

# Administration Guide - SAP for MAXDB *i*DataAgent

## TABLE OF CONTENTS

---

### OVERVIEW

#### Introduction

#### Key Features

- Full Range of Backup and Recovery Options
- SnapProtect Backup
- Command Line Support
- Backup and Recovery Failovers
- Efficient Job Management and Reporting
- Block Level Deduplication

#### Terminology

---

### SYSTEM REQUIREMENTS - SAP FOR MAXDB /DATAAGENT

---

### SUPPORTED FEATURES - SAP FOR MAXDB /DATAAGENT

---

### GETTING STARTED - DEPLOYING ON WINDOWS

#### Installation

##### Method 1: Interactive Install

##### Method 2: Install Software from the CommCell Console

---

### GETTING STARTED - DEPLOYING IN A GLOBAL ZONE OR UNIX SERVERS

#### Where to Install

#### Installation

##### Method 1: Interactive Install

##### Method 2: Install Software from the CommCell Console

---

### GETTING STARTED - DEPLOYING IN A NON-GLOBAL ZONE

#### Where to Install

#### Installation

##### Method 1: Interactive Install

##### Method 2: Install Software from the CommCell Console

---

### GETTING STARTED - SAP FOR MAXDB CONFIGURATION

---

### GETTING STARTED - SAP FOR MAXDB BACKUP

#### Perform a Backup

- What Gets Backed Up
- What Does Not Get Backed Up

---

### GETTING STARTED - SAP FOR MAXDB RESTORE

#### Perform a Restore

---

### ADVANCED - SAP FOR MAXDB CONFIGURATION

#### Understanding the CommCell Console

#### Configuring Multiple Streams for Backups and Restores

- Configuring Multiple Streams on Windows Client
- Configuring Multiple Streams on Unix Client

#### Registering the Client with SAP SLD

#### Modifying an Instance

#### Deleting an Instance

---

## **ADVANCED - SAP FOR MAXDB BACKUP**

### **Full Backup**

- Perform an Offline (Cold) Full Backup
- Perform an Online (Warm) Full Backup

### **Incremental Backups**

- Perform an Offline (Cold) Incremental Backup
- Perform an Online (Warm) Incremental Backup

### **Selective Online Full Backup**

### **Archive Log Backups**

### **Managing Jobs**

---

## **ADVANCED - SAP FOR MAXDB RESTORE**

### **Choosing Restore Types**

### **Choosing the Restore Destination**

### **Restoring to a Different Client (Cross Machine Restore)**

### **Restoring a Full Backup**

### **Restoring Incremental Backup**

### **Restoring Logs**

### **Restore from a Secondary Copy**

### **Restore Using a Specific Library or Drive Pool**

### **Manage Restore Jobs**

- Control Jobs

---

## **DATA AGING - SAP FOR MAXDB**

---

## **DISASTER RECOVERY - SAP FOR MAXDB**

### **Plan for Disaster Recovery**

### **Recover the MAXDB Database**

---

## **ADDITIONAL OPERATIONS**

### **Audit Trail**

### **Storage Policy**

### **Auxiliary Copy**

### **Operation Window**

### **Operating System and Application Upgrades**

### **Uninstalling Components**

### **Online Help Links**

---

## **FREQUENTLY ASKED QUESTIONS**

---

## **TROUBLESHOOTING - SAP FOR MAXDB BACKUP**

### **Backup Failure**

### **External backup tool errors**

---

## **TROUBLESHOOTING - SAP FOR MAXDB RESTORE**

### **Failure of Backups and Restores Performed from a Remote Desktop on Windows**

### **Recovering Data Associated with Deleted Clients and Storage Policies**

# Overview - SAP

## TABLE OF CONTENTS

### Introduction

#### Key Features

- Full Range of Backup and Recovery Options
- Selective Online Full Backup
- SnapProtect Backup
- Command Line Support
- Backup and Recovery Failovers
- Efficient Job Management and Reporting
- Block Level Deduplication

### Terminology

## 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

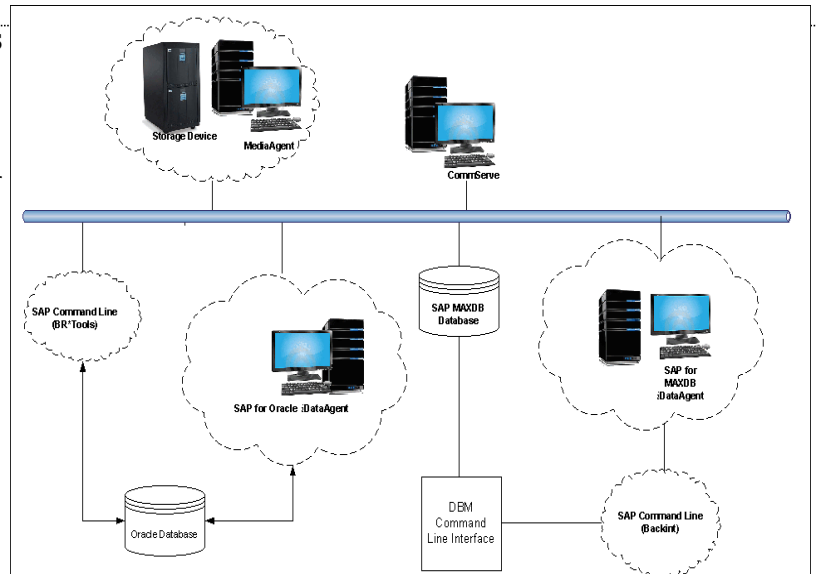
When the database is shutdown and not available for use, you can perform a full backup of the database without the logs. This is especially used when the data is consistent and there are no transactions in the database.

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

### SNAPPROTECT BACKUP

SAP for Oracle iDataAgent 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:

<b>CLIENT</b>	The computer in which the iDataAgent is installed and contains the data to be secured.
<b>INSTANCE</b>	The SAP for Oracle database to be used for the backup and restore operations.
<b>SUBCLIENT</b>	The SAP data to be backed up.
<b>DBM CLI</b>	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.
<b>BACKINT</b>	Backint is an interface program that allows DBM CLI to communicate with SAP MAXDB using streams/pipes to perform backup and restore operations.

[Back to Top](#)

# System Requirements - SAP for MAXDB iDataAgent

System Requirements | Supported Features

The following requirements are for the SAP for MAXDB iDataAgent:

APPLICATION/OPERATING SYSTEM		PROCESSOR
<b>SAP MAXDB 7.5, 7.6, 7.7, 7.8 AND 7.9 ON:</b>		
<b>AIX</b>	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)
<b>HP-UX</b>	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
<b>LINUX</b>	<b>RED HAT ENTERPRISE LINUX/CENTOS</b>	
	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
	<b>SUSE LINUX (SLES)</b>	
	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	
<b>SOLARIS</b>	Solaris 11.x	x64, Sparc5 (or higher recommended)
	Solaris 10.x	x64, Sparc5 (or higher recommended)
<b>WINDOWS</b>	<b>WINDOWS 2008</b>	
	Microsoft Windows Server 2008 Editions with a minimum of Service Pack 1* *Core Editions not supported	All Windows-compatible processors supported
<b>WINDOWS</b>	<b>WINDOWS 2003</b>	
	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 iDataAgent 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 iDataAgents, refer to:

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

backup_IDA application, you can use the following file name: backup_IDA.fc	<pre>(system_u:object_r:texrel_shlib_t,s0) /opt/&lt;software installation directory&gt;/Base/libdb2osse.so.1 -- gen_context (system_u:object_r:texrel_shlib_t,s0) /opt/&lt;software installation directory&gt;/Base/libDb2Sbt.so -- gen_context (system_u:object_r:texrel_shlib_t,s0) /opt/&lt;software installation directory&gt;/Base/libdb2trcapi.so.1 -- gen_context (system_u:object_r:texrel_shlib_t,s0) /opt/&lt;software installation directory&gt;/Base/libDrDatabase.so -- gen_context (system_u:object_r:texrel_shlib_t,s0) /opt/&lt;software installation directory&gt;/Base/libIndexing.so -- gen_context (system_u:object_r:texrel_shlib_t,s0) /opt/&lt;software installation directory&gt;/Base/libSnooper.so -- gen_context (system_u:object_r:texrel_shlib_t,s0)</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 COMMCCELL 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 to install software on this computer.  
The options that appear on this screen depend on the computer in which the software is being installed.

4. Select **I accept the terms in the license agreement**.  
Click **Next**.

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

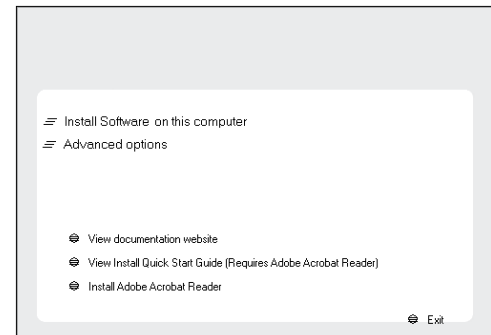
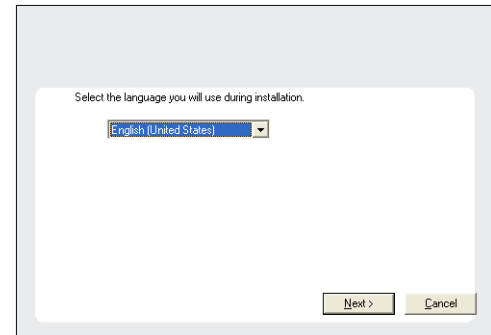
## BEFORE YOU BEGIN

### Download Software Packages

Download the latest software package to perform the install.

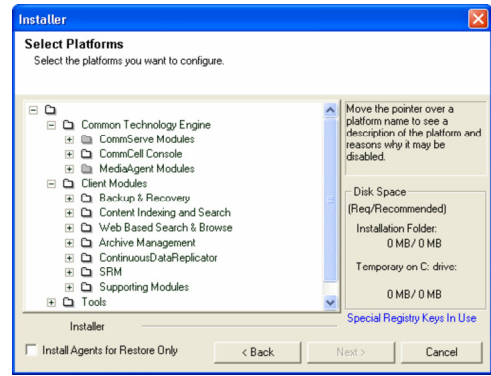
### System Requirements

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

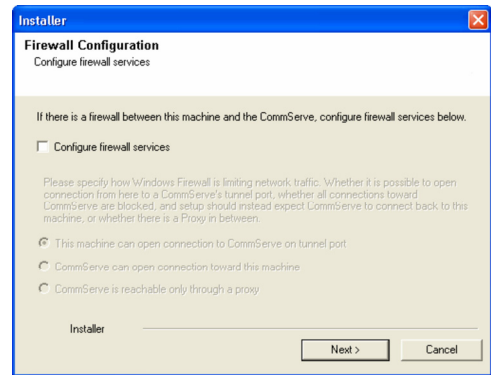
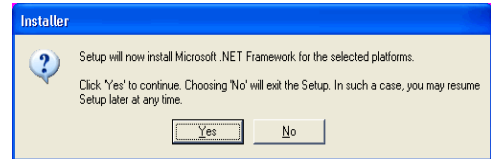




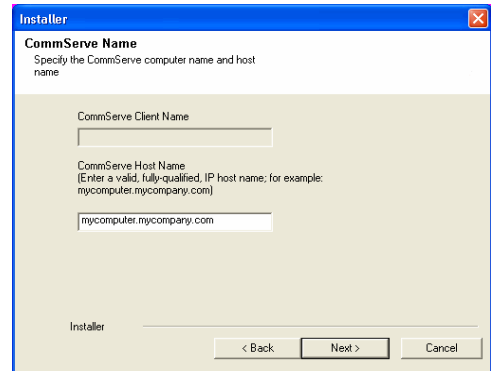
6. Click **YES** to install Microsoft .NET Framework package.
  - This prompt is displayed only when Microsoft .NET Framework is not installed.
  - Once the Microsoft .NET Framework is installed, the software automatically installs the Microsoft Visual J# 2.0 and Visual C++ redistributable packages.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



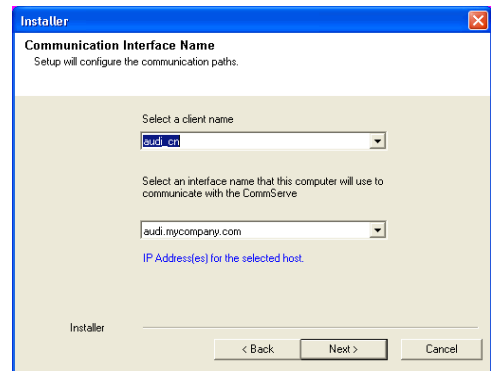
8. Enter the fully qualified domain name of the **CommServe Host Name**.  
 Click **Next**.  
 Do not use space and the following characters when specifying a new name for the CommServe Host Name:  
`\ | ` ~ ! @ # $ % ^ & * ( ) + = < > / ? , [ ] { } ; : ; " ' " "`



9. Click **Next**.



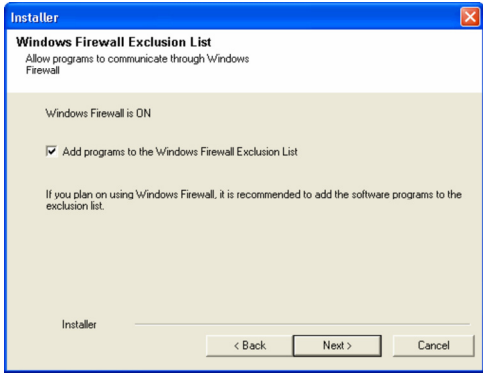
10. Select **Add programs to the Windows Firewall Exclusion List**, to add CommCell programs and services to the Windows Firewall Exclusion List.



Click **Next**.

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

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



11. Verify the default location for software installation.

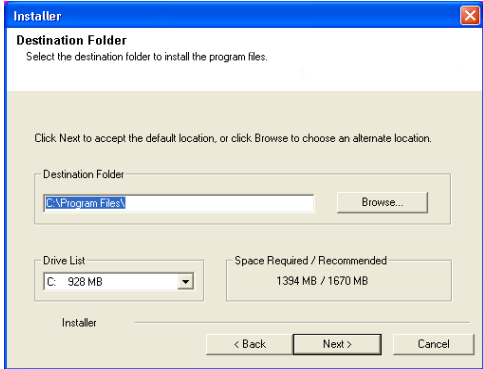
Click **Browse** to change the default location.

Click **Next**.

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

/ : \* ? " < > | #

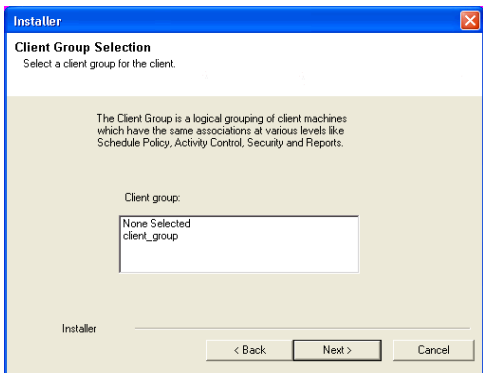
It is recommended that you use alphanumeric characters only.



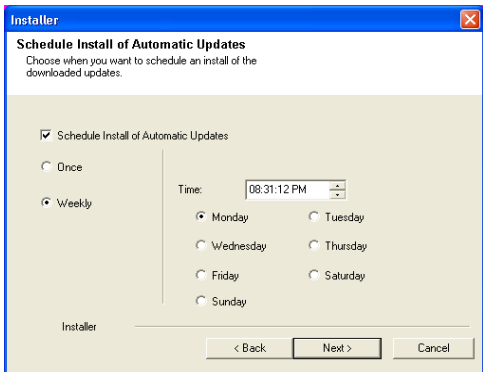
12. Select a Client Group from the list.

Click **Next**.

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



13. Click **Next**.



14. Click **Next**.

15. Select a **Storage Policy**.  
Click **Next**.

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

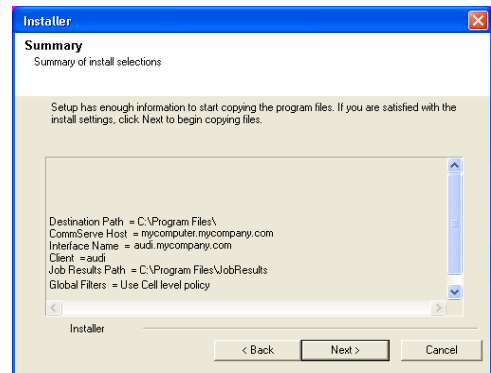
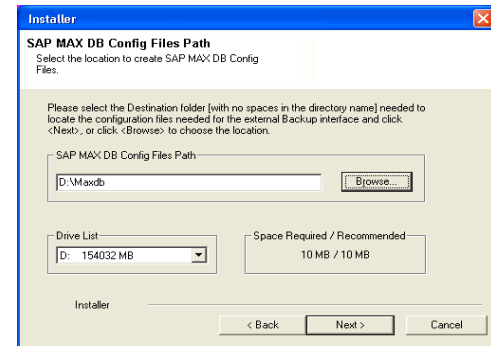
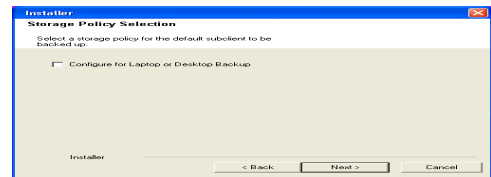
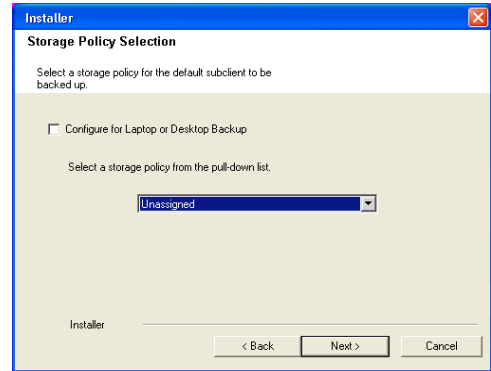
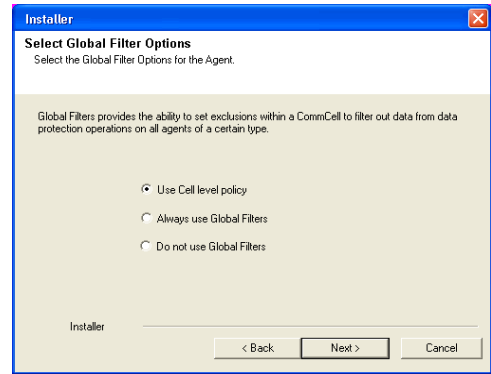
Click **OK**.

You can create the Storage Policy later in step 20.

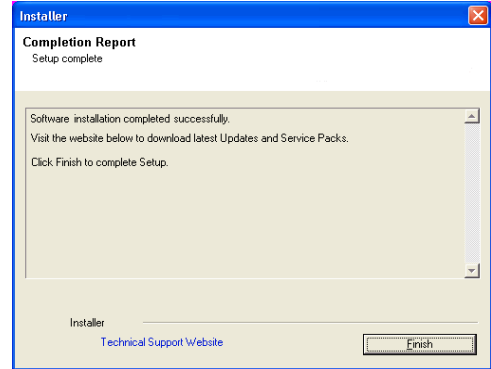
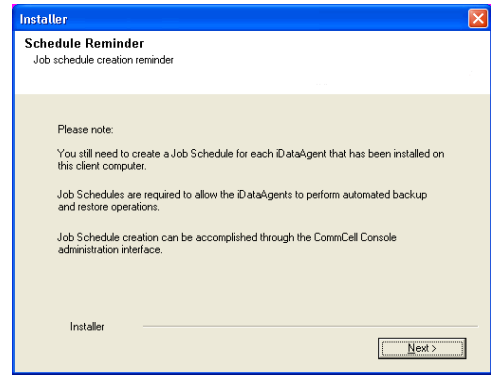
16. Enter the location to create SAP MAXDB Config Files.  
You can Click **Browse** to select the location.  
Click **Next**.

17. Click **Next**.

18. Click **Next**.



19. Click **Finish**.

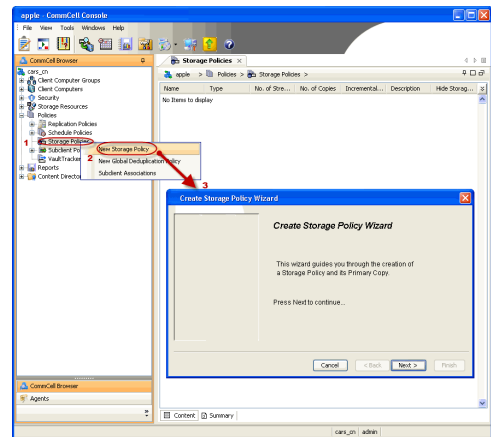


If you already have a storage policy selected in step 15, click the **Next** button available on the bottom of the page to proceed to the **Configuration** section.

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

20. Create a Storage Policy:

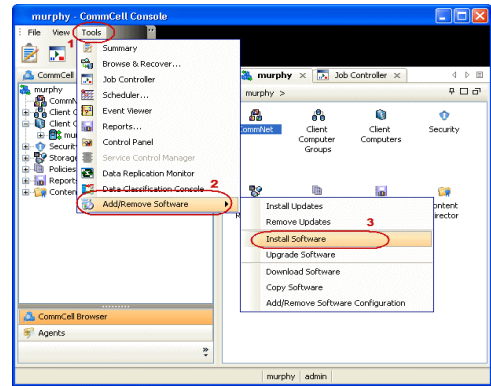
1. From the CommCell Browser, navigate to **Policies**.
2. Right-click the **Storage Policies** and then click **New Storage Policy**.
3. Follow the prompts displayed in the Storage Policy Wizard. The required options are mentioned below:
  - Select the Storage Policy type as **Data Protection and Archiving**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



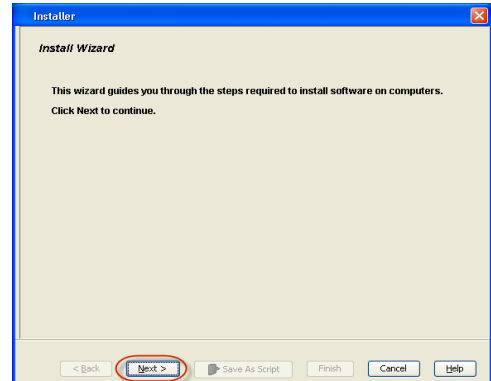
## METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

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

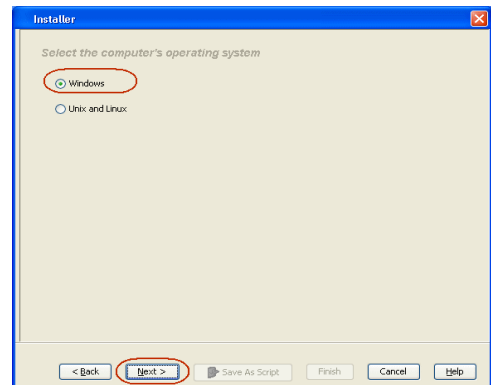
2. Click **Next**.



3. Select **Windows**.  
Click **Next**.



4. Select **Manually Select Computers**.  
Click **Next**.

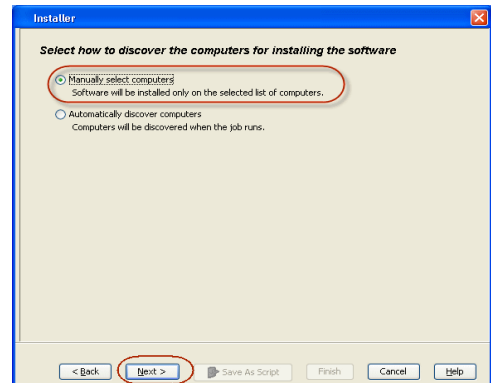


5. Enter the fully qualified domain name of the Windows client computer where the MaxDB database resides.

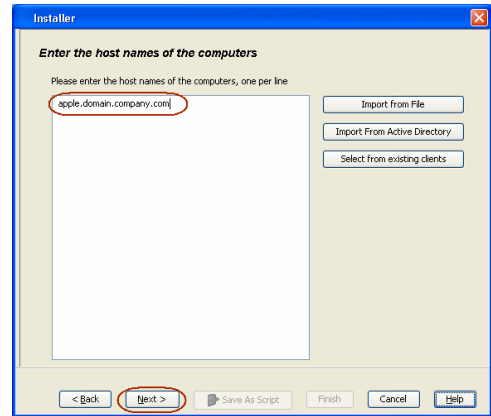
For example: `apple.domain.company.com`

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

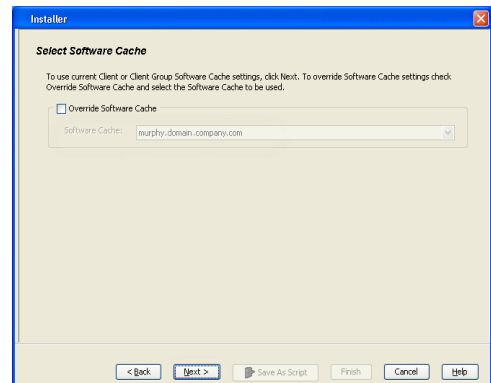
Click **Next**.



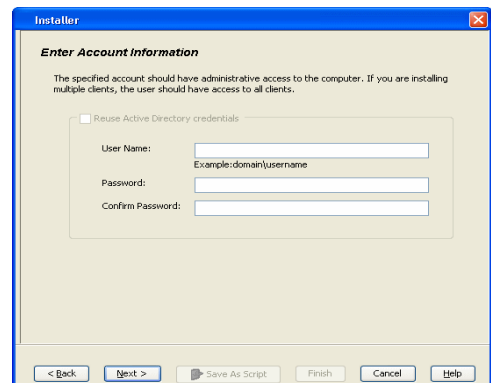
6. Click **Next**.



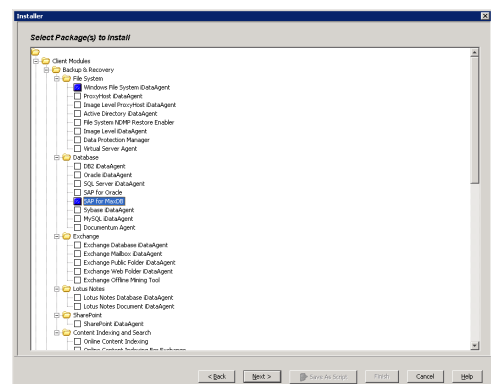
7. Specify **UserName** and **Password** of the computer.  
Click **Next**.



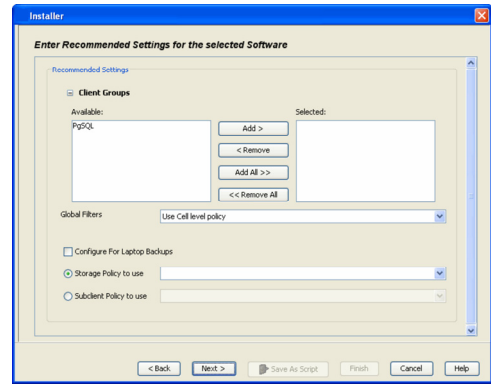
8. Select **SAP for MaxDB**.  
Click **Next**.



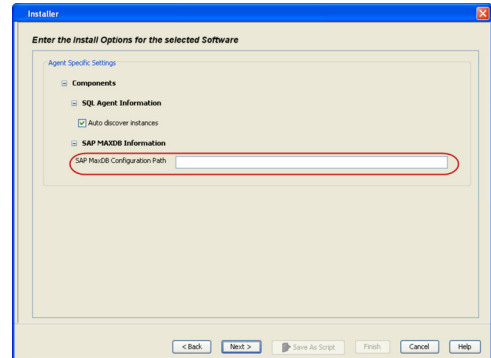
9. Click **Next**.



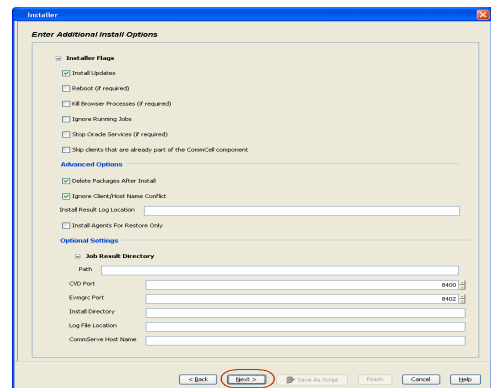
10. Type the **SAP MASDB Configuration Path**.  
Click **Next**.



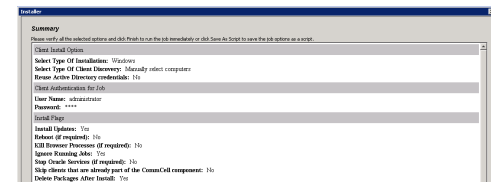
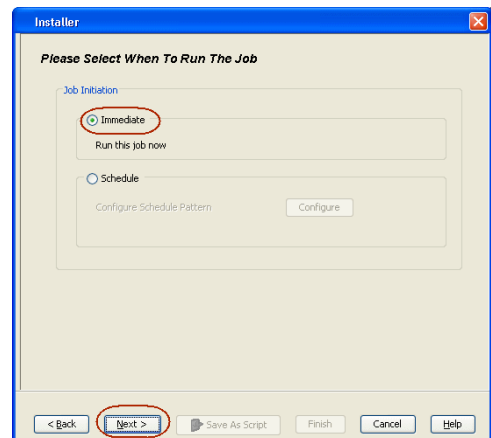
11. Click **Next**.



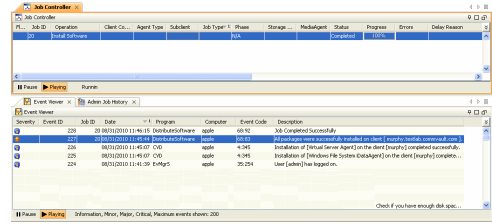
12. Select **Immediate**.  
Click **Next**.



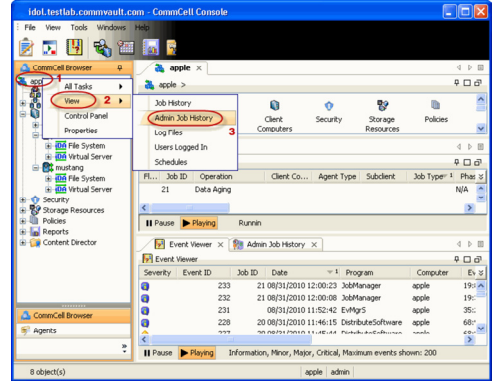
13. Click **Finish**.



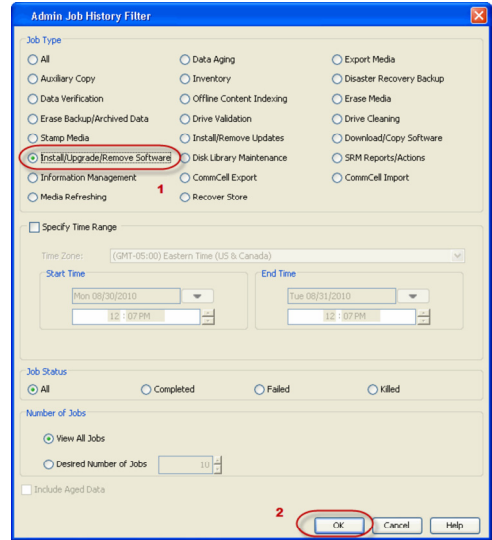
14. You can track the progress of the job from the **Job Controller** or **Event Viewer** window.



15. Once the job is complete, right-click the **CommServe** computer, click **View** and then click **Admin Job History**.

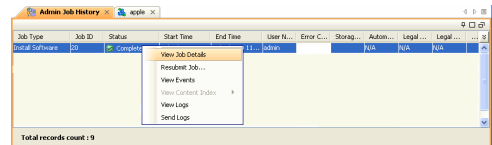


16. Select **Install/Upgrade/Remove Software**.  
Click **OK**.



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 COMMCCELL CONSOLE

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

## METHOD 1: INTERACTIVE INSTALL

1. Run the following command from the Software Installation Disc:  
**./cvpkgadd**
2. The product banner and other information is displayed.  
Press **Enter**.
3. Read the license agreement. Type **y** and press **Enter**.
4. Press **Enter**.
5. 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.
6. 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 "fail-over" from one server to another, which includes stopping services and deactivating IP address on the first server and activating the IP address/services on the other server.

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

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

- 1) Install on a physical machine

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**.

13. Press **Enter** to accept the default path and continue, or  
Enter a path to modify the default path and press **Enter**.

#### NOTES

- Do not use the following characters when specifying the path:  
!@#\$\$%^&\*():/?\

14. Press **Enter** to accept the default location for the log files and continue, or  
Enter a path to modify the default location and press **Enter**.

#### 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]
[ ] 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]
```

```
>) >>>>>>>>>> NEXT PAGE >>>>>>>>>>
[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
```

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 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 "/var/log/calypso/Log\_Files".

15. Type **no**.

**NOTES**

- If entering **Yes**, go to Step 17.

16. Type **d** for done.

17. If you indicated **Yes** in Step 15., you will be prompted for the group name that must be used to launch processes.

Enter the group name and then press **Enter**.

**NOTES**

- See your Unix systems administrator for assistance in creating a user group.

18. Type a network TCP port number for the Communications Service (CVD) and press **Enter**.

Type a network TCP port number for the Client Event Manager Service (EvMgrC) and press **Enter**.

19. If this computer and the CommServe is separated by a firewall, type **Yes** and then press **Enter**.

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**.

**NOTES**

- Ensure that the CommServe is accessible before typing the name; otherwise the installation will fail.

21. Press **Enter**.

Log Directory: [/var/log]

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]

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:

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

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

Every instance of Calypso should use a unique set of network ports to avoid interfering with other instances running on the same machine.

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

Please enter the port numbers.

Port Number for CVD : [8600]

Port Number for EvMgrC: [8602]

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

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

CommServe Host Name:

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.

22. Type the number of a Client Group and press **Enter**.

A confirmation screen will mark your choice with an "X". Type **d** for done with the selection, and press **Enter** to continue.

**NOTES**

- This screen will be displayed only if Client Groups are configured for the CommCell.


23. Enter the number corresponding to the storage policy through which you want to back up the External Data Connector and press **Enter**.

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

You can create the Storage Policy later in step 25.

24. Type **3** to the **Exit** option and press **Enter**.

The installation is now complete.

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

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

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

Client Group(s) is currently configured on CommServe cs.company.com. Please choose the group(s) that you want to add this client client.company.com to. The selected group(s) will be marked (X) and can be deselected if you enter the same number again. After you are finished with the selection, select "Done with the Selection".

```
[ ] 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
```

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

- 1) SP\_StandAloneLibrary2\_2
- 2) SP\_Library3\_3
- 3) SP\_MagLibrary4\_4

Storage Policy: [1]

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

Successfully installed Calypso

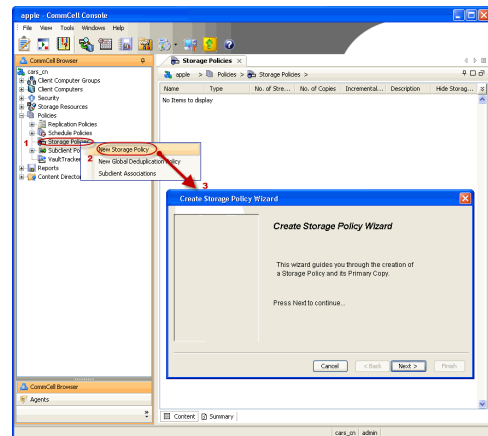
Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "fail-over" from one server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

Currently you have Calypso installed on physical node 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]



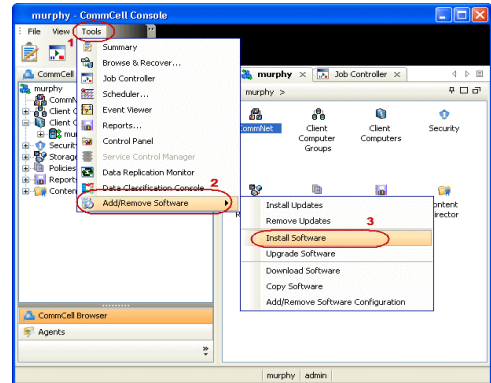
to store the Deduplication store.

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

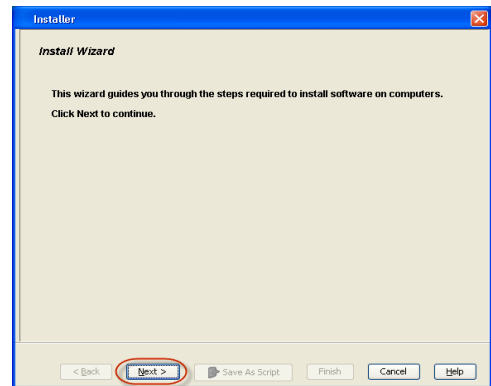
- o Review the details and click **Finish** to create the Storage Policy.

## METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

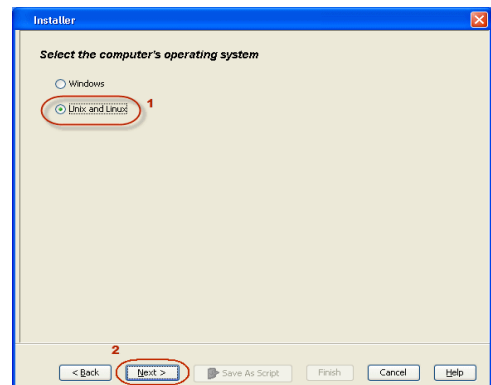
1. From the CommCell Browser, select **Tools | Add/Remove Software | Install Software**.



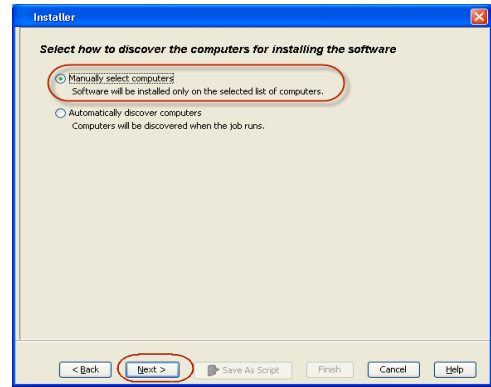
2. Click **Next**.



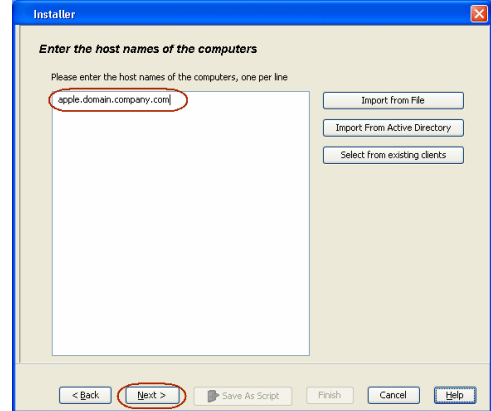
3. Select **Unix and Linux**.  
Click **Next**.



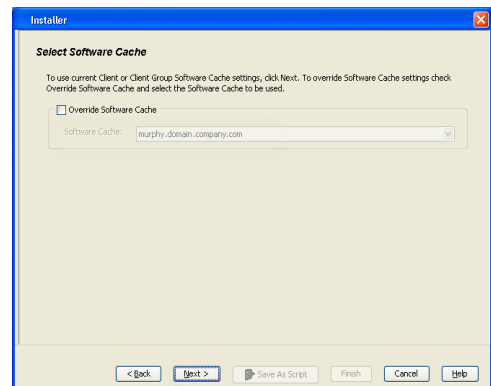
4. Select **Manually Select Computers**.  
Click **Next**.



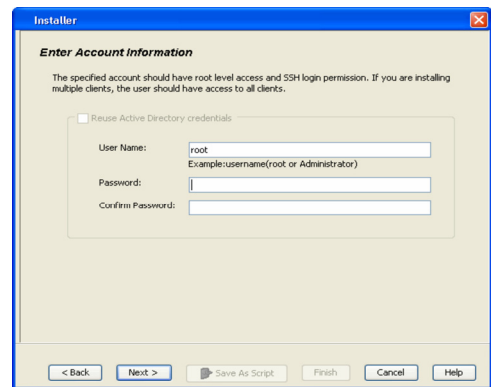
5. Enter the fully qualified domain name of the computer in which you wish to install.  
For example: `apple.domain.company.com`  
The SAP for MaxDB iDataAgent will be installed on this client computer.  
Click **Next**.



6. Click **Next**.

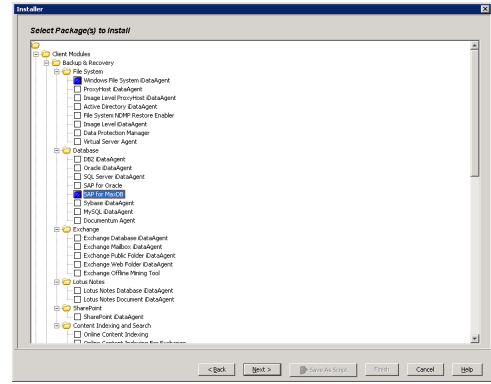


7. Specify **UserName** and **Password** of client computer.  
Click **Next**.

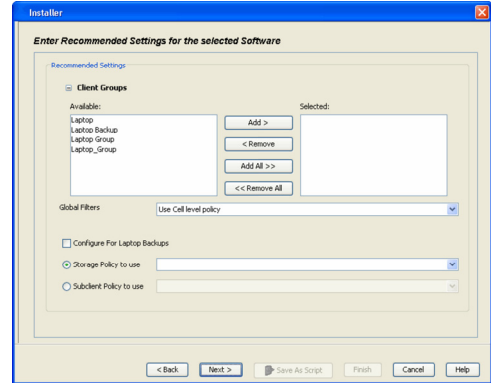


8. Select **SAP for MaxDB** .  
Click **Next**.

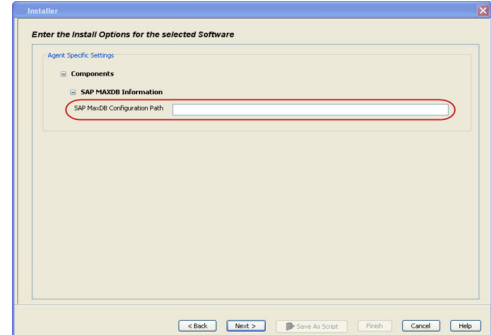
9.
  - Select **Client Group** from **Available** and click **Add**.  
Do not add more than one Client Group.
  - Select a **Storage Policy** from the drop-down list. Click **Next**.



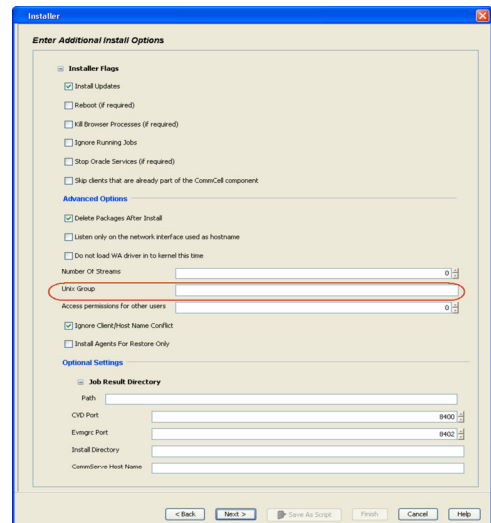
10. Type the **SAP MaxDB Configuration Path**.  
Click **Next**.



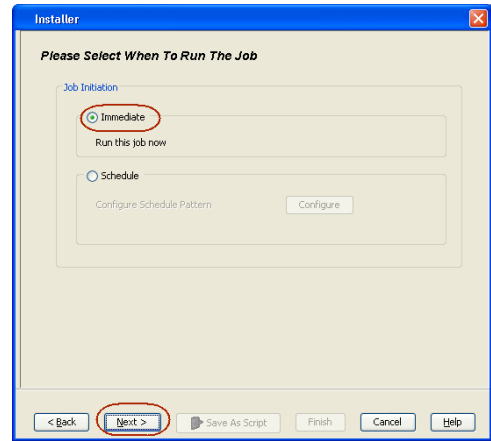
11. Click **Next**.



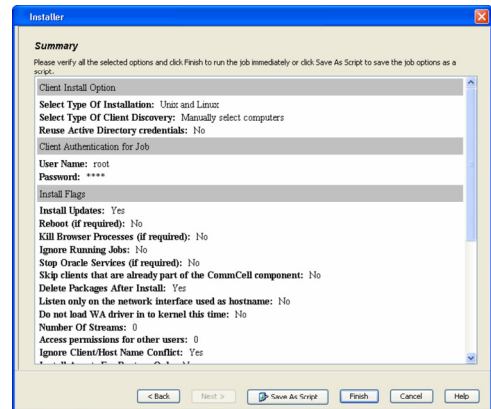
12. Select **Immediate**.  
Click **Next**.



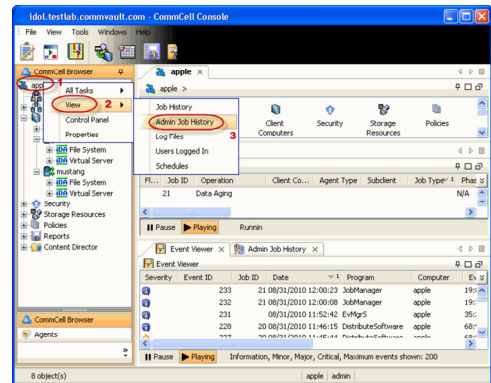
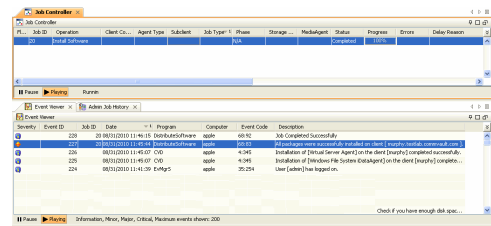
13. Click **Finish**.



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**.

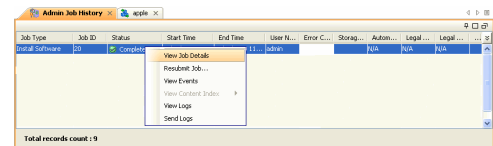
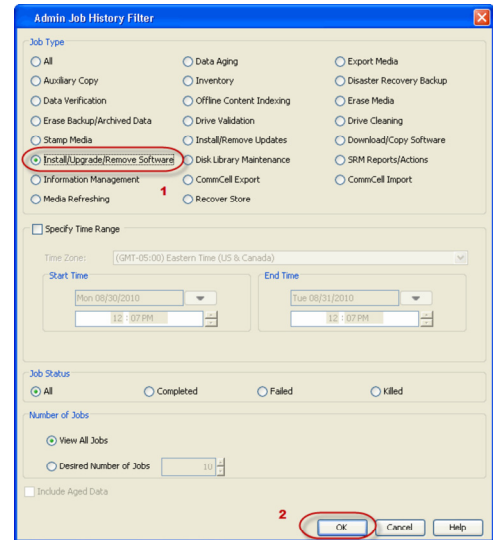


16. Select **Install/Upgrade/Remove Software**.  
Click **OK**.



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 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 COMMCCELL 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-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
```

3. The product banner and other information is displayed.

Press **Enter**.

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

5. Press **Enter**.

6. 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**.

## 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.



- All the modules installed on the computer will store the log files in this directory.
16. Type **no**.
- NOTES**
- If entering **Yes**, go to Step 18.
17. Type **d** for done.
18. If you indicated **Yes** in Step 16., you will be prompted for the group name that must be used to launch processes.
- Enter the group name and then press **Enter**.
- NOTES**
- See your Unix systems administrator for assistance in creating a user group.
19. Type a network TCP port number for the Communications Service (CVD) and press **Enter**.
- Type a network TCP port number for the Client Event Manager Service (EVMgrC) and press **Enter**.
20. If this computer and the CommServe is separated by a firewall, type **Yes** and then press **Enter**.
- 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**.
- NOTES**
- Ensure that the CommServe is accessible before typing the name; otherwise the installation will fail.
22. Press **Enter**.

"/var/log/calypso/Log\_Files".

Log Directory: [/var/log]

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]

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:

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

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

Every instance of Calypso should use a unique set of network ports to avoid interfering with other instances running on the same machine.

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

Please enter the port numbers.

Port Number for CVD : [8600]

Port Number for EVMgrC: [8602]

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

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

CommServe Host Name:

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.

23. Type the number of a Client Group and press **Enter**.

A confirmation screen will mark your choice with an "X". Type **d** for done with the selection, and press **Enter** to continue.

**NOTES**

- This screen will be displayed only if Client Groups are configured for the CommCell.


24. Enter the number corresponding to the storage policy through which you want to back up the External Data Connector and press **Enter**.

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

You can create the Storage Policy later in step 26.

25. Type **3** to the **Exit** option and press **Enter**.

The installation is now complete.

 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:
    - o Select the Storage Policy type as **Data Protection and Archiving** and click **Next**.
    - o Enter the name in the **Storage Policy Name** box and click **Next**.
    - o From the **Library** list, click the name of a disk library to which the primary copy should be associated and then click **Next**.  
Ensure that you select a library attached to a MediaAgent operating in the current release.
    - o From the **MediaAgent** list, click the name of a MediaAgent that will be used to create the primary copy and then click **Next**.
    - o For the device streams and the retention criteria information, click **Next** to accept default values.
    - o Select **Yes** to enable deduplication for the primary copy.
    - o From the **MediaAgent** list, click the name of the MediaAgent that will be used

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

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

Client Group(s) is currently configured on CommServe cs.company.com. Please choose the group(s) that you want to add this client client.company.com to. The selected group(s) will be marked (X) and can be deselected if you enter the same number again. After you are finished with the selection, select "Done with the Selection".

```
[ ] 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

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

- 1) SP\_StandAloneLibrary2\_2
- 2) SP\_Library3\_3
- 3) SP\_MagLibrary4\_4

Storage Policy: [1]

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

Successfully installed Calypso

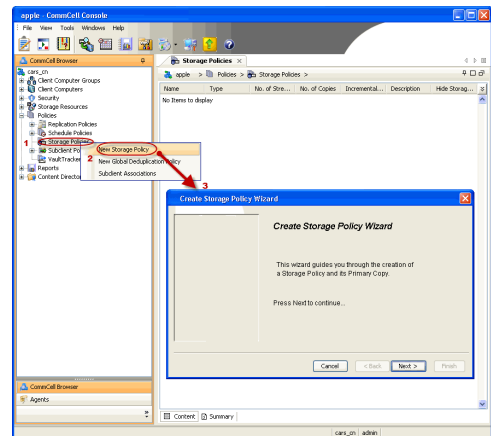
Certain Calypso packages can be associated with a virtual IP, or in other words, installed on a "virtual machine" belonging to some cluster. At any given time the virtual machine's services and IP address are active on only one of the cluster's servers. The virtual machine can "fail-over" from one server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

Currently you have Calypso installed on physical node 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]



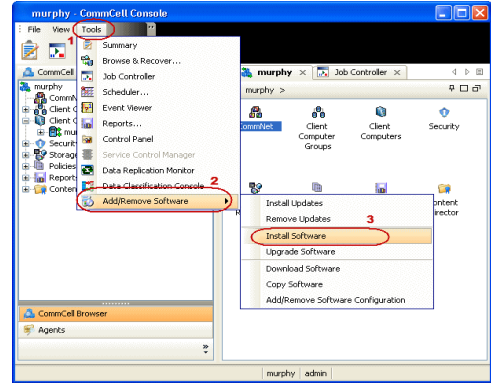
to store the Deduplication store.

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

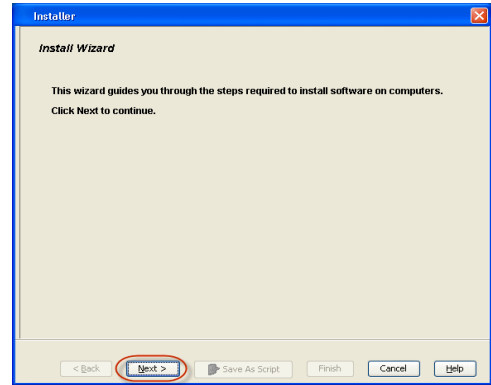
- o Review the details and click **Finish** to create the Storage Policy.

## METHOD 2: INSTALL SOFTWARE FROM COMMCELL CONSOLE

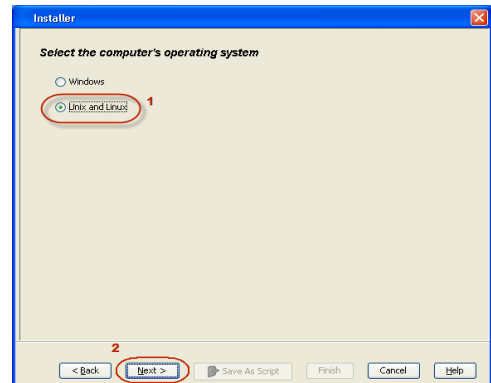
1. From the CommCell Browser, select **Tools | Add/Remove Software | Install Software**.



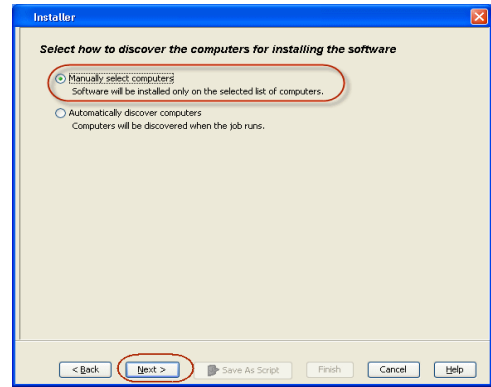
2. Click **Next**.



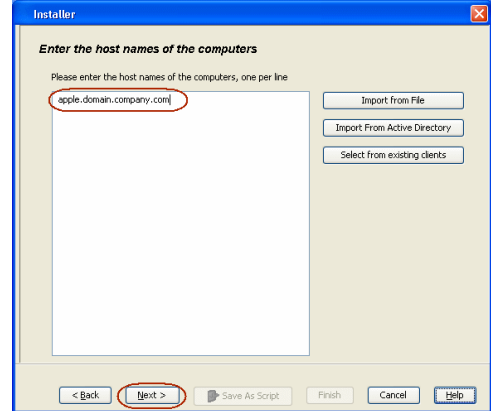
3. Select **Unix and Linux**.  
Click **Next**.



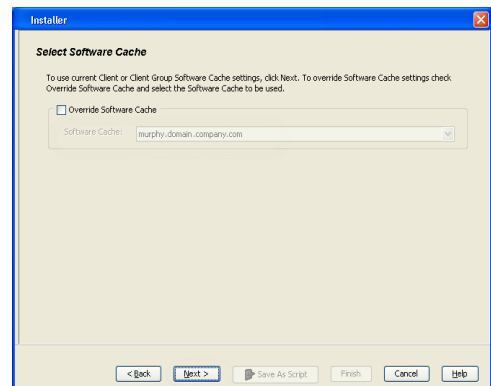
4. Select **Manually Select Computers**.  
Click **Next**.



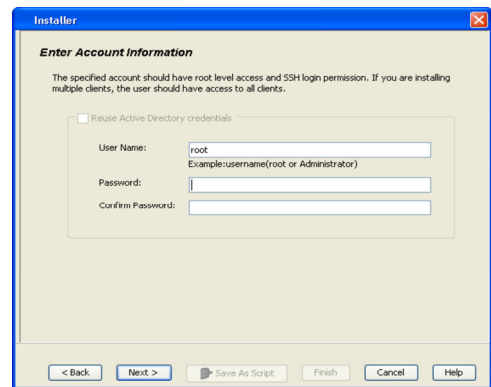
5. Enter the fully qualified domain name of the computer in which you wish to install.  
For example: `apple.domain.company.com`  
The SAP for MaxDB iDataAgent will be installed on this client computer.  
Click **Next**.



6. Click **Next**.

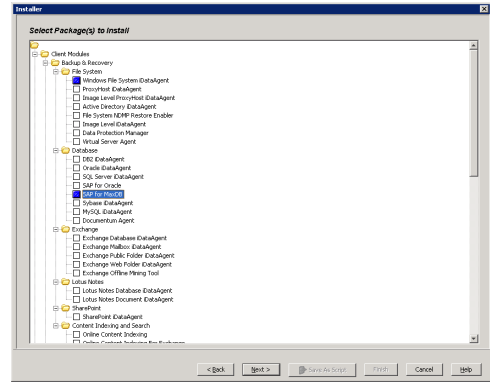


7. Specify **UserName** and **Password** of client computer.  
Click **Next**.

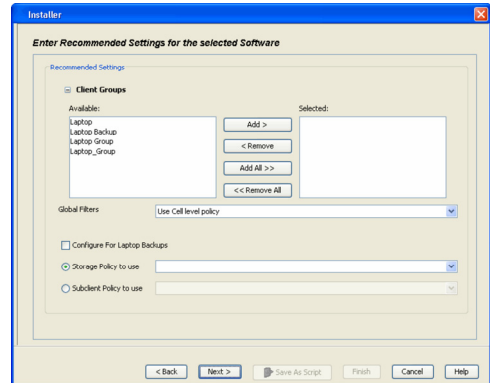


8. Select **SAP for MaxDB** .  
Click **Next**.

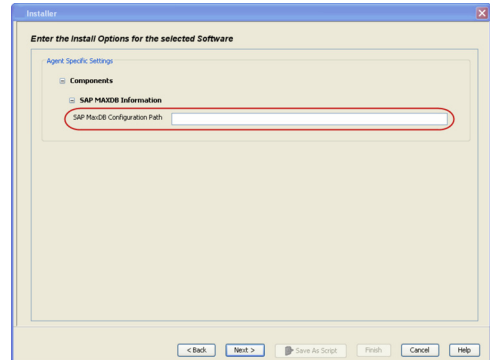
9.
  - Select **Client Group** from **Available** and click **Add**.  
Do not add more than one Client Group.
  - Select a **Storage Policy** from the drop-down list. Click **Next**.



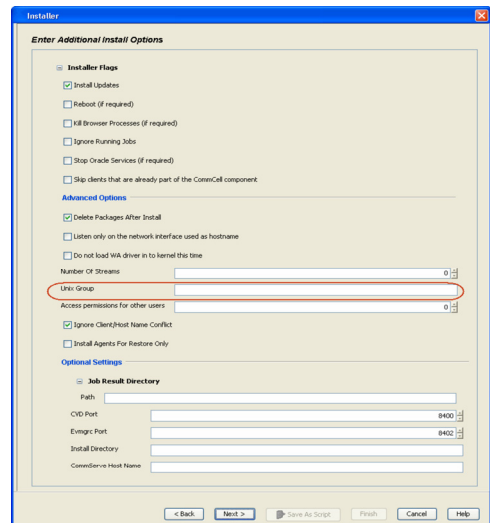
10. Type the **SAP MaxDB Configuration Path**.  
Click **Next**.



11. Click **Next**.

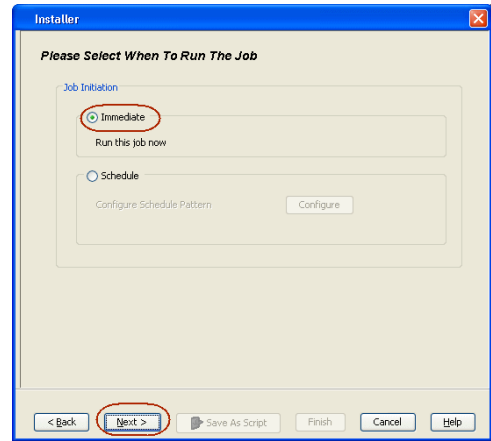


12. Select **Immediate**.  
Click **Next**.

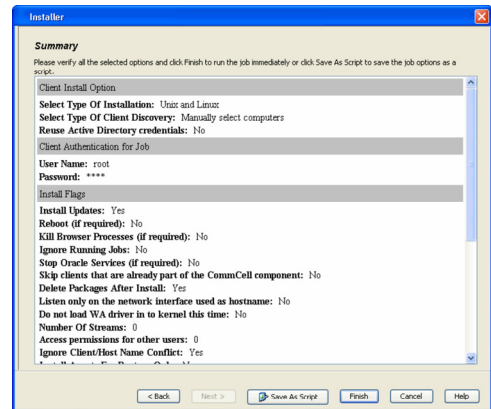




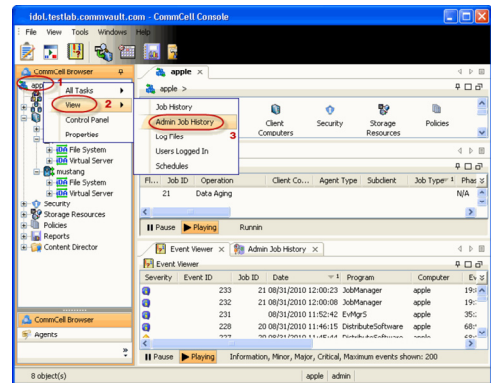
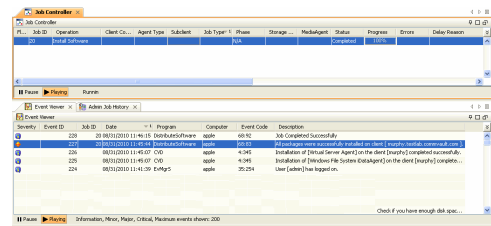
13. Click **Finish**.



14. You can track the progress of the job from the **Job Controller** or **Event Viewer** window.



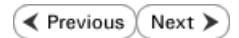
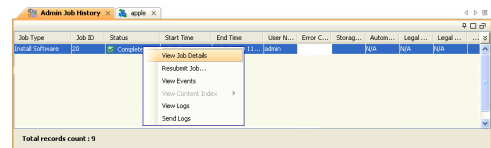
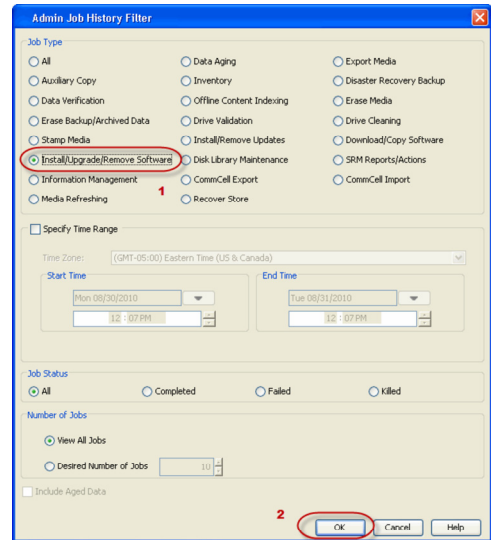
15. Once the job is complete, right-click the **CommServe** computer, click **View** and then click **Admin Job History**.



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 - SAP for MaxDB Configuration

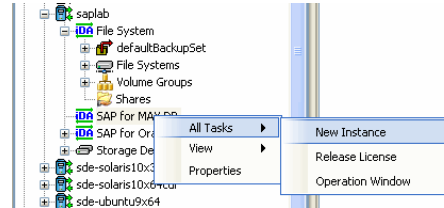
◀ Previous Next ▶

## CONFIGURATION

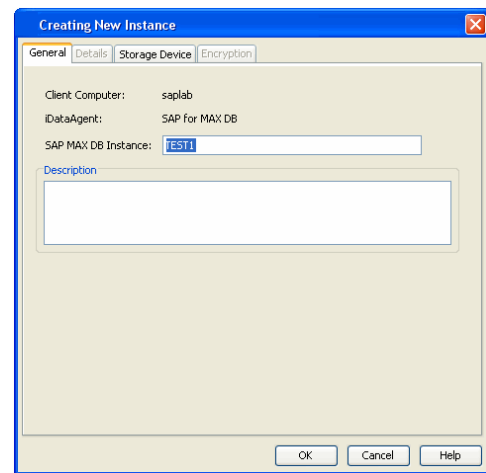
Once the SAP for MaxDB iDataAgent is installed, you need to configure an Instance and associate the SAP MaxDB database with the iDataAgent to facilitate backups. Each instance references a MaxDB database.

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

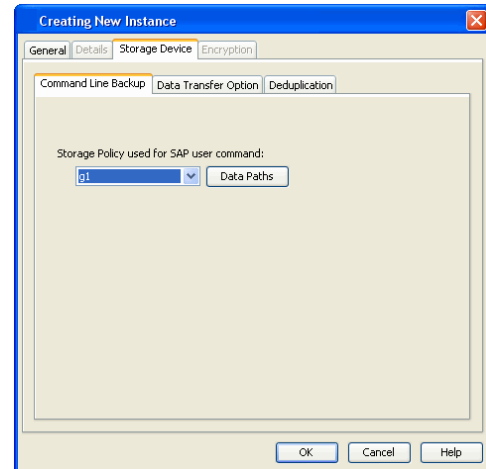
- From the CommCell Browser, navigate to **Client Computers | <Client> | SAP for MaxDB**.
  - Right-click SAP for MaxDB | All Tasks** and click **New Instance**.



- Enter the Instance name in **SAP MaxDB Instance** text field
  - Enter a description about the instance.



- 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.



- 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

**CV\_restCopyPrec** ( To enable a restore from a secondary copy,

add the **CV\_restCopyPrec** parameter followed by the copy precedence number to 2)

2



# Getting Started - SAP for MAXDB Backup

[◀ Previous](#) [Next ▶](#)

## 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
```

4. The backup should complete without any errors.

```
ok
```

```
Return Code      0
```

[◀ Previous](#) [Next ▶](#)

# Getting Started - SAP for MaxDB Restore

◀ Previous Next ▶

## PERFORMING A RESTORE

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:

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 command.

```
#> dbmcli -d CERT1 -u dbm,dbm db_cold
```

3. Type the command to check all backup IDs. The command should return OK.

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

```
dbmcli on CERT1>backup_ext_ids_get BackData2
```

```
OK
```

4. 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.

```
dbmcli on CERT1>backup_ext_ids_list
```

```
OK
```

```
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|
```

5. Type the command to execute the restore of entire database.

```
dbmcli on CERT1>
```

```
recover_start BackData2
```

```
DATA ExternalBackupID "CERT1 SAP_0_46
```

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

```
CERT1 SAP_0_46
```

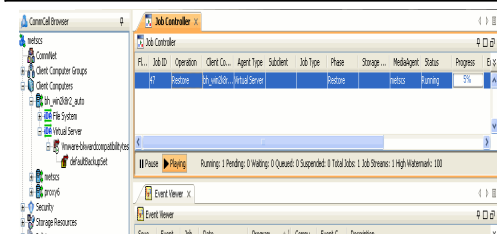
```
/space/sdb/data/cert1/files/pipe_mem2"
```

```
dbmcli on CERT1>exit
```

```
OK
```

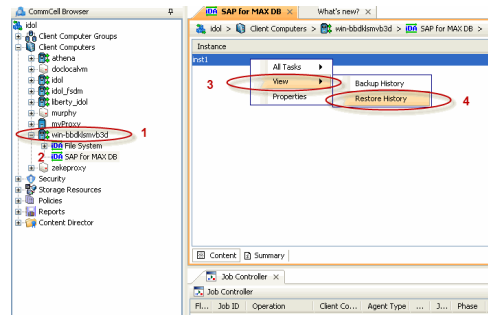
The restore should complete without any errors.

6. You can monitor the progress of the restore job in the **Job Controller** or **Event Viewer** window of the CommCell Console.

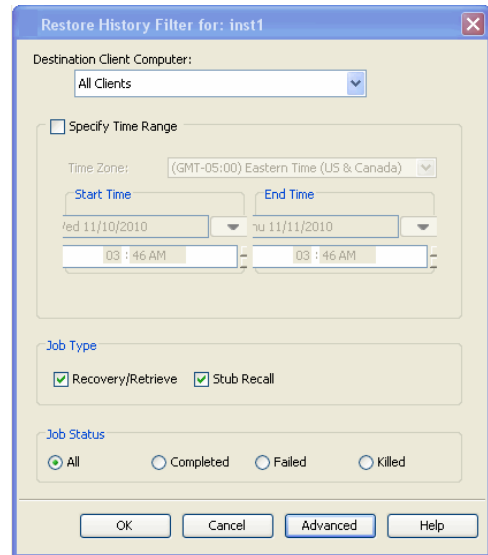


- 7. Once the restore job has completed, right-click the entity (e.g. agent, instance) and click **View | Restore History**.

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



- 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.





# Advanced - SAP for MAXDB Configuration

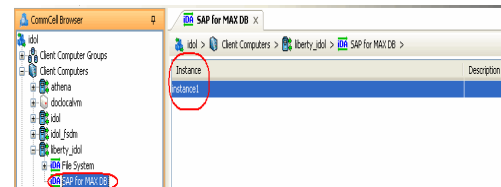
## TABLE OF CONTENTS

<p><b>Understanding the CommCell Console</b></p> <p><b>Configuring Multiple Streams for Backups and Restores</b></p> <ul style="list-style-type: none"> <li>Configuring Multiple Streams on Windows Client</li> <li>Configuring Multiple Streams on Unix Client</li> </ul> <p><b>Registering the Client with SAP SLD</b></p> <p><b>Modifying an Instance</b></p> <p><b>Deleting an Instance</b></p>	<p><b>Command Line Operations</b></p> <ul style="list-style-type: none"> <li>Log On to the CommServe</li> <li>Configure Instances</li> <li>Log Off from the CommServe</li> </ul>
---	--

## UNDERSTANDING THE COMMCELL CONSOLE

The SAP for MAXDB iDataAgent 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 iDataAgent, 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.

### CONFIGURING MULTIPLE STREAMS ON 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
medium_put BackData2\mem2
\\. \pipe\pipe_mem2 PIPE DATA 0 0 NO NO '' BACK
medium_put BackPages2\mem1
\\. \pipe\pipe_mem3 PIPE PAGES 0 0 NO NO '' BACK
medium_put BackPages2\mem2
\\. \pipe\pipe_mem4 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 FILE DATA 0 0 YES ''
```

### CONFIGURING MULTIPLE STREAMS ON 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.

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 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 /

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

```

## 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:

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.

```
backint <-f createsldxml> <short_client_name>
<maxdb>
```

Example:

```
backint -f createsldxml racer maxdb
```

On Unix Client:

Create an XML File using the `backint` program. The `backint` program needs to be run as a root user and in the `<iDataAgent>` directory.

```
[root@flyhat3 iDataAgent]#
. ../Base/cvprofile
[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.

A return code of 200 implies a successful registration of SAP for Oracle client `racer` in the SLD.

```
<SLD_HOST_NAME> <PORT_NUMBER>
<USER_NAME> <PASSWORD> <XML_FILE>
```

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:

```
qllogin -cs <commserve name> -u <user name>
```

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

```
qllogin -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 spl
```

### 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
<b>Change Storage Policies</b>	<p>You might need to modify the storage policies in any of the following situations:</p> <ul style="list-style-type: none"> <li>• To include a different media for the backup operation.</li> <li>• To use a storage policy with a different retention criteria.</li> </ul> <p>You can change the storage policies for command line backup from the instance level.</p> <ol style="list-style-type: none"> <li>1. From the CommCell Browser, right-click the SAP for MAXDB <b>Instance</b> and click <b>Properties</b>.</li> <li>2. Click <b>Storage Device</b> tab.</li> <li>3. Click <b>Command Line Backup</b> tab and select from the list of existing storage policies for command line backups.</li> <li>4. Click <b>OK</b> to save your settings.</li> </ol>	Refer to Storage Policies.
<b>Configure Data Transfer Options</b>	<p>You can efficiently configure the available resources for transferring data secured by data protection operations from the subclient level. This includes the following:</p> <ul style="list-style-type: none"> <li>• Enable or disable <b>Data Compression</b> either on the client or the MediaAgent.</li> <li>• Configure the transfer of data in the network using the options for <b>Network Bandwidth Throttling</b> and <b>Network Agents</b>.</li> </ul> <p>You can configure the data transfer options.</p> <ol style="list-style-type: none"> <li>1. From the CommCell Browser, right-click the subclient.</li> <li>2. Click <b>Properties</b>.</li> <li>3. Click <b>Storage Device</b>.</li> <li>4. Click <b>Data Transfer Option</b> tab.</li> <li>5. Choose the appropriate software compression option for this subclient.</li> <li>6. Select <b>Throttle Network Bandwidth</b> and set the required bandwidth.</li> <li>7. Click <b>OK</b>.</li> </ol>	Refer to Data Compression and Network Bandwidth Throttling.
<b>Configure Deduplication</b>	<p>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</p>	Refer to Deduplication

	<p>generation (a component of deduplication) is performed on the client or MediaAgent computer.</p> <p>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.</p> <ol style="list-style-type: none"> <li>1. Click the <b>Instance Properties</b> and select <b>Storage Device</b> tab.</li> <li>2. Click <b>Deduplication</b> tab.</li> <li>3. Select one of the following: <ul style="list-style-type: none"> <li>o <b>On Client</b> - to enable signature generation on the client computer.</li> <li>o <b>On Media Agent</b> - to enable signature generation on the MediaAgent computer.</li> <li>o <b>No Deduplication</b> - to disable deduplication for the instance.</li> </ul> </li> <li>4. Click <b>OK</b> to save your settings.</li> </ol>	
<b>View Data Paths</b>	<p>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.</p> <ol style="list-style-type: none"> <li>1. From the CommCell browser, right-click the Instance .</li> <li>2. Click <b>Properties</b>.</li> <li>3. Click <b>Storage Device</b>.</li> <li>4. Select <b>Storage Policy</b> from the drop-down menu.</li> <li>5. Click <b>Data Paths</b>.</li> </ol>	
<b>Configure Activity Control</b>	<p>You can enable backup and restore operations from the agent and Instance level. However, you can enable restore operations only from the agent level.</p> <ol style="list-style-type: none"> <li>1. From the CommCell browser, right-click the Instance.</li> <li>2. Click <b>Properties</b>.</li> <li>3. Click <b>Activity Control</b>, select or clear option(s) as desired.</li> <li>4. Click <b>OK</b>.</li> </ol>	Refer to Activity Control.
<b>Configure User Security</b>	<p>You can configure user security from the agent or instance level.</p> <p>You can perform the following functions:</p> <ul style="list-style-type: none"> <li>• Identify the user groups to which this CommCell object is associated.</li> <li>• Associate this object with a user group.</li> <li>• Disassociate this object from a user group.</li> </ul> <ol style="list-style-type: none"> <li>1. From the CommCell browser, right-click the Instance.</li> <li>2. Click <b>Properties</b>.</li> <li>3. Click <b>Security</b>.</li> <li>4. Select the appropriate user groups to which you want to associate to the CommCell object from the <b>Available Groups</b> pane, and then move the user group to the <b>Associated Groups</b> pane.</li> <li>5. Click <b>OK</b>.</li> </ol>	Refer to User Administration and Security.
<b>Enable/Disable Data Encryption</b>	<p>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.</p> <ol style="list-style-type: none"> <li>1. From the CommCell browser, right-click the Instance.</li> <li>2. Click <b>Properties</b>.</li> <li>3. Click <b>Encryption</b>.</li> <li>4. Select the desired encryption.</li> <li>5. Click <b>OK</b>.</li> </ol>	Refer to Data Encryption.
<b>View Software Version and Installed Updates</b>	<p>The <b>Version</b> tab, at the Agent level displays the software version and post-release service packs and updates installed for the component.</p> <ol style="list-style-type: none"> <li>1. From the CommCell browser, right-click the agent.</li> <li>2. Click <b>Properties</b>.</li> <li>3. Click <b>Version</b>.</li> <li>4. Click <b>OK</b>.</li> </ol>	
<b>CommCell Configuration Report</b>	<p>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.</p> <ol style="list-style-type: none"> <li>1. From the CommCell browser, click <b>Reports</b> icon.</li> <li>2. Select <b>CommCell Configuration</b>.</li> <li>3. Click <b>Run</b>.</li> </ol>	Refer to CommCell Configuration.

## 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.

[Back to Top](#)

# Advanced - SAP for MAXDB Backup

## TABLE OF CONTENTS

### Full Backup

- Perform an Offline (Cold) Full Backup
- Perform an Online (Warm) Full Backup

### Incremental Backups

- Perform an Offline (Cold) Incremental Backup
- Perform an Online (Warm) Incremental Backup

### Selective Online Full Backup

### Archive Log Backups

### Automatic Log Backups

### Managing Jobs

## FULL BACKUP

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.

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

2. Ensure that the database is in admin (cold) state.  
If not, execute the command to bring the database to admin (cold) state.

```
#> 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

ok

Return Code          0
```

The backup should complete without any errors.

### PERFORMING 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. Ensure that the database is in online (warm) state.  
If not, execute the command to bring the database to online (warm) state.

```
#> 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

ok

Return Code          0
```

The backup should complete without any errors.

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

2. Create a table and add records.

Usage example:

```
sdbfill <DBName> init|create|append|check|delete [<From> <To>
[<TransactionLength> [<SleepBeforeCommit> [ q|a|b
[dba dbapassword]]]]]
```

3. Ensure that the database is in admin (cold) state.

If not, execute the command to bring the database to admin (cold) state.

4. Type the command to execute the offline incremental backup

The backup should complete without any errors.

```
ADMIN
#> sdbfill CERT1
append 1000000 2000000 10000 0 a DBA DBA
2000000,
finale commit at 1999999
1000000 rows inserted successfully.
#> dbmcli -d CERT1 -u dbm,dbm db_cold
#> dbmcli -d <DBSid> -u dbm,dbm -uUTL -c
backup_start BackPages migration
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 CERT1 -u dbm,
dbm -uUTL
dbmcli on CERT1>db_state
OK
State
ONLINE
```

2. Create a table and append the data in the table.

Usage example:

```
sdbfill <DBName> init|create|append|check|delete [<From> <To>
[<TransactionLength> [<SleepBeforeCommit> [ q|a|b
[dba dbapassword]]]]]
```

3. Ensure that the database is in online (warm) state.

If not, execute the command to bring the database to online (warm) state.

4. Type the command to execute the online incremental backup

The backup should complete without any errors.

```
#> sapdbfill append 1000000 2000000 10000 0 a DBA
DBA
#> dbmcli -d CERT1 -u dbm,dbm db_warm
#> dbmcli -d <DBSid> -u dbm,dbm -uUTL -c
backup_start BACKPages recovery
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` 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.

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

2. Ensure that the database is in online (warm) state.  
If not, execute the command to bring the database to online (warm) state.

```
#> dbmcli -d CERT1 -u dbm,dbm db_warm
```

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 cert1>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 -d CERT1 -u dbm,
dbm -uUTL -c backup_start 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_000000003
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         sapclient.company.com:CERT1_20101202_231525
Max Used Data Page  0
Converter Page Count 11
```

---

## 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
Date                20101202
Time                00233902
Server              sapclient.company.com
Database            CERT1
Kernel Version      Kernel    7.7.04   Build 028-123-194-355
Pages Transferred   4104
Pages Left          0
Volumes             2
Medianame           BackPages2
Location            /space/sdb/data/cert1/files/pipe_mem4
Errortext
Label               PAG_000000004
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         sapclient.company.com:CERT1_20101202_231525
Max Used Data Page  0
Converter Page Count 20
```

**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
Bytes processed            177274880
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
Returncode                0
Date                      20101203
Time                      00003409
Server                    sapclient.company.com
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
Label                     PAG_000000005
Is Consistent             true
First LOG Page            43902
Last LOG Page
DB Stamp 1 Date           20101203
DB Stamp 1 Time           00003409
DB Stamp 2 Date
DB Stamp 2 Time
Page Count                8324
Devices Used              2
Database ID               sapclient.company.com:CERT1_20101202_231525
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@sappg54 files]# dbmcli -d CERT1 -u dbm,dbm -uUTL -c backup_Start BackData2 Recovery
OK
Returncode                0
Date                      20101203
Time                      00003741
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_000000006
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
Bytes processed        70909952
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**.
2. 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.

[Back to Top](#)

# Advanced - SAP for MAXDB Restore

## TABLE OF CONTENTS

- Choosing Restore Types**
- Choosing the Restore Destination**
- Restoring to a Different Client (Cross Machine Restore)**
- Restoring to a Different Client With Different Database Name (Cross Machine Restore)**
- Restoring a Full Backup**
- Restoring Incremental Backup**
- Restoring Logs**
- Restoring Automatic Logs**
- Restore from a secondary copy**
- Restore Using a Specific Library or Drive Pool**
- Manage Restore Jobs**
  - Control Jobs

## RELATED TOPICS

### Capabilities and Required Actions

Provides comprehensive information on licensing.

## 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 Recover Database	Since the database is offline and is consistent, there is no need for logs.
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:

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 `srcrossclient` parameter followed by the name of the source client. For example:

```
srcrossclient
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 iDataAgent for backup on x64 platform. You cannot do a full system restore on an x64 platform if you are using SAP for MAXDB iDataAgent 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_000000018
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_000000019
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_000000005
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_000000020
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_000000021
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_000000006
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_000000007
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
10:45:36|BACK|0|BackData2|vftPipe|NO|0|8|M|/opt/sdb/data/cert1/files/pipe_mem2|1|
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|NO|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|NO|0|8|M|/opt/sdb/data/cert1/files/pipe_mem4|1|
5203B4910012|LOG_000000005|CERT1 1023362_78327 /opt/sdb/data/cert1/files/pipe_mem5|LOG RECOVERY |2013-08-08
11:09:05|BACK|0|BackLog|vftPipe|NO|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|NO|0|8|M|/opt/sdb/data/cert1/files/pipe_mem3|0|
5203B6410015|PAG_000000020|CERT1 1023362_78327 /opt/sdb/data/cert1/files/pipe_mem4|PAGES MIGRATION|2013-08-08
11:16:17|BACK|0|BACKPages2|vftPipe|NO|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|NO|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|NO|0|8|S|/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_000000018
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_000000019
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

```

### 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_000000005
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_000000006
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 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_000000007
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 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_000000007
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.
```

- 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"
```

```

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_000000021
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_000000006
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_000000007
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_000000007
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.
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.
3. Type the following command to check all backup IDs. The command should return OK.
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.
5. Type the following command to execute the restore of entire database.

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

```
dbmcli on CERT1>db_state
```

```
OK
```

```
State
```

```
ADMIN
```

```
#> dbmcli -d CERT1 -u dbm,dbm db_cold
```

```
# 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
```

For Unix:

```
dbmcli on CERT1>recover_start
```

6. The restore should complete without any errors.

```
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
```

```
OK
```

## 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.
2. Type the command to check for all backup IDs. The command should return OK.
3. 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 of an incremental backup

```
#> 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
```

#### 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
```

```
\\.\pipe\pipe_mem3,
```

```
CERT1 SAP_1011379_352
```

```
\\.\pipe\pipe_mem4"
```

```
dbmcli on CERT1>exit
```

```
OK
```

5. The restore should complete without any errors.

## RESTORING LOGS

Use the following steps to restore the logs:

1. Open the DBM Command line Interface and verify the status of the database.
2. Type the command to verify all backup IDs. The command should return OK.
3. 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 commands to restore the logs.
5. The restore should complete without any errors.

```
#> 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
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
OK
```

## 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_XXXXXXX_8506 /space/sdb/data/cert1/files/pipe_mem2|DATA MIGRATION|2010-12-02 23:13:45|
AVAILABLE|CERT1 SAP_XXXXXXX_8507 /space/sdb/data/cert1/files/pipe_mem1|DATA MIGRATION|2010-12-02 23:15:25|
AVAILABLE|CERT1 SAP_XXXXXXX_8507 /space/sdb/data/cert1/files/pipe_mem2|DATA MIGRATION|2010-12-02 23:15:25|
AVAILABLE|CERT1 SAP_XXXXXXX_8508 /space/sdb/data/cert1/files/pipe_mem3|PAGES MIGRATION|2010-12-02 23:18:53|
AVAILABLE|CERT1 SAP_XXXXXXX_8508 /space/sdb/data/cert1/files/pipe_mem4|PAGES MIGRATION|2010-12-02 23:18:53|
AVAILABLE|CERT1 SAP_XXXXXXX_8509 /space/sdb/data/cert1/files/pipe_mem5|LOG RECOVERY |2010-12-02 23:20:17|
AVAILABLE|CERT1 SAP_XXXXXXX_8511 /space/sdb/data/cert1/files/pipe_mem1|DATA MIGRATION|2010-12-02 23:29:08|
AVAILABLE|CERT1 SAP_XXXXXXX_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_XXXXXXX_8514 /space/sdb/data/cert1/files/pipe_mem4|PAGES MIGRATION|2010-12-02 23:39:02|
AVAILABLE|CERT1 SAP_XXXXXXX_8517 /space/sdb/data/cert1/files/pipe_mem5|LOG RECOVERY |2010-12-02 23:27:17|
AVAILABLE|CERT1 SAP_XXXXXXX_8518 /space/sdb/data/cert1/files/pipe_mem5|LOG RECOVERY |2010-12-02 23:34:43|
AVAILABLE|CERT1 SAP_XXXXXXX_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_XXXXXXX_8522 /space/sdb/data/cert1/files/pipe_mem5|LOG RECOVERY |2010-12-02 23:27:15|
AVAILABLE|CERT1 SAP_XXXXXXX_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_XXXXXXX_8531 /space/sdb/data/cert1/files/pipe_mem1|DATA MIGRATION|2010-12-03 00:37:41|
```



```

AVAILABLE|CERT1 SAP_XXXXXXX_8531 /space/sdb/data/cert1/files/pipe_mem2|DATA MIGRATION|2010-12-03 00:37:41|
AVAILABLE|CERT1 SAP_XXXXXXX_8532 /space/sdb/data/cert1/files/pipe_mem5|LOG RECOVERY |2010-12-03 00:30:53|
AVAILABLE|CERT1 SAP_XXXXXXX_8533 /space/sdb/data/cert1/files/pipe_mem5|LOG RECOVERY |2010-12-03 00:31:13|
AVAILABLE|CERT1 SAP_XXXXXXX_8534 /space/sdb/data/cert1/files/pipe_mem5|LOG RECOVERY |2010-12-03 00:45:18|
AVAILABLE|CERT1 SAP_XXXXXXX_8535 /space/sdb/data/cert1/files/pipe_mem5|LOG RECOVERY |2010-12-03 00:45:17|
AVAILABLE|CERT1 SAP_XXXXXXX_8536 /space/sdb/data/cert1/files/pipe_mem5|LOG RECOVERY |2010-12-03 00:44:51|

```

```

---
dbmcli on CERT1>

```

Delete the log & data Segments:

```

dbmcli on CERT1>db_cold
OK

```

```

---
dbmcli on CERT1>db_state
OK
State
ADMIN

```

```

---
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

```

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|
.....
.....

```

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@sappg54 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_000000003
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          sapclient.company.com:CERT1_20101202_231525
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_000000004
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         sapclient.company.com:CERT1_20101202_231525
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
```

```
---
```

```
dbmcli on CERT1>db_state
```

```

OK
State

```

ADMIN

---

dbmcli on CERT1&gt;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_000000006
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

```

---

## 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&gt;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_000000009
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
Returncode          -8020
Date                20101203
Time                00043323
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_000000010
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
Database ID         sapclient.company.com:CERT1_20101202_231525
Max Used Data Page
Converter Page Count
```

---

### APPLY NEXT LOG TILL THE DATABASE IS CONSISTENT

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

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
Returncode          -8020
Date                20101203
Time                00043444
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_000000011
Is Consistent
First LOG Page      50226
Last LOG Page       54560
DB Stamp 1 Date     20101203
DB Stamp 1 Time     00004501
DB Stamp 2 Date     20101203
DB Stamp 2 Time     00004513
Page Count          4300
Devices Used        1
Database ID         sapclient.company.com:CERT1_20101202_231525
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
Date                20101203
Time                00043444
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_000000011
Is Consistent
First LOG Page      50226
Last LOG Page       54560
DB Stamp 1 Date     20101203
DB Stamp 1 Time     00004501
DB Stamp 2 Date     20101203
DB Stamp 2 Time     00004513
Page Count          4300
Devices Used        1
Database ID         sapclient.company.com:CERT1_20101202_231525
Max Used Data Page
Converter Page Count
```

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

```
---
dbmcli on CERT1>
```

**RESTORING LOGS FROM FIRST FULL BACKUP**

1. Open the DBM Command line Interface and verify the status of the database.
  
2. MAXDB should be in activated status to perform a restore operation on the first full backup. If the database is inactive, execute the following command.

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

3. Type the following command to execute the restore of entire 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|
```

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

```
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_000000003
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 iDataAgent 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
```

3. 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.
- ```
dbmcli on CERT1>backup_ext_ids_list
OK
END
```
4. Type the command to execute the restore.
- ```
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**.
2. 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.

Back to Top



# Data Aging - SAP for MaxDB iDataAgent

## TABLE OF CONTENTS

### Getting Started

#### Extended Retention Rules

#### Data Aging for Log Backups

#### Configuring Retention Rules for Backups

#### Configuring Retention Rules for Unlinked Log Backups

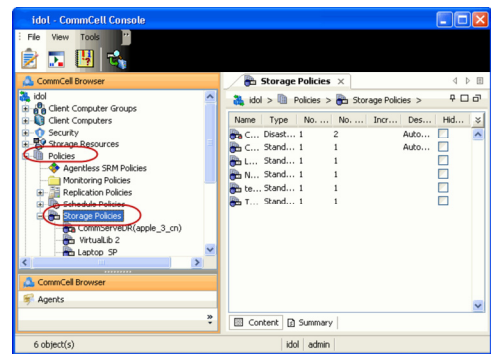
#### Data Aging Rules for Jobs Completed with Errors

## GETTING STARTED

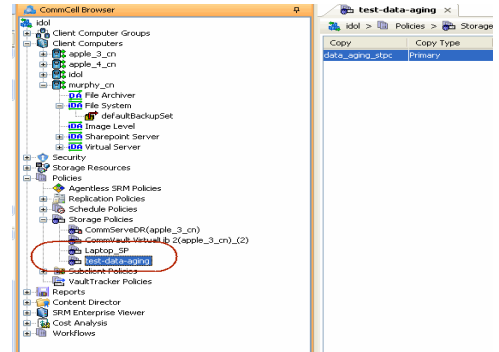
Data Aging is the process of removing old data from secondary storage to allow the associated media to be reused for future backups.

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.

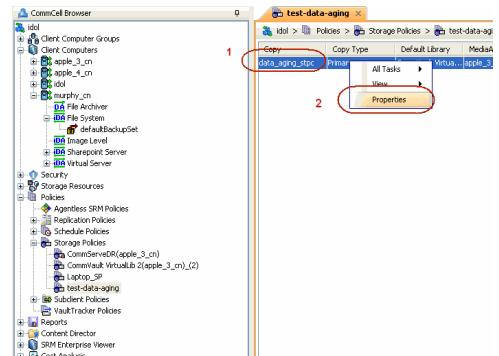
1. From the CommCell Browser, navigate to **Policies | Storage Policies**.



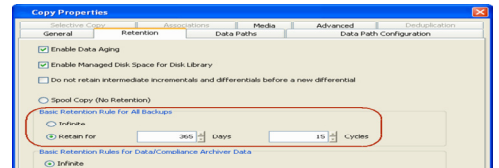
2. Highlight the **Storage Policy**.



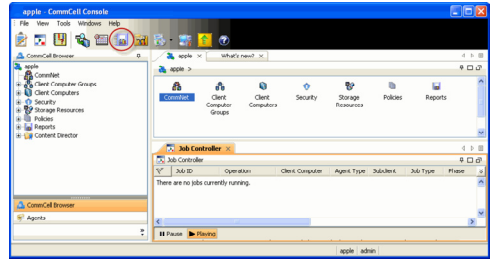
3. From the right pane, right-click the **Storage Policy Copy** and click the **Properties**.



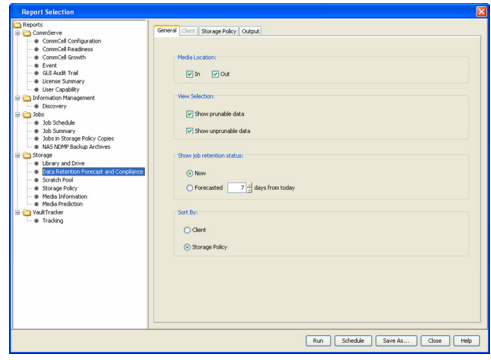
4.
  - Click the **Retention** tab.
  - Click the **Retain For** in the **Basic Retention Rules for All Backups** area.
  - Enter number of days to retain the data.
  - Enter number of cycles to retain the data.
  - Click **OK**.



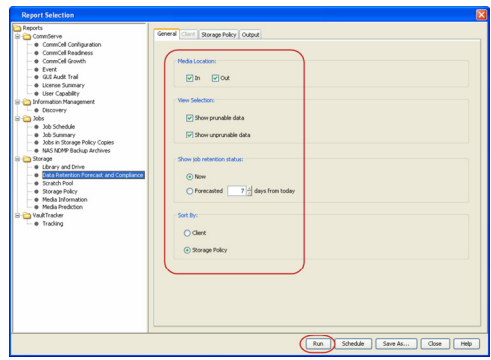
5. From the CommCell Browser, click the **Reports** icon.



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



7. Click **Run**.

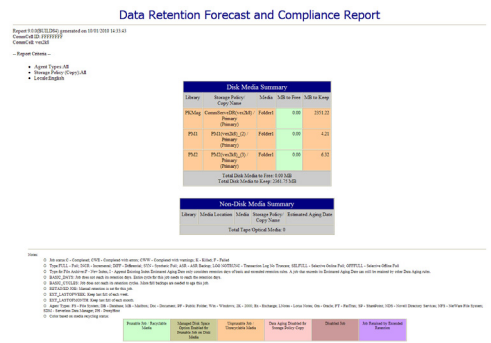


8. The report will display the data to be pruned when a data aging job is run.

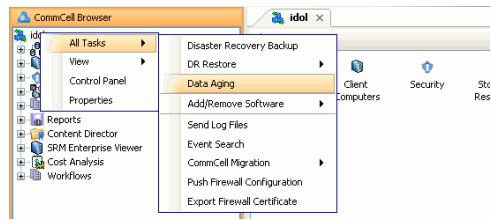
To ensure only data intended for aging is actually aged, it is important to identify the data that will be aged based on the retention rules you have configured. Hence, ensure this report includes only the data you intend to age.

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

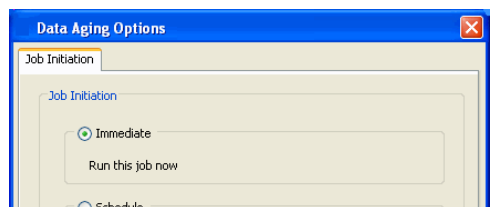
Once you run a data aging job, the data will be lost.



9. From the CommCell Console, right click the CommServe icon and click **All Tasks | Data Aging**.

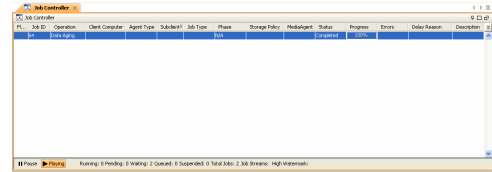


10. Select **Immediate** in the Job Initiation section and click **OK**.



- 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 successfully, re-run the job.



## EXTENDED RETENTION RULES

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:

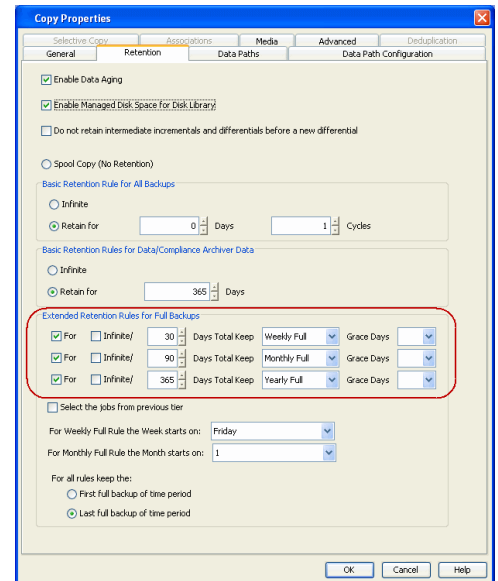
- You may want to retain your weekly full backups for 30 days.
- You may want to retain your monthly full backup for 90 days.
- You may want to retain your yearly full backup for 365 days.

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:

- Right-click the storage policy copy and click **Properties**.
- Click the **Retention** tab.
- Set the basic retention rules by clicking **Retain for** and entering the number of days and cycles appropriate for your organization.
- 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).
- Repeat Step 4 to configure additional extended retention.
- Click **OK**.



## 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.

**Selective Online Full Backup**

- 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 retention rules by set number of days.

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 **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:

1. Build a secondary (destination) client machine (of a different name). Reinstall the SAP for MAXDB iDataAgent on the destination client. Ensure that the database remains in ADMIN mode.

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**.

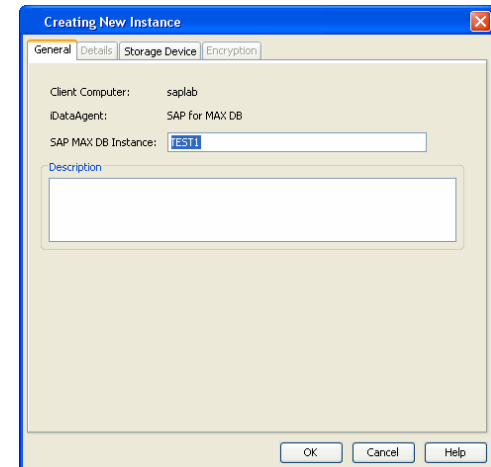
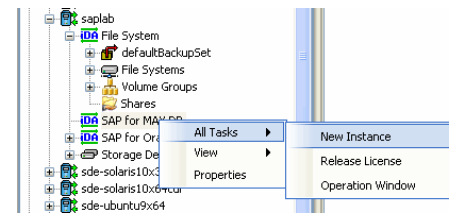
3.
  - Enter the Instance name in **SAP MaxDB Instance** text field
  - Enter a description about the instance.

4.
  - Install the SAP Backint program.
  - Create the media types and the `backint` configuration file.
  - Configure backint

- Configuring backint on Unix.

Run each of the adjacent commands to configure backint on Unix

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



```
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
```

- 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:

- 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.
- 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

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>
```

Example:

```
srccrossclient
magnum.company.com
```

For example:

```
backint -u -f inquire -t file
-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

## TABLE OF CONTENTS

[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:
  - o Enter the name of the rule in the **Name** field.
  - o 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 iDataAgent.
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.
  - o 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.
  - o 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.
4. 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 iDataAgent
  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 cvpkgzm 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 plug-ins 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 `iDataAgent` and Base software (`cvpkgzm`) from the client computer hosting the software. You can uninstall the Base software from your client computer by entering the `cvpkgzm` 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
CONFIGURATION	Agent	<a href="#">SAP for MAXDB Agent Properties (General)</a> <a href="#">SAP for MAXDB Agent Properties (Version)</a> <a href="#">SAP for MAXDB Agent Properties (Security)</a> <a href="#">SAP for MAXDB Agent Properties (Activity Control)</a>	
	Instance	<a href="#">SAP for MAXDB Instance Properties (General)</a> <a href="#">SAP for MAXDB Instance Properties (Storage Device)</a> <a href="#">SAP for MAXDB Instance Properties (Security)</a> <a href="#">SAP for MAXDB Instance Properties (Encryption)</a>	

[Back to Top](#)

## 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 iDataAgent 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 iDataAgent 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

<p><b>Improper group association is specified during installation</b></p>	<p>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/&lt;&gt;Registry. As a result, the backups will fail. Sometimes, the backup fails due to incorrect group permissions.</p> <p>The following message would be logged in the &lt;instanceName&gt;/wrk/dbm.ebl file:</p> <p>Instance [&lt;instanceName&gt;] Machine [&lt;machName&gt;] does not exist.</p> <p>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 &lt; &gt;group and reinstall all the &lt; &gt;packages on the client.Use group dba during the installation.</p> <p>Also, make sure to add sdb/sdba to group dba in the file /etc/group.</p> <p>If you need to change the &lt; &gt; Group as part of security administrations. Then follow the procedure given below:</p> <ul style="list-style-type: none"> <li>• edit &lt; &gt;_GROUP variable in &lt; &gt;/Base/pkginfo file</li> <li>• do a "chgrp -R &lt; &gt;", "chmod o-w" on all &lt; &gt;files</li> <li>• Restart the services.</li> </ul>
<p><b>Failure of Backups and Restores performed from a remote desktop on windows</b></p>	<p>Currently, backups and restores cannot be performed from a remote desktop on Windows.</p> <p>Use any one of the following solutions that suits your setup:</p> <ul style="list-style-type: none"> <li>• Login to remote desktop using the following command: <pre>mstsc /v:winclient /console</pre> </li> <li>• Use netmeeting</li> <li>• Use telnet</li> <li>• Use the clients console</li> </ul>

## EXTERNAL BACKUP TOOL ERRORS

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

	<pre>The file '/opt/galaxy/SapMaxDbAgent/err' already exists. &lt;instance&gt;# rm /opt/galaxy/SapMaxDbAgent/err &lt;instance&gt;# ./dbmcli -d TEST2 -u dbm,dbm -uUTL -c backup_start BackLog</pre>
<p><b>External backup tool not found error:</b></p> <p><b>The file /Base/backint.exe is not executable.</b></p>	<p>In this situation, the configuration of BACKINT interface is incorrect. Configure the following parameter files to the exact location of the backint.exe.</p> <pre>D:\program files\sdb\programs\pgm&gt;cat D:\MaxDB\sdb\config\backint.conf BACKINT "D:\&lt; &gt;\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&gt;</pre>
<p><b>External backup tool not found error:</b></p> <p><b>The file /SapMaxDbAgent/backint.conf is missing or unreadable.</b></p>	<p>Execute the following commands:</p> <pre>magnum-as-root&gt; ./dbmcli -d TEST1 -u dbm,dbm -uUTL ./dbmcli on TEST1&gt;dbm_configset -raw BSI_ENV /oracle/galaxy/SapMaxDbAgent/backint.conf OK --- ./dbmcli on TEST1&gt;dbm_configset -raw set_variable_0 LD_LIBRARY_PATH=/oracle/galaxy/Base OK --- ./dbmcli on TEST1&gt;dbm_configset -raw set_variable_1 SHLIB_PATH=/oracle/galaxy/Base OK --- ./dbmcli on TEST1&gt;quit OK --- magnum-as-root&gt; pwd /oracle/sdb/programs/bin magnum-as-root&gt;</pre>

# 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.)

8. 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.

---