABLE|CERT1 SAP xxxxxx 8506 /space/sdb/data/cert1/files/pipe mem2|DATA MIGRATION|2010-12-02 23:13:45|
AVAILABLE|CERT1 SAP_xxxxxx_8507 /space/sdb/data/cert1/files/pipe_mem1|DATA MIGRATION|2010-12-02 23:15:25|
AVAILABLE|CERT1 SAP_xxxxxx_8507 /space/sdb/data/cert1/files/pipe_mem2|DATA MIGRATION|2010-12-02 23:15:25
AVAILABLE|CERT1 SAP xxxxxx 8508 /space/sdb/data/cert1/files/pipe mem3|PAGES MIGRATION|2010-12-02 23:18:53|
AVAILABLE|CERT1 SAP xxxxxx 8508 /space/sdb/data/cert1/files/pipe mem4|PAGES MIGRATION|2010-12-02 23:18:53|
AVAILABLE|CERT1 SAP xxxxxx 8509 /space/sdb/data/cert1/files/pipe mem5|LOG RECOVERY |2010-12-02 23:20:17|
AVAILABLE|CERT1 SAP_xxxxxx_8511 /space/sdb/data/cert1/files/pipe_mem1|DATA MIGRATION|2010-12-02 23:29:08|
AVAILABLE|CERT1 SAP_xxxxxx_8511 /space/sdb/data/cert1/files/pipe_mem2|DATA MIGRATION|2010-12-02 23:29:08|
AVAILABLE|CERT1 SAP xxxxxxx 8514 /space/sdb/data/cert1/files/pipe mem3|PAGES MIGRATION|2010-12-02 23:39:02|
AVAILABLE|CERT1 SAP_xxxxxx_8514 /space/sdb/data/cert1/files/pipe_mem4|PAGES MIGRATION|2010-12-02 23:39:02|
AVAILABLE | CERT1 SAP xxxxxx 8517 / space/sdb/data/cert1/files/pipe mem5 | LOG
                                                                            RECOVERY |2010-12-02 23:27:17|
AVAILABLE | CERT1 SAP_xxxxxx_8518 / space / sdb/data/cert1/files/pipe_mem5 | LOG
                                                                             RECOVERY |2010-12-02 23:34:43|
AVAILABLE|CERT1 SAP_xxxxxx_8519 /space/sdb/data/cert1/files/pipe_mem5|LOG
                                                                             RECOVERY |2010-12-02 23:35:03|
AVAILABLE|CERT1 SAP_xxxxxxx_8521 /space/sdb/data/cert1/files/pipe_mem5|LOG
                                                                             RECOVERY |2010-12-02 23:34:58|
AVAILABLE|CERT1 SAP xxxxxx 8522 /space/sdb/data/cert1/files/pipe mem5|LOG
                                                                             RECOVERY |2010-12-02 23:27:15|
AVAILABLE|CERT1 SAP xxxxxx 8530 /space/sdb/data/cert1/files/pipe mem3|PAGES MIGRATION|2010-12-03 00:34:09|
AVAILABLE|CERT1 SAP_xxxxxxx_8530 /space/sdb/data/cert1/files/pipe_mem4|PAGES MIGRATION|2010-12-03 00:34:09|
AVAILABLE|CERT1 SAP_xxxxxx_8531 /space/sdb/data/cert1/files/pipe_mem1|DATA MIGRATION|2010-12-03 00:37:41|
```

```
AVAILABLE|CERT1SAP_XXXXXX_8531/space/sdb/data/cert1/files/pipe_mem2|DATAMIGRATION|2010-12-0300:37:41|AVAILABLE|CERT1SAP_XXXXXX_8532/space/sdb/data/cert1/files/pipe_mem5|LOGRECOVERY|2010-12-0300:30:53|AVAILABLE|CERT1SAP_XXXXXX_8533/space/sdb/data/cert1/files/pipe_mem5|LOGRECOVERY|2010-12-0300:31:13|AVAILABLE|CERT1SAP_XXXXXX_8534/space/sdb/data/cert1/files/pipe_mem5|LOGRECOVERY|2010-12-0300:45:18|AVAILABLE|CERT1SAP_XXXXXX_8535/space/sdb/data/cert1/files/pipe_mem5|LOGRECOVERY|2010-12-0300:45:17|AVAILABLE|CERT1SAP_XXXXXX_8536/space/sdb/data/cert1/files/pipe_mem5|LOGRECOVERY|2010-12-0300:45:17|
```

dbmcli on CERT1>

ADMIN

Delete the log & data Segments:

dbmcli on CERT1>db_cold OK

```
dbmcli on CERT1>db_state
OK
State
```

---dbmcli on CERT1>quit OK

ACTIVATE THE DATABASE TO RESTORE FROM FIRST FULL BACKUP

Type the command to activate the database:

```
Db activate to the first full backup
```

)12/_8511 /space/sdb/data/cert1/files/pipe_mem1 DATA MIGRATION 2010-12-02 23:29:0	181			
AVAILABLE CERT1 SAP 102	0127 8511 /space/sdb/data/cert1/files/pipe mem2 DATA MIGRATION 2010-12-02 23:29:0	180			
AVAILABLE CERT1 SAP 102)127 ⁻ 8514 /space/sdb/data/cert1/files/pipe ⁻ mem3 PAGES MIGRATION 2010-12-02 23:39:()21			
AVAILABLE CERT1 SAP 102)127 ⁸⁵¹⁴ /space/sdb/data/cert1/files/pipe ^m em4 PAGES_MIGRATION 2010-12-02_23:39:()2			
AVAILABLE CERT1 SAP 102	0127 8517 /space/sdb/data/cert1/files/pipe_mem5 LOGRECOVERY_ 2010-12-02_23:27:3	17			
AVAILABLE CERT1 SAP 102	0127 8518 /space/sdb/data/cert1/files/pipe_mem5 LOGRECOVERY_ 2010-12-02_23:34:4	13			
AVAILABLE CERT1 SAP 102	0127 8519 /space/sdb/data/cert1/files/pipe_mem5 LOGRECOVERY_ 2010-12-02_23:35:0	331			
AVATLABLEICERT1 SAP 102	0127_8521 /space/sdb/data/cert1/files/pipe_mem5 LOGRECOVERY_2010-12-02_23:34:5	581			
AVATLABLEICERTI SAP 102	0127_8522 /space/sdb/data/cert1/files/pipe_mem5 LOGRECOVERY_2010-12-02_23:27:	151			
AVATLABLEICERTI SAP 102	0127_8530 /space/sdb/data/cert1/files/pipe_mem3 PAGES_MIGRATION 2010-12-03_00:34:)9i			
AVAILABLEICERTI SAP 102	0127 8530 /space/sdb/data/cert1/files/pipe_mem4/PAGES_MIGRATION/2010-12-03_00:34:	191			
AVAILABLEICERTI SAP 102	127 8531 /space/sdb/data/cert1/files/pipe_mem1 DATA_MIGRATION 2010-12-03_00:37:	411			
AVATLABLE CERTI SAP 102	127 8531 /space/sdb/data/cert1/files/pipe_mem2/DATA_MIGRATION/2010-12-03 00:37:	111			
AVATLABLE CERTI SAP 102	127 8532 /space/sdb/data/cert1/files/pipe_mem51LOGRECOVERY_2010-12-03_00.30:1	531			
AVATLABLE CERTI SAP 102	127 8533 /space/sdb/data/cert1/files/pipe_mem51LOGRECOVERY_2010-12-03_00.31:	131			
AVAILABLE CEDTI SAL 102	127 8534 (space/sdb/data/corti/files/pipe_mem5100CPECOVERY_2010-12-03_00.45.)	1.8.1			
AVAILABLE CEDTI SAF_102	127 8535 (space/edb/data/certi/files/pipe_mem5110CRECOVERY [2010-12-03 00.45]	171			
AVAILABLE CEDEL CAD 102	127_0536 / space/adb/data/certi/files/pipe_mem5100CRECOVERY_2010-12-03_00.44.	L / 5 1			
AVAILABLE CERII SAF_102	JI2/_0000 / Space/Sub/data/certi/lites/pipe_memorphog) T			
·····					
Restoring from backup J	10 10 8311 112 8311				
AVAILABLE CERTI SAP_102	J12/ 8511 /space/sdb/data/cert1/files/pipe_memilDaTA_MIGRATION/2010-12-02_23:29:	181			
AVAILABLE CERTI SAP_102	<pre>JI2/_8511 /space/sdb/data/cert1/files/pipe_mem2 DATA MIGRATION 2010-12-02 23:29:(</pre>	181			
[root@sappg54 files]# dbmcli -d CERT1 -u dbm,dbm -uUTL					
[root@sappg54 files]# d	omcli -d CERT1 -u dbm,dbm -uUTL				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti</pre>	omcli -d CERT1 -u dbm,dbm -uUTL yate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511				
[root@sappg54 files]# d dbmcli on CERT1>db_acti	omcli -d CERT1 -u dbm,dbm -uUTL zate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f</pre>	omcli -d CERT1 -u dbm,dbm -uUTL vate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511 iles/pipe mem1, CERT1 SAP 1020127 8511 /space/sdb/data/cert1/files/pipe mem2"				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK</pre>	omcli -d CERT1 -u dbm,dbm -uUTL zate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511 iles/pipe_mem1, CERT1 SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2"				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode</pre>	omcli -d CERT1 -u dbm,dbm -uUTL vate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511 iles/pipe_mem1, CERT1 SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date</pre>	omcli -d CERT1 -u dbm,dbm -uUTL yate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511 iles/pipe_mem1, CERT1 SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time</pre>	omcli -d CERTI -u dbm,dbm -uUTL yate recover BackData2 DATA ExternalBackupID "CERTI SAP_1020127_8511 iles/pipe_mem1, CERTI SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time Server</pre>	omcli -d CERTI -u dbm,dbm -uUTL vate recover BackData2 DATA ExternalBackupID "CERTI SAP_1020127_8511 iles/pipe_mem1, CERTI SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519 sapclient.company.com				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time Server Database</pre>	omcli -d CERT1 -u dbm,dbm -uUTL zate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511 iles/pipe_mem1, CERT1 SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519 sapclient.company.com CERT1				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time Server Database Kernel Version</pre>	omcli -d CERTI -u dbm,dbm -uUTL vate recover BackData2 DATA ExternalBackupID "CERTI SAP_1020127_8511 iles/pipe_mem1, CERTI SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519 sapclient.company.com CERTI Kernel 7.7.04 Build 028-123-194-355				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time Server Database Kernel Version Pages Transferred</pre>	omcli -d CERTI -u dbm,dbm -uUTL yate recover BackData2 DATA ExternalBackupID "CERTI SAP_1020127_8511 iles/pipe_mem1, CERTI SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519 sapclient.company.com CERT1 Kernel 7.7.04 Build 028-123-194-355 8608				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time Server Database Kernel Version Pages Transferred Pages Left</pre>	omcli -d CERTI -u dbm,dbm -uUTL yate recover BackData2 DATA ExternalBackupID "CERTI SAP_1020127_8511 iles/pipe_mem1, CERTI SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519 sapclient.company.com CERT1 Kernel 7.7.04 Build 028-123-194-355 8608 0				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time Server Database Kernel Version Pages Transferred Pages Left Volumes</pre>	omcli -d CERTI -u dbm,dbm -uUTL yate recover BackData2 DATA ExternalBackupID "CERTI SAP_1020127_8511 iles/pipe_mem1, CERTI SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519 sapclient.company.com CERT1 Kernel 7.7.04 Build 028-123-194-355 8608 0 2				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time Server Database Kernel Version Pages Transferred Pages Left Volumes Medianame</pre>	<pre>omcli -d CERT1 -u dbm,dbm -uUTL yate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511 iles/pipe_mem1, CERT1 SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519 sapclient.company.com CERT1 Kernel 7.7.04 Build 028-123-194-355 8608 0 2 BackData2</pre>				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time Server Database Kernel Version Pages Transferred Pages Left Volumes Medianame Location</pre>	<pre>omcli -d CERT1 -u dbm,dbm -uUTL yate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511 iles/pipe_mem1, CERT1 SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519 sapclient.company.com CERT1 Kernel 7.7.04 Build 028-123-194-355 8608 0 2 BackData2 / (space/sdb/data/cert1/files/pipe_mem2)</pre>				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time Server Database Kernel Version Pages Transferred Pages Left Volumes Medianame Location Errortext</pre>	<pre>omcli -d CERT1 -u dbm,dbm -uUTL yate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511 iles/pipe_mem1, CERT1 SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519 sapclient.company.com CERT1 Kernel 7.7.04 Build 028-123-194-355 8608 0 2 BackData2 /space/sdb/data/cert1/files/pipe_mem2</pre>				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time Server Database Kernel Version Pages Transferred Pages Left Volumes Medianame Location Errortext Label</pre>	<pre>pmcli -d CERT1 -u dbm,dbm -uUTL yate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511 iles/pipe_mem1, CERT1 SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519 sapclient.company.com CERT1 Kernel 7.7.04 Build 028-123-194-355 8608 0 2 BackData2 /space/sdb/data/cert1/files/pipe_mem2 DAT_000000003</pre>				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time Server Database Kernel Version Pages Transferred Pages Left Volumes Medianame Location Errortext Label Ls_Corsistent</pre>	<pre>pmcli -d CERT1 -u dbm,dbm -uUTL yate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511 iles/pipe_mem1, CERT1 SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519 sapclient.company.com CERT1 Kernel 7.7.04 Build 028-123-194-355 8608 0 2 BackData2 /space/sdb/data/cert1/files/pipe_mem2 DAT_000000003 true</pre>				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time Server Database Kernel Version Pages Transferred Pages Left Volumes Medianame Location Errortext Label Is Consistent First LOC Page</pre>	<pre>pmcli -d CERT1 -u dbm,dbm -uUTL yate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511 iles/pipe_mem1, CERT1 SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519 sapclient.company.com CERT1 Kernel 7.7.04 Build 028-123-194-355 8608 0 2 BackData2 /space/sdb/data/cert1/files/pipe_mem2 DAT_00000003 true 22115</pre>				
<pre>[root@sappg54 files]# d dbmcli on CERT1>db_acti /space/sdb/data/cert1/f OK Returncode Date Time Server Database Kernel Version Pages Transferred Pages Left Volumes Medianame Location Errortext Label Is Consistent First LOG Page Locat LoG Page</pre>	<pre>pmcli -d CERT1 -u dbm,dbm -uUTL yate recover BackData2 DATA ExternalBackupID "CERT1 SAP_1020127_8511 iles/pipe_mem1, CERT1 SAP_1020127_8511 /space/sdb/data/cert1/files/pipe_mem2" 0 20101203 00010519 sapclient.company.com CERT1 Kernel 7.7.04 Build 028-123-194-355 8608 0 2 BackData2 /space/sdb/data/cert1/files/pipe_mem2 DAT_00000003 true 22115</pre>				

DB Stamp 1 Date	20101202
DB Stamp 1 Time	00232825
DB Stamp 2 Date	
DB Stamp 2 Time	
Page Count	8574
Devices Used	2
Database ID	<pre>sapclient.company.com:CERT1_20101202_231525</pre>
Max Used Data Page	0
Converter Page Count	11

dbmcli on CERT1>

RESTORE FROM INCREMENTAL BACKUP

Type the command to restore from incremental backup:

```
AVAILABLE|CERT1 SAP_1020127_8514 /space/sdb/data/cert1/files/pipe_mem3|PAGES MIGRATION|2010-12-02 23:39:02|
AVAILABLE|CERT1 SAP_1020127_8514 /space/sdb/data/cert1/files/pipe_mem4|PAGES MIGRATION|2010-12-02 23:39:02|
```

dbmcli on CERT1>recover_start BackPages2 ExternalBackupID "CERT1 SAP_1020127_8514

/space/sdb/data/cert1/files/pipe_mem3, CERT1 SAP_1020127_8514 /space/sdb/data/cert1/files/pipe_mem4" OK

Returncode	0			
Date	20101203			
Time	00010812			
Server	sapclient.company.com			
Database	CERT1			
Kernel Version	Kernel 7.7.04 Build 028-123-194-355			
Pages Transferred	4096			
Pages Left	0			
Volumes	2			
Medianame	BackPages2			
Location	/space/sdb/data/cert1/files/pipe_mem4			
Errortext				
Label	PAG_00000004			
Is Consistent	true			
First LOG Page	32999			
Last LOG Page				
DB Stamp 1 Date	20101202			
DB Stamp 1 Time	00233730			
DB Stamp 2 Date				
DB Stamp 2 Time				
Page Count	4055			
Devices Used	2			
Database ID	<pre>sapclient.company.com:CERT1_20101202_231525</pre>			
Max Used Data Page	0			
Converter Page Count	20			

RESTORE FROM JOB ID

Type the command to restore from a Job ID:

Restore Data from backup xxx1

```
AVAILABLE|CERT1 SAP_1020127_xxx1 /space/sdb/data/cert1/files/pipe_mem1|DATA MIGRATION|2010-12-03 00:37:41|
AVAILABLE|CERT1 SAP_1020127_xxx1 /space/sdb/data/cert1/files/pipe_mem2|DATA MIGRATION|2010-12-03 00:37:41|
dbmcli on CERT1>db_state
OK
State
OFFLINE
----
dbmcli on CERT1>db_cold
OK
state
```

Administration Guide - SAP for MaxDB iDataAgent

ADMIN

dbmcli on CERT1>db activate recover BackData2 DATA ExternalBackupID "CERT1 SAP 1020127 xxx1

/space/sdb/data/cert1/files/pipe_mem1, CERT1 SAP_1020127_xxx1 /space/sdb/data/cert1/files/pipe_mem2"

OK	
Returncode	0
Date	20101203
Time	00042756
Server	sapclient.company.com
Database	CERT1
Kernel Version	Kernel 7.7.04 Build 028-123-194-355
Pages Transferred	8600
Pages Left	0
Volumes	2
Medianame	BackData2
Location	/space/sdb/data/cert1/files/pipe_mem2
Errortext	_
Label	DAT 00000006
Is Consistent	true
First LOG Page	43903
Last LOG Page	
DB Stamp 1 Date	20101203
DB Stamp 1 Time	00003741
DB Stamp 2 Date	
DB Stamp 2 Time	
Page Count	8574
Devices Used	2
Database ID	sapclient.company.com:CERT1 20101202 231525
Max Used Data Page	0 – –
Converter Page Count	20
5	

RESTORE LOGS FROM THE LOG JOB WITH TIME STAMP GREATER THAN THAT OF THE CURRENT JOB ID

Type the command to Restore Logs from the log job with time stamp greater than that of the current Job ID xxx1:

Ex: JobID with time stamp that is just greater xxx1 is xxx6. Please obtain this from the below backup list.

AVAILABLE CERT1	SAP_1020127_8511	/space/sdb/data/cert1/files/pipe_mem1	DATA	MIGRATION	2010-12-02	23:29:08
AVAILABLE CERT1	SAP_1020127_8511	/space/sdb/data/cert1/files/pipe_mem2	DATA	MIGRATION	2010-12-02	23:29:08
AVAILABLE CERT1	SAP_1020127_8514	/space/sdb/data/cert1/files/pipe_mem3	PAGES	MIGRATION	2010-12-02	23:39:02
AVAILABLE CERT1	SAP_1020127_8514	/space/sdb/data/cert1/files/pipe_mem4	PAGES	MIGRATION	2010-12-02	23:39:02
AVAILABLE CERT1	SAP_1020127_8517	/space/sdb/data/cert1/files/pipe_mem5	LOG	RECOVERY	2010-12-02	23:27:17
AVAILABLE CERT1	SAP_1020127_8518	/space/sdb/data/cert1/files/pipe_mem5	LOG	RECOVERY	2010-12-02	23:34:43
AVAILABLE CERT1	SAP_1020127_8519	/space/sdb/data/cert1/files/pipe_mem5	LOG	RECOVERY	2010-12-02	23:35:03
AVAILABLE CERT1	SAP_1020127_8521	/space/sdb/data/cert1/files/pipe_mem5	LOG	RECOVERY	2010-12-02	23:34:58
AVAILABLE CERT1	SAP_1020127_8522	/space/sdb/data/cert1/files/pipe_mem5	LOG	RECOVERY	2010-12-02	23:27:15
AVAILABLE CERT1	SAP_1020127_8530	/space/sdb/data/cert1/files/pipe_mem3	PAGES	MIGRATION	2010-12-03	00:34:09
AVAILABLE CERT1	SAP_1020127_8530	/space/sdb/data/cert1/files/pipe_mem4	PAGES	MIGRATION	2010-12-03	00:34:09
AVAILABLE CERT1	SAP_1020127_8531	/space/sdb/data/cert1/files/pipe_mem1	DATA	MIGRATION	2010-12-03	00:37:41
AVAILABLE CERT1	SAP_1020127_8531	/space/sdb/data/cert1/files/pipe_mem2	DATA	MIGRATION	2010-12-03	00:37:41
AVAILABLE CERT1	SAP_1020127_8532	/space/sdb/data/cert1/files/pipe_mem5	LOG	RECOVERY	2010-12-03	00:30:53
AVAILABLE CERT1	SAP_1020127_8533	/space/sdb/data/cert1/files/pipe_mem5	LOG	RECOVERY	2010-12-03	00:31:13
AVAILABLE CERT1	SAP_1020127_8534	/space/sdb/data/cert1/files/pipe_mem5	LOG	RECOVERY	2010-12-03	00:45:18
AVAILABLE CERT1	SAP_1020127_8535	/space/sdb/data/cert1/files/pipe_mem5	LOG	RECOVERY	2010-12-03	00:45:17
AVAILABLE CERT1	SAP_1020127_8536	/space/sdb/data/cert1/files/pipe_mem5	LOG	RECOVERY	2010-12-03	00:44:51

Job ID xxx6 was at 00:44:51, which falls next from the time stamp of xxx1 at 00:37:41

Selection of Log job ID to restore is the key for Auto Log Restore.

Restore Logs from Job ID xxx6

dbmcli on CERT1>db_state OK State OFFLINE

dbmcli on CERT1>db_cold OK

Restore this job with the syntax "recover_start" as below. dbmcli on CERT1>recover_start BackLog LOG ExternalBackupID "CERT1 SAP_1020127_xxx6 /space/sdb/data/cert1/files/pipe_mem5"

OK			
Returncode	-8020		
Date	20101203		
Time	00043242		
Server	sapclient.company.com		
Database	CERT1		
Kernel Version	Kernel 7.7.04 Build 028-123-194-355		
Pages Transferred	4320		
Pages Left	0		
Volumes	1		
Medianame	BackLog		
Location	/space/sdb/data/cert1/files/pipe mem5		
Errortext	-		
Label	LOG 00000009		
Is Consistent	-		
First LOG Page	41557		
Last LOG Page	45892		
DB Stamp 1 Date	20101203		
DB Stamp 1 Time	00003100		
DB Stamp 2 Date	20101203		
DB Stamp 2 Time	00004449		
Page Count	4300		
Devices Used	1		
Database ID	sapclient.company.com:CERT1 20101202 231525		
Max Used Data Page			
Converter Page Count			

APPLY NEXT LOG JOB IN THE SEQUENCE

Type the command to apply the next log job in the sequence:

Apply next log with the sequence according its time stamp. In this case next log needs to be applied from Job ID xxx5

Recover Replace of Log from Job ID xxx5:

```
Make sure to run this as Recover_Replace
dbmcli on CERT1>recover_replace BackLog ExternalBackupID
```

"CERT1 SAP_1020127_xxx5 /space/sdb/data/cert1/files/pipe mem5" OK -8020 Returncode 20101203 Date Time 00043323 Server sapclient.company.com Database CERT1 Kernel Version 7.7.04 Build 028-123-194-355 Kernel Pages Transferred 4320 Pages Left 0 Volumes 1 Medianame BackLog Location /space/sdb/data/cert1/files/pipe mem5 Errortext Label LOG_00000010 Is Consistent First LOG Page 45893 Last LOG Page 50225 DB Stamp 1 Date 20101203 DB Stamp 1 Time 00004449 DB Stamp 2 Date 20101203 DB Stamp 2 Time 00004501 Page Count 4300 Devices Used 1

sapclient.company.com:CERT1_20101202_231525

APPLY NEXT LOG TILL THE DATABASE IS CONSISTENT

Type the command to apply the next log till the database is consistent:

Database ID Max Used Data Page Converter Page Count

Apply next log with the sequence according its time stamp. In this case next log needs to be applied from Job ID xxx4

Recover Replace of Log from Job ID xxx4:

Make sure to run this as Recover_Replace

```
Recover Replace Log Job ID xxx4:
dbmcli on CERT1>recover_replace BackLog ExternalBackupID
```

"CERT1 SAP 1020127 xxx4 /space/sdb/data/cert1/files/pipe mem5"

```
OK
                       -8020
Returncode
                       20101203
Date
Time
                       00043444
Server
                       sapclient.company.com
Database
                       CERT1
Kernel Version
                                 7.7.04 Build 028-123-194-355
                       Kernel
Pages Transferred
                      4320
Pages Left
                       0
Volumes
                       1
Medianame
                      BackLog
                       /space/sdb/data/cert1/files/pipe_mem5
Location
Errortext
                       LOG 00000011
Label
Is Consistent
                       50226
First LOG Page
Last LOG Page
                       54560
DB Stamp 1 Date
                       20101203
                       00004501
DB Stamp 1 Time
DB Stamp 2 Date
                       20101203
DB Stamp 2 Time
                       00004513
Page Count
                       4300
Devices Used
                       1
                       sapclient.company.com:CERT1 20101202 231525
Database ID
Max Used Data Page
Converter Page Count
```

BRING THE DATABASE ONLINE

Once all the applicable logs with greater time stamp were restored, run Recover_Ignore command to bring database online:

Now Recover Ignore to get the DB consistent and open state:

```
dbmcli on CERT1>recover_ignore
OK
Returncode
                       0
                       20101203
Date
Time
                       00043444
                       sapclient.company.com
Server
                       CERT1
Database
Kernel Version
                                 7.7.04 Build 028-123-194-355
                       Kernel
Pages Transferred
                       4320
Pages Left
                       0
Volumes
                       1
                       BackLog
Medianame
                       /space/sdb/data/cert1/files/pipe mem5
Location
Errortext
                       LOG_00000011
Label
Is Consistent
First LOG Page
                       50226
Last LOG Page
                       54560
DB Stamp 1 Date
                       20101203
                       00004501
DB Stamp 1 Time
DB Stamp 2 Date
                       20101203
DB Stamp 2 Time
                       00004513
Page Count
                       4300
Devices Used
                       1
                       sapclient.company.com:CERT1 20101202 231525
Database ID
Max Used Data Page
Converter Page Count
___
dbmcli on CERT1>db_state
OK
State
ONLINE
```

---dbmcli on CERT1>

	Open the DBM Command line Interface and verify the status of the database.	#> dbmcli -d CERT1 -u dbm,dbm -uUTL
		dbmcli on CERT1>db_state
		ok
		State
		ADMIN
2.	MAXDB should be in activated status to perform a restore operation on the first full	AVAILABLE CERT1 SAP_1020127_8511
	backup. If the database is mactive, execute the following command.	/space/sdb/data/cert1/files/pipe_mem1
		DATA MIGRATION 2010-12-02 23:29:08 AVAILABLE CERT1 SAP_1020127_8511
		/space/sdb/data/cert1/files/pipe_mem2
		DATA MIGRATION 2010-12-02 23:29:08 AVAILABLE CERT1 SAP_1020127_8514
		/space/sdb/data/cert1/files/pipe_mem3
		PAGES MIGRATION 2010-12-02 23:39:02 AVAILABLE CERT1 SAP_1020127_8514
		/space/sdb/data/cert1/files/pipe_mem4
		PAGES MIGRATION 2010-12-02 23:39:02 AVAILABLE CERT1 SAP_1020127_8517
		/space/sdb/data/cert1/files/pipe_mem5
		LOG RECOVERY 2010-12-02 23:27:17 AVAILABLE CERT1 SAP_1020127_8518
		/space/sdb/data/cert1/files/pipe mem5
		- LOG RECOVERY 2010-12-02 23:34:43 AVAILABLE CERT1 SAP 1020127 8519
		LOG RECOVERY 2010-12-02 23:35:03 AVAILABLE CERT1 SAP 1020127 8521
		/space/sdb/data/cert1/files/pipe_mem5
		LOG RECOVERY 2010-12-02 23:34:58 AVAILABLE CERT1 SAP 1020127 8522
		/space/sdb/data/cert1/files/pipe mem5
		LOG RECOVERY 2010-12-02 23:27:15 AVAILABLE CERT1 SAP 1020127 8530
		 /space/sdb/data/cert1/files/pipe mem3
		PAGES MIGRATION 2010-12-03 00:34:09 AVAILABLE CERT1 SAP 1020127 8530
		/space/sdb/data/cert1/files/pipe_mem4
		PAGES MIGRATION 2010-12-03 00:34:09 AVAILABLE CERT1 SAP 1020127 8531
		/space/sdb/data/cert1/files/pipe_mem1
		DATA MIGRATION 2010-12-03 00:37:41 AVAILABLE CERT1 SAP 1020127 8531
		/space/sdb/data/cert1/files/pipe_mem?
		DATA MIGRATION 2010-12-03 00.37.41
		AVAILABLE CERT1 SAP_1020127_8532
		/space/sdb/data/cert1/files/pipe_mem5
		LOG RECOVERY 2010-12-03 00:30:53 AVAILABLE CERT1 SAP_1020127_8533
		/space/sdb/data/cert1/files/pipe_mem5
		LOG RECOVERY 2010-12-03 00:31:13 AVAILABLE CERT1 SAP_1020127_8534
		/space/sdb/data/cert1/files/pipe_mem5

3. Type the following command to execute the restore of entire database.

4. After restoring all the logs required, verify the recovered database.

AVAILABLE | CERT1 SAP_1020127_8535

/space/sdb/data/cert1/files/pipe_mem5

|LOG RECOVERY |2010-12-03 00:45:17| AVAILABLE|CERT1 SAP_1020127_8536

/space/sdb/data/cert1/files/pipe_mem5

|LOG RECOVERY |2010-12-03 00:44:51| Example:

Restoring from backup Job ID 8511 AVAILABLE|CERT1 SAP_1020127_8511

/space/sdb/data/cert1/files/pipe_mem1

|DATA MIGRATION|2010-12-02 23:29:08| AVAILABLE|CERT1 SAP 1020127 8511

/space/sdb/data/cert1/files/pipe_mem2

|DATA MIGRATION|2010-12-02 23:29:08| [root@sapclient files]#

dbmcli -d CERT1 -u dbm,dbm -uUTL dbmcli on CERT1>db_activate recover

BackData2 DATA ExternalBackupID

"CERT1 SAP_1020127_8511

/space/sdb/data/cert1/files/pipe_mem1,

CERT1 SAP_1020127_8511

/space/sdb/data/cert1/files/pipe_mem2" OK

Returncode 0 Date 20101203 Time 00010519 Server sapclient.company.com Database CERT1 Kernel Version Kernel 7.7.04

Build 028-123-194-355 Pages Transferred 8608 Pages Left 0 Volumes 2 Medianame BackData2

Location

/space/sdb/data/cert1/files/pipe_mem2 Errortext Label DAT_00000003 Is Consistent true First LOG Page 22115 Last LOG Page DB Stamp 1 Date 20101202 DB Stamp 1 Time 00232825 DB Stamp 2 Date DB Stamp 2 Time Page Count 8574 Devices Used 2

RESTORE FROM A SECONDARY COPY

SAP for MAXDB *i*DataAgent provide the capability of restoring data from secondary copies from SAP command line. This is useful for restoring data when the primary copy is unavailable. To utilize this feature, add the cv_restCopyPrec parameter followed by the copy precedence number 2 into the parameter file prior to running the restore. Ensure that you have run a backup of the SAP MAXDB database prior to starting restore from a secondary copy. Ensure that you have run an auxiliary copy operation after completing the backup.

1.	Open the DBM Command line Interface and verify the status of the database.	#> dbmcli -d CERT1 -u dbm,dbm -uUTL
		dbmcli on CERT1>db_state
		OK
		State
		ADMIN
2.	Type the command to check for all backup IDs. The command should return OK.	# dbmcli -d CERT1 -u dbm,dbm -uUTL
		dbmcli on CERT1>backup_ext_ids_get BackData2
		OK

- Type the command to list all the External Backup ID's. The command should return OK and display a list of all External Backup ID's.
- 4. Type the command to execute the restore.

```
dbmcli on CERT1>backup_ext_ids_list
OK
END
For Unix:
dbmcli on CERT1>recover_start
BackData2 DATA ExternalBackupID
"CERT1 SAP 1020127 8514
/space/sdb/data/cert1/files/pipe_mem3,
CERT1 SAP 1020127 8514
/space/sdb/data/cert1/files/pipe_mem4"
For Windows:
dbmcli on CERT1>recover start
BackData2 DATA ExternalBackupID
"CERT1 SAP_1011379_351
\\.\pipe\pipe_mem1,
CERT1 SAP_1011379_351
\\.\pipe\pipe mem2"
dbmcli on CERT1>exit
```

5.. The restore should complete without any errors.

RESTORE USING A SPECIFIC LIBRARY OR DRIVE POOL

Data can be restored/recovered from any compatible library and drive type in the CommCell. By default the system automatically identifies and restores/recovers data from any configured library in the CommCell, even if the media is not available in the original library in which the data protection operation was performed. Data Recovery operations use a specific data path - MediaAgent, Library and Drive Pool - to perform the restore operations. When the default options are selected, the system automatically chooses the most appropriate data path. For comprehensive information on choosing an alternate data path, see Data Recovery Operations using Alternate Data Paths.

In some situations you may want to use another data path to perform a data recovery operation. In such a situation, you can specify the MediaAgent, Library and/or the Drive Pool.

Consider the following examples:

- You may want to use a specific MediaAgent to perform the browse and restore operation instead of the system selected default MediaAgent. For example, the default MediaAgent may be busy and you wish to use another MediaAgent which is idle, or you know the library attached to a specific MediaAgent contains the media associated with the data you wish to restore.
- The default MediaAgent may have a problem accessing the devices (library, drive) and hence you wish to use another MediaAgent sharing the library to perform the browse and restore operation.

This feature is applicable only for tape/optical libraries. The operation will fail if the requested data is not available in the disk library attached to the specified MediaAgent.

MANAGING JOBS

Once you initiate the restore operation, a restore job is generated in the Job Controller. A single job ID will be generated in Job Controller. You can view the progress of the job through Job Controller.

You can view the specific historical information about the job once the job is completed from the client computer, iDataAgent, or instance level in the CommCell Console.

CONTROL JOBS

The Kill control option to terminate a job is available for this iDataAgent in the Job Controller window:

This control can be applied to:

- All jobs in the Job Controller.
- All selected jobs in the Job Controller providing you have the correct security associations at the proper level for each job selected.
- All data protection operations running for a particular client or client/agent.
- All data protection operations running for a particular MediaAgent.

You can Kill a job from the Job Controller of the CommCell Console.

- 1. Right-click the job and select Kill.
- Click Yes when the confirmation prompt appears if you are sure you want to kill the job. The job status may change to Kill Pending for a few moments while the operation completes. Once completed, the job status will change to Killed and it will be removed from the Job Controller window after five minutes.

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Data Aging - SAP for MaxDB iDataAgent

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Getting Started Extended Retention Rules Data Aging for Log Backups Configuring Retention Rules for Backups Configuring Retention Rules for Unlinked Log Backups Data Aging Rules for Jobs Completed with Errors

GETTING STARTED

Data Aging is the process of removing old data from secondary storage to allow the associated media to be reused for future backups.

By default, all backup data is retained infinitely. However, you should change the retention of your data based on your needs. Note that if you continue to have infinite retention, you will also need infinite storage capacity.

1. From the CommCell Browser, navigate to Policies | Storage Policies.

2. Highlight the Storage Policy.

3. From the right pane, right-click the **Storage Policy Copy** and click the **Properties**.



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- Click the **Retention** tab.
 - Click the Retain For in the Basic Retention Rules for All Backups area.
 - Enter number of days to retain the data.
 - Enter number of cycles to retain the data.
 - Click OK.

4.

5. From the CommCell Browser, click the **Reports** icon.

Expand Reports and select Data Retention Forecast and Compliance. 6.

Click Run. 7.

9.

Data Aging.

The report will display the data to be pruned when a data aging job is run. 8.

> To ensure only data intended for aging is actually aged, it is important to identify the data that will be aged based on the retention rules you have configured. Hence, ensure this report includes only the data you intend to age.

If necessary, fine-tune your rules so that only the intended data is aged.

Once you run a data aging job, the data will be lost.



Report 9.0.0(SULDS4) g Consecut ID FFFFFFF Consecut verziel

Agent Types All
 Storage Policy (Copy) All
 LocaleEnglish

File Vew Tools Windows Heb

⊮tn ⊮ou

10. Select Immediate in the Job Initiation section and click OK.

Data Retention Forecast and Compliance Report Departure Add : Deca Aging Disability Dis Description Adults Seeago Desiry Copy Ŷ Security Stc Rec Push Firewall Configuration Export Firewall Certificate

Reports

Storage

Run Schedule Save As... Close Help

Run Schedule Save As... Close Help

Data Aging Options	
Job Initiation	
Job Initiation	
• Immediate	
Run this job now	
C Schedule	

Managed Divit System Option Examined for Disordable Selling and Divit

You can track the progress of the job from the Job Controller window. When the job has completed, the Job Controller displays Completed.
 Make sure that the job completes successfully. If the job did not complete

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 C

EXTENDED RETENTION RULES

successfully, re-run the job.

Extended retention rules allow you to keep specific full (or synthetic full) backups for longer periods of time.

Extended retention rules can be used in the following circumstances:

- If you have a single drive tape library
- If you want to create a hierarchical retention scheme (grandfather-father-son tape rotation)

In all other cases, it is recommended that the Auxiliary Copy feature be used for extended storage as it actually creates another physical copy of the data, thereby reducing the risk of data loss due to media failure.

UNDERSTANDING EXTENDED RETENTION RULES

Extended retention allows you to retain a specific full (or synthetic full) backup for an additional period of time. For example, you may want to retain your monthly full backups for 90 days.

Extended retention rules allow you to define three additional "extended" retention periods for full (or synthetic full) backups. For example:

- You may want to retain your weekly full backups for 30 days.
- You may want to retain your monthly full backup for 90 days.
- You may want to retain your yearly full backup for 365 days.

A backup job will be selected for extended retention based on its start time. For example: If a backup job starts at 11:55 pm on August 31st and ends at 1 am on September 1st, then it will be selected as the last full backup for the month of August and will be picked up for extended retention.

SETTING UP EXTENDED RETENTION RULES

Use the following steps for setting up the extended retention rules:

- 1. Right-click the storage policy copy and click Properties.
- 2. Click the Retention tab.
- 3. Set the basic retention rules by clicking **Retain for** and entering the number of days and cycles appropriate for your organization.
- 4. Set the extended retention rules as follows:

Click the **For** button.

Enter the number of **Days Total** to retain the backup.

Click the **Keep** drop-down list, and select the desired backup criteria (e.g., Monthly Full).

Click the **Grace Days** drop-down list and select the number of days (e.g., 2).

- 5. Repeat Step 4 to configure additional extended retention.
- 6. Click **OK**.

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DATA AGING FOR LOG BACKUPS

The SAP for MAXDB iDataAgent uses the command line to perform the data and log backup operations. Log Backups are not considered part of the backup cycle. However, a log backup will be linked to a full data backup operation based on the type of backup job.

The following table determines the behavior and retention policy of log backups:

TYPE OF BACKUP	BEHAVIOR OF LOG BACKUP	RETENTION RULES FOR
		LOG BACKUPS
Regular Full Backup	A log backup performed after a full data backup will not be linked	Retention rules set for data backup job will not apply for log backups.

 A log backup performed after a full data backup will be linked. The Incremental and other backup jobs performed between a full data backup job and log backup job will also be linked and considered as backup cycle. 	 Log backups will be aged according to the retention time set for its associated data backup job. The linked or chained log backups are not aged until the linked data is aged.
--	---

CONFIGURING RETENTION RULES FOR BACKUPS

You can manually set the retention time for each command line job from the storage policy copy. The log backups will be aged according to the retention time set for its associated data backup job.

- 1. From the CommCell Browser, click the **Control Panel** button in the toolbar.
- 2. Double-click the **Media Management** icon
- 3. Click the Data Aging tab.
- 4. Select the Days to retain the jobs when cycles are ignored and retention days on copy is 0 option and set the desired number of retention days.
- 5. Click OK.

CONFIGURING RETENTION RULES FOR UNLINKED LOG BACKUPS

If a full backup job is run on data and logs, then the next log backup will not be linked to this full backup job. An unlinked log backup will follow the unique data aging rules for log backups. Use the following steps to configure the retentions rules by set number of days.

- $1. \ \ \, {\rm From \ the \ CommCell \ Browser, \ click \ the \ \, {\rm Control \ Panel \ button \ in \ the \ toolbar.}$
- 2. Double-click the Media Management icon.
- 3. Click the **Data Aging** tab.
- 4. Select the Prune All Database Agent Logs Only By Days Retention Rule option.
- 5. Click OK.

DATA AGING RULES FOR JOBS COMPLETED WITH ERRORS

Jobs that are completed with errors are not treated as a valid full backup job and hence are pruned based on basic retention rules. However, if you require to apply extended retention rules to these jobs, you can exclude the jobs that completed with errors during extended retention calculations.

- 1. From the CommCell Browser, click the Control Panel button in the toolbar.
- 2. Double-click the Media Management icon.
- 3. Click the Data Aging tab.
- 4. Change the value for the Ignore Completed With Errors job option for Extended Retention calculations option from 1 to 0.
- 5. Click **OK**.

ADVANCED TOPICS

Data Aging - Advanced

Provides comprehensive information on additional Data Aging capabilities.

Disaster Recovery - SAP for MAXDB

TABLE OF CONTENTS

Plan for Disaster Recovery

Recover the MAXDB Database

PLANNING FOR A DISASTER RECOVERY

Before you begin a disaster recovery, make sure to do the following:

- Ensure that the destination client is same as source client while performing a disaster recovery.
- Make sure to restore the configuration files before performing a disaster recovery.
- Frequent backups of log and data will also be helpful for a successful disaster recovery.
- Ensure that there is ample size for the data and log files before performing a disaster recovery.

RECOVERING THE MAXDB DATABASE

Whenever the MAXDB database is corrupted and a restore cannot recover the entire database, perform the following steps:

Build a secondary (destination) client machine (of a different name). Reinstall the SAP #> dbmcli -d CERT1 -u dbm, dbm -uUTL 1. for MAXDB *i*DataAgent on the destination client. Ensure that the database remains in dbmcli on CERT1>db_state ADMIN mode. OK

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- 2. Create a database instance from CommCell Console.
 - From the CommCell Browser, navigate to Client Computers | <Client> | SAP for MaxDB.
 - Right-click SAP for MaxDB | All Tasks and Click New Instance.
- 3. Enter the Instance name in SAP MaxDB Instance text field
 - Enter a description about the instance.



- Install the SAP Backint program.
 - Create the media types and the backint configuration file.
 - Configure backint

4.

Configuring backint on Unix.

Run each of the adjacent commands to configure backiint on Unix

dbm configset -raw BSI ENV

/<software install path>/SapMaxDbAgent/backint.conf dbm configset -raw set variable 0 LD_LIBRARY_PATH=/<software install path>/Base dbm_configset -raw set_variable_1 SHLIB PATH=/<software install path>/Base Include the following lines in .profile for AIX and HP-UX: SHLIB_PATH=/<software install path> /Base:/<software install path>/Base64 export SHLIB PATH

Include the following lines in .profile for Linux and Solaris:

LD LIBRARY PATH=/<software install path> /Base:/<software install path>/Base64 export LD_LIBRARY_PATH dbm_configset -raw BSI_ENV \<software install path>\

Configuring backint on Windows.

Run the adjacent command to configure backint on Windows.

The software install path should be the same as the path provided during the SAP for MAXDB on Windows installation.

6. Specify the source client in the parameter file followed by the name of the source client.

On Unix (All Platforms):

Include this information in the param file under <software_install_folder>/SapMaxDbAgent.

On Windows:

Include this information in the param file under the SAP MAXDB config file directory that you provide in the installation pop-up window during the installation.

- 7. Restore the dbm.knl and dbm.ebf files by performing one of the following:
 - Use Backint to restore the latest copy of these files manually. Example to restore dbm.knl and dbm.ebf files manually:
 - Get the full set of backup job IDs. Specifically, create an input file called file1.txt. backint -u -f inquire -t file a. Ensure that the contents of the file is #NULL, and run an inquiry to get a list of backups.
 - b. Using the last job ID to get the catalog files, create an input file called file2.txt, and include the last job ID in the file (e.g., SAP_0_28). Then execute the following command:
 - c. Restore the catalog files. Specifically, create an input file called file3.txt. Include contents similar to the following in the file:

Then execute the following command to restore the dbm.knl and dbm.ebf catalog files:

- If possible, enter the following dbmcli command: backup_ext_ids <medium_using_Backint> <original_database_name>.
- If possible, use the Restore without Backup History option in the DBMGUI recovery wizard provided by SAP.
- 8. Perform the required data restore to the destination client

Example:

srccrossclient magnum.company.com

For example:

-p param -l file1.txt

backint -u -f inquire -t file -p param -i file2.txt

SAP 0 28 d:\maxdb\sdb\data\wrk\CLDB\dbm.ebf SAP 0 28 d:\maxdb\sdb\data\wrk\CLDB\dbm.knl

backup backint -u -f restore -t file -p param -i inp3.txt

#> dbmcli -d CERT1 -u dbm, dbm -uUTL dbmcli on CERT1>db_state OK State ADMIN # dbmcli -d CERT1 -u dbm, dbm -uUTL dbmcli on CERT1> backup_ext_ids_get BackData2 OK dbmcli on CERT1> backup_ext_ids_list OK END dbmcli on CERT1>recover start BackData2 DATA ExternalBackupID "CERT1 dbmcli on CERT1>exit

OK

9. Perform the required log restore to the destination client

#> dbmcli -d CERT1 -u dbm,dbm -uUTL dbmcli on CERT1>db_state OK State ADMIN # dbmcli -d CERT1 -u dbm,dbm -uUTL dbmcli on CERT1> backup_ext_ids_get BackData2 OK dbmcli on CERT1> backup_ext_ids_list OK END dbmcli on CERT1>recover_start BackLog LOG ExternalBackupID "CERT1 dbmcli on CERT1>recover_replace BackLog ExternalBackupID "CERT1 dbmcli on CERT1>exit OK

Configure the restored MaxDB database using the SAP for MaxDB iDataAgent. Back to Top

Additional Operations - SAP for MAXDB iDataAgent

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Audit Trail Storage Policy Auxiliary Copy Operation Window Operating System and Application Upgrades Uninstalling Components Online Help Links

RELATED TOPICS

Support

Provides comprehensive information on SAP for MaxDB iDataAgent support.

Additional Operations - Concepts

Provides comprehensive information on additional operations procedures contained on this page.

- Audit Trail
- Storage Policies
- Storage Policy Copies
- Auxiliary Copy
- Operation Window
- Uninstalling Components

AUDIT TRAIL

The Audit Trail feature allows you to track the operations of users who have access to the CommCell. This capability is useful if a detrimental operation was performed in the CommCell and the source of that operation needs to be determined.

Audit Trail tracks operations according to four severity levels:

- Critical: This level records operations that will result in imminent loss of data.
- **High**: This level records operations that may result in loss of data.
- Medium: This level records changes to the general configuration of one or more entities. Such changes may produce unintended results when operations are performed.
- Low: This level records changes to status, addition of entities, and other operations that have minimal impact on existing CommCell functions.

To set Audit Trail retention periods:

- 1. From the Tools menu in the CommCell Console, click Control Panel, and then select Audit Trail.
- 2. From the Audit Trail dialog box, select the desired retention time (in days) for each severity level.
- 3. Click **OK**.

STORAGE POLICY

A Storage policy defines the data lifecycle management rules for protected data. Storage policies map data from its original location to a physical storage media and determine its retention period.

- 1. Expand the Policies node, right-click Storage Policies, and select New Storage Policy.
- 2. Click Next.
- 3. Select **Data Protection and Archiving** to create a regular storage policy or **CommServe Disaster Recovery Backup** to backup the CommServe database and click **Next**.
- 4. Click Next.
- 5. Enter the name of storage policy and click Next.
- 6. Enter the name of the primary copy and click Next.
- 7. From the drop down box, select the default library for the primary copy and click Next.
- 8. From the drop down box, select the MediaAgent and click Next.
- 9. Enter number of data streams and set the retention period for the policy and click Next.
- 10. Click Next.
- 11. Click Browse, browse to your designated deduplication store location and click Next.
- 12. Confirm your selections and click **Finish**.

AUXILIARY COPY

An auxiliary copy operation allows you to create secondary copies of data associated with data protection operations, independent of the original copy.

- 1. Expand the Policies node, right-click storage policy for which you want to perform an auxiliary copy, click All Tasks, and then click Run Auxiliary Copy.
- 2. If you are starting the auxiliary copy operation from the CommServe level, select the storage policy for which you wish to perform the auxiliary copy.

If you are starting the auxiliary copy operation from the Storage Policy level, the Storage Policy field is already populated with the name of the Storage Policy you selected.

- 3. If the source copy is configured with a shared library, select the Source MediaAgent for the auxiliary copy.
- 4. Click **OK** to start the auxiliary copy operation. A progress bar displays the progress of the operation.

OPERATION WINDOW

By default, all operations in the CommCell can run for 24 hours. To prevent certain operations from running during certain periods of the day, you can define operation rules so that these operations are disabled during those times.

When operation rules are configured, operations that are started within the time window specified will go to a queued (as opposed to pending) state. Once the time window specified in the operation rule has elapsed, these queued or running operations will resume automatically.

- 1. In the CommCell Browser, right-click the appropriate entity, click All Tasks, and then click Operation Window.
- 2. Click Add.
- 3. From the **Operation Window** dialog box:
 - Enter the name of the rule in the **Name** field.
 - Select either an administration, data protection (either full or non-full), and/or a data recovery operation from the **Operations** pane.
- 4. Click OK.

OPERATING SYSTEM AND APPLICATION UPGRADES

Operating system upgrades are only supported when upgrading from one version of an OS to a different version of the same OS (e.g., Win2003 to Win2008). The two methods of upgrading are:

- Seamless Upgrade This involves uninstalling the Agent software, upgrading the operating system, and then re-installing the Agent software.
- Full OS Replacement This involves performing a clean install of a new version of the OS, re-installing any application software, then re-installing the CommServe, MediaAgent, and/or Agent software.

For Full OS Replacement, the client computer must be configured to have the CommServe, MediaAgent, and/or Client software re-installed to the same location, the same Fully Qualified Domain Name or short domain name, the same partitions, disk drive format (FAT, NTFS, et. al.), and IP configuration as previously.

If it is necessary to remove Agent software to facilitate an operating system or application upgrade, do not delete the icon for the Agent from the CommCell Console, or all associated backed up data will be lost.

Use the following strategy to upgrade the operating system software:

- Identify the computers you want to upgrade and the CommCell components installed on each of these computers.
- Choose the type of upgrade procedure you want to use on each computer: seamless or full replacement.
- CommServe, MediaAgent, and Client computers can be upgraded in any order.

NOTES ON SAP MAXDB APPLICATION UPGRADES

To upgrade the SAP application software:

- 1. Uninstall the SAP for MAXDB iDataAgent.
- 2. Upgrade the SAP MAXDB application software.
- 3. Reinstall the SAP for MAXDB *i*DataAgent.
- 4. Map the SAP MAXDB application software as per the earlier configuration (using the same parameters file).

UNINSTALLING COMPONENTS

Once you have uninstalled a component, you will no longer be able to perform data protection operations. The protected data, however, is still available on the media for the length of time expressed in the Retention Time defined in the associated Storage Policy Copy. If desired, you can browse the backup data from another active client within the same CommCell or perform data recovery operations from the component to another active client within the same CommCell.

You cannot, however, restore the data to the component's original host computer because the necessary software is no longer present. You will have to reinstall the component software to the original computer in order to perform data recovery operations on such data. See Reinstalling Uninstalled Agents for comprehensive information on reinstalling the uninstalled agents.

If you want to browse backup data from a client computer whose component software has been removed, simply follow the standard browse procedures.

GENERAL UNINSTALL CONSIDERATIONS

Removing a component is a two-phase process:

- First, you need to uninstall the component software from the client computer hosting the software.
- If you are unable to uninstall the component from a computer using the recommended procedures, you can use the Deconfigure Agents feature to release the license and clean up entries from the CommServe database. However, files and registry entries relating to the component will not be removed from its host computer.
- Next, you must delete the component icon from the CommCell Browser.
 - Once you decide that you wont need to browse and/or restore the data after an uninstall or deconfigure, you can manually delete the component from the CommCell Browser. Doing so invalidates the corresponding backup data which may also release backup media to the system. See Delete the Agent for step-by-step instructions.

Consider the following prior to uninstalling any component:

- Verify that the CommServe is running (except when uninstalling the CommServe software).
- Verify that no jobs are in progress or scheduled to occur while the software is being uninstalled. If jobs are scheduled, either perform the uninstall at another time or disable the jobs on the client computer using the CommCell Console.
- Verify that the CommCell Console and Service Control Manager window are closed.
- If components were not installed in the default location, you will have to manually delete the directory/folders once the uninstall is complete.
- When uninstalling software, you may need to remove additional components and drivers if any had been installed.
- If the Authentication for Agent Installs feature has been enabled on the CommCell, users must have Agent Management capabilities to uninstall agents. During the uninstall, users will be prompted for their account information to continue with the uninstall. If the user is not authorized, the uninstall process will abort. For more information, see Authentication for Agent Installs.
- If uninstalling a component from the command line using an uninstall shortcut in the <software_installation_directory>\Uninstall folder, the command should not be run with the <software_installation_directory>\Uninstall folder open in the command. Instead, the command should be run with the uninstall package included in the command.

For example, the correct command would appear as follows:

<software_installation_directory>\Uninstall\<uninstall_package>

UNINSTALLING COMPONENTS

You can uninstall Windows components using one of the following methods:

Method 1: Uninstall Components Using the CommCell Console

Method 2: Uninstall Components from Add or Remove Programs

METHOD 1: UNINSTALL WINDOWS COMPONENTS USING THE COMMCELL CONSOLE

- 1. From the CommCell Browser, right-click the desired Client Computer and click All Tasks -> Add/Remove Programs and click Uninstall Software.
- 2. Uninstall Software Options dialog will appear.
- 3. In the Uninstall Software tab, select Uninstall All to uninstall all the software packages.
- In the Job Initiation tab, select Immediate to run the job immediately.
 You can track the progress of the job from the Job Controller or Event Viewer.

METHOD 2: UNINSTALL WINDOWS COMPONENTS FROM ADD OR REMOVE PROGRAMS

- 1. Click the Start button on the Windows task bar and then click Control Panel.
- 2. Double-click Add/Remove Programs.
 - For Windows Vista/Windows 2008, click Uninstall a Program in the Control Panel.
- 3. Click **Remove** to uninstall the components in the following sequence:
 - 1. SAP for Oracle *i*DataAgent
 - 2. Windows File System iDataAgent
 - 3. Base Software

UNINSTALLING UNIX AND MACINTOSH COMPONENTS

In order to uninstall the SAP for Oracle iDataAgent on a Unix computer, you need to remove the CVGxOrSAP Unix component using the cvpkgrm utility.

UNINSTALL SEQUENCE

When uninstalling a component on a Unix or Macintosh computer, the following sequence must be used:

- 1. Uninstall all application components and updates.
- 2. Uninstall the MediaAgent (if one exists)
- 3. Uninstall the Base software

Since the component software depends upon the Base software, you must uninstall the component software first.

UNINSTALLING COMPONENTS FROM A CLUSTER

The following sections provide general guidelines for uninstalling components from a Windows or Unix cluster.

ALL CLUSTERS

- Verify that the cluster is set to its original state (i.e., the active and passive nodes are in the same state of ownership for their disk groups as they were during installation).
- If the computer from which the component has been uninstalled is rebooted, services will not be restarted following the reboot. However, any cluster plugins available will continue to run.

WINDOWS CLUSTERS

- The software for a virtual server must be uninstalled from each computer in the cluster configured to host that virtual server, on which the software had been installed.
- For uninstalling a MediaAgent or Client from a cluster virtual server, it is recommended that users uninstall the active node first and then continue and uninstall all passive nodes. This will ensure that GxClusterPlugIn resources are removed properly.
- For a CommServe in a clustered environment, it is possible to remove the CommServe software from just one node of the cluster, while allowing it to continue to function on the remaining node(s). To do so, you must ensure the computer from which you are uninstalling the CommServe is a passive node. If you uninstall the CommServe from an active node, this will cause it to stop functioning because this will also remove the database.
- When you have more than one CommServe installed in a cluster and if you uninstall one of the CommServes from any of the nodes, leaving behind other installations, you need to re-register the DM2FastWebquery.dll using the following command line utility on the node where the CommServe was uninstalled:

<software installation path>\Base\CVGACUtil.exe /i /s DM2FastWebquery.dll

UNIX CLUSTERS

- Clustered environments pertain only to HP-UX, Linux, and Solaris clients.
- You will need to deconfigure the Unix File System iDataAgent from each virtual machine first before uninstalling it from the physical nodes.
- You will then need to uninstall the Unix File System *i*DataAgent and Base software (cvpkgrm) from the client computer hosting the software. You can uninstall the Base software from your client computer by entering the cvpkgrm command from a command line and then completing the directives in the resulting script. This script deletes the appropriate files and executables, and it removes the registry entries from the system.
- The component software allows you to Deconfigure virtual machines completely. It also allows you to Deconfigure individual modules for the virtual machines.

To Deconfigure a virtual machine, the virtual machine must be Deconfigured from all of the physical machines (hosts) on which it has been configured. This means that, within a clustered environment, each virtual machine must be Deconfigured from at least two hosts. To do this, follow the sequence outlined in Components on Unix.

ONLINE HELP LINKS

Use the following links to view the online help for the corresponding tabs in the CommCell Console:

OPERATIONS	ENTITY	ONLINE HELP LINKS	SUB LINKS
CONETCURATION	Agent	SAP for MAXDB Agent Properties (General)	
CONFIGURATION		SAP for MAXDB Agent Properties (Version)	
		SAP for MAXDB Agent Properties (Security)	
		SAP for MAXDB Agent Properties (Activity Control)	
	Instance	SAP for MAXDB Instance Properties (General)	
		SAP for MAXDB Instance Properties (Storage Device)	
		SAP for MAXDB Instance Properties (Security)	
		SAP for MAXDB Instance Properties (Encryption)	

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Frequently Asked Questions - SAP for MaxDB

CAN WE PROTECT DATA ON NON-GLOBAL ZONES IF THE FILE SYSTEM /DATAAGENT IS INSTALLED ONLY ON THE GLOBAL ZONE?

Yes. We can protect file system data on non-global zones if the File System *i*DataAgent is installed only on the global zone. However, in order to enable consistent backups of application specific data on the non-global zones, you will need to install the corresponding application specific *i*DataAgent on the non-global zone.

HOW DO WE PROTECT SAP FOR MAXDB DATA ON A NON-GLOBAL ZONE?

In order to enable consistent backups of SAP for MaxDB data on a non-global zone, you need to install the SAP for MaxDB iDataAgent on the non-global zone.

CAN WE SCHEDULE BACKUPS OF SAP FOR MAXDB?

You can schedule backups of SAP for MaxDB only through a scheduler in the Operating System. You can use SAP Calendar for Windows and Crontab for Unix to schedule your backups.

IS DEDUPLICATION SUPPORTED FOR SAP FOR MAXDB?

No. Deduplication is not supported for SAP for MaxDB.

Troubleshooting - SAP for MAXDB Backup

Backup Restore

SCHEDULED LOG BACKUP OPERATION FAILS WHEN LOG SIZE IS TOO SMALL (OR NEGLIGIBLE)

Scheduled log backup operation fails with the following error message:

-24920, ERR BACKUPOP: backup operation was unsuccessful The database was unable to fulfill a request (-123, No more log to save)

SYMPTOM

When a log backup is scheduled using a script and if the log size is very small (or negligible), then the log backup operation fails.

RESOLUTION

Use the following command to check the log size on each log backup in script. If the log size is too small, then skip the log backup.

dbmcli -d <SID> -u '<LOGIN>,<PWD>' -c info log

BACKUP FAILURE

Improper group association is specified during installation	The SAP for MAXDB user (sdb) should belong to the same group as entered during the installation. Otherwise, SAP for MAXDB will not be able to record the transactions in backint_maxdb.log and will not be able to access the registry. For example; /etc/<>Registry. As a result, the backups will fail. Sometimes, the backup fails due to incorrect group permissions.
	The following message would be logged in the <instancename>/wrk/dbm.ebl file:</instancename>
	Instance [<instancename>] Machine [<machname>] does not exist.</machname></instancename>
	Select 'sys' group (sdb) do not belong to this group and as a result the backup fails during the Backup. Please follow the proper installation instructions to create < >group and reinstall all the < >packages on the client.Use group dba during the installation.
	Also, make sure to add sdb/sdba to group dba in the file /etc/group.
	If you need to change the $<$ > Group as part of security administrations. Then follow the procedure given below:
	• edit < >_GROUP variable in < >/Base/pkginfo file
	• do a "chgrp -R < >", "chmod o-w" on all < >files
	Restart the services.
Failure of Backups and Restores	Currently, backups and restores cannot be performed from a remote desktop on Windows.
performed from a remote desktop on windows	Use any one of the following solutions that suits your setup:
	Login to remote desktop using the following command:
	mstsc /v:winclient /console
	Use netmeeting
	Use telnet
	Use the clients console

EXTERNAL BACKUP TOOL ERRORS

External backup tool not found	Execute the following commands:
error:	<instance># ./dbmcli -d TEST2 -u dbm,dbm -uUTL -c backup_start BackLog</instance>
The file '/opt/<	ERR
>/SapMaxDbAgent/In' already	-24927,ERR_TOOLCHK: external backup tool not found
	The file '/opt/galaxy/SapMaxDbAgent/in' already exists.
	<instance># rm /opt/galaxy/SapMaxDbAgent/in</instance>
	<instance># ./dbmcli -d TEST2 -u dbm,dbm -uUTL -c backup_start BackLog</instance>
	ERR
	-24927,ERR_TOOLCHK: external backup tool not found
	The file '/opt/galaxy/SapMaxDbAgent/out' already exists.
	<instance># rm /opt/galaxy/SapMaxDbAgent/out</instance>
	<instance># ./dbmcli -d TEST2 -u dbm,dbm -uUTL -c backup_start BackLog</instance>
	ERR
	-24927,ERR_TOOLCHK: external backup tool not found
1	

	The file '/opt/galaxy/SapMaxDbAgent/err' already exists.
	<instance># rm /opt/galaxy/SapMaxDbAgent/err</instance>
	<instance># ./dbmcli -d TEST2 -u dbm,dbm -uUTL -c backup_start BackLog</instance>
External backup tool not found error:	In this situation, the configuration of BACKINT interface is incorrect. Configure the following parameter files to the exact location of the backint.exe.
The file /Base/backint.exe is not	D:\program files\sdb\programs\pgm>cat D:\MaxDB\sdb\config\backint.conf
executable.	BACKINT "D:\< >\< >\Base\backint.exe"
	INPUT "D:\MaxDB\sdb\config\in"
	OUTPUT "D:\MaxDB\sdb\config\out"
	ERROROUTPUT "D:\MaxDB\sdb\config\err"
	PARAMETERFILE "D:\MaxDB\sdb\config\param"
	TIMEOUT_SUCCESS 300
	TIMEOUT_FAILURE 300
	D:\program files\sdb\programs\pgm>
External backup tool not found	Execute the following commands:
error:	magnum-as-root> ./dbmcli -d TEST1 -u dbm,dbm -uUTL
The	./dbmcli on TEST1>dbm_configset -raw BSI_ENV /oracle/galaxy/SapMaxDbAgent/backint.conf
file /SapMaxDbAgent/backint.com	ок
	./dbmcli on TEST1>dbm_configset -raw set_variable_0 LD_LIBRARY_PATH=/oracle/galaxy/Base
	OK
	./dbmcli on TEST1>dbm_configset -raw set_variable_1 SHLIB_PATH=/oracle/galaxy/Base
	OK
	 /dbmcli on TEST1>quit
	OK
	magnum-as-root> pwd
	/oracle/sdb/programs/bin
	magnum-as-root>

Troubleshooting - SAP for MAXDB Restore

Backup Restore

The following section provides information on some of the troubleshooting scenarios related to backup

FAILURE OF BACKUPS AND RESTORES PERFORMED FROM A REMOTE DESKTOP ON WINDOWS

PROBLEM

Currently, backups and restores cannot be performed from a remote desktop on Windows.

SOLUTION

Use any one of the following solutions that suits your setup:

• Login to remote desktop using the following command:

mstsc /v:winclient /console

- Use netmeeting
- Use telnet
- Use the clients console

RECOVERING DATA ASSOCIATED WITH DELETED CLIENTS AND STORAGE POLICIES

The following procedure describes the steps involved in recovering data associated with the following entities:

• Deleted Storage Policy

• Deleted Client, Agent, Backup Set or Instance

BEFORE YOU BEGIN

This procedure can be performed when the following are available:

- You have a Disaster Recovery Backup which contains information on the entity that you are trying to restore. For example, if you wish to recover a storage policy (and the data associated with the storage policy) that was accidentally deleted, you must have a copy of the disaster recovery backup which was performed before deleting the storage policy.
- Media containing the data you wish to recover is available and not overwritten.
- If a CommCell Migration license was available in the CommServe when the disaster recovery backup was performed, no additional licenses are required. If not, obtain the following licenses:
- IP Address Change license
- CommCell Migration license

See License Administration for more details.

• A standby computer, which will be used temporarily to build a CommServe.

RECOVERING DELETED DATA

- 1. Locate the latest Disaster Recovery Backup which contains the information on the entity (Storage Policy, Client, Agent, Backup Set or Instance) that you are trying to restore.
 - You can check the Phase 1 destination for the DR Set or use Restore by Jobs for CommServe DR Data to restore the data.
 - If the job was pruned and you know the media containing the Disaster Recovery Backup, you can move the media in the Overwrite Protect Media Pool. See Accessing Aged Data for more information. You can then restore the appropriate DR Set associated with the job as described in Restore by Jobs for CommServe DR Data.
 - If the job is pruned and you do not know the media containing the Disaster Recovery Backup, you can do one of the following:

If you regularly run and have copies of the Data on Media and Aging Forecast report you can check them to see if the appropriate media is available.

- 2. On a standby computer, install the CommServe software. For more information on installing the CommServe, see CommServe Deployment.
- 3. Restore the CommServe database using the CommServe Disaster Recovery Tool from the Disaster Recovery Backup described in Step 1. (See Restore a Disaster Recovery Backup for step-by-step instructions.)
- 4. Verify and ensure that the Bull Calypso Client Event Manager Bull Calypso Communications Service (EvMgrS) is running.
- 5. If you did not have a CommCell Migration license available in the CommServe when the disaster recovery backup was performed, apply the IP Address Change license and the CommCell Migration license on the standby CommServe. See Activate Licenses for step-by-step instructions.

6. Export the data associated with the affected clients from the standby CommServe as described in Export Data from the Source CommCell.

When you start the Command Line Interface to capture data, use the name of the standby CommServe in the - commcell argument.

7. Import the exported data to the main CommServe as described in Import Data on the Destination CommCell.

This will bring back the entity in the CommServe database and the entity will now be visible in the CommCell Browser. (Press F5 to refresh the CommCell Browser if the entity is not displayed after a successful merge.)

- If you have additional data that was backed up after the disaster recovery backup and before the deletion of the entity, use the procedure described in Import Metadata from a Tape or Optical Media to obtain the necessary information.
- 9. You can now browse and restore the data from the appropriate entity.

As a precaution, mark media (tape and optical media) associated with the source CommCell as READ ONLY before performing a data recovery operation in the destination CommCell.

Online Help Topics

Encryption

Use this dialog box to select the data encryption options for the selected content. When accessing this dialog box from the Subclient Properties Encryption tab, this setting applies only to the selected subclient content for operations run from the CommCell Console. When accessing this dialog box from the Instance Properties Encryption tab, this setting applies only to third-party Command Line operations. The functionality is not propagated to the Subclient Properties Encryption tabs.

None

When selected, no encryption will take place during a data protection operations.

Media Only (MediaAgent Side)

When selected, for data protection operations, data is transmitted without encryption and then encrypted prior to storage. During data recovery operations, data is decrypted by the client.

When using this setting in conjunction with the client property **With a Pass-Phrase**, you will be required to provide a pass-phrase for data recovery operations unless you export the client pass-phrase to the destination client(s). When using pass-phrase security for third-party Command Line operations or DataArchiver Agents stub recovery operations, you must export the pass- phrase to the destination client.

Network and Media (Agent Side)

When selected, for data protection operations, data is encrypted before transmission and is stored encrypted on the media. During data recovery operations, data is decrypted by the client.

When using this setting in conjunction with the client property **With a Pass-Phrase**, you will be required to provide a pass-phrase for data recovery operations unless you export the client pass-phrase to the destination clients.

Network Only (Agent Encrypts, MediaAgent Decrypts)

When selected, for data protection operations, data is encrypted for transmission and then decrypted prior to storage on the media. During data recovery operations, data is encrypted by the MediaAgent and then decrypted in the client.

When using this setting in conjunction with the client property **With a Pass-Phrase**, you will not be required to provide a pass-phrase for data recovery operations.

Script Preview

Click to display the backup script, based on the current subclient configuration, that will be submitted to RMAN when backups are performed for the selected Oracle subclient.