Features - Lotus Notes Database *i*DataAgent

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Overview - Lotus Domino Server *i*DataAgents

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INTRODUCTION

The following definitions are offered to prevent the confusion that may arise from the use of the term *client*:

- A Lotus Domino server is a computer on which the Lotus Domino Server software has been installed.
- *Notes clients* are computers on which Lotus Notes client software has been installed. These computers access databases and services on the Lotus Domino server.
- A *client* is a computer whose data is backed up via an *i*DataAgent.
- Lotus Domino servers and Notes client computers can be *clients* of a File System *i*DataAgent which backs up file system data.
- Only a Lotus Domino server can be a *client* of the Lotus Domino Server *i*DataAgents.
- The Lotus Notes data on *Notes clients* can only be backed up using a File System *i*DataAgent.

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*i*DATAAGENTS FOR LOTUS DOMINO SERVER

A Lotus Domino Server will include databases that are backed up by the Lotus Domino Server *i*DataAgents:
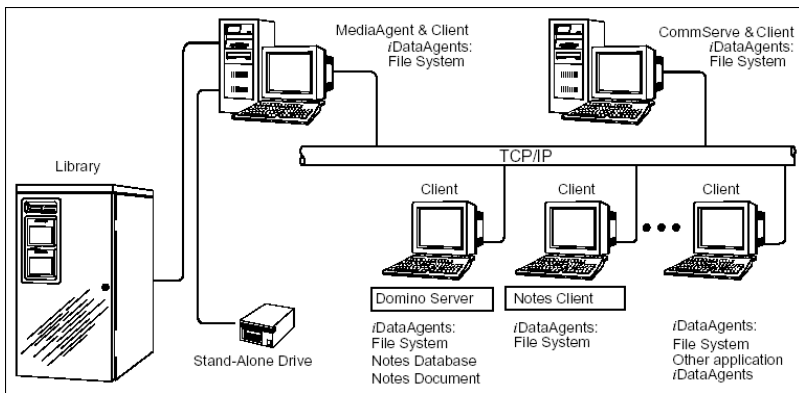
- Notes Database
- Notes Document

The Lotus Domino Server *i*DataAgents are just two of several *i*DataAgents which provide backup and restore support for different kinds of data in what is often a mixed network environment.

As concerns Lotus Domino Server databases, remember that the:

- Lotus Domino Server *i*DataAgents only secure the Notes databases that reside on the Lotus Domino server (e.g., Notes Databases or documents residing in the Domino Data Path)
- File System *i*DataAgent secures:

    - Lotus Notes data that resides on a Notes client computer's local hard drive
    - File system data that resides on a Lotus Domino server

The following figure shows the *i*DataAgents needed to fully secure a hypothetical, heterogeneous computing environment.

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USING THE APPROPRIATE LOTUS DOMINO SERVER *i*DATAAGENT

The Notes Document *i*DataAgent is designed to be used as a system administration tool. Use the Notes Document *i*DataAgent if your primary goal is partial database recovery. This capability enables you to:

- Perform small restore jobs in the course of day-to-day database use (e.g., retrieve data accidentally deleted by a user).
- Restore part of a database (i.e., a subset of documents). This can be especially useful when you need to bring part of a large database online as quickly as possible after a system failure.

The Notes Database *i*DataAgent is designed to be used as a disaster recovery tool. Use this *i*DataAgent if your primary goal is full database recovery in the event of a database or system crash rather than small day-to-day restore jobs. All versions of a database can be restored in the event that a restore of the database in a specific state is needed.

If you have both *i*DataAgents installed, you can back up Lotus Notes data using both of them. For example, you may want to run hourly backups of your documents using the Notes Document *i*DataAgent. This way, you can restore any individual documents on the server to within one hour of failure. At the same time, you may want to schedule weekly full backups of your Domino server using the Notes Database *i*DataAgent, with daily incremental and transaction log backups in between. This way you can recover efficiently in the event of a server failure. Although your documents are backed up by both *i*DataAgents, the backups are created differently and serve different purposes.

> You cannot back up data with one Lotus Domino Server *i*DataAgent and restore it with the other. For example, you cannot back up a Notes database with the Notes Database *i*DataAgent and restore it with the Notes Document *i*DataAgent.

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SUPPORTED DATA TYPES

The following sections describe the data types supported with the Lotus Notes Database and Lotus Notes Document *i*DataAgents.

> For both the Lotus Notes Database and Lotus Notes Document *i*DataAgents, only databases with alphanumeric names are supported.

LOTUS NOTES DATABASE *I*DATAAGENT

Data Protection Operations for the following data types are supported by the Lotus Notes Database *i*DataAgents:

- Lotus Notes databases generated on File allocation table (FAT) file systems
- Lotus Notes databases generated on New Technology file systems (NTFS)
- The Domino transaction logs
- All Notes databases and templates (.nsf and .ntf), logged and non-logged, visible to the Domino Server.

Data Protection Operations for all other data types not mentioned in the above list are not supported by the Lotus Notes Database *i*DataAgents, including:

- shared mail databases
- databases on remote computers
- database full text indexes
- non-database files (for example: exe, dll, ini, dir, dsk, id, box)

- Notes data stored on Lotus Notes client computers (use the appropriate Windows File System *i*DataAgent on the Lotus Notes client computer)

LOTUS NOTES DOCUMENT *I*DATAAGENT

Data Protection Operations for the following data types are supported by the Lotus Notes Document *i*DataAgents:

- Lotus Notes databases generated on File allocation table (FAT) file systems
- Lotus Notes databases generated on New Technology file systems (NTFS)
- All Notes databases and templates (.nsf and .ntf), logged and non-logged, visible to the Domino Server.

Data Protection Operations for all other data types not mentioned in the above list are not supported by the Lotus Notes Document *i*DataAgents, including:

- transaction logs (only handled by the Notes Database *i*DataAgent)
- database encryption settings (manual re-encryption required after a restore)
- To backup or restore the following items, use the File System *i*DataAgent. Be sure that these files are not being accessed by any applications during backup.
- shared mail databases
- databases on remote computers
- database full text indexes
- non-database files (for example: exe, dll, ini, dir, dsk, id, box)
- Notes data stored on Lotus Notes client computers (use the appropriate Windows File System *i*DataAgent on the Lotus Notes client computer)

SUPPORTED FILE SYSTEM DATA TYPES

When restoring Lotus Notes data, you can restore the data to a file system type that differs from the type in which it originated. In other words, you can restore NTFS data to a FAT file system and restore FAT data to an NTFS file system. FAT file systems do not support Discretionary Access Control Lists (DACL); therefore, any NTFS data that is restored to a FAT partition loses its original DACL privileges. Also, when FAT file system data is restored to an NTFS file system, the restored data inherits the DACL of the destination directory.

## NOTES DATA SECURED BY THE FILE SYSTEM *I*DATAAGENT

If you have the File System *i*DataAgents installed on your Lotus Domino server, you should edit your file system backup filter to exclude the Domino databases in order to prevent Lotus Notes files from being backed up together with the file system. If you are using the Notes Database *i*DataAgent, exclude the transaction log directory from file system backups, as well.

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TREE LEVELS IN THE LOTUS DOMINO SERVER *I*DATAAGENTS

When the Lotus Domino Server *i*DataAgent is installed, the following levels are automatically created in the CommCell Browser:
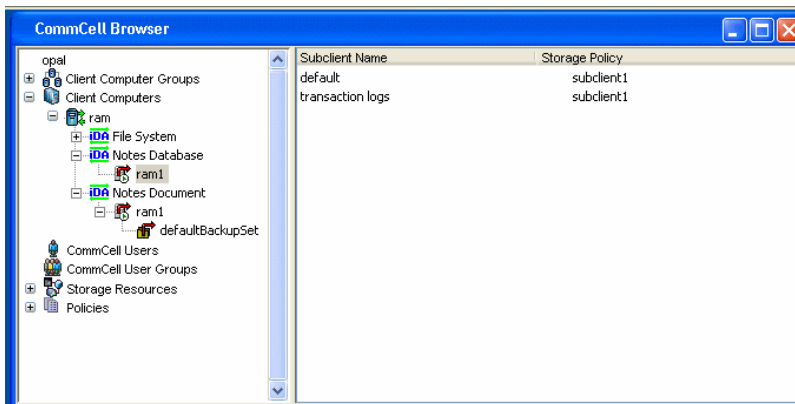
owl: Client

Notes Database

Notes Database: Agent   default: Subclients

server1: Instances (Partitions)   transaction logs: transaction logs

Notes Document

Notes Document: Agent   default: Subclients

server1: Instances (Partitions)

defaultBackupSet: Backup Sets

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LICENSE REQUIREMENT

To perform a data protection operation using this Agent a specific Product License must be available in the CommServe® Server.

Review general license requirements included in License Administration. Also, View All Licenses provides step-by-step instructions on how to view the license information.

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WHAT YOU NEED TO KNOW ABOUT LOTUS DOMINO SERVER

A Lotus Domino server can be set up and organized in a number of ways. It is important to understand this organization to create an effective backup plan.

NOTES PARTITIONS

A Notes partition is an instance of Lotus Domino Server running on a given computer. Lotus Domino Server may be installed multiple times on the same computer, each instance, or partition, acting as an individual server.

For example, computer A is running a simple Notes database. It is decided that computer A will also host a Domino web server database. The Domino administrator could add this data to the existing Domino partition, or install another partition of Domino Server for this new database. Installing a new partition would allow the administrator to tune the performance characteristics of each partition individually while offering a simpler organizational scheme.

NOTES DATA PATHS

Each partition of Lotus Domino Server will have a data path which describes the location of the database files. Databases existing outside of the data path are linked to the primary data path (see below).

NOTES LINKS AND LINK FILES

A Notes link is a pointer to a database outside of the data path for a given partition. A Notes link file is a text file that contains the path or paths of those databases. There are two types of Notes link files, database link files and folder link files. A database link is a .nsf file containing the path of a single database. A folder link is a .dir file containing a path or paths to multiple databases.

- The Lotus Domino Server *i*DataAgents back up only those databases that exist within the Domino data path. Databases outside of the Domino data path must be linked to the Domino path by a Notes link file in order to be included in backups performed by the Lotus Domino Server *i*DataAgents.
- Whereas the Lotus Domino Server *i*DataAgents will back up the database files in a folder to which a directory link points; they will not back up the directory link files (*.dir files) themselves. To back up directory link files, set up the appropriate backup filter for the File System *i*DataAgent so that the directory link files are *included* in the backup.

DESIGN ELEMENTS

Design elements are templates, forms and other non-data documents stored within a Notes database. Data documents (see below) may be dependant upon specific design elements. A design element, also referred to as a design document, is considered in its entirety. Design elements are restored as one complete unit.

DATA DOCUMENTS

Data documents are the primary data storage component within Lotus Notes. They are comparable to records in other database programs. Each data document contains several data objects, including but not limited to, user input, mail messages and other data.

DOMINO SERVER TRANSACTION LOGS

A transaction log is a file containing a record of changes to all databases on a Domino Server partition. It is used to:

- recover a server partition upon a restart
- bring a database up-to-date during a restore job.

Lotus Domino Server offers many styles of transaction logging:

- archive
- circular
- linear
- disabled

Archive, circular and linear styles cause the server to write all database transactions into a single transaction log. Archive style is recommended for use with the

Lotus Notes Database *i*DataAgent.

Enabling archive logging should not cause the transaction log to grow excessively, since the Domino Server automatically prunes the transaction logs. If you allocate a reasonable amount of space on your Domino server for transaction logs and back up the server regularly, under normal operating conditions the transaction logs will not exceed the disk space allotted to them.

DOMINO SERVER ID

The Domino Server ID should not have an associated password. Having one assigned does not hinder future backups, but does prevent a complete unconditional overwrite of a database if you have not selected the option to share the password with Notes addins.

If the Domino Server ID has a password associated with it, you must enable the option on the ID called Don't prompt for password from other Notes based programs (Share this user ID password with these Notes addins). This option can be found in the Domino Administrator, on the Configuration tab, under Tools/Certification/ID Properties for the SERVER ID file. A server restart is required after setting this option. In addition to this, the Domino Server ID must be running during the restore operation.

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DOMINO SERVER TRANSACTION LOGS (ARCHIVE LOGGING STYLE)

The Notes Document *i*DataAgent can secure databases that do not utilize transaction logging. If you plan to use this *i*DataAgent exclusively you can disable archive logging.

The Notes Database *i*DataAgent requires the enabling of archive style transaction logging for all Domino server partitions in order to perform incremental online backups of the databases. Databases for which transaction logging has not been enabled will not be backed up incrementally by the transaction log subclient, instead, non-logged databases are backed up in full by the subclient on which they reside.

The following information clarifies the relationships between the Domino server transaction logs, transaction log backups, and the reuse of transaction logs that backups can trigger.

All Lotus Notes databases share the same transaction log, which is divided into smaller files known as log extents. These files can be identified by their .txn extension and are always 64MB in size (fixed). In R5, you can specify a Maximum Log Size in increments of 64MB up to 4GB (64 extents) in Domino server configuration. The Maximum Log Size is managed through either reuse or pruning log extents that have been successfully backed up (archived). When a log extent reaches its full 64MB capacity, it is marked as available for archiving by the Domino server. Once the extent is backed up by the system (via an incremental backup of the Transaction Logs subclient), it is marked as archived and can thus be reused by the Domino server.

If all log extents are filled and no log extents have been archived, the Domino server will create additional log extents past the Maximum Log Size as long as there is disk space available. Once disk space has been filled, the Domino server will stop working.

Pruning of transaction logs only occurs if the Domino server has been stopped and restarted.

LOG REUSE EXAMPLE

Suppose the max log size is set to 256MB (4 log extents of 64MB each). Domino server will create 4 empty log extent files (numbered 0,1,2,3) when transaction logging is enabled for the first time. Over time, Domino server will fill up log extents 0 - 3 and need to write another log extent. It notices that another log extent would exceed the max log size of 256MB and checks to see if there is any archived log extent that it can reuse (in this case, none). It has no recourse but to create a new 64MB log extent file. This continues as long as there is disk space available and no log extents have been archived. Eventually a Transaction Log backup starts and all full log extents are backed up and marked Archived. (For Domino 6 and higher, the active log extent will also be backed up but not be marked Archived.) When Domino server next needs to write another log it still notices that the log size exceeds the maximum, but in this case it finds that some log extents have been archived. It selects the first archived log extent (log extent #0) and rewrites over it. Keep in mind a Domino log reuse does not reduce the total log size.

LOG RECOVERY EXAMPLE

Suppose transaction log extents #3, #4, and #5 are needed for the recovery of a database. Log extents #4 and #5 are still on disk and log extent #3 is not. The system searches backup data for the latest copy of the database before the specified browse time. The database is restored and the system requests the Domino server play back any transactions up to the browse time. The Domino server determines that it needs log extent #3 and sends a request back to the system, which restores log extent #3 and gives control back to the Domino server. Transactions from log extent #3 are replayed and since log extents #4 and #5 are still on the disk, their transactions are replayed without requesting anything from the system. Transaction replay stops when the browse time is reached.

BEST PRACTICES FOR TRANSACTION LOGGING

- **Keep the transaction log on a separate partition or drive.**
- **Use the largest log drive possible** or at least 4 to 5 times larger than your observed daily usage to safeguard against media contention situations.
- **Make sure the speed of logs being archived is faster than that of new logs being created.** Otherwise, the total log size will increase over time.
- **Enable transaction logging in ARCHIVE mode for Notes Database database-level backups.** Although the Lotus Notes Database *i*DataAgent allows you to install, backup and restore when the transaction logging setting for Domino server is ARCHIVE , CIRCULAR, DISABLED or (LINEAR, R6 only), it is

highly recommended that you make use of transaction logging in ARCHIVE mode for Notes Database level backups. Transaction logging in ARCHIVE mode provides for the best possibilities for data recovery over ALL other modes.
Be aware that when not using ARCHIVE mode:

○ The backup data size of incremental backups could be close to full backups, and point-in-time restore is not always possible, and

○ When CIRCULAR (LINEAR in R6) logging is used, transaction log backups are not possible, and point-in-time restore is possible only if logs are not overwritten.

Logging methods should not be changed once the software has been installed. Changing logging methods after the software has been installed may result in unexpected results when data aging operations are performed.

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DISASTER RECOVERY CONSIDERATIONS

● Before you use your agent, be sure to review and understand the associated full system restore (or disaster recovery) procedure. The procedure for some agents may require that you plan specific actions or consider certain items before an emergency occurs. See Disaster Recovery for more information regarding your agent.

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System Requirements - Lotus Notes/Domino Server Database *i*DataAgent

| Lotus Notes Database *i*DataAgent | Lotus Notes Document *i*DataAgent | Supported Features |

The Lotus Notes/Domino Server *i*DataAgents support the following Lotus Domino Server releases in both Domino Cluster and non-Domino Cluster environments.

> If you are running a Lotus Domino Server in a Domino Cluster, special restore considerations apply. See Restore Considerations for this Agent in Restore Data - Lotus Notes/Domino Server for more information.

APPLICATION/OPERATING SYSTEM	PROCESSOR
LOTUS DOMINO SERVER RELEASE 8.02 32-BIT ON:	
AIX AIX 6.1	Power PC (Includes IBM System p)
AIX 5.3 with technology level 7 (or higher) and runtime library xlC.rte 8.0.0.0 or higher	Power PC (Includes IBM System p)
LINUX **RED HAT ENTERPRISE LINUX/CENTOS**	
Red Hat Enterprise Linux/CentOS 5.x with glibc 2.5.x	Intel Pentium, x64 or compatible processors
SUSE LINUX (SLES)	
SuSE Linux 10.x with glibc 2.4.x	Intel Pentium, x64 or compatible processors
SOLARIS Solaris 10.x with a minimum of SunOS (Sparc) Patch 119963-14	UltraSPARC III and higher recommended
WINDOWS **WINDOWS 2003**	
Microsoft Windows Server 2003 x64* Editions with a minimum of Service Pack 1 * Special configuration considerations apply. See Installing 32-bit Components on a Microsoft Windows x64 Platform for more information.	All Windows-compatible processors supported
Microsoft Windows Server 2003 32-bit Editions with a minimum of Service Pack 1	All Windows-compatible processors supported
LOTUS DOMINO SERVER RELEASE 8.02 64-BIT ON:	
AIX AIX 6.1	Power PC (Includes IBM System p)
AIX 5.3 with technology level 7 (or higher) and runtime library xlC.rte 8.0.0.0 or higher	Power PC (Includes IBM System p)
WINDOWS **WINDOWS 2003**	
Microsoft Windows Server 2003 x64 Editions with a minimum of Service Pack 1	All Windows-compatible processors supported
LOTUS DOMINO SERVER RELEASE 8.5.X 32-BIT ON:	
AIX AIX 6.1	Power PC (Includes IBM System p)
AIX 5.3 with technology level 7 (or higher) and runtime library xlC.rte 8.0.0.0 or higher	Power PC (Includes IBM System p)
LINUX **RED HAT ENTERPRISE LINUX/CENTOS**	
Red Hat Enterprise Linux/CentOS 5.x with glibc 2.5.x	Intel Pentium, x64 or compatible processors
SUSE LINUX (SLES)	
SuSE Linux 11.x with glibc 2.9.x and above	Intel Pentium, x64 or compatible processors
SuSE Linux 10.x with glibc 2.4.x	Intel Pentium, x64 or compatible processors
SOLARIS Solaris 10.x with a minimum of SunOS (Sparc) Patch 119963-14	UltraSPARC III and higher recommended

WINDOWS	WINDOWS 2008	
	Microsoft Windows Server 2008 32-bit and x64 Editions* *Core Editions not supported * Special configuration considerations apply. See Installing 32-bit Components on a Microsoft Windows x64 Platform for more information.	All Windows-compatible processors supported
	WINDOWS 2003	
	Microsoft Windows Server 2003 x64* Editions with a minimum of Service Pack 2	All Windows-compatible processors supported
	Microsoft Windows Server 2003 32-bit Editions with a minimum of Service Pack 2	All Windows-compatible processors supported

LOTUS DOMINO SERVER RELEASE 8.5.X 64-BIT ON:		
AIX	AIX 6.1	Power PC (Includes IBM System p)
	AIX 5.3 with technology level 7 (or higher) and runtime library xlC.rte 8.0.0.0 or higher	Power PC (Includes IBM System p)
WINDOWS	**WINDOWS 2008**	
	Microsoft Windows Server 2008 x64 Editions* *Core Editions not supported	All Windows-compatible processors supported
	WINDOWS 2003	
	Microsoft Windows Server 2003 x64 Editions with a minimum of Service Pack 2	All Windows-compatible processors supported

HARD DRIVE

1.5 GB minimum of hard disk space for installing the software.

MEMORY

AIX

WINDOWS

2 GB RAM minimum required beyond the requirements of the operating system and running applications

WINDOWS

2 GB RAM minimum required beyond the requirements of the operating system and running applications

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 - Microsoft Windows File System iDataAgent
- System Requirements - AIX File System iDataAgent
- System Requirements - Linux File System iDataAgent
- System Requirements - Solaris File System iDataAgent

NETWORK

TCP/IP Services configured on the computer.

SELINUX

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

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

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

File Name	Content of the File

`<directory>/<file_name>.te`
 	
where:
 	
`<directory>` is `/usr/share/selinux/devel`
 	
`<file_name>` 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: `backup_IDA.te`
	The content of the file should be as follows:
	
	policy_module(<name>,<version>)
	
	##############################
	
	where:
	
	`<name>` is the name of the policy module. You can give any unique name to the policy module, such as a process or application name.
	
	`<version>` is the version of the policy module. It can be any number, such as 1.0.0.
	
	For Example: While creating a policy module for the backup_IDA application, you can use the following content.
	
	`policy_module(backup_IDA,1.0.0)`

`<directory>/<file_name>.fc`
 	
where:
 	
`<directory>` is `/usr/share/selinux/devel`
 	
`<file_name>` 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: `backup_IDA.fc`
	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 `/var/log/messages`. Also, if required, add it to the following list of files.
	
	`/opt/<software installation directory>/Base/libCTreeWrapper.so -- gen_context (system_u:object_r:texrel_shlib_t,s0)`
	
	`/opt/<software installation directory>/Base/libCVMAGuiImplgso -- gen_context (system_u:object_r:texrel_shlib_t,s0)`
	
	`/opt/<software installation directory>/Base/libdb2locale.so.1 -- gen_context (system_u:object_r:texrel_shlib_t,s0)`
	
	`/opt/<software installation directory>/Base/libdb2osse.so.1 -- gen_context (system_u:object_r:texrel_shlib_t,s0)`
	
	`/opt/<software installation directory>/Base/libDb2Sbt.so -- gen_context (system_u:object_r:texrel_shlib_t,s0)`
	
	`/opt/<software installation directory>/Base/libdb2trcapi.so.1 -- gen_context (system_u:object_r:texrel_shlib_t,s0)`
	
	`/opt/<software installation directory>/Base/libDrDatabase.so -- gen_context (system_u:object_r:texrel_shlib_t,s0)`
	
	`/opt/<software installation directory>/Base/libIndexing.so -- gen_context (system_u:object_r:texrel_shlib_t,s0)`
	
	`/opt/<software installation directory>/Base/libSnooper.so -- gen_context (system_u:object_r:texrel_shlib_t,s0)`

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

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

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

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

SELinux is now configured to work with this application.

NOTES ON DOMINO CLUSTER INSTALLATIONS

For Lotus Notes *i*DataAgent to work on Domino cluster, the following requirements have to be met:

1. All Domino servers that are part of Domino Cluster must be installed on Different physical machines.

2. Multiple Domino partitions must be running on the same client machine, however binding to different IP addresses on a single NIC card.

3. Multiple Domino partitions must be running on the same client machine, however binding to different IP addresses on multiple NIC cards.

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

Install the Lotus Notes *i*DataAgents - Windows

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INSTALL REQUIREMENTS

The following procedure describes the steps involved in installing the Windows File System and Notes Database and Notes Document *i*DataAgents. Lotus Notes Database and Document *i*DataAgents are installed on the computer in which the Domino Server resides.

For the Lotus Domino Server family of *i*DataAgents, the computer on which the Lotus Domino server resides is the client to the CommServe. Client never refers to a Lotus Notes client of a Lotus Domino server; the Notes Database and Notes Document *i*DataAgents are not intended for, and cannot be, installed on Lotus Notes clients.

Verify that the computer in which you wish to install the software satisfies the minimum requirements specified in System Requirements - Lotus Notes/Domino Server *i*DataAgents and System Requirements - Microsoft Windows File System *i*DataAgent.

Review the following Install Requirements before installing the software:

GENERAL

- Review Install Considerations before installing the software.
- Agents should be installed only after the CommServe and at least one MediaAgent have been installed in the CommCell. Also, keep in mind that the CommServe® software and MediaAgent must be installed and running (but not necessarily on the same computer), before you can install the Agent.
- Close all applications and disable any programs that run automatically, including anti-virus, screen savers and operating system utilities. Some of the programs, including many anti-virus programs, may be running as a service. Stop and disable such services before you begin. You can re-enable them after the installation.
- Ensure there is an available license on the CommServe software for the Agent.
- Verify that you have the Software Installation Disc that is appropriate to the destination computer's operating system.

BEFORE YOU BEGIN

- Log on to the client as local Administrator or as a member of the Administrators group on that computer.

INSTALL PROCEDURE

GETTING STARTED

1. Place the Software Installation Disc for the Windows platform into the disc drive.

   After a few seconds, the installation program is launched.

   If the installation program does not launch automatically:

   - Click the **Start** button on the Windows task bar, and then click **Run**.
   - Browse to the installation disc drive, select **Setup.exe**, click **Open**, then click **OK**.

   NOTES

   - If you are installing on Windows Server Core editions, mount to Software Installation Disc through command line, go to the **AMD64** folder and run **Setup.exe**.

2. Choose the language you want to use during installation. Click the down arrow and select the desired language from the drop-down list, and click **Next** to continue.
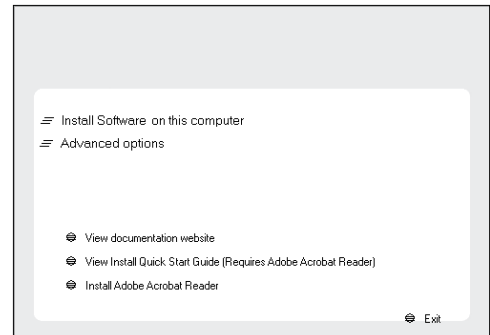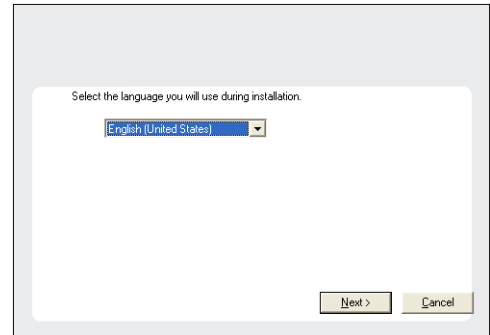
3. Select the option to install software on this computer.

   NOTES

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

4. Read the license agreement, then select **I accept the terms in the license agreement**.

   Click **Next** to continue.

SELECT COMPONENTS FOR INSTALLATION

5. Select the component(s) to install.

   NOTES

   ● Your screen may look different from the example shown.
   ● Components that either have already been installed, or which cannot be installed, will be dimmed. Hover over the component for additional details.
   ● If you wish to install the agent software for restore only, select **Install Agents for Restore Only** checkbox. See Installing Restore Only Agents for more information.
   ● The **Special Registry Keys In Use** field will be highlighted when `GalaxyInstallerFlags` registry key is enabled. Move the mouse pointer over this field to see a list of registry keys that have been created in this computer.

   Click **Next** to continue.

   To install the Lotus Notes *i*DataAgents system, expand the following `Client Modules` folder, `Backup & Recovery` folder and `Lotus Notes` folder. Then select the following:

   ● `Lotus Notes Database `*i*`DataAgent`
   ● `Lotus Notes Document `*i*`DataAgent`

   When you select the Lotus Notes *i*DataAgent for install, the appropriate Windows File System *i*DataAgent is automatically selected for install.

CONFIGURATION OF OTHER INSTALLATION OPTIONS

6. If this computer and the CommServe is separated by a firewall, select the **Configure**

firewall services option and then click **Next** to continue.

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

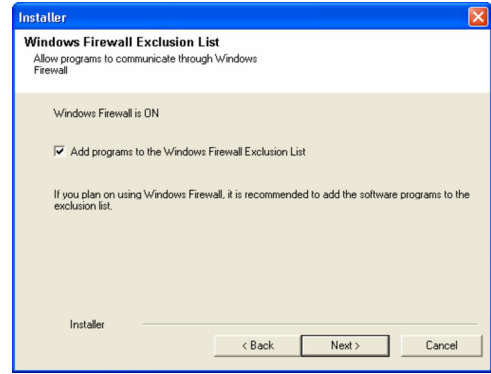If firewall configuration is not required, click **Next** to continue.

7. Enter the fully qualified domain name of the CommServe Host Name. This should be TCP/IP network name. e.g., computer.company.com.

    NOTES

    - The CommServe client name is the name of the computer. This field is automatically populated.
    - Do not use space and the following characters when specifying a new name for the CommServe Host Name:

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

    - If a computer has already been installed, this screen will not be displayed; instead the installer will use the same Server Name as previously specified.
    - If you do not specify the CommServe Host Name, a window will be prompted to continue in decouple mode. Click **Yes** to continue to Decoupled Install. Click **No** to specify a CommServe Name and continue with the installation.

    Click **Next** to continue.

8. Enter the **username** and **password** associated with an external domain user account or a CommCell user account to authorize the installation of this agent.

    NOTES

    - This window will be displayed when the **Require Authentication for Agent Installation** option is selected in the **CommCell Properties**. For more information, see Authentication for Agent Installs.

    Click **Next** to continue.

9. Enter the following:

    - The local (NetBIOS) name of the client computer.
    - The TCP/IP IP host name of the NIC that the client computer must use to communicate with the CommServe Server.

    NOTES

    - Do not use spaces when specifying a new name for the Client.
    - The default network interface name of the client computer is displayed if the computer has only one network interface. If the computer has multiple network interfaces, enter the interface name that is preferred for communication with the CommServe Server.
    - If a component has already been installed, this screen will not be displayed; instead, the install program will use the same name as previously specified.

    Click **Next** to continue.

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

    NOTES:

    - If Windows Firewall is enabled on the computer, this option is selected by default and must be enabled to proceed with the installation.
    - If Windows Firewall is disabled on the computer, you can select this option to add the programs and services to enabled CommCell operations across the firewall, if the firewall is enabled at a later time.

You can either select this option during install or add the programs and services after installation. For adding the programs and services after installation, see Configure Windows Firewall to Allow CommCell Communication.
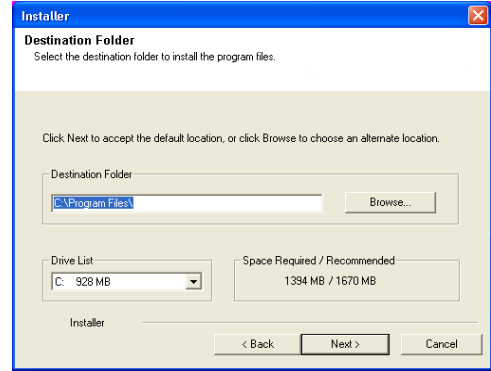
Click **Next** to continue.

11. If you have already installed the file system *i*DataAgent, go to Select Partitions. Otherwise: Specify the location where you want to install the software.

NOTES

- 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.
- If you intend to install other components on this computer, the selected installation directory will be automatically used for that software as well.
- If a component is already installed in this computer, this screen may not be displayed. The software will be automatically installed in the same location that was previously specified.

Click **Browse** to change directories.
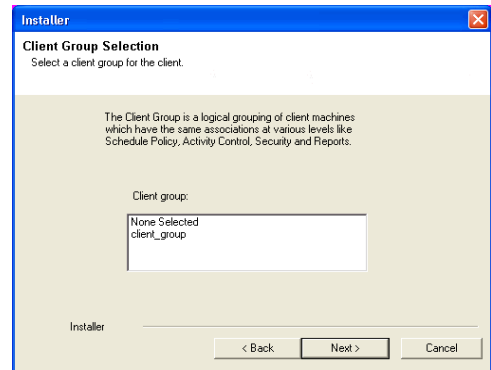
Click **Next** to continue.

CLIENT GROUP SELECTION

12. Select a Client Group from the list.

Click **Next** to continue.

NOTES

- This screen will be displayed if Client Groups are configured in the CommCell Console. For more information, see Client Computer Groups.

SCHEDULE AUTOMATIC UPDATE

13. If necessary, select this option to schedule an automatic installation of software updates.

NOTES

- Schedule Install of Automatic Updates allows automatic installation of the necessary software updates on the computer on a single or weekly basis. If you do not select this option, you can schedule these updates later from the CommCell Console.
- To avoid conflict, do not schedule the automatic installation of software updates to occur at the same time as the automatic FTP downloading of software updates.
- If a component has already been installed, this screen will not be displayed; instead, the installer will use the same option as previously specified.

Click **Next** to continue.
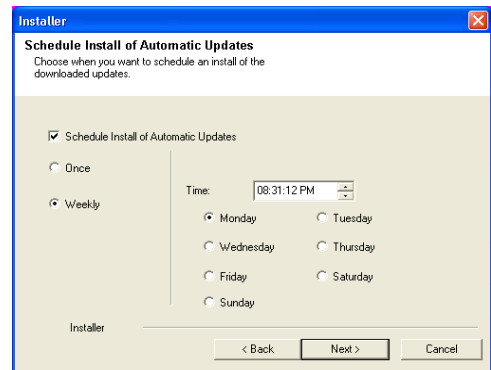
STORAGE POLICY SELECTION

14. Select the storage policy through which you want to back up/archive the agent.

NOTES

- A storage policy directs backup data to a media library.
- If desired, you can change your storage policy selection at any time after you have installed the client software.
- This screen may appear more than once, if you have selected multiple agents for installation. You will be prompted to configure the storage policy association for each of the selected agents.

Click **Next** to continue.

If you want to use different storage policies for any of the available partitions, leave them unconfigured in this step and add them using the CommCell Browser after the installation is complete. See Add a Lotus Domino Server Partition on Windows.
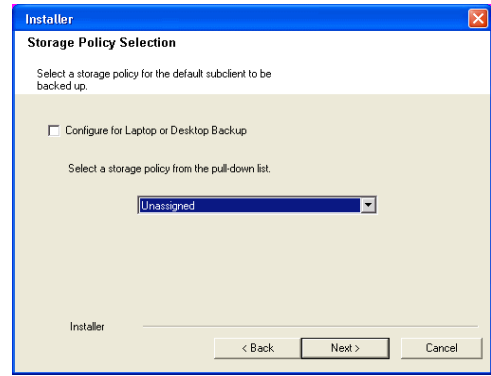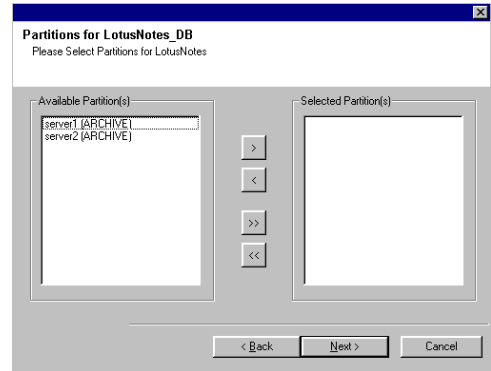
SELECT PARTITIONS

15. For Lotus Notes Database:

Select one or more partitions from the Available Partitions pane to include in the install.

NOTES

- All partitions selected in this step are configured to use the storage policy selected through Storage Policy Selection.
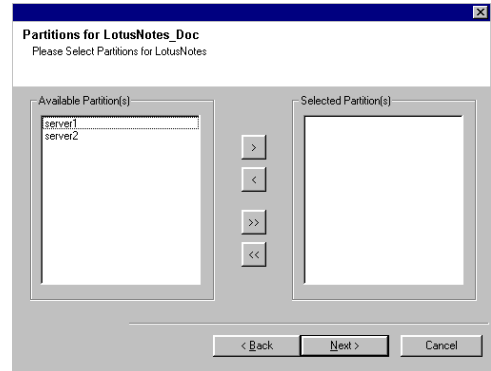
Click **Next** to continue.

16. For Lotus Notes Document:

Select one or more partitions from the Available Partitions pane to include in the install.

NOTES

- All partitions selected in this step are configured to use the storage policy selected through Storage Policy Selection.

Click **Next** to continue.

VERIFY SUMMARY OF INSTALL OPTIONS

17. Verify the summary of selected options.

NOTES

- The **Summary** on your screen should reflect the components you selected for install, and may look different from the example shown.

Click **Next** to continue or **Back** to change any of the options.

The install program now starts copying the software to the computer. This step may take several minutes to complete.
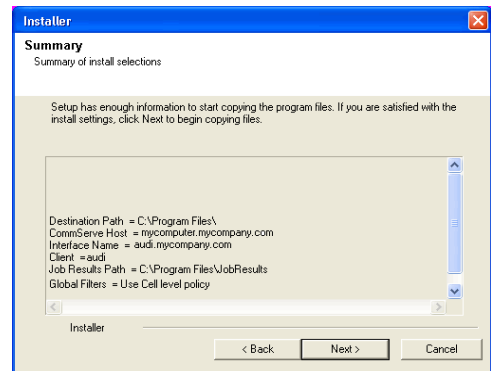
**18.** The System Reboot message may be displayed. If so, select one of the following:

- **Reboot Now**
  If this option is displayed without the **Skip Reboot** option, the install program has

found files required by the software that are in use and need to be replaced. If **Reboot Now** is displayed without the **Skip Reboot** option, reboot the computer at this point. The install program will automatically continue after the reboot.

● **Exit Setup**
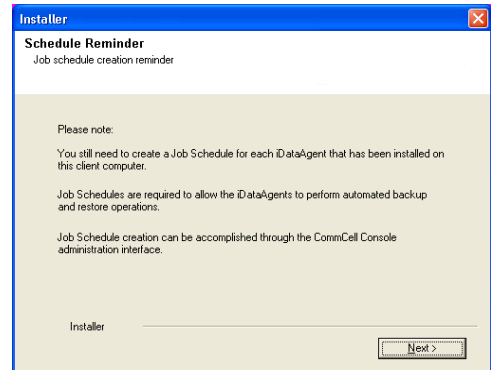If you want to exit the install program, click **Exit Setup**.
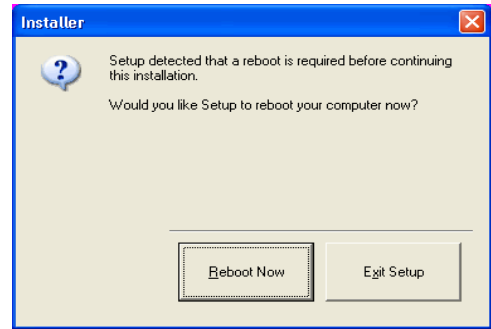
SETUP COMPLETE

19. Click **Next** to continue.

NOTES

● Schedules help ensure that the data protection operations for the Agent are automatically performed on a regular basis without user intervention. For more information, see Scheduling.

20. Setup displays the successfully installed components.

NOTES

● The **Setup Complete** message displayed on your screen will reflect the components you installed, and may look different from the example shown.

● If you install an Agent with the CommCell Console open, you need to refresh the CommCell Console (F5) to see the new Agents.

● If **Reboot Now** button is displayed make sure to reboot the computer before performing any other operations from the computer.

Click **Finish** to close the install program.

The installation is now complete.
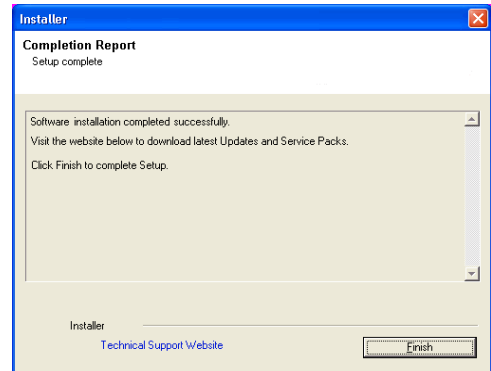
POST-INSTALL CONSIDERATIONS

GENERAL

● Review Install Considerations after installing the software.

● Install post-release updates or Service Packs that may have been released after the release of the software. When you are installing a Service Pack, ensure that it is the same version as the one installed in the CommServe Server. Alternatively, you can enable Automatic Updates for quick and easy installation of updates in the CommCell component.

Install the Lotus Notes *i*DataAgent - Unix

TABLE OF CONTENTS

INSTALL REQUIREMENTS

The Lotus Notes Database *i*DataAgent is installed on the computer from which the *i*DataAgent secures data. (This computer is referred to as the *Client* computer in this install procedure.)

Verify that the computer in which you wish to install the software satisfies the minimum requirements specified in the following:

- System Requirements - Lotus Notes/Domino Server *i*DataAgents
- System Requirements - AIX File System *i*DataAgent
- System Requirements - Linux File System *i*DataAgent
- System Requirements - Solaris File System *i*DataAgent

Review the following Install Requirements before installing the software:

GENERAL

- Review Install Considerations before installing the software.
- Agents should be installed only after the CommServe and at least one MediaAgent have been installed in the CommCell. Also, keep in mind that the CommServe and MediaAgent must be installed and running (but not necessarily on the same computer), before you can install the Agent.
- Ensure there is an available license on the CommServe for the Agent.
- Verify that you have the Software Installation Disc that is appropriate to the destination computer's operating system.

BEFORE YOU BEGIN

- Log on to the client as `root`.
- The install package requires `super-user` permissions to execute.

INSTALL PROCEDURE

GETTING STARTED

1. Place the software installation disc for the Unix platform into the disc drive.

    You can also install the product using a disc drive mounted on another computer on the network.

    - On Solaris, double-click the **cvpkgadd** program from the File Manager window.
    - On other Unix platforms, open the Terminal window, navigate to the software installation disc and then enter **./cvpkgadd**.

2. The product banner and other information is displayed.

    Press **Enter** to continue.

3. Read the license agreement. Type **y** and press **Enter** to continue.

4. Enter the number corresponding to the setup task you want to perform.

    NOTES

    - For Install data protection agents on this computer option, follow the steps described in this procedure.
    - Advance options provide additional setup features such as record and play setup, creating a custom package and External Data Connector Agent software.

      To create a custom package and for record and play setup, follow the steps described in Custom Package - Unix.

    ```
    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
    ```

To install the External Data Connector Agent, follow the steps described in External Data Connector - Unix.

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.

```
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 platforms (32 bit)

2) FS and MA only (64 bit)

Your choice: [1]
```

6. This prompt is displayed only when you are installing on AIX, HP-UX, Linux, or Solaris computers.

Press **Enter** to continue

NOTES

- When you install on non-clustered computer, you must select the number associated with the option **Install on a physical machine**.

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

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

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

1) Install on a physical machine

2) Install on a virtual machine

3) Exit

Your choice: [1]
```

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 number corresponding to the network interface that you wish to use as default, and then press **Enter** to continue.

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.

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

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

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

8. Specify the client name for the computer.

Press **Enter** to accept the default name and continue, or
Enter a new client name for the computer and then press **Enter** to continue.

```
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]
```

SELECT COMPONENTS FOR INSTALLATION

9. Enter the number corresponding to the **CVGxIDA** module.

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

NOTES

- To select multiple component, enter the number by adding a space.
- Your screen may look different from the example shown.
- Components that either have already been installed, or which cannot be installed, will not be shown.
- In addition, the list of modules that appear depends on the specific Unix File System in which the package is installed. (e.g., **CVGxWA** will appear only when the installation package is run on a Solaris computer.)

```
Install Calypso on physical machine client.company.com

Select the Calypso module that you would like to install

[ ] 1) Media Agent      [1301] [CVGxMA]
[ ] 2) FileSystem IDA    [1101] [CVGxIDA]
   >) >>>>> 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: 2
```

BASE SOFTWARE INSTALLATION

10. If you wish to install the agent software for restore only, enter **Yes** and press **Enter** to continue. See Installing Restore Only Agents for more information.

Otherwise, accept **no**, press **Enter** to continue.

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

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.

```
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
```

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. Enter **Yes** to download and install the latest service packs and post packs from the software provider.

   NOTES

   - Internet connectivity is required to download updates.
   - This step is applicable for multi instancing.

   Press **Enter** to continue.

13. Specify the location where you want to install the software.

   NOTES

   - Do not use the following characters when specifying the path:
     !@#$%^&*():/?\
   - The amount of free space required depends on the components selected for install, and may look different from the example shown.

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

   Press **Enter** again to confirm the path.

14. Specify the location for the log files.

   NOTES

   - All the modules installed on the computer will store the log files in this directory.
   - The amount of free space required depends on the components selected for install, and may look different from the example shown.

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

   Press **Enter** again to confirm the path.

15. Indicate whether you would like to launch processes with inherent database access rights.

   Press **Enter** to assign a new group, or
   Type **No** and then press **Enter** to continue.

16. If you indicated **Yes** in the previous step, you will be prompted for the group name that must be used to launch processes.

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

   Press **Enter** again to continue.

17. 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**.

```
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]

Press <ENTER> to continue ...

Please specify where you want us to install Calypso
binaries.

It must be a local directory and there should be at least
98MB 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]

..

Calypso will be installed in /opt/calypso.
Press ENTER to continue ...

Please specify where you want to keep Calypso log files.

It must be a local directory and there should be at least
100MB of free space available. All log files will be
created in a "calypso/Log_Files" subdirectory, so if you
enter "/var/log", the logs will actually be placed into
"/var/log/calypso/Log_Files".

Log Directory: [/var/log]

..

Calypso log files will be created
in /var/log/calypso/Log_Files.
Press ENTER to continue ...

Most of Calypso 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 Calypso processes, all
temporary and configuration files will be created with -
rw-rw-rw permissions.

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

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

Please enter the name of the group which will be assigned
to all Calypso files and on behalf of which all Calypso
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".
Press <ENTER> to continue ...

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.
```

NOTES

- For more information about Network TCP Ports, see Network TCP Port Requirements.
- For more information about these services, see Services.
- If the port number you entered already exists, a message will be displayed `Port #### is already reserved in /etc/services`. To work around this issue, enter different port number.

```
Please enter the port numbers.

Port Number for CVD : [8600]

Port Number for EvMgrC: [8602]
```

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

    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** to continue.

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

19. Type the name of the CommServe computer and press **Enter** to continue.

    NOTES

    - Ensure that the CommServe is accessible before typing the name; otherwise the installation will fail.
    - If you enter a short name which resolves to the same IP address as the fully qualified CommServe name, you will be asked if you would prefer to use the fully qualified name.

```
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:
```

20. Enter the **username** and **password** information for an external domain user account or a CommCell user account. This authorizes the installation of an agent on the CommCell.

    NOTES

    - This is only displayed when the **Authentication for Agent** feature is enabled in the CommCell Properties. Users must belong to a User Group with Agent Management capabilities to enable this feature. For more information, see Authentication for Agent Installs.

    Click **Enter** to continue.

```
Enter your CommCell user name and password:

User Name :

Password :

Press <ENTER> to continue ...
```

ENABLE GLOBAL FILTERS

21. Type the appropriate number for configuring Global Filters for the default subclient and press Enter to continue.

    NOTES

    - Select **Use Cell level Policy** to inherit the global filter policy configuration set for the CommCell, i.e., if the **Use Global Filters on All Subclients** option is selected in the **Global Filters** dialog box (from the CommCell Console's Control Panel), then this policy will be applied to the default subclient as well. If is not selected, then the global filters will not be applied to the default subclient.
    - Select **Always use Global filters** to always apply the global filters policy to the default subclient regardless of the policy set for the CommCell.
    - Select **Do not use Global filters** to disregard applying the global filters to the default subclient regardless of the policy set for the CommCell.

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

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

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

CLIENT GROUP SELECTION

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. For more information, see Client Computer Groups.

```
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
[ ] 3) DKS

[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
```

23. Press **Enter** to continue.

    NOTES

    - Schedules help ensure that the data protection operations for the Agent are automatically performed on a regular basis without user intervention. For more information, see Scheduling.

```
+---------------------+

IMPORTANT:

In addition to installing Calypso on this computer, you
will also need to create a Job Schedule for each
iDataAgent that has been installed on this client
computer.

Job Schedules are required to allow the Calypso
iDataAgents to perform automated backup and restore
```

```
operations.

Job Schedule creation can be accomplished through the
Calypso CommCell Console administration interface.

+--------------------+
```

STORAGE POLICY SELECTION

24. Enter the number corresponding to the storage policy through which you want to back up the File System *i*DataAgent and then press **Enter** to continue.

NOTES

- A storage policy directs backup data to a media library. Each library has a default storage policy.
- When you install an Agent, the install program creates a default subclient for most Agents.
- If desired, you can change your storage policy selection at any time after you have installed the client software.
- If this screen appears more than once, it is because you have selected multiple agents for installation and are configuring storage policy association for each of the installed agents.
- The storage policy(ies) displayed on your screen may look different from the example shown.

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

1) SP_StandAloneLibrary2_2
2) SP_Library3_3
3) SP_MagLibrary4_4
4) fornax_fornax_HWCmp
5) ranger_ranger_HWCmp
6) fornax_fornax_ClntCmp
7) fornax_fornax_MACmp
8) fornax_fornax_NoCmp

Storage Policy: [3]
```

CONFIGURE PARTITIONS

25. The home directory reflects the directory in which the Lotus Notes software is installed. Type the name of home directory for the partition and then press **Enter** to continue.

```
Please enter Domino Home Directory.

Notes Home Directory:
```

26. The partition name reflects the name of the computer on which the software is installed. Type the name of the partition and then press **Enter** to continue.

NOTES

- All partitions selected in this step are configured to use the storage policy selected in Storage Policy Selection.

```
Please enter Domino Partition Name.

Domino Partition Name:
```

27. The data directory reflects the directory in which all databases reside. Type the name of the data directory for the partition and then press **Enter** to continue.

```
Please enter Domino Data Directory.

Domino Data Directory:
```

28. Review the information listed on the verification screen and then press **Enter** to continue.

To change partition information, type **no** and press **Enter**. The system returns you to Configure Partitions to enter the partition name again.

```
You have entered all the required information for this
partition.
Please review it now, and answer "yes", if it is correct:

Domino Partition Name........ your entry here
Domino Data Directory.. ......your entry here
Domino Version...............<version number>
Domino User..................<user name>
Domino Home Directory........your entry here
Is this correct? [yes]
```

29. The system asks if you would like to configure another partition.

If you don't want to configure another partition, press **Enter**; otherwise type **yes** and press **Enter** to return to Configure Partitions and configure another partition.

```
Configured 1 partition(s) of Notes so far.

Would you like to configure another partition? [no]
```

30. The install program now starts copying the software to the computer. The progress of the operation is displayed.

```
.....
.....
.....
.....

Successfully copied xx files

.....
.....

Successfully installed <package_name>.

Press ENTER to continue ...
```

SETUP COMPLETE

31. If this module was the last possible module to install, you are automatically exited from the program.

Otherwise, type the number for the **Exit** option and then press **Enter**. Your screen may appear different from the example shown.

The installation is now complete.

```
1) Proxy FileSystem iDataAgent    <= CVGxProxyIDA
2) Oracle iDataAgent              <= CVGxOrIDA
3) DB2 iDataAgent                 <= CVGxDB2
4) Exit this menu

Module number: [1]
```

POST-INSTALL CONSIDERATIONS

GENERAL

- Review Install Considerations after installing the software.

- Install post-release updates or Service Packs that may have been released after the release of the software. When you are installing a Service Pack, ensure that it is the same version as the one installed in the CommServe Server. Alternatively, you can enable Automatic Updates for quick and easy installation of updates in the CommCell component.

Backup - Lotus Domino Server

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Overview

Supported Backup Types

Lotus Notes Database Backups

- Subclient Backup Jobs
- Partition Backup Jobs

Lotus Notes Document Backup Jobs

- Subclient Backup Jobs
- Backup Set Backup Jobs

Backup Considerations

Advanced Backup Options

OVERVIEW

Plan your backup jobs for this agent by reviewing the following information:

- For an overview of backup jobs, see Backup Data.
- For a list of supported data types for this agent, see Supported Data Types.
- For information on subclients, see Subclients
  - For information on configuring subclients for this agent, see Subclients - Lotus Notes.
  - For information on excluding data via subclients, see Excluding Data from Data Protection Operations.

SUPPORTED BACKUP TYPES

The Lotus Notes Database *i*DataAgent supports the following backup types:

- Full Backups
- Incremental Backups - Lotus Notes

The Lotus Notes Document *i*DataAgent supports the following backup types:

- Full Backups
- Incremental Backups - Lotus Notes
- Differential Backups
- Synthetic Full Backups

LOTUS NOTES DATABASE BACKUPS

This agent has the following unique functionality. The Lotus Notes Database *i*DataAgent backs up very specific sets of data depending upon what type of operation you choose. Review the following to understand exactly what will be backed up when you perform a backup job at the indicated level:

- Subclient Backup Jobs
- Partition Backup Jobs

SUBCLIENT BACKUP JOBS

The job that is performed when you select a full or incremental backup depends on the type of subclient that you are backing up:

DEFAULT SUBCLIENT

When you perform a full backup job for the default subclient, the system performs a discover on the partition and executes a full backup of:

- all the databases that are already configured within the subclient.
- unconfigured databases within the partition (discovered).

When an incremental backup job is performed for the default subclient, the system performs a discover of the partition, and executes a backup of:

- unconfigured databases (discovered).
- any databases manually added since the last backup.
- any previously backed up databases where the DBIID has changed since the last backup.
- non-logged databases that have been modified since the last backup.

When you add new databases to a default Subclient, the auto discovery finds the new databases and backs them up as Full.

USER-DEFINED SUBCLIENTS

When a full backup job is performed for a user-defined subclient, the system executes a full backup of:

- that subclient's databases.

When an incremental backup job is performed for a user-defined subclient, any database that was not part of this subclient on the last backup (incremental or full) will get backed up:

- any databases manually added since the last backup.
- any previously backed up databases where the DBIID has changed since the last backup.
- non-logged databases that have been modified since the last backup.

When you add new database(s) to the user-defined subclients that are already created for Lotus Notes *i*DataAgent, the system performs a full backup for newly added database(s).

TRANSACTION LOG SUBCLIENT

To use the transaction log subclient you must have Domino Server configured in archive logging style.

The Lotus Notes *i*DataAgent creates a transaction log subclient that handles backing up transaction logs for all databases within the partition. You can only perform incremental backup jobs for a transaction log subclient. When you perform an incremental backup, the system backs up all full log extents. For Domino Server versions 5.0.4 and above, the active log extent is backed up as well.

Any changes in the database(s) is logged and backed up by the Transaction log subclient.

PARTITION BACKUP JOBS

When a full backup job is performed at the partition level, the following actions take place:

- New databases that are not yet configured for Backup are added to the default subclient.
- All databases that are already part of this partition are backed up.

> After a full backup, each subclient in the partition will be represented in the Backup History. Full backups backup
> databases. Full backups do not backup the transaction log subclient.

When an incremental backup job is performed for a partition, the following actions take place:

- New databases that are not yet configured for Backup are added to the default subclient.
- Any database that was not part of the partition on the last backup (incremental or full) is backed up.
- Any previously backed up databases where the DBIID has changed since the last backup are backed up.
- Non-logged databases that have been modified since the last backup are backed up.

LOTUS NOTES DOCUMENT BACKUP JOBS

This agent has the following unique functionality. The Lotus Notes Document *i*DataAgent backs up very specific sets of data depending upon what type of operation you choose. Review the following to understand exactly what will be backed up when you perform a backup job at the indicated level:

- Subclient Backup Jobs
- Backup set Backup Jobs

SUBCLIENT BACKUP JOBS

The jobs that are performed when you select a full, incremental, differential or synthetic full backup depend on the type of subclient that you are backing up:

DEFAULT SUBCLIENTS

When you perform a full backup job for the default subclient, the following takes place:

- The software performs a discover on the partition and executes a full backup of any new databases.
- The software performs a full backup of the databases that already exist within the subclient.

When you perform an incremental backup job for the default subclient, the following takes place:

- The software performs a discover of the partition, and executes a full backup of any new databases.
- The software performs a full backup for any databases that were manually added since the last backup.
- The software performs a backup for any new or changed documents of previously backed up databases of the subclient.

When you perform a differential backup job for the default subclient, the following takes place:

- The software performs a discover of the partition, and executes a full backup of any new databases.
- The software performs a full backup for any databases that were manually added since the last backup.
- The software performs a backup for any new or changed documents of existing databases since the last **full** backup.

When you perform a synthetic full backup job for the default subclient, the following takes place:

- The software creates a full image of the data in the subclient by overlaying existing incremental and/or differential backups onto the latest full backup.
- No new databases are discovered or added to the backup.

USER-DEFINED SUBCLIENTS

When you perform a full backup job for a user-defined subclient, the following takes place:

- The software executes a full backup of its databases.

When you perform an incremental backup job for a user-defined subclient, the following takes place:

- Any new or changed documents of existing databases that were not part of this subclient on the last backup are backed up.
- The software performs a full backup for any databases that were manually added since the last backup.

When you perform a differential backup job for a user-defined subclient, the following takes place:

- Any new or changed documents of the existing databases that were not part of this subclient on the last **full** backup are backed up.
- The software performs a full backup for any databases that were manually added since the last backup.

When you perform a synthetic full backup job for the default subclient, the following takes place:

- The software creates a full image of the data in the subclient by overlaying existing incremental and/or differential backups onto the latest full backup.
- No new databases are discovered or added to the backup.

BACKUP SET BACKUP JOBS

Using a Backup Set backup job is an efficient means to run a specified backup type in one operation on all the subclients of the backup set.

When a full backup job is performed for a backup set, the following actions take place:

- New databases that are not yet configured for Backup are added to the default subclient.
- All databases that are part of this backup set are backed up.

When an incremental backup job is performed for a backup set, the following actions take place:

- New databases that are not yet configured for Backup are added to the default subclient.
- Any database that was not part of this backup set on the last backup will get backed up.

When a differential backup job is performed for a backup set, the following actions take place:

- New databases that are not yet configured for Backup are added to the default subclient.
- Any database that was not part of this backup set on the last full backup will get backed up.

When a synthetic full backup job is performed for a backup set, the following actions take place:

- The software creates a full image of the data in the backup set by overlaying existing incremental and/or differential backups onto the latest full backup.
- No new databases are discovered or added to the backup.

BACKUP CONSIDERATIONS

Before performing any backup procedures for this agent, review the following information:

BEST PRACTICES FOR DOMINO ATTACHMENT AND OBJECT SERVICE (DAOS) BACKUPS

Consider the following when performing backups of Domino servers utilizing DAOS:

- If deferred deletion is configured, the interval time should be set to a period longer than the period between backups. For example, if backups are performed once every two weeks, the deferred deletion interval should be set to 15 days or longer. This setting can be specified in the server document's **Defer deletion of DAOS objects in n days** option.

- The following files are not backed up by the Lotus Notes *i*DataAgents; however, they can be backed up by the File System *i*DataAgent:
  - DAOS.CFG
  - all NLO files

- DAOS links are not preserved during Lotus Notes Document *i*DataAgent restores. To reintroduce these links, the following compact operation must be performed:

```
load compact -C -daos on test.nsf
```

BEST PRACTICES FOR TRANSACTION LOGGING

- **Keep the transaction log on a separate partition or drive.**

- **Use the largest log drive possible** or at least 4 to 5 times larger than your observed daily usage to safeguard against media contention situations.

- **Make sure the speed of logs being archived is faster than that of new logs being created.** Otherwise, the total log size will increase over time.

- **Enable transaction logging in ARCHIVE mode for Notes Database database-level backups.** Although the Lotus Notes Database *i*DataAgent allows you to install, backup and restore when the transaction logging setting for Domino server is ARCHIVE , CIRCULAR, DISABLED or (LINEAR, R6 only), it is highly recommended that you make use of transaction logging in ARCHIVE mode for Notes Database level backups. Transaction logging in ARCHIVE mode provides for the best possibilities for data recovery over ALL other modes.
  Be aware that when not using ARCHIVE mode:
  - The backup data size of incremental backups could be close to full backups, and point-in-time restore is not always possible, and
  - When CIRCULAR (LINEAR in R6) logging is used, transaction log backups are not possible, and point-in-time restore is possible only if logs are not overwritten.

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Backup - Lotus Domino Server - How To

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Start a Synthetic Full Backup

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Start a Backup on New Media

Start a Backup that Marks Media Full on Completion

Start a Backup with a Set Job Priority

Start a Backup with Vault Tracking enabled

Command Line Backups

START A BACKUP

Before You Begin

- Depending on your agent, you can perform the following types of backup operations: **Full**, **Incremental**, **Differential** or **Synthetic Full.**
  - Read Full Backups before performing a Full Backup.
  - Read Incremental Backups before performing a Incremental Backup.
  - Read Differential Backups before performing a Differential Backup.
  - Read Synthetic Full Backups before performing a Synthetic Full Backup.

Required Capability: See Capabilities and Permitted Actions

To start an immediate backup job:

1. From the CommCell Browser, expand **Client Computers** by double-clicking **Client Computers** | *i*DA File System | **defaultBackupSet**. The default and other subclients (if available) are displayed on the right-hand windowpane.

2. To back up the default subclient, right-click the subclient, and click **Backup**.

3. From the Backup Options dialog box, select **Run Immediately**.

4. Select **Full**, **Incremental**, **Differential** or **Synthetic Full** backup.

   In certain circumstances a non-full backup may automatically be converted to a full backup. For a listing of these circumstances, see When a Non-Full Backup is Automatically Converted to a Full Backup.

5. Click **OK**. You can track the progress of the backup job from the **Job Controller** window. If you are using a stand-alone drive, you are prompted to load a specific cartridge into the drive. If you are using a library, you will not receive this prompt. The system loads the tapes automatically. Your cartridges should be appropriately labeled. This will enable you to locate the correct cartridge for a restore job, if necessary.

6. When the backup has completed, the Job Controller displays `Completed`.

   After running a backup, you may want to verify the backup data. You can do this by viewing the Backup History. For more information, see Backup Job History.

   - You can also run backups of the following:
     ○ For a user-defined backup set or instance, right-click the backup set you want to back up, click **All Tasks**, and click **Backup All Subclients**.
     ○ For the Lotus Notes Document *i*DataAgent, to back up a partition, right-click the partition you want to back up, click **All Tasks**, and click **Backup Default Backup Set**.
       For the Lotus Notes Database *i*DataAgent, to back up a partition, right-click the partition you want to back up, click **All Tasks**, and click **Backup All Subclients**.
     ○ For Agents that do not have backup set or instance levels, to back up all subclients, right-click the agent icon, click **All Tasks**, and click **Backup All Subclients**.
       ■ If you chose a level higher than subclient (i.e., backup set, etc.), you are prompted to confirm that you want to back up all the subclients below that level/node. Click **Yes**.
       ■ Starting a data protection operation on a backup set, instance or agent level causes the system to start individual data protection operations for each subclient contained therein. If the subclients are associated with the same storage policy, then their operations will run sequentially unless that storage policy is configured to accommodate multiple data streams.

START A SYNTHETIC FULL BACKUP

Before You Begin

- Read Synthetic Full Backups before performing a Synthetic Full Backup.
- For SharePoint Document, for a versioned document that has multiple versions, all of the backed up versions can be viewed in the **View All Versions** window and restored, until a Synthetic Full backup is run. After running the Synthetic Full backup you can only view and restore the latest backed up version for the document.

Required Capability: See Capabilities and Permitted Actions

To start an immediate backup job:

1. From the CommCell Browser, expand **Client Computers** by double-clicking **Client Computers** | *i*DA File System | **defaultBackupSet**. The default and other subclients (if available) are displayed on the right-hand windowpane.

2. To back up the default subclient, right-click the subclient, and click **Backup**.

3. From the Backup Options dialog box, select **Run Immediately**.

4. Select **Synthetic Full** backup.

   Running an incremental backup immediately before the synthetic full ensures that any new or recently changed data is included in the synthetic full. Running an incremental backup immediately after the synthetic full ensures that any new or recently changed data since the backup that occurred prior to the synthetic full, but was not included in the synthetic full, is backed up by the incremental. Remember, a synthetic full consolidates data; it does not actually back up data from the client computer.

5. Click **OK**. You can track the progress of the backup job from the **Job Controller** window. If you are using a stand-alone drive, you are prompted to load a specific cartridge into the drive. If you are using a library, you will not receive this prompt. The system loads the tapes automatically. Your cartridges should be appropriately labeled. This will enable you to locate the correct cartridge for a restore job, if necessary.

6. When the backup has completed, the **Job Controller** displays `Completed`.

   After running a backup, you may want to verify the backup data. You can do this by viewing the Backup History. For more information, see Backup Job History.

   You can also run synthetic full backups of the following:

- For a user-defined backup set or instance, right-click the backup set you want to back up, click **All Tasks**, and click **Backup All Subclients**.

- For the Lotus Notes Document *i*DataAgent, to back up a partition, right-click the partition you want to back up, click **All Tasks**, and click **Backup Default Backup Set**.
  For the Lotus Notes Database *i*DataAgent, to back up a partition, right-click the partition you want to back up, click **All Tasks**, and click **Backup All Subclients**.

- For Agents that do not have backup set or instance levels, to back up all subclients, right-click the agent icon, click **All Tasks**, and click **Backup All Subclients**.

  - If you chose a level higher than subclient (i.e., backup set, etc.), you are prompted to confirm that you want to back up all the subclients below that level/node. Click **Yes**.

  - Starting a data protection operation on a backup set, instance or agent level causes the system to start individual data protection operations for each subclient contained therein. If the subclients are associated with the same storage policy, then their operations will run sequentially unless that storage policy is configured to accommodate multiple data streams.

SCHEDULE BACKUPS

You can schedule backups to occur with the following procedure. You will be prompted to create a schedule for the data protection operation after selecting your data protection options.

Before You Begin

- **All Agents**
  - Be sure all of the subclients are backed up, or scheduled to be backed up as needed, in order to secure all of the data for the agent. Note this does not apply to archive operations.

Required Capability: See Capabilities and Permitted Actions

▶ To schedule a backup operation:

1. From the CommCell Browser, select one of the following:
   - To back up a subclient, right-click the subclient and click **Backup**.
   - To back up a backup set or instance, right-click the backup set or instance, click **All Tasks**, and click **Backup All Subclients**.
   - To back up the default backup set, right-click the agent or instance node, click **All Tasks**, and click **Backup Default Backup Set**.
   - For the Lotus Notes Document *i*DataAgent, to back up a partition, right-click the partition you want to back up, click **All Tasks**, and click **Backup Default Backup Set**.
     For the Lotus Notes Database *i*DataAgent, to back up a partition, right-click the partition you want to back up, click **All Tasks**, and click **Backup All Subclients**.
   - For Agents that do not have backup set or instance levels, to back up all subclients, right-click the agent icon, click **All Tasks**, and click **Backup All Subclients**.

2. If you chose a level higher than subclient (i.e., backup set, etc.), you are prompted to confirm that you want to back up all the subclients below that level/node. Click **Yes**.

3. From the Backup Options dialog box, select the type of backup that you want to initiate. In certain circumstances a non-full backup may automatically be converted to a full backup. For a listing of these circumstances, see When a Non-Full Backup is Automatically Converted to a Full Backup.

4. Click **Schedule**. Click **OK** to continue.

5. From the Schedule Details (Schedule Details) dialog box, create a schedule for this operation. For step-by-step instructions, see Create a Job Schedule. Click **OK** to continue.

6. Your backup operation will execute according to the specified schedule.

   Starting a data protection operation on a backup set, instance or agent level causes the system to start individual data protection operations for each subclient contained therein. If the subclients are associated with the same storage policy, then their operations will run sequentially unless that storage policy is configured to accommodate multiple data streams.

START A BACKUP IN THE SUSPENDED STATE

Use the following procedure to start a backup in the suspended state.

Before You Begin

- Be sure all of the subclients are backed up, or scheduled to be backed up as needed, in order to secure all of the data for the agent. Note this does not apply to archive operations.

Required Capability: See Capabilities and Permitted Actions

➤ To start an immediate backup job with advanced backup options:

1. From the CommCell Browser, select one of the following:
    *   To backup a subclient, right-click the subclient to want to backup and click **Backup**.
    *   To backup a user-defined backup set or instance, right-click the backup set you want to backup, click **All Tasks**, and click **Backup All Subclients**.
    *   To backup the default backup set, right-click the agent or instance node, click **All Tasks**, and click **Backup Default Backup Set**.
    *   For Lotus Notes *i*DataAgent, to backup a partition, right-click the partition you want to backup, click **All Tasks**, and click **Backup Default Backup Set**.
    *   For Agents that do not have backup set or instance levels, to backup all subclients, right-click the agent icon, click **All Tasks**, and click **Backup All Subclients**.

2. If you chose a level higher than subclient (i.e., backup set, etc.), you are prompted to confirm that you want to back up all the subclients below that level/node. Click **Yes**.

3. From the Backup Options dialog box, select **Run Immediately**.

4. Select the type of backup that you want to initiate.
    In certain circumstances a non-full backup may automatically be converted to a full backup. For a listing of these circumstances, see When a Non-Full Backup is Automatically Converted to a Full Backup.

5. Click the **Advanced** button to open the **Advanced Backup Options** dialog box.

6. Click on the Advanced Backup Options (Startup) tab, and select **Startup in suspended state** and click **OK**.

7. From the **Backup Options** dialog box, click **OK**. You can track the progress of the backup job from the Job Controller window.

8. If you are using a stand-alone drive, you are prompted to load a specific cartridge into the drive. If you are using a library, you will not receive this prompt. The system loads the tapes automatically.

    > Your cartridges should be appropriately labeled. This will enable you to locate the correct cartridge for a restore job, if necessary.

9. When the backup has completed, Job Controller displays `Completed`.

    > Starting a data protection operation on a backup set, instance or agent level causes the system to start individual data protection operations for each subclient contained therein. If the subclients are associated with the same storage policy, then their operations will run sequentially unless that storage policy is configured to accommodate multiple data streams.

START A BACKUP ON NEW MEDIA

Use the following procedure to start a backup on new media.

Before You Begin

*   Be sure all of the subclients are backed up, or scheduled to be backed up as needed, in order to secure all of the data for the agent. Note this does not apply to archive operations.

Required Capability: See Capabilities and Permitted Actions

➤ To start an immediate backup job with advanced backup options:

1. From the CommCell Browser, select one of the following:
    *   To backup a subclient, right-click the subclient to want to backup and click **Backup**.
    *   To backup a user-defined backup set or instance, right-click the backup set you want to backup, click **All Tasks**, and click **Backup All Subclients**.
    *   To backup the default backup set, right-click the agent or instance node, click **All Tasks**, and click **Backup Default Backup Set**.
    *   For Lotus Notes *i*DataAgent, to backup a partition, right-click the partition you want to backup, click **All Tasks**, and click **Backup Default Backup Set**.
    *   For Agents that do not have backup set or instance levels, to backup all subclients, right-click the agent icon, click **All Tasks**, and click **Backup All Subclients**.

2. If you chose a level higher than subclient (i.e., backup set, etc.), you are prompted to confirm that you want to back up all the subclients below that level/node. Click **Yes**.

3. From the Backup Options dialog box, select **Run Immediately**.

4. Select the type of backup that you want to initiate.
    In certain circumstances a non-full backup may automatically be converted to a full backup. For a listing of these circumstances, see When a Non-Full Backup is Automatically Converted to a Full Backup.

5. Click the **Advanced** button to open the **Advanced Backup Options** dialog box.

6. Click on the Advanced Backup Options (Media) tab, and select **Start new media** and click **OK**.

If you would like jobs with other Job IDs to use this new media, also select the **Allow other schedule to use media set** option.

7. From the **Backup Options** dialog box, click **OK**. You can track the progress of the backup job from the Job Controller window.

8. If you are using a stand-alone drive, you are prompted to load a specific cartridge into the drive. If you are using a library, you will not receive this prompt. The system loads the tapes automatically.

> Your cartridges should be appropriately labeled. This will enable you to locate the correct cartridge for a restore job, if necessary.

9. When the backup has completed, Job Controller displays `Completed`.

> Starting a data protection operation on a backup set, instance or agent level causes the system to start individual data protection operations for each subclient contained therein. If the subclients are associated with the same storage policy, then their operations will run sequentially unless that storage policy is configured to accommodate multiple data streams.

START A BACKUP THAT MARKS MEDIA FULL ON COMPLETION

Use the following procedure to start a backup that marks media full on completion.

Before You Begin

● Be sure all of the subclients are backed up, or scheduled to be backed up as needed, in order to secure all of the data for the agent. Note this does not apply to archive operations.

Required Capability: See Capabilities and Permitted Actions

▶ To start an immediate backup job with advanced backup options:

1. From the CommCell Browser, select one of the following:
   ○ To backup a subclient, right-click the subclient to want to backup and click **Backup**.
   ○ To backup a user-defined backup set or instance, right-click the backup set you want to backup, click **All Tasks**, and click **Backup All Subclients**.
   ○ To backup the default backup set, right-click the agent or instance node, click **All Tasks**, and click **Backup Default Backup Set**.
   ○ For Lotus Notes *i*DataAgent, to backup a partition, right-click the partition you want to backup, click **All Tasks**, and click **Backup Default Backup Set**.
   ○ For Agents that do not have backup set or instance levels, to backup all subclients, right-click the agent icon, click **All Tasks**, and click **Backup All Subclients**.

2. If you chose a level higher than subclient (i.e., backup set, etc.), you are prompted to confirm that you want to back up all the subclients below that level/node. Click **Yes**.

3. From the Backup Options dialog box, select **Run Immediately**.

4. Select the type of backup that you want to initiate.
   In certain circumstances a non-full backup may automatically be converted to a full backup. For a listing of these circumstances, see When a Non-Full Backup is Automatically Converted to a Full Backup.

5. Click the **Advanced** button to open the **Advanced Backup Options** dialog box.

6. Click on the Advanced Backup Options (Media) tab, and select **Mark media full after successful operation** and click **OK**.

7. From the **Backup Options** dialog box, click **OK**. You can track the progress of the backup job from the Job Controller window.

8. If you are using a stand-alone drive, you are prompted to load a specific cartridge into the drive. If you are using a library, you will not receive this prompt. The system loads the tapes automatically.

> Your cartridges should be appropriately labeled. This will enable you to locate the correct cartridge for a restore job, if necessary.

9. When the backup has completed, Job Controller displays `Completed`.

> Starting a data protection operation on a backup set, instance or agent level causes the system to start individual data protection operations for each subclient contained therein. If the subclients are associated with the same storage policy, then their operations will run sequentially unless that storage policy is configured to accommodate multiple data streams.

START A BACKUP WITH A SET JOB PRIORITY

This option allows you to manually set a job priority. This is useful if you have jobs that are very important and must complete, and/or jobs that can be moved to a lower priority. For more information, see Job Priorities and Priority Precedence.

Before You Begin

- Be sure all of the subclients are backed up, or scheduled to be backed up as needed, in order to secure all of the data for the agent. Note this does not apply to archive operations.

Required Capability: See Capabilities and Permitted Actions

To start an immediate backup job with advanced backup options:

1. From the CommCell Browser, select one of the following:
   - To backup a subclient, right-click the subclient to want to backup and click **Backup**.
   - To backup a user-defined backup set or instance, right-click the backup set you want to backup, click **All Tasks**, and click **Backup All Subclients**.
   - To backup the default backup set, right-click the agent or instance node, click **All Tasks**, and click **Backup Default Backup Set**.
   - For Lotus Notes *i*DataAgent, to backup a partition, right-click the partition you want to backup, click **All Tasks**, and click **Backup Default Backup Set**.
   - For Agents that do not have backup set or instance levels, to backup all subclients, right-click the agent icon, click **All Tasks**, and click **Backup All Subclients**.

2. If you chose a level higher than subclient (i.e., backup set, etc.), you are prompted to confirm that you want to back up all the subclients below that level/node. Click **Yes**.

3. From the Backup Options dialog box, select **Run Immediately**.

4. Select the type of backup that you want to initiate.
   In certain circumstances a non-full backup may automatically be converted to a full backup. For a listing of these circumstances, see When a Non-Full Backup is Automatically Converted to a Full Backup.

5. Click the **Advanced** button to open the **Advanced Backup Options** dialog box.

6. Click on the Advanced Backup Options (Startup) tab, and select **Change Priority** and then enter a value. Click **OK** to continue.

7. From the **Backup Options** dialog box, click **OK**. You can track the progress of the backup job from the Job Controller window.

8. If you are using a stand-alone drive, you are prompted to load a specific cartridge into the drive. If you are using a library, you will not receive this prompt. The system loads the tapes automatically.

> Your cartridges should be appropriately labeled. This will enable you to locate the correct cartridge for a restore job, if necessary.

9. When the backup has completed, Job Controller displays `Completed`.

> Starting a data protection operation on a backup set, instance or agent level causes the system to start individual data protection operations for each subclient contained therein. If the subclients are associated with the same storage policy, then their operations will run sequentially unless that storage policy is configured to accommodate multiple data streams.

START A BACKUP WITH VAULT TRACKING ENABLED

Use the following procedure to start a backup with Vault Tracking enabled.

For additional information, see the following:

- VaultTracker
- VaultTracker Enterprise

Before You Begin

- Be sure all of the subclients are backed up, or scheduled to be backed up as needed, in order to secure all of the data for the agent.

Required Capability: See Capabilities and Permitted Actions

To start an immediate backup job with advanced backup options:

1. select one of the following:
   - To backup a subclient, right-click the subclient to want to backup and click **Backup**.
   - To backup a user-defined backup set or instance, right-click the backup set you want to backup, click **All Tasks**, and click **Backup All Subclients**.
   - To backup the default backup set, right-click the agent or instance node, click **All Tasks**, and click **Backup Default Backup Set**.
   - For Lotus Notes *i*DataAgent, to backup a partition, right-click the partition you want to backup, click **All Tasks**, and click **Backup Default Backup Set**.
   - For Agents that do not have backup set or instance levels, to backup all subclients, right-click the agent icon, click **All Tasks**, and click **Backup All Subclients**.

2. If you chose a level higher than subclient (i.e., backup set, etc.), you are prompted to confirm that you want to back up all the subclients below that

level/node. Click **Yes**.

3. From the Backup Options dialog box, select **Run Immediately**.

4. Select the type of backup that you want to initiate.
   In certain circumstances a non-full backup may automatically be converted to a full backup. For a listing of these circumstances, see When a Non-Full Backup is Automatically Converted to a Full Backup.

5. Click the **Advanced** button to open the **Advanced Backup Options** dialog box.

6. Click on the **Vault Tracking** tab, and select the vault tracking options you want to use and click **OK**.

7. From the **Backup Options** dialog box, click **OK**. You can track the progress of the backup job from the Job Controller window.

8. If you are using a stand-alone drive, you are prompted to load a specific cartridge into the drive. If you are using a library, you will not receive this prompt. The system loads the tapes automatically.

> Your cartridges should be appropriately labeled. This will enable you to locate the correct cartridge for a restore job, if necessary.

9. When the backup has completed, Job Controller displays `Completed`.

COMMAND LINE BACKUPS

You can perform backups of Lotus Notes Database from the command line interface.

Command line backups enable you to perform backup operation on multiple clients simultaneously. In order to run the backups from command line, you need an input xml file which contains the parameters for configuring the backup options. This input xml file can be obtained from one of the following ways:

● Download the input xml file template and save it on the computer from where the backup will be performed.

● Generate the input xml file from the CommCell Console and save it on the computer from where the backup will be performed.

LOG ON TO THE COMMSERVE

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

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

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

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

  `qlogin -cs server1 -u user1`

PERFORM THE BACKUP

1. Download the backup_template.xml file and save it on the computer from where the command will be executed.

2. Execute the saved .xml script using qoperation execute command.

   `qoperation execute -af backup_template.xml -backupLevel  FULL -subclientName etc1 -clientName hop`

3. Verify the status of the job using the following command:

   `qlist job -j JOBID`

4. Once the job completes, logout from the CommServe using the qlogout command.

   `qlogout [-cs commserver] [-all] [-tf tokenfile] [-tk token] [-h]`

EXAMPLES

Performing a Full Backup	qoperation execute -af backup_template.xml -backupLevel FULL -subclientName etc1 -clientName hop
Performing an Incremental Backup	qoperation execute -af backup_template.xml -backupLevel INCREMENTAL -subclientName etc1 -clientName hop

GENERATE THE COMMAND LINE SCRIPT FROM THE COMMCELL CONSOLE

In addition to the parameters provided in the template xml file, if you want to include additional options for the backup, you can do so by selecting the required options from the CommCell Console and generate the command line xml script for the backup.

Follow the steps given below to generate a script which you can use to perform a backup from the command line interface:

1. From the CommCell Console, navigate to **<Client>** | **Lotus Notes Database** **iDataAgent** | **defaultBackupSet**.

2. Right click the default subclient and click **Backup**.

3. Select the required backup options which you want to execute using the script.

4. Click **Save as Script**.
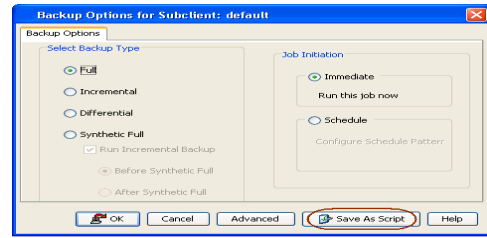
5. Enter the location where you want to save the script or click **Browse** and navigate to the location.

   The script will be saved as a .xml file and a .bat file is created.

   If a file with the same name already exists in the specified location, the .xml file will be created with a timestamp. However, the .bat file will overwrite the existing file.

6. Enter the username and password for the user account which you want to use to perform the backup.

   By default, the user account which you have used to login to CommCell console is used for performing the backup. However, if the user account does not have access to any application or database, click **Use a different account**.

7. Click **OK**.
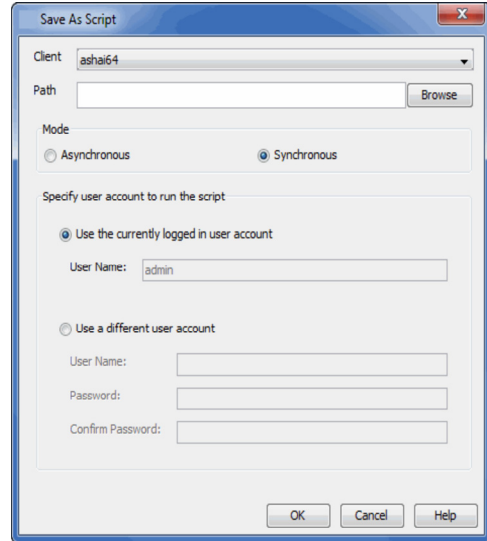
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Restore Data - Lotus Notes/Domino Server

Topics | How To | Full System Restore | Related Topics

Overview

Restore Considerations for this Agent

Restore Destinations

- In-Place Restore
- Out-of-Place Restore
- Restore to Network Drive/NFS-Mounted File System
- Cross-Platform/Application Restores

OVERVIEW

The following page describes the agent-specific restore options. Additional restore options are accessible from the Related Topics menu.

The Lotus Domino Server *i*DataAgents supports the following restore operations:

- **Lotus Notes Database *i*DataAgent** supports both the database and the database plus transaction log restore operations. In addition the following restore options are also provided:
  - Option to unconditionally overwrite the database
  - Options to automatically change the database instance ID (DBIID), or change database instance ID if necessary
  - Option to restore one or more specific versions of a database (This is accomplished by appending the database name with its version number, which can be easily selected during Browse and Restore operations.)
  - Change database replica ID
  - Do Not Replay Transaction logs
- **Lotus Notes Document *i*DataAgent** supports the following restore options:
  - Option to Overwrite data documents
  - Option to Overwrite design documents (For AIX and Solaris in-place restores, this option requires the data document to also be selected.)
  - Option to Overwrite database links
  - Option to Database links only

All restores can be performed both in-place and out-of-place. (See Restore Destinations below for comprehensive information.)

For the Lotus Domino Server *i*DataAgents restore operations can be performed from the client, *i*DataAgent, and partition levels in the CommCell Browser.

When there is a problem with the Lotus Domino server or the operating system of the client computer full system restores may be required. See Full System Restores for Lotus Domino Server *i*DataAgents for more information.

RESTORE CONSIDERATIONS FOR THIS AGENT

Before performing any restore procedures for this agent, review the following information.

Both *i*DataAgents:

- Review the general restore requirements described in What You Need to Know Before Performing a Restore.
- Database objects whose names contain backslash characters (\ ) are displayed in the Browse window with the backslash changed to a space character. This change is only for the sake of the browse and has no effect on the way data is actually backed up or restored.
- If the Domino Server ID has a password associated with it, the Domino Server ID must be running during the restore operation. For more information on the subject, see Domino Server ID.
- When restoring documents to a database that is outside the data path, and then attempting to open the database, you may receive a warning message indicating that the database is being used by another user, and to share the database, all users must use a Domino server instead of a File server.

  To work around this, do any of the following:

  - Wait approximately 30 minutes for the server to clear itself.
  - Run `dbcache flush` on the Domino Server Console to flush the contents of the Domino database cache.
  - Shut down and restart the Domino server.

Notes Document *i*DataAgent:

- In a Domino Cluster environment, data restored on one server will not propagate to other servers within the Domino Cluster. Documents will be restored with the original sequence ID, which may be lower than the existing document within the Domino Cluster. In such cases, the restored Document will be overwritten by the existing Document during replication.

  To avoid these conflicts, perform any restore operations using the Out-of-Place restore method. This will ensure all restored Documents are given new sequence IDs and thus will not be overwritten during replication.

- You can restore the contents of the mailbox when mailbox has older name. Restoring data from both old data and new data is allowed to the new .nsf mail file.

- DAOS links are not preserved during Lotus Notes Document *i*DataAgent restores. To reintroduce these links, the following compact operation must be performed:

  ```
  load compact -C -daos on test.nsf
  ```

Notes Database *i*DataAgent:

- If the **Change Database Replica ID** option is selected in the **Restore Options** dialog box, the replication ID will be changed during the restore operation. This may cause the database to not be replicated during replication operations with other Domino servers. Thus, it is recommended that this option not be selected if you plan to replicate this database after the restore operation is complete.

- If the first partition of the Domino server on the destination computer is running and you want to restore databases to their original locations, only databases that are not open (i.e., non-system databases and those not opened by a user) can be restored. If the server is shut down, all databases can be restored to their original locations.

- When there is a problem with the Lotus Domino server or the operating system of the client computer **full system restores** may be required.

RESTORE DESTINATIONS

By default, the Lotus Domino Server *i*DataAgents restore 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.

- Even after the Notes Database *i*DataAgent is removed from a given client, you can browse the client's backup data and restore it to another computer (provided that the *i*DataAgent icon has not been deleted from the CommCell Browser and the backup data has not expired).

The following sections enumerates the types of restore destinations that are supported by the Lotus Domino Server *i*DataAgents. See Restore/Recover/Retrieve Destinations - Support for a list of Agents supporting each restore destination type.

IN-PLACE RESTORE

- Same path/destination

OUT-OF-PLACE RESTORE

Keep in mind that out-of-place restore operations are also subject to the conditions described in Cross-Platform / Application Restores.

- Same path/destination
- Different path/destination

RESTORE TO NETWORK DRIVE/NFS-MOUNTED FILE SYSTEM

Data secured by Lotus Domino Server *i*DataAgents can be restored to a UNC path (Windows) or an NFS-Mounted File System (Unix). (See Restore to Network Drive/NFS-Mounted File System for comprehensive information.) Keep in mind that this operation does not apply to Lotus Domino clients on AIX platforms.

CROSS-PLATFORM / APPLICATION RESTORES

Review the following information before performing a cross-platform or cross-application restores from the Lotus Domino Server *i*DataAgents:

- Support for restoring/recovering/retrieving data from one application version to another generally follows the same compatibility support provided by the associated third-party application vendor, unless otherwise noted.

- The restore destination must be on another Lotus Domino Server within the same CommCell.

- On Windows, cross-platform restores between the different versions of an operating system is supported.

- On Windows, cross-application restores to the same and higher Domino Server version is supported.
  On AIX, cross-application restores to the same Domino Server version is supported.

See Also:

- Same Operating System - Different Version for general information.

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Perform Cross-Machine Restore of Databases

Command Line Restores

PERFORM CROSS-MACHINE RESTORE OF DATABASES

The Lotus Notes Database *i*DataAgent restores database backups as follows:

- If the source and destination computer have a partition with the same data path then the data is restored to the common data path.
- If all partitions on the destination computer are different than the source computer, then the data will be restored to the first partition.

No transaction logs are restored, and no transactions are replayed. Follow the procedure for this mode if:

- You don't want to shut down the destination server during the restore operation.
- The last database backup is more recent than the last transaction log backup. In this case, there is no need to restore the transaction log.

Required Capability: See Capabilities and Permitted Actions

▶ To perform a database-only cross-machine restore:

Follow the procedure described in Browse and Restore. Make sure to:

1. Select the appropriate **Destination Computer** from the **Restore Options (General)** dialog box.
2. Determine the restore path to the destination computer using **Restore to Same Paths**.

   When **Restore to Same Paths** is selected:

   - If the source computer and the destination computer have a partition with the same data path, the data is restored to the common data path.
   - If all partitions on the destination computer are different than the source computer, the data will be restored to the first partition.

   When **Restore to Same Paths** is de-selected:

   - You can select any **Destination Folder** on the selected destination computer.

NOTES

- For out-of-place restores, any database can be restored to a new location while the server is running.
- Because this job does not restore log files, some restore options are not made available (e.g., **Change database instance id (DBIID)**, **Change database replica id**).

COMMAND LINE RESTORES

You can restore Lotus Notes Database from the command line interface.

Command line restores enable you to perform restore operations on multiple clients at the same time. It also allows you to reuse the command line scripts for additional restores.

When performing command line restores, note that backups taken from the CommCell Console can be restored using Command Line and vice versa. However, backups taken from a previous version of the CommCell Console can be restored only from the Command Line.

In order to run the restores from command line, you need an input xml file which contains the parameters for configuring the restore options. This input xml file can be obtained using one of the following ways:

- Download the input xml file template and save it on the computer from where the restore will be performed.
- Generate the input xml file from the CommCell Console and save it on the computer from where the restore will be performed.

LOG ON TO THE COMMSERVE

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

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

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

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

```
qlogin -cs server1 -u user1
```

PERFORM THE RESTORE

1. Download the restore_template.xml file and save it on the computer from where the command will be executed.

2. Execute the saved xml script using qoperation execute command.

```
qoperation execute -af restore_template.xml -clientName hop
```

3. Verify the status of the job using the following command:

```
qlist job -j JOBID
```

4. Once the job completes, logout from the CommServe using the qlogout command.

```
qlogout [-cs commserver] [-all] [-tf tokenfile] [-tk token] [-h]
```

GENERATE THE COMMAND LINE SCRIPT FROM THE COMMCELL CONSOLE

In addition to the parameters provided in the template xml file, if you want to include additional options for the restore, you can do so by selecting the required options from the CommCell Console and generate the command line xml script for the restore operation.

Follow the steps given below to generate a script which you can use to perform a restore from the command line interface:

1. From the CommCell Console, navigate to **<Client>** | **Lotus Notes Database**
   iDataAgent | **defaultBackupSet**.

2. Right-click the **<Subclient>** in the right pane and then click **Browse Backup Data**.

3. Click **OK**.

4. In the right pane of the Browse window, select the data that you want to restore and click **Recover All Selected**.

5. Select the required restore options which you want to execute using the script.

6. Click **Save as Script**.
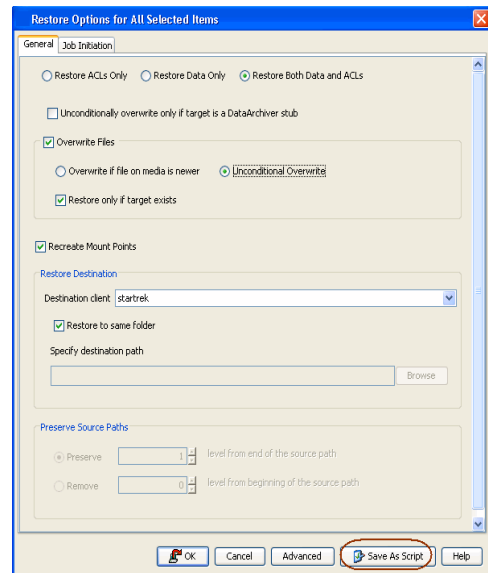
7. Enter the location where you want to save the script or click **Browse** and navigate to the location.

   The script will be saved as a .xml file and a .bat file is created.

   If a file with the same name already exists in the specified location, the .xml file will be created with a timestamp. However, the .bat file will overwrite the existing file.

8. Enter the username and password for the user account which you want to use to perform the restore.

   By default, the user account which you have used to login to CommCell console is used for performing the restore. However, if the user account does not have access to application and database, click **Use a different account**.

9. Click **OK**.
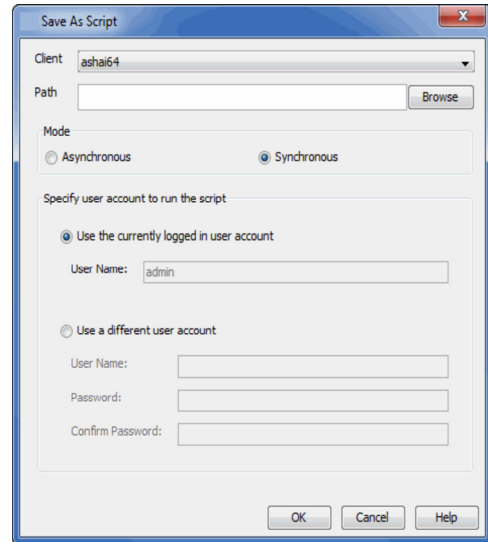
Browse and Restore

Topics | How To | Related Topics

OVERVIEW

There are two functions that help you retrieve backed up data from the backup media: browse and restore. In the CommCell Browser, the browse and variously-named restore commands appear, depending on agent, in the right-click menus at the agent, instance and/or backup set levels.

Browse operations allow you to view data that has been backed up by the agent on the client computer and select all or some of that data. Depending on the agent, there are several options available to customize your browse. See Browse Data for comprehensive information on Browse operations.

Restore operations allow you to retrieve data from backup media and restore it to the desired location. Restoring without browsing is most appropriate when you want to restore the latest backup job for an agent, instance or backup set and want to retain the current file structure. See Basic Restore for more information on restoring without using browse.

Browse and Restore

The Browse and Restore procedure is a sequential procedure that combines the two procedures. When you select a **Browse** command from the CommCell Browser, you can define and run one of many potential browse sequences. At the end of the browse, when you are looking at the resulting information presented in the Browse window, you can continue with a restore procedure simply by selecting data and clicking the **Recover All Data** button. As with the browse, depending on the agent, there are several options available to customize your restore.

Perform a **browse and restore** operation when you want to:

- restore from an earlier backup
- restore only select files/objects
- restore deleted files/objects
- when you don't want or don't need to retain the current file structure
- utilize browse options

Browse and Restore - How To

Topics | How To | Related Topics

BROWSE AND RESTORE

Before You Begin:

- Review the general and agent-specific restore requirements accessed from Restore Backup Data prior to performing any restore operation.

Required Capability: See Capabilities and Permitted Actions

To browse and restore data:

1. From the CommCell Browser, right-click the agent, instance, backup set, or Legal hold set (for Legal Hold data) that contains the data you want to restore, click **All Tasks** and then click the available **Browse** command (command names vary by agent).

2. Run a browse operation. See Browse Data for a list of customized browse operations and their step-by-step instructions. If you accept all defaults, you will be browsing the latest backups for the selected data.

3. From the Browse window, Select Objects From the Browse Window for Restore.

4. From the agent's **Restore Options** and **Advanced Restore Options** dialog boxes, select the restore options that you want to use. For agents with multiple tabs, do not click **OK** until you have used all of the desired tabs. When you accept all the default settings, you will be restoring the selected data to its original location. See Restore Backup Data for access to complete information on the agent-specific Restore Destination options and procedures available.

5. When restoring encrypted data, refer to Data Encryption for comprehensive feature information and procedures for using the Encryption tab of the Advanced Restore Options dialog box.

6. After completing your selections, you can either start an immediate restore or schedule the restore.

   ○ If you want to schedule the job, click the Job Initiation tab from the Restore Options dialog box, click **Schedule**, schedule the job, and then click **OK**.

   ○ If you want to run the job now, accept or click **Run Immediately** in the same tab and then click **OK**.

   While the job is running, you can right-click the job in the Job Controller and select **Detail** to view information on the job. After the data has been restored, you will see a job completion message in the Job Controller and Event Viewer.

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Overview

Configurable Properties

OVERVIEW

During installation of the Lotus Domino Server *i*DataAgents, the system detects and configures all Lotus Domino Server partitions. If you have multiple partitions, you may add any of the detected partitions to the system during the install or add them manually later.

When adding or installing partitions, the system establishes a default configuration which for Notes Database consists of a default subclient and a transaction logs subclient for the partition, and for Notes Document consists of a default subclient for the partition. In most cases, the default configuration is appropriate and should not require any changes. However, if desired, you can change this configuration to better suit your needs. For more information about these subclients, see Subclients - Lotus Notes.

See Instances for an overview of partitions. Given below is a list of what you need to provide before creating a Lotus Domino Server partition.

- A storage policy.
- If desired, a backup schedule. The partition can be linked to either a pre-defined, generic schedule policy, or a backup schedule can be defined.

Once a partition is added to your system configuration, you can back up Lotus Notes databases on that partition using the Lotus Notes Database *i*DataAgent and Lotus Notes documents on that partition using the Notes Document *i*DataAgent.

Notes Document *i*DataAgent users will want to research creating Restore View Names.

CONFIGURABLE PROPERTIES

Once installed, the agent is configured and is therefore able to manage the data or volumes on the client computer. However, you can change certain aspects of the instance configuration to manage the data in the manner that best suits your needs.

You can view or change the instance configuration from the Instance Properties dialog box. The following information can be configured.

ASSIGN RESTORE VIEW NAMES TO NEWLY-DISCOVERED DATABASES (LOTUS NOTES DOCUMENT *I*DATAAGENT ONLY)

A Restore View is the Lotus Notes view through which the software system displays a database's data documents when you browse database contents for restore purposes.

Documents not included in the Restore View are listed by NoteID only. Consequently, for each database that is secured by the system, it is important that you designate (prior to back up) a restore view that will display most or all of the Notes in the database.

Use the Partition Properties Restore View Names tab to enter a list of text patterns that the system can use in assigning a Restore View to newly discovered databases. The information collected from this view is stored and displayed as text only. You can enter multiple text patterns on which to search in this tab. If no views contain the first text pattern entered, the system searches for the second pattern, and so on. Entering multiple text patterns in the Partition Restore View Names list may slow the database discovery process. Note that the system browse may not sort all fields in the same manner as the actual Lotus Notes view.

The list of restore view names is used as follows: When the system discovers a database, the system checks the views to see if any view name contains the text pattern. This search is case insensitive. The database's view name does not have to be exactly the same as the entry in the Restore View Names list; it merely has to contain the text pattern.

When the database has multiple views whose names contain the pattern that the system is searching for, the first view encountered is used as the Restore view. For example, if you enter `All` as the first Partition Restore View Name and the database includes views called `All Documents by Date`, `All Documents by User`, and `All Sales Documents`, the first one encountered by the system during the search will be used as the Restore View for the database. See Add a Restore View Name for step-by-step instructions.

After adding Restore View Names at the partition level, you can assign a specific Restore View Name to documents at the subclient level using the Subclient Properties Databases tab. This will be the Lotus Notes view through which you browse documents from a given database for restore purposes. Documents not included in the restore view can be restored, but they must either be selected on the basis of their Notes document IDs or restored via a complete database restore. If you change a restore view name after running a backup, it is recommended you run a full backup for that subclient.

USER ACCOUNTS

One or more of the agents of this type use one or more accounts that are configured from a non-Properties dialog

box. See the appropriate section for your agent(s) in User Accounts and Passwords for more information.

USER SECURITY

You can perform the following functions:

- Identify the user groups to which this CommCell object is associated.
- Associate this object with a user group.
- Disassociate this object from a user group.

For more information, see User Administration and Security.

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Create an Instance

Modify an Instance

Delete an Instance

Change the User Account

Add a Lotus Domino Server Partition on Windows

Add a Lotus Notes Database Partition on AIX

Add a Restore View Name

Assign Databases to a Subclient

Change Account for Executing Pre/Post Commands for Data Protection (Lotus Notes Database)

Change Account for Restoring to Mapped/Shared Network Drives and Restricted Directories

Discover and Assign New Databases

CREATE/MODIFY AN INSTANCE

Before you Begin

- For the Oracle, Oracle RAC or SAP for Oracle *i*DataAgent, if you have custom SQL settings, you must turn off these settings to ensure that the instance browse works correctly and that the instance status is correctly fetched. To do this, create and edit the `cvlogin.sql` file with the appropriate contents at `ORACLE_HOME/sqlplus/admin`. For example, run the following command:

  `edit file $ORACLE_HOME/sqlplus/admin/cvlogin.sql`

  Then include the following contents in the `cvlogin.sql` file:

  `set heading on;`

  `set pause off;`

Required Capability: See Capabilities and Required Actions

▶ To create/modify an Instance

1. To create an instance, from the CommCell Browser, locate the correct client computer node, and right-click the agent node for which you want the new instance created, click **All Tasks**, and then click **New Instance** from the shortcut menu.

   To modify an existing instance, from the CommCell Browser, right-click the instance you want to modify, and then click **Properties** from the shortcut menu.

2. From the General tab, enter the name (up to 32 characters) for the instance. In addition, provide the required access information for this instance.

   For various *i*DataAgents, you can add/modify an application/database user account. See the appropriate section as follows in **User Accounts and Passwords** for more information:

   ○ DB2 *i*DataAgent

      ○ Documentum *i*DataAgent

      ○ Informix *i*DataAgent

      ○ Microsoft SQL Server *i*DataAgent

      ○ Oracle *i*DataAgents (Oracle, Oracle RAC, SAP for Oracle)

      ○ Sybase *i*DataAgent

      ○ MySQL *i*DataAgent

      ○ PostGreSQL *i*DataAgent

3. If your agent uses the Details tab, enter the required database connect string and other optional parameters.

      ○ For the Oracle, Oracle RAC and SAP for Oracle *i*DataAgents, see the Oracle *i*DataAgents section in **User Accounts and Passwords** for more information.

4. From the Storage Device tab, select storage policy copies to be used for, as applicable, data backups, command line data backups and log backups. Within these tabs you can click Data Paths to display the details of the data paths associated with the primary storage policy copy of the selected storage policy.

5. If your agent uses the Software Compression tab, and you want to enable software compression for the selected backups, click the tab and select the option appropriate to your environment.

6. If you want to enable data encryption, from the Encryption tab select encryption settings for third-party or RMAN command line backups.

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

8. A message advises you to schedule backups for your new instance. It is recommended you elect to set a schedule now. You can also associate this instance with an All Agent Types schedule policy (which is automatically created by the system, or can be a user defined Data Protection schedule policy). If you have already associated a schedule policy at a previous level (Agent, Client, or Client Computer Group) the schedules defined in the Schedule Policy will be automatically applied to the new instance. See Schedule Policy for more information.

      ○ For agents that offer an **OK** option, click **OK** to acknowledge the message. This procedure is now complete.

      ○ For agents that offer **Yes** and **No** options to this message, click **No** if you don't want to create a backup schedule at this time, and this procedure is complete. If you click **Yes**, a dialog box prompts you to back up all subclients of this instance.

9. Click **Yes**. The **Backup Options** dialog box appears, which allows you to create the necessary schedules.

10. From the Backup Options dialog box, select the type of backup that you want to schedule.

11. If you want to access **Advanced Backup Options**, click **Advanced**.

12. After selecting the backup type and any advanced options, click **OK**. The **Schedule Details** dialog box appears.

13. From the Schedule Details tab of the **Schedule Details** dialog box, select the scheduling options that you want to apply, then click **OK**.

NOTES

- A default subclient is created for the Oracle instance, which includes all the objects in the instance. When you are done with this procedure, open the `Subclient Properties` dialog box for the default subclient and verify that the `Resync Catalog` option available in the `Backup Arguments` tab is selected. This would help you to successfully perform a full system restore in the event of destroyed or damaged client.

- After creating the instance for DB2, you can now create one or more Backup Sets for this instance.

MODIFY AN INSTANCE

Required Capability: See Capabilities and Required Actions

▶ To modify an Instance

1. From the CommCell Browser, right-click the instance you want to modify, and then click **Properties** from the shortcut menu.

2. Click the General tab of the Instance properties box to change the required access information for this instance.

3. If your agent uses the Accounts tab, use this tab to specify the Windows account used by the system. For MySQL iDataAgent, use this tab to specify the MySQL Server user account.

4. If your agent uses the Restore View Names tab, use this tab to enter or modify a list of text patterns for the view through which the system displays a database's data documents when you browse.

5. If your agent has the Security tab, you can view CommCell resource associations to enable or disable user groups that can perform system operations on associated resources.

6. For an Oracle instance, click the Details tab to change the database connect string and other optional parameters.

7. For an Oracle RAC instance, go to the next step. Otherwise, go to Step 12.

8. Click the Details tab, and type or select values for the fields at the bottom of the dialog box as appropriate. For the DB2 DPF instance, to associate a database partition with a different client, click the affected partition in the `DB2 Partition Clients` field, click **Modify**, and click from the list in the Edit

Directory Share Name Pair dialog box the name of the new client for the partition. Then click **OK**.

9.   Click the Oracle instance (Client/Instance/Status) that you want to modify. Then click **Modify**.

10.   In the Update Instance dialog box, update the desired field values by typing or browsing as appropriate. Then click **OK**.

11.   Repeat the previous two steps for each Oracle instance that you want to modify.

12.   From the Storage Device tab(s), select storage policy copies to be used for, as applicable, data backups, command line data backups and log backups. Within these tabs you can click Data Paths to display the details of the data paths associated with the primary storage policy copy of the selected storage policy.

   For the MySQL *i*DataAgent, select the storage policy for the log backups from the Log Backups tab.

13.   If your agent uses the Software Compression tab, and you want to enable software compression for the selected backups, click the tab and select the appropriate option.

14.   If you want to enable data encryption, from the Encryption tab select encryption settings for third-party or RMAN command line backups.

15.   Click **OK** to save the configuration changes.

16.   A message advises you to schedule backups for your new instance. It is recommended you elect to set a schedule now. If you click **No**, this procedure is now complete. If you click **Yes**, a dialog box prompts you to back up all subclients of this instance.

17.   Click **Yes**. The **Backup Options** dialog box appears, which allows you to create the necessary schedules.

18.   From the Backup Options dialog box, select the type of backup that you want to schedule.

19.   If you want to access **Advanced Backup Options**, click **Advanced**.

20.   After selecting the backup type and any advanced options, click **OK**. The **Schedule Details** dialog box appears.

21.   From the Schedule Details tab of the **Schedule Details** dialog box, select the scheduling options that you want to apply, then click **OK**.

DELETE AN INSTANCE

Before You Begin

● For most agents except Oracle and SQL Server, you cannot delete an instance if there is only one instance present for an agent. To delete the final instance for most agents except the ones identified, you must first remove the agent software from the client computer. For Oracle RAC, which does not involve agent software, you can delete the instance under the RAC pseudo-client.

● When you delete a specific instance positioned in the level below the corresponding agent or pseudo-client in the CommCell Console, the following actions occur:

   ○ The corresponding backup data for that instance becomes immediately unavailable, thus making it inaccessible for restore purposes. In effect, the backup data is deleted.

   ○ All child levels contained within the level are deleted in the CommCell Browser.

   ○ All job schedules and job histories that pertain to any of the levels within the deleted instance are deleted.

● If you delete an Oracle *i*DataAgent instance included within an Oracle RAC instance (node), the backup data is not deleted, and it is available for restore by another eligible client.

● 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.

Required Capability: See Capabilities and Required Actions

To delete an instance positioned in the level below the corresponding agent or pseudo-client

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.

To delete an Oracle *i*DataAgent instance included within an Oracle RAC instance (node)

1.   Right-click the Oracle RAC instance, click **Properties**, and click **Details**.

2.   Click the instance that you want to delete within **Client/Instance/Status** and click **Delete**.

3.   Repeat the previous step for each Oracle *i*DataAgent instance (except the last one remaining) within the Oracle RAC instance that you want to delete.

4.   Click **OK**. This should delete the Oracle *i*DataAgent instance(s).

   With the exceptions noted above, you can no longer access the corresponding backup data for restore purposes.

CHANGE THE USER ACCOUNT

Before You Begin

- Review Instances
- Review Subclients

Required Capability Administrative Management

To change the user account

1. From the CommCell Browser, expand the agent tree, right-click the desired instance, and then click **Properties**.

2. From the **General** dialog box, click the **Change** button associated with the User Account information.

3. From the **Impersonate NT User** dialog box, enter the requested information.

4. Click **OK** to save the settings.

ADD A LOTUS DOMINO SERVER PARTITION ON WINDOWS

Required Capability: See Capabilities and Required Actions

To add a Lotus Domino Server partition to your system configuration on **Windows** platforms:

1. From the CommCell Browser, right-click the Notes *i*DataAgent node, click **All Tasks** and then click **Add New Partition.** The system discovers all new partitions, and displays them in the Add New Partition dialog box.

2. To add a partition, select the check box located to the left of the partition name.

3. Assign a storage policy to the partition by clicking in its Storage Policy box and selecting a policy from the list.

4. Click **OK** to save your settings.

5. The **Backup Schedule** screen displays. To create a backup schedule for the new partition, select one of the three options:

   ○ To disregard backup schedules, click the **Do Not Schedule** radio button and click **OK**. The screen exits with no backup schedule established for the new partition. This task is now complete.
   ○ To link the new partition with a pre-defined policy, click the **Associate with Generic Schedule Policy** radio button, choose from the list, and click **OK** to exit the screen. This task is now complete.
   ○ To establish a backup schedule for the new partition, click the **Schedule** radio button, and click **OK**. Go to Step 6.

6. The system displays a **Backup All Subclients** prompt verifying that you want to backup all the subclients of this partition except the transaction logs subclient. Click **OK** to backup.

7. The **Backup Options** dialog box appears, which allows you to create the necessary schedules.

8. From the Backup Options dialog box, select the type of backup that you want to schedule.

9. If you want to access **Advanced Backup Options**, click **Advanced**.

10. After selecting the backup type and any advanced options, click **OK**.

11. The **Schedule Details** dialog box appears. From the Schedule Details dialog box, select the scheduling options that you want to apply, then click **OK**.

This task is now complete.

ADD A LOTUS NOTES DATABASE PARTITION ON UNIX

Although it is possible to create multiple partitions during installation of the *i*DataAgent, you may need to add additional partitions at a later date. For clients running Unix, you repeat the installation procedure except as noted below:

Required Capability: See Capabilities and Required Actions

To add a Lotus Notes Database partition on Unix

1. Log on to the client as `root`.

2. Place the software installation disc for the Unix platform into the disc drive. You can also install the product using a disc drive mounted on another computer on the network.

3. Open a Terminal window, navigate to the disc and enter **cvpkgadd**. This package contains scripts which need super-user permission to execute.

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

5. The following message displays (note that the menu options displayed below will vary depending on platform):

   ```
   1.CVGxMA

   2.CVGxOrIDA

   3.CVGxDB2IDA

   4.CVGxLndbIDA (Add New Partitions Only)

   5.CVGxLndocIDA

   6.Exit

   Module number: [4]
   ```

   Enter the module number corresponding to `CVGxLndbIDA (Add New Partitions Only)`.

6. The partition number that displays reflects how many partitions have already been created.

   In this example, two partitions are already in existence; therefore, the new partition is numbered as 3:

   ```
   Please enter Notes DB Partition Name for partition 3.

   Partition Name:
   ```

   Type the name of the partition, then press **Return** (or **Enter**).

7. The following message prompts you to enter the Notes User Name for the partition. This is the user name used by the *i*DataAgent to log on to the Notes database.

   ```
   Please enter Notes User Name for this partition.

   Notes User Name:
   ```

   Type the Notes User Name for the partition, then press **Return**.

8. The following message prompts you to enter the Notes Home Directory for the partition. This is the directory in which the Lotus Notes software is installed.

   ```
   Please enter Notes Home Directory for this partition.

   Notes Home Directory:
   ```

   Type the Notes Home Directory for the partition, then press **Return**.

9. The following message prompts you to enter the Notes Data Directory for the partition. This is the directory in which all databases reside.

   ```
   Please enter Notes Data Directory for this partition.

   Notes Data Directory:
   ```

   Type the Notes Data Directory for the partition, then press **Return**.

10. The following message displays:

    ```
    You have entered all the required information for this partition.

    Please review it now, and accept "yes", if it is correct:

    Partition Name........ your entry here

    Notes User............ your entry here

    Notes Home Directory.. your entry here

    Notes Data Directory.. your entry here

    Is this correct? [yes]
    ```

    After verifying the above information, press **Return** to continue.

11. The following message displays:

```
Configured 3 partition(s) of Notes so far.

Would you like to configure another partition? [no]
```

If you don't want to configure another partition, press **Return**. (To configure another partition type **yes** and press **Return** to repeat the process starting at Step 5.)

12. The following message displays:

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

1)SP_Library2_2

2)SP_MagLibrary3_3
```

Enter the module number corresponding to the storage policy to use for the configured partition.

13. After configuring the partition, the install program verifies the information entered during install and checks all requirements. A summary similar to the following displays:

```
Successfully installed CVGxLndbIDA.

Press ENTER to continue ...
```

Press **Return** when prompted.

14. If this is the last component to be installed, enter the number corresponding to the **Exit** option on the menu.

This task is now complete.

ADD A RESTORE VIEW NAME

Before You Begin

Review Instances - Restore View Names

Required Capability: See Capabilities and Required Actions

▶ To add a Lotus Domino Server Restore View

1. From the CommCell Browser, expand a Notes Document *i*DataAgent node, right-click a partition, and click **Properties.**

2. From the Restore View Names tab, click **Add**.

3. Enter the text pattern in the space provided. This pattern does not have to match any actual Notes view name.

4. When there are multiple names listed, highlight a name and use the **Up** or **Down** buttons to promote or demote that name. This adjusts the pattern's priority in the system's browse search algorithm.

5. Click **OK** to save your settings.

6. If desired, you can assign a specific Restore View Name to documents at the subclient level using the Subclient Properties Databases tab.

This task is now complete.

ASSIGN DATABASES TO A SUBCLIENT

*Required Capability***:** See Capabilities and Permitted Actions

▶ To assign databases to a subclient:

1. From the CommCell Browser, click **Configure** from any of these locations:
    ○ For Notes Database *i*DataAgent right-click the partition node with the subclient to which you want to assign databases, select **All Tasks** and then click **Configure**.
    ○ For Notes Document *i*DataAgent right-click the backup set node with the subclient to which you want to assign databases, select **All Tasks** and then click **Configure**.
    ○ For both *i*DataAgents, you can use the Subclient Properties (Databases) tab to access its **Configure** button.

2. From the Add/Modify database/subclient configuration for partition/backup set dialog box, for each database that you want to assign click its Subclient box and select the desired subclient from the list. Alternatively, you can select a range of databases and use **Change all selected databases to** list to assign a single subclient to all the databases in one step.

Regardless of the assignment method, your choices always include:

○ The default subclient

○ Any user-defined subclients

○ The Do Not Backup subclient

If you choose the Do Not Backup subclient, the database will not be backed up.

3. For the Notes Document *i*DataAgent, click the **Restore View Name** box for the database element that you want to assign to the subclient to make the list arrow appear. Click again to make the list appear. Select an option from the list.

4. To save the subclient configuration, click **OK**.

CHANGE ACCOUNT FOR EXECUTING PRE/POST COMMANDS (DATA PROTECTION)

Required Capability: See Capabilities and Permitted Actions

▶ To change a user account for executing pre/post commands for Data Protection jobs:

1. From the CommCell Browser, expand the tree to view the appropriate level icon for the affected agent.

○ From the agent, instance/partition, or backup set/archive set level, right-click the appropriate icon, click **All Tasks**, and click **New Subclient** from the short-cut menu.

○ From the subclient level, right-click the subclient icon and click **Properties** from the short-cut menu.

2. From the Subclient Properties dialog box, create and/or configure the subclient as appropriate. Then click the **Pre/Post Process** tab.

3. From the **Pre/Post Process** tab, click **Change**.

4. From the User Account dialog box, select one of the account options. If you select **Impersonate User**, type the appropriate user name and password.

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

CHANGE ACCOUNT FOR RESTORING TO MAPPED/SHARED NETWORK DRIVES AND RESTRICTED DIRECTORIES

Required Capability: See Capabilities and Permitted Actions

▶ To change a user account for restoring to mapped/shared network drives and restricted directories:

1. From the CommCell Browser, expand the tree to view the desired level icon for the affected agent. Then right-click the icon and click **All Tasks** from the short-cut menu.

2. Click the appropriate **Browse** or **Restore** option. Then populate, select, and click as appropriate to access the **Restore Options (for All Selected Items)** dialog box.

3. From the **Restore Options (for All Selected Items)** dialog box, click **Advanced**.

4. From the Advanced Restore Options dialog box, select **Impersonate (Windows, NetWare) User**. Then type the appropriate user name and password.

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

DISCOVER AND ASSIGN NEW DATABASES

Required Capability: See Capabilities and Permitted Actions

▶ To discover and assign new databases:

1. From the CommCell Browser, click **Configure** from any of these locations:

○ For Notes Database *i*DataAgent right-click the partition with the subclient to which you want to assign databases, select **All Tasks** and then click **Configure**.

○ For Notes Document *i*DataAgent right-click the backup set with the subclient to which you want to assign databases, select **All Tasks** and then click **Configure**.

○ For both *i*DataAgents, you can use the Subclient Properties (Databases) tab to access its **Configure** button.

2. From the Add/Modify database/subclient configuration for partition dialog box, click **Discover**.

3. When the discovery process completes, the system redisplays the **Add/Modify database/subclient in partition/backup set** dialog box which displays the databases that have already been assigned; plus any newly discovered databases that have not been assigned. The unassigned databases are those that have no entry in the Subclient column.

4. To assign these databases, click the Subclient box of each database that you want to assign and select the desired subclient from the list. Alternatively, you can select a range of databases and use **Change all selected databases to** list to assign a single subclient to all the databases in one step.

   Regardless of the assignment method, your choices always include:

   o The default subclient

   o Any user-defined subclients

   o The Do Not Backup subclient

   If you choose the Do Not Backup subclient, the database will not back up.

5. For the Notes Document *i*DataAgent, click the **Restore View Name** box for the database element that you want to assign to the subclient to make the list arrow appear. Click again to open the list. Select an option from the list. Alternatively, you can select a range of databases and use **Change all restore View names to** list to assign a single name to all the selected databases in one step.

6. To register your database assignments with the system, click **Apply**.

7. If you have no other databases to assign, click **OK**.

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OVERVIEW

The following table shows subclient creation and configuration details specific to Lotus Notes *i*DataAgents.

AGENT	Type of Data	Default Subclient created during install of the Agent	Supports Default Subclient	Supports User Defined Subclient	Contents of the default subclient when user-defined subclient is present	Other Types of subclients supported by the Agent	Notes
Lotus Notes Database	Lotus Notes database	Yes	Yes	Yes	databases/database elements not assigned to the other subclients, unless otherwise configured*	Transaction Log; Do Not Backup	*See Caution Against Re-configuring Default Subclient Content.
Lotus Notes Document	Lotus Notes documents	Yes	Yes	Yes	content not assigned to other subclients, unless otherwise configured*	Do Not Backup	*See Caution Against Re-configuring Default Subclient Content.

The following example illustrates a simple subclient configuration:

Example - Lotus Notes

Default Subclients

When you perform a full backup for the default subclient, the subclient performs a discover on the partition and performs a full backup of any new databases and of the databases that already exist within the subclient. When an incremental backup is performed for the default subclient, the subclient performs a discover on the partition, and it performs a full backup of discovered and newly-added databases and new or modified documents of existing databases, including:

- unconfigured databases
- databases that were added manually since the last backup
- previously backed up databases where the DBIID has changed since the last backup
- non-logged databases that have been modified since the last backup

While this feature ensures that all the new databases will be automatically backed up, you may want to assign the new databases to specific subclients. To do this, you can conduct the discovery process and assign the databases yourself using any of the following:

- Databases tab of the Subclient Properties dialog box
- Configure command in the shortcut menu of the a Lotus Notes Database *i*DataAgent partition
- Configure command in the shortcut menu of the a Lotus Notes Document *i*DataAgent backup set

User-Defined Subclients

Optionally, users can create additional subclients with each one containing one or more databases. When a full backup is performed for a user-defined subclient, the subclient performs a full backup of its databases. When an incremental backup is performed for a user-defined subclient, the subclient performs a full backup of any database that was not part of this subclient on the last backup (incremental or full), and new or modified documents of existing databases, and databases that were:

- added manually since the last backup

- previously backed up databases where the DBIID has changed since the last backup
- non-logged databases that have been modified since the last backup

Transaction Log Subclients

The system creates a transaction log subclient for the Lotus Notes Database iDataAgent that handles backing up transaction logs for all log-enabled databases within the partition.

Do Not Backup Subclient

The `Do Not Backup` subclient is created by the system. It cannot be scheduled for backup, so databases included in this subclient are never backed up. Essentially, this subclient acts as a backup filter.

CONFIGURABLE PROPERTIES

Once installed, the agent is configured and is therefore able to manage the data or volumes on the client computer. However, you can change certain aspects of the subclient configuration to manage the data in the manner that best suits your needs.

You can view or change the subclient configuration from the Subclient Properties dialog box. The following information can be configured.

ACTIVITY CONTROL

You can enable or disable all operations for this CommCell object and all objects below it. For more information, see Activity Control.

CONTENT/DATABASES

You can define the content of the subclient. Most agents include a configure button that displays a dialog where you can add or modify the data included as subclient content. For step-by-step instructions, see Configure Subclient Content.

DATA TRANSFER OPTIONS

Several configurable options to efficiently use available resources for transferring data secured by data protection operations are provided in the subclient. This includes the following:

- Enable or disable Data Compression either on the client or the MediaAgent.
- Configure the transfer of data in the network using the options for Network Bandwidth Throttling and Network Agents.

DATA ENCRYPTION

You can enable or disable the encryption of data for transmission over unsecure networks and for storage on media. For more information, see Data Encryption.

DATA PATHS

You can view the data paths associated with the primary storage policy copy of the selected storage policy or incremental storage policy. You can also modify the data paths for the subclient including their priority. For additional information, see Configuring Alternate Data Paths for Subclients.

DISCOVERY FILTERS

You can perform the following functions:

- Define discovery filters to exclude specified subclient data from being discovered. For more information, see Discovery Filters for Lotus Notes iDataAgents.
- Use regular expressions (or wildcards) in subclient discovery filters. See Inclusions, Exclusions, and Exceptions to Exclusions for more information.

The Filters tab is only available for the default subclient.

PRE/POST PROCESSES

You can add, modify or view Pre/Post processes for the subclient. These are batch files or shell scripts that you can run before or after certain job phases. For more information, see Pre/Post Processes.

SUBCLIENT NAME

You can rename a user-defined subclient.

USER ACCOUNTS

You can define an account with permissions to execute Pre/Post commands for the agent's archive, backup, or volume creation jobs.

See Lotus Domino Server iDataAgents in **User Accounts and Passwords** for more information.

THINGS TO CONSIDER WHEN CREATING AND CONFIGURING LOTUS NOTES SUBCLIENTS

When creating and configuring subclients for Lotus Notes iDataAgents, keep in mind the following considerations:

- Lotus Notes Document has a configuration requirement to assign a Restore View Name to the subclient, in addition to specifying the subclient name, content and storage policy association.
- For discovery filter considerations, see Discovery Filters for Lotus Notes iDataAgents.
- **Caution Against Re-configuring Default Subclient Content**

  We recommend that you do not re-configure the content of a default subclient because this would disable its capability to serve as "catch-all" entity for client data. As a result, the likelihood that some data will not get backed up or scanned for archiving would increase.

SETTING FOLDER-BASED AUTO-DISCOVERY FOR SUBCLIENTS

This operation is only available for subclients of a Notes Database iDataAgent.

You can create a registry key that sets the auto-discover feature to find certain databases and assign them to subclients, based on a folder pattern that you specify in the registry key. Even if the databases that match the folder pattern are already assigned to another subclient, the databases move to the subclient where the registry key is set.

To create the registry key:

1. Open Registry Editor (Regedit.exe or Redegt32.exe).

2. Navigate to the Lotus Notes Database iDataAgent folder.

   For example: **HKEY_LOCAL_MACHINE** | **SOFTWARE** | **Commvault Systems** | **Galaxy** | <**Instance Name**> | **LotusNotesDBagent**.

3. Right click **LotusNotesDBAgent**, point to **New**, and then click **String Value**.

4. In the **Name** box, enter <**Domino partition name**>_<**subclient name**>.

   Each registry key name must be unique in the registry so that it is associated with the correct subclient. Therefore, you must name the registry key with the Domino partition name and the subclient name, separated by an underscore (_). For example: partition1_subclient1.

5. Right click the <**Domino partition name**>_<**subclient name**> key that you just created, and then click **Modify**.

6. In the **Value** box, enter a folder pattern in regular expression that will discover the databases you want to automatically include in the subclient. For information about regular expressions, see Content, Filters, and Regular Expressions.

   For example:

   ○ To include all databases in a folder, enter a single asterisk (*) at the end of the folder path: **mail\NotesVolume1***
   ○ To include all databases in all sub-folders, enter two asterisks (**) at the end of the folder path: **mail\NotesVolume2****
   ○ To add multiple regular expressions, separate each expression with a semi-colon (;): **mail\NotesVolume1*;mail\NotesVolume2***

7. Click **OK**.

For more information, see the entry in Registry Keys.

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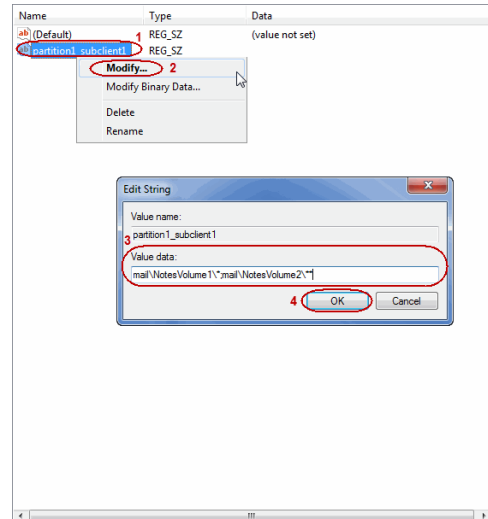
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Set the Network Bandwidth and Network Agents for a Data Protection Operation

View Data Paths

View Subclient Content

ADD/EDIT A DATA PROTECTION FILTER FOR A SUBCLIENT

Before You Begin

- Review Filters.
- Do not change the data protection or discovery filter of a subclient that has a data protection operation in progress.
- The system does not allow you to add entries that are not content of a particular subclient to that subclient's filter.
- For BlueArc and EMC Celerra (running at least DART OS 5.6.x) subclients, the filter string with or without wildcards must match the name or path of the file or directory being filtered.
- For NetApp subclients only name type filters (with wildcards) are supported:
  - You cannot enter paths as a filter (e.g. /vol/vol0/data1). Since NetApp does not support the use of paths in filters, if there are multiple files with the same name, even though they may be in different directories, all of them will be excluded from backups.
  - Name of the file or directory must exactly match the filter string.
  - You can specify a maximum of 32 strings in the exclude list.

Select the desired procedure:

- To add a data protection or discovery filter for a subclient
- To edit a data protection filter for a subclient

Required Capability: Capabilities and Permitted Actions

▶ To add a data protection or discovery filter entry for a subclient:

1. From the CommCell Browser, right-click the subclient whose data protection or discovery filter you want to add, and then click **Properties** from the shortcut menu.

2. Click the Filters tab of the Subclient Properties dialog box.

3. For Exchange Mailbox, Exchange Mailbox/Public Folder Archiver Agents and Exchange Compliance Archiver, to specify a mailbox or folder that you want to exclude from data protection operations:
   - Click the upper **Add** button.
   - From the Browse window, expand the mailbox tree of the client computer.
   - Click the mailbox or folder that you want to exclude from the backup/archive operations on the selected subclient, and then click **Add**. (Repeat this step for each additional entry.)
   - From the Browse window, click **OK**.

     The mailboxes or folders that you selected appear as entries in the upper pane. Repeat this step if you want to add more mailboxes and/or folders to the filter.

4. For NAS NDMP *i*DataAgents, click the **Add** button and, in the input window, type the name of the file, directory, (or path for BlueArc) that you want to exclude from the backups and click **OK**. The name displays as an entry in the **Exclude these files/folders/patterns** pane. Repeat this step if you want to add more files, directories, or paths to the filter.

5. For SharePoint Server *i*DataAgents, to specify a URL/file/folder/pattern that you want to exclude from data protection operations or to specify an exception filter for database backup sets, do one of the following:

   ○ Click the **Add** button next to **Exclude these files/folder/patterns**: input window and type the URLs of site collections that you want to exclude from the backups and click **OK**. The site collection displays as an entry in the **Exclude these files/folders/patterns** pane. Wildcards are supported. See Wildcards for more information. Repeat this step if you want to add more URLs, files, directories, or paths to the filter.

   ○ Click the **Add** button next to **Except for these files/folders**: input window and type the URLs/folders of site collections that you want to be exceptions for the exclusion filter and click **OK**. These exceptions will be included in the data protection operations. Wildcards are not supported for exception filters.

6. For Exchange Public Folder *i*DataAgents and SharePoint Server *i*DataAgent, to specify a workspace/folder that you want to exclude from the backups, click the upper **Browse** button and expand the *i*DataAgent of the client computer. Click the workspace/folder that you want to exclude from the backups and then click **Add**. Repeat this step for each additional entry.

7. For Windows/Unix/Macintosh File System *i*DataAgents, File Archiver for Windows/Unix Agents, and ProxyHost *i*DataAgent, to specify a file/folder/directory that you want to exclude from data protection operations, do one of the following:

   ○ Click the upper **Add** button and, in the **Enter Path** window, type the complete path (including drive letter) of the file/folder/directory that you want to exclude from the backups/archive operations. Repeat this step if you want to add more files/folders/directories to the filter.

   ○ Click the upper **Browse** button and expand the file system of the client computer. Click the file/folder/directory that you want to exclude from backups/archive operations and then click **Add**. Repeat this step for each additional entry.

8. For NetWare File System/NDS *i*DataAgents, to specify data that you want excluded from the backups, do one of the following:

   ○ To manually enter the path:

      ▪ Click the **Add** button.

      ▪ In the Input window, type the complete path (e.g., VOL1:\demo\disk2) of the data that you want to exclude.

      ▪ Click **OK**. (The path that you typed displays as an entry in the upper pane.) Repeat this step if you want to exclude more data.

   ○ To browse and select a path:

      ▪ Click the **Browse** button.

      ▪ From the Backup Data window, expand the file system or NDS tree of the NetWare server.

      ▪ Select the data that you want to exclude, and then click **Add**. Repeat this step for each additional entry.

      ▪ From the Backup Data window, click **OK.** The data that you selected displays as entries in the upper pane.

9. For Lotus Notes Database and Lotus Notes Document *i*DataAgents, to specify a file or folder that you want to exclude from discovery, do one of the following:

   ○ Select the **Pattern/path to be excluded** field. Then type in a file or folder that you want to exclude. The format of the entry should start with a slash (\). The path entered is always relative to the data path of the partition. Then click **Add**. Repeat this step for each additional entry.

   ○ Click the upper **Browse** button and expand the file system of the client computer. Click the file or folder that you want to exclude from the backups and then click **Add**. Repeat this step for each additional entry.

10. For Exchange Mailbox, Exchange Mailbox/Public Folder Archiver Agents and Exchange Compliance Archiver, to specify a wildcard pattern of the folders that you want to exclude across all mailboxes within the subclient:

    ○ Click the lower **Add** button.

    ○ In the Input window, type the wildcard pattern of the folders that you want to exclude from backup/archive operations on the selected subclient.

    ○ Click **OK**. The path that you typed appears as an entry in the lower pane. Repeat this step if you want to add more entries to the filter.

11. For Exchange Public Folder *i*DataAgents and SharePoint Server *i*DataAgent, to specify an exception to an excluded workspace/folder (i.e., a folder/document that you want included in the backups, but whose parent directory has been excluded), click the lower **Browse** button and expand the *i*DataAgent of the client computer. Click the workspace/folder that you want to include in the backups and then click **Add**. Repeat this step for each additional entry.

12. For Windows/Unix/Macintosh File System *i*DataAgents, File Archiver for Windows/Unix Agents, and ProxyHost *i*DataAgent, to specify an exception to an excluded folder/directory (i.e., a file or folder/directory that you want included in the data protection operations, but whose parent folder/directory has been excluded), do one of the following:

    ○ Click the lower **Add** button and, in the **Enter Path** window, type the complete path (including drive letter) of the file/folder/directory that you want to include in the backups/archive operations. Repeat this step if you want to add more exceptions to the filter.

    ○ Click the lower **Browse** button and expand the file system of the client computer. Click the file/folder/directory that you want to include in the backups/archive operations and then click **Add**. Repeat this step for each additional entry.

13. For NetWare File System/NDS *i*DataAgents, to specify an exception to an excluded directory or NDS container (i.e., data that you want included in the backups, but whose parent directory or NDS container has been excluded), do one of the following:

    ○ To manually enter the path:

       ▪ Click the **Add** button.

       ▪ In the Input window, type the complete path (e.g., VOL1:\demo\disk2\readme) of the data that you want to include.

- - Click **OK**.
    - ○ To browse and select a path:
      - - Click the **Browse** button.
      - - From the Backup Data window, expand the file system or NDS tree of the NetWare server.
      - - Click the file or folder that you want to include in the backups and then click **Add**. Repeat this step for each additional entry.
      - - Click **OK.** The selected data displays as entries in the lower pane.
14. Click **OK** to save your changes.

Required Capability: Capabilities and Permitted Actions

To edit a data protection filter entry for a subclient:

1. From the CommCell Browser, right-click the subclient whose data protection filter you want to edit, and then click **Properties** from the shortcut menu.

2. Click the Filters tab of the Subclient Properties dialog box.

3. Click the filter entry that you want to edit, and then click the **Edit** button associated with that pane.

4. Type the changes into the **Enter Path** dialog box, then click **OK**.

5. Click **OK** to save your changes.

NOTES

- When you change a data protection or discovery filter, the change is effective the next time a data protection operation is run on the applicable subclient.

- Performing a full backup after changing filters or exceptions is recommended.

ASSIGN DATABASES TO A SUBCLIENT

*Required Capability***:** See Capabilities and Permitted Actions

To assign databases to a subclient:

1. From the CommCell Browser, click **Configure** from any of these locations:
   - ○ For Notes Database *i*DataAgent right-click the partition node with the subclient to which you want to assign databases, select **All Tasks** and then click **Configure**.
   - ○ For Notes Document *i*DataAgent right-click the backup set node with the subclient to which you want to assign databases, select **All Tasks** and then click **Configure**.
   - ○ For both *i*DataAgents, you can use the Subclient Properties (Databases) tab to access its **Configure** button.

2. From the Add/Modify database/subclient configuration for partition/backup set dialog box, for each database that you want to assign click its Subclient box and select the desired subclient from the list. Alternatively, you can select a range of databases and use **Change all selected databases to** list to assign a single subclient to all the databases in one step.

   Regardless of the assignment method, your choices always include:

   - ○ The default subclient
   - ○ Any user-defined subclients
   - ○ The Do Not Backup subclient

   If you choose the Do Not Backup subclient, the database will not be backed up.

3. For the Notes Document *i*DataAgent, click the **Restore View Name** box for the database element that you want to assign to the subclient to make the list arrow appear. Click again to make the list appear. Select an option from the list.

4. To save the subclient configuration, click **OK**.

ASSOCIATE A SUBCLIENT TO A STORAGE POLICY

Required Capability: See Capabilities and Permitted Actions

To associate a subclient to a storage policy:

1. From the CommCell Browser, right-click the subclient whose associated storage policy you want to change, then click **Properties** from the shortcut menu.

2. Click the Storage Device tab of the Subclient Properties dialog box.

3. From the **Storage Policy** list of the **Data Storage Policy** tab, select a data storage policy to associate with this subclient. If necessary, click the **Create**

Storage Policy button to create a new storage policy to which the subclient can then be associated.

4. From the Changing a Storage Policy window select the next type of backup operation. Click **OK**.

5. If applicable for your agent, you can change the number of data streams from the **Number of Data/Database Backup Streams** field.

6. If applicable for your agent, click the **Log Storage Policy** tab and select a storage policy to associate with this transaction log subclient from the **Transaction Log Storage Policy** list. Also, you can set the **Number of Transaction Log Backup Streams** from this tab.

7. Click **OK** to save your changes and close the Subclient Properties Storage Device tab.

ASSOCIATE OR DISASSOCIATE A USER GROUP TO A COMMCELL OBJECT

Required Capability: See Capabilities and Permitted Actions

▶ To associate or disassociate a user group to a CommCell entity:

1. From the CommCell Browser, click the CommServe, client computer group, client computer, agent, MediaAgent, Library, Storage Policy, backup set, subclient, or Shelf media, and then select **Properties**.

2. From the **Security** tab, select the appropriate user groups to which you want to associate to the CommCell object from the **Available Groups** pane, and then move the user group to the **Associated Groups** pane.

3. Click **OK**.

CHANGE ACCOUNT FOR EXECUTING PRE/POST COMMANDS (DATA PROTECTION)

Required Capability: See Capabilities and Permitted Actions

▶ To change a user account for executing pre/post commands for Data Protection jobs:

1. From the CommCell Browser, expand the tree to view the appropriate level icon for the affected agent.
   ○ From the agent, instance/partition, or backup set/archive set level, right-click the appropriate icon, click **All Tasks**, and click **New Subclient** from the short-cut menu.
   ○ From the subclient level, right-click the subclient icon and click **Properties** from the short-cut menu.

2. From the Subclient Properties dialog box, create and/or configure the subclient as appropriate. Then click the **Pre/Post Process** tab.

3. From the **Pre/Post Process** tab, click **Change**.

4. From the User Account dialog box, select one of the account options. If you select **Impersonate User**, type the appropriate user name and password.

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

CONFIGURE A SUBCLIENT FOR PRE/POST PROCESSING OF DATA PROTECTION/ARCHIVE OPERATIONS

Before You Begin

● We recommend not configuring a pre/post process for a subclient that is currently running a data protection or archive operation.

● Verify that there are no pre/post processes already assigned for the subclient.

● Review the Overview and Agent-Specific Guidelines for your agent before configuring pre/post processes for data protection/archive operations.

● Pre-process commands for the *i*DataAgents will be executed only when the necessary resources (e.g., media, library, drive, etc.) are available.

Required Capability: Capabilities and Permitted Actions

▶ To configure a subclient for Pre/Post processing of data protection/archive operations:

1. From the CommCell Browser, right-click the subclient for which you want to configure a pre/post process, and then click **Properties** from the shortcut menu.

2. Click the Pre/Post Process tab of the Properties dialog box.

3. For an agent other than the Oracle RAC *i*DataAgent, click inside the space that corresponds to one of the following phases and type the full path of the process that you want executed during that phase. Alternatively, click **Browse** to locate the process (applicable only for paths that do not contain any spaces). For the Oracle RAC *i*DataAgent, click **Browse** for the corresponding process, click the name of the control node client in the Select Client for Browse dialog box, and click **OK**. Then browse for and click the process.
   ○ PreBackup
   ○ PreScan
   ○ PreArchive

- ○ PreCopy
- ○ PreSnap
- ○ PostBackup
- ○ PostScan
- ○ PostArchive
- ○ PostCopy
- ○ PostSnap

Click **OK**.

4. If you want to run a Post Process for all attempts to run that job phase, then select the corresponding checkbox.

5. For subclients on Windows platforms, if **Run As** displays **Not Selected**, or if you want to change the account that has permission to run these commands, click **Change**.

   a. In the User Account dialog box, select **Use Local System Account,** or select **Impersonate User** and enter a user name and password. Click **OK**.

   b. If you selected Local System Account, click **OK** to the message advising you that commands using this account have rights to access all data on the client computer.

6. Click **OK** to save your changes and close the Pre/Post Process tab of the Properties dialog box.

CONFIGURE SUBCLIENT CONTENT

Before You Begin

- Review Subclients.
- Do not configure the content of a subclient while the parent node or any sibling subclient has a data protection or archive operation currently running on it.
- Exchange Mailbox *i*DataAgents and Exchange Mailbox/Public Folder Archiver Agents: If you change the contents of the default backup set or archive set then the auto-discover feature will be disabled. If you disable the auto-discovery feature, newly created mailboxes will not be backed up/archived unless they are manually discovered and assigned to a subclient.
- NAS NDMP *i*DataAgents: You must ensure there is no overlap in content between all subclients. Overlap in subclient content will result in loss of data. An existing subclient's contents are not automatically changed when another subclient is added with overlapping contents.
- SharePoint Server *i*DataAgent: The Site Content Database, the Site Collection Database, the Site Database, and the Site Index for the virtual server must all be assigned to the same subclient.
- Lotus Notes Document *i*DataAgent: Review Assigning Restore View Names to Newly-discovered Databases
- QR Agent: Follow these guidelines when adding a volume to a QR Agent subclient:
  - ○ The volume must correspond to a physical disk or RAID array.
  - ○ A volume created by volume management software other than VxVM is not valid subclient content.
  - ○ Subclients may have overlapping content; however, if two or more subclients overlap, they all must use the same snapshot engine. If the QR policies associated with the subclients are configured to use different snap engines, they must be reconfigured to use the same snap engine in this scenario.
- **Caution Against Re-configuring Default Subclient Content**

  We recommend that you do not re-configure the content of a default subclient because this would disable its capability to serve as "catch-all" entity for client data. As a result, the likelihood that some data will not get backed up or scanned for archiving would increase.

Required Capability: See Capabilities and Permitted Actions

▶ To configure subclient content:

1. From the CommCell Browser, right-click the subclient for which you want to configure content, click **All Tasks** (if applicable) and then click **Properties**.

2. Follow the procedure below that is applicable for your agent:
   - ○ For File System, Active Directory, File Archiver, Exchange Public Folder *i*DataAgents, NDS, and SharePoint Server *i*DataAgents click the Subclient Properties (Content) tab and configure content for the subclient as described below for your agent:
     - ■ For File System, Active Directory, File Archiver, NDS, and SharePoint Server *i*DataAgents: Type the full path of the data that you want to include as subclient content in the **Enter New Content** field, then click **Add**. Optionally, click **Browse** to enter the content. When browsing content while configuring SharePoint subclients, you can add content via multiple selections with the CTRL or SHIFT keys. For Windows, when specifying a UNC Path, click **As User**, and enter the user account information for the domain user with permissions for that path. For NetWare/DNS, see the Notes section below for content path examples. For Unix File Systems, you can enter the mount point of an NFS-mounted file system, see the Notes section below for examples.
     - ■ For Exchange Public Folder *i*DataAgents: Click **Browse**, select folders to include as content, then click **Add**.
     - ■ For the Unix File System *i*DataAgents, to facilitate the management of resource fork data in Apple double-encoded Macintosh files, click **Enable Apple Double Support**.

- For the Unix File System *i*DataAgents, to view the actual data path for any symbolic link in the subclient content, click **Expand symbolic links of subclient content** and then click **Discover**.

○ For NAS NDMP *i*DataAgents, configure the **Backup Content Path** field(s) as described below, then click **Add**:

- Click the drop-down list arrow to display the root volumes on the file server. To change the root volume, click one in the list. If you want to refine the content path further, use the space to the right of (or below) the root volume list to enter additional path information. Note the following:

  - For NetApp, the root volume is the mount path of each volume.
    Example: for volume FS1 the root volume will be /vol/FS1.

  - For EMC Celerra, the root volume is the mount point created for a volume.
    Example: for volume FS1 with mount point /FS1 the root volume will be /FS1.

  - For Hitachi, no root volumes are shown in the drop down list. Type the full path of the root volume.
    Example: for volume FS1 with mount point /mnt/FS1 the root volume will be /mnt/FS1.

  - For BlueArc, the root volume is a combination of a descriptor of the path and the volume name.
    Example: for volume FS1 with a mount point of / the root volume will be /__VOLUME__/FS1.

- Optionally, for NetApp NAS NDMP, click **Browse** to enter the content.

○ For Exchange Mailbox and Exchange Mailbox/Public Folder Archiver Agents follow the procedure to Discover and Assign New Mailboxes or Assign Mailboxes to Another Subclient.

○ For Lotus Notes Database and Document *i*DataAgents follow the procedure to Discover and Assign New Databases or Assign Databases to a Subclient.

○ For DB2, DB2 DPF, Exchange Database, Novell GroupWise, SharePoint Server, SQL Server Database, Sybase, and MySQL *i*DataAgents, click the Subclient Properties (Content) tab and configure content for the subclient as described below for your agent:

- For the DB2 *i*DataAgent, specify whether you want to include the entire database or a subset of this data as content for the subclient. For the DB2 DPF *i*DataAgent, specify whether you want to include all the affected database partitions or a subset of this data as content for the subclient.

- For Exchange and GroupWise *i*DataAgents: Click **Configure**. From the Add/Modify Subclients dialog box click the subclient entry for the database element/Storage Group that you want to add to the new subclient and select the name of the destination subclient from the list that appears. Alternatively, you can select and assign a range of databases/storage groups using the **Change all selected databases/storage groups to** list. Note that you must have at least one database element/Storage Group assigned to this subclient in order to save the configuration.

  A database/Storage Group that is not configured for a subclient does not appear in the list. This can be the case if the subclient containing the database/Storage Group was deleted. If this happens, click **Discover** to display all databases/Storage Groups.

- For the SharePoint Server *i*DataAgent, follow the procedure to Discover and Assign New Data Types.

- For the Sybase *i*DataAgent, follow the procedure to Manually Discover Databases.

- For the MySQL *i*DataAgent, follow the procedure to Configure MySQL Databases.

○ For the Informix *i*DataAgent, click the Subclient Properties (Content) tab and define the contents of the subclient. Specifically, establish the backup mode for the data to be backed up, set the backup level, and decide whether to back up the emergency boot file and/or the ONCONFIG file.

○ For the Oracle, SAP for Oracle, or Oracle RAC *i*DataAgent, click the Subclient Properties (Content) tab and define the contents of the subclient. To configure this subclient for specialized types of backups, follow the appropriate procedure below:

- Create Subclient for Backing Up Archived Redo Log Files

- Create Subclient for Backing Up Offline Databases

- Create Subclient for Backing Up Online Databases

- Create Subclient for Performing Selective Online Full Backups

○ For SAN *i*DataAgents, click the Subclient Properties (Content) tab and configure content for the subclient as described below for your agent:

- Image Level on Unix *i*DataAgent: Click **Add**. From the Add Content Path dialog box, select the volume(s) that you want to back up (use CTRL + click to select multiple volumes). Click **OK**. The selected volumes are added to the **Contents of subclient** list. These volumes are automatically configured to be CXBF devices. Alternatively, use Volume Explorer per specific scenarios to configure CXBF devices.

  To configure an unmounted block device or raw device as content, first use Volume Explorer to configure the device as a CXBF device. Then select the configured CXBF device as subclient content. You can ignore the warning that is displayed.

  For more information, see When to Use Volume Explorer. For a step-by-step procedure, see Configure a CXBF Device in Volume Explorer.

- Image Level and Image Level ProxyHost on Windows *i*DataAgents: Click **Add**. Then in the **Add Content** dialog box, type the full path of the volume or mount point that you want to include as subclient content, then click **Add**. Optionally, click **Browse** to select the content. Click **OK**. The volume or mount point is added to the **Contents of subclient** list. Add additional content by repeating this step.

- ProxyHost *i*DataAgent: Select a backup host from the **Backup Host** list. This is the computer to which the BCV is connected. Click **Add**. In the **Content** field of the Add/Edit Content for Subclient dialog box, type the primary host path of the content that you want to back up, or click **Browse** to find and select this data. In the **Backup Host BCV Path** field of the Add/Edit Content for Subclient dialog box, type the path through which the backup host accesses this data on the BCV, or click **Browse** to find and select this path. Click **OK**. The primary host data path and corresponding backup host BCV path are added as a single entry in the **Contents of subclient** list. To add additional entries, repeat these steps. Refer to Notes below for more information.

○ For Quick Recovery Agents, click the Subclient Properties (Content) tab and configure the following options:

- Click **Add Volume**. From the Adding Volume dialog box, select volume(s) that you want to add to the subclient content (use CTRL + click to select multiple volumes). You can add/edit additional advanced options for the selected volume by select **Advanced** on the Adding Volume dialog box. Click **OK**.

- Click Add App to select an application and associated volumes. Click **OK**.

  Any instances you intend to protect and recover with the QR Agent must be configured in the QR Agent properties Authentication tab. They will not appear in the Add App dialog box if they are not configured. Only volumes containing datafiles and archive log files will be detected by Add App. Volumes containing control files and redo log files will not be detected.

  For a clustered Exchange Server, if you are *not* using VSS to perform an online quiesce, sufficient permissions are required in order to be able to perform an offline quiesce; in such cases, ensure that the **User Name** specified has Exchange Administrator rights.

  See also Configure Subclients for Overlapping Content.

3. Click **OK** to save your content configuration.

NOTES

- Content examples for NetWare are **OU=prospects**.**O=engineering.[Root]**, (for NDS content), and **SYS:\public** (for File System content).
- Content examples for adding an NFS-mounted file system to subclient content of a Unix File System *i*DataAgent:
  - */mountpointA* to include the entire file system at mountpointA
  - */mountpointA/projects* for only the *projects* directory within the file system at mountpointA.
- Informix subclients include one or more dbspaces. As databases are added to the dbspaces, the subclients are updated automatically.
- Exchange Mailbox *i*DataAgents and Exchange Mailbox/Public Folder Archiver Agents: Initially, all unconfigured mailboxes are assigned to the default subclient. You can create a new subclient and reassign mailboxes to this new subclient (within the same backup set/archive set). Once assigned, the mailboxes become part of the content of the new subclient.
- SharePoint Server *i*DataAgent: Initially, all unconfigured data types are assigned to the default subclient. You can create a new subclient and reassign data types to this new subclient. Once assigned, they become part of the content of the new subclient.
- ProxyHost *i*DataAgent: The primary host data path is backed up by the subclient and is the path through which the backup host accesses this data on the BCV. A primary host path and its corresponding backup host path are listed in the following format:

  <primary_host_path> --> <backup_host_path>

  For example, assume that you want to back up the **D:\data** directory from your primary host and **D:** is mirrored by a BCV, which is mapped to the backup host as **F:**. Consequently, the path to this data on the backup host is **F:\data.** When you add this directory to a subclient, it is listed in the **Contents of subclient** pane as **D:\data --> F:\data**.

  > The primary host path in the **Content** field is used for browse and restore purposes. However, it is the data in the **Backup Host BCV Path** which is actually backed up. If these two paths do not accurately correspond, the path that appears when data is browsed for restore does not accurately reflect the data that will be restored. In the example given above, assume that **D:\data** is entered in the **Content** field, while **F:\data1** is accidentally entered in the **Backup Host BCV Path**. If you browse and select **D:\data** to be restored, it is actually **D:\data1** that is restored. (Remember, **F:\Data1** is the path on the backup host that corresponds to **D:\data1** on the primary host.)

CONFIGURE THE SUBCLIENT FOR DATA ENCRYPTION

Encryption settings made at the subclient level are for data protection and recovery operations run from the CommCell Console and are not related in any way to settings made at the instance level which is for third-party Command Line operations only.

See Data Encryption - Support for a list of supported products.

Before You Begin

- Encryption must be enabled at the client level prior to configuring any subclients residing on that client. See Configure the Client for Data Encryption.
- If you are attempting to configure for third-party Command Line operations, do not use this procedure. See Configure Third-party Command Line Operations for Encryption.

Required Capability: Capabilities and Permitted Actions

To configure the subclient for data encryption:

1. From the CommCell Console, right-click the subclient and click **Properties**.

2. From the Subclient Properties (Encryption) tab, select an option based on the criteria described in the Encryption tab help.

3. Click **OK** to save your settings and close subclient properties.

CREATE A NEW SUBCLIENT

Before You Begin

- Review Subclients.

- Do not create a subclient while the parent node or any sibling subclient has a data protection or archive operation currently running on it.

- In cases where a new subclient is created with the same name as a deleted subclient, the system will append a Unix time stamp to the deleted subclient's name in data protection job history reports and views to distinguish the two subclients. For example, *subclientname*_1104257351.

- Informix *i*DataAgents: If you will be using the Informix ONBAR utility to create backup and restore scripts, you need not create subclients. Otherwise, if you will be using the CommCell Console to back up and restore Informix database objects (subsets/dbspaces), then you will need to create a subclient.

- ProxyHost *i*DataAgents: If you are using a BCV, you must prepare a batch file or a shell script file on the backup host containing commands to synchronize and split the BCV. The Resource Pack includes information on configurations for these batch files or shell scripts, as well as examples that apply to specific applications and hardware (e.g., Exchange databases in an EMC Symmetrix environment). See Resource Pack for more information on the Resource Pack.

  The ProxyHost *i*DataAgent also requires that you set permissions for the batch/shell script file on the backup host.

- SQL Server Database *i*DataAgents: When running on Windows Server 2003 and VSS is enabled, the **New Subclient** command is not available.

- PostgreSQL *i*DataAgents: Once you configure the PostgreSQL instance, the system automatically generates the default backup sets and default subclients. However, you can use the CommCell Console to create user-defined subclients for dump backup sets to distribute some of the database content. You cannot create user-defined subclients for FS backup sets.

Required Capability: See Capabilities and Permitted Actions

➤ To create a new subclient:

1. From the CommCell Browser, right-click the node (agent/backup set/archive set/instance) for which you want to create a new subclient, click **All Tasks** (if applicable), and then simply click **New Subclient** for most agents.

   ○ For the SQL Server *i*DataAgent, expand **New Subclient** and click either **Database** to include individual databases or **File/File Group** to include database elements**.**

2. Click the General tab or General (Quick Recovery Agent) tab of the Subclient Properties dialog box and type the name (up to 32 characters) of the subclient that you want to create.

   ○ For supported agents identified in Support Information - Snapshot Engines, you can select a QSnap option to snap data and then perform a data protection operation on the data.

   ○ For Image Level on Unix and Image Level ProxyHost on Unix, use the **Incremental Support Using** field to configure either a CXBF subclient or a checksum subclient and to enable incremental support for either subclient type.

   ○ For QR Agents, you must also select a QR Policy from the **QR Policy** list.

   ○ For the Windows *i*DataAgents that support VSS, you can optionally Enable VSS on a Subclient.

3. Select other options from the General tab as appropriate for the agent.

4. Click the **Content** or **Databases** tab of the Subclient Properties dialog box and Configure Subclient Content as appropriate for your agent.

5. For all agents (except QR), click the Storage Device (Data Storage Policy) tab of the Subclient Properties dialog box, then select a data storage policy to associate with this subclient from the storage policy list.

   ○ For the DB2 and DB2 DPF *i*DataAgents, you can also change the number of data backup streams. For the DB2 DPF *i*DataAgent, the default stream threshold should be equal to the total number of database partitions for the subclient.

   ○ For SQL Server *i*DataAgents, you can also click the Storage Device (Log Storage Policy) tab of the Subclient Properties dialog box, then select a log storage policy to associate with this subclient from the storage policy list and select the number of backup streams for transaction log backup jobs.

   ○ For 1-Touch for Unix, it is strongly recommended that the storage policy that you select for the subclient configured for 1-Touch use a MediaAgent on a different computer. If you do this, and if the system crashes, the media will not have to be exported to another MediaAgent in order to recover the system.

6. For Oracle and DB2 *i*DataAgents, click the Backup Arguments (Oracle) or Backup Arguments (DB2, DB2 DPF) tab of the Subclient Properties dialog box and Configure Backup Arguments as appropriate for your agent. Note that the backup arguments for Informix are located on the Content tab.

7. For Migration Archiver Agents, click the **Archiving Rules** or **Rules** tab of the Subclient Properties dialog box and configure archiving rules as appropriate for your agent. In order to perform rules-based migration archiving operations, the **Disable All Rules** checkbox must be cleared.

   If the File Archiver for Windows supports Data Classification, several filter-like configuration fields are defined as archiving rules and are available from the Subclient Properties (Rules) tab. If you want to define content and archiving rules based on file attributes other than volumes, size, and modified time (i.e., if you want to customize your rules), click the Advanced tab and configure as appropriate. Also, stub management options can be configured from the Stub Rule tab. See Configure Archiving Rules - File Archiver Agents for step-by-step instructions.

8. For ProxyHost and Image Level ProxyHost *i*DataAgents, click the Pre/Post Process tab of the Subclient Properties dialog box. In the **PreScan** field, type the path to the batch file/shell script file that contains those commands that are to run before each backup of the subclient, or click **Browse** to locate and select this file. For ProxyHost and Image Level ProxyHost, the file must reside on the backup host or primary host.

9. Optionally (if supported for your agent) you can:

   - Add a Data Protection or Discovery Filter for a Subclient on the Filters tab.

- Configure a Subclient for Pre/Post Processing of Data Protection/Archive Operations on the Pre/Post Process tab.
- Enable Software Compression for a Subclient on the Software Compression tab of the **Storage Device** tab.
- Configure the Subclient for Data Encryption on the Encryption tab.
- Enable or Disable Operations for this subclient on the Activity Control tab.
- Configure Mailbox Stores for Auto-Discovery on the Auto-discovery tab.
- Configure the Subclient for 1-Touch on the 1-Touch Recovery tab.
- View or change the user group security associations for this subclient from the Security tab.
- Determine location from where archive logs will be backed up or deleted from the Log Destinations tab.

10. Click **OK** to save the subclient configuration. For QR Agents, this procedure is now complete. For all other agents, continue on to the next step.

11. The Backup Schedule dialog box advises you to schedule data protection operations for your new subclient. It is recommended you elect to set a schedule now. You can also associate this subclient with an All Agent Types schedule policy (which is automatically created by the system, or can be a user defined Data Protection schedule policy). If you have already associated a schedule policy at a previous level (Backup Set/Instance, Agent, Client, or Client Computer Group) the schedules defined in the Schedule Policy will be automatically applied to the new subclient. See Schedule Policy for more information.

    ○ If you want to associate this subclient with an All Agent Types schedule policy, click **Associate with Generic Schedule Policy**, and then select that schedule policy from the drop-down list box. Click **OK**.

    ○ If you want to associate this subclient with a specific schedule policy, click **Associate to schedule policy**, and then select the schedule policy from the drop-down list box. Click **OK**.

    ○ If you have selected to define a schedule for this subclient:

        ■ Click **Schedule**.
        ■ From the Backup/Archive Options dialog box, select the type of data protection operation that you want to schedule.
        ■ If you want to set Advanced Backup/Archive Options, click **Advanced**.
        ■ After selecting the data protection type and any advanced options, click **OK**. The **Schedule Details** dialog box appears.
        ■ From the Schedule Details tab, select the scheduling options that you want to apply, then click **OK**.

    ○ If you don't want to create a data protection schedule at this time, click **Do Not Schedule,** and then click **OK**.

This task is now complete.

DELETE A DATA PROTECTION FILTER FROM A SUBCLIENT

Before You Begin

- Review Filters.
- Do not change the data protection or discovery filter of a subclient that has a data protection operation in progress.
- File Archiver for Windows/Unix Agents: We recommend that you don't delete the following entries from the exclusion filter, as it could cause your file system to be inoperable. For Windows, these include: *.dll, *.bat, *.exe, *.cur, *.ico, *.lnk. For Unix, these include *.a, *.ksh, *.csh, *.sh, *.lib, *.so.

Required Capability: Capabilities and Permitted Actions

▶ To delete a data protection or discovery filter entry from a subclient:

1. From the CommCell Browser, right-click the subclient whose data protection or discovery filter you want to delete, and then click **Properties** from the shortcut menu.

2. Click the Filters tab of the Subclient Properties dialog box.

3. To delete an entry from the Exclusions list, click the entry in the upper pane then click the upper **Delete** button. (Repeat this step for each entry that you want to delete.)

4. To delete an entry from the Exceptions list (if applicable for your agent), click the entry in the lower pane then click the lower **Delete** button. (Repeat this step for each entry that you want to delete.)

5. Click **OK** to save your changes.

NOTES

- Whenever you delete an entry from the exclusion filter, check if the exceptions list (i.e., lower pane) contains any entries that are children of the deleted data (if applicable for your agent). If so, you should delete them as described in Step 4 since they no longer need to be listed. The system automatically deletes any exceptions that are children of a deleted exclusion unless you used wildcard expressions in the exclusion path.
- When you change a data protection or discovery filter, the change is effective the next time the subclient is backed up/archived.
- Data will not be backed up in a differential backup for a subclient after a filter was removed.
- Since Incremental backups only back up data that has been modified since the last backup, previously filtered files whose filters are now removed, will not

be backed up unless they have been modified since that last backup. To back up previously filtered files that have not been modified but whose filters have been removed since the last backup, you need to run a Full backup.

- Performing a full backup after changing filters or exceptions is recommended.

DELETE A USER-DEFINED SUBCLIENT

Related Topics:

- Command Line Interface - qdelete subclient
- Subclients

Required Capability: See Capabilities and Permitted Actions

To delete a user-defined subclient:

1. From the CommCell Browser, right-click the user-defined subclient that you want to delete, and then click **Delete** from the shortcut menu.

2. A confirmation message is displayed, asking if you want to delete the subclient.
   Click **No** to cancel the deletion and retain the subclient, or click **Yes** to continue the deletion. If you click **Yes**:

   ○ the subclient, and any data that may have been protected/archived by the subclient are logically deleted, and you can no longer access the corresponding data for recovery/retrieve purposes. However, the data remains valid for the length of time specified by the associated retention period. Some agents allow you to browse data from a deleted subclient provided that the Browse Data Before date and time precedes the time that the user-defined subclient was deleted.

   ○ for agents that support a default subclient, once the user-defined subclient is deleted its contents are automatically reallocated to the default subclient the next time a data protection/archive/discovery operation is run on the default subclient to ensure data protection coverage.

   ○ the system deletes the selected subclient node and removes it from the CommCell Browser.

   ○ the system deletes any data protection/archive and recovery/retrieve job schedules that are associated with the subclient.

DISCOVER AND ASSIGN NEW DATABASES

Required Capability: See Capabilities and Permitted Actions

To discover and assign new databases:

1. From the CommCell Browser, click **Configure** from any of these locations:

   ○ For Notes Database *i*DataAgent right-click the partition with the subclient to which you want to assign databases, select **All Tasks** and then click **Configure**.

   ○ For Notes Document *i*DataAgent right-click the backup set with the subclient to which you want to assign databases, select **All Tasks** and then click **Configure**.

   ○ For both *i*DataAgents, you can use the Subclient Properties (Databases) tab to access its **Configure** button.

2. From the Add/Modify database/subclient configuration for partition dialog box, click **Discover**.

3. When the discovery process completes, the system redisplays the **Add/Modify database/subclient in partition/backup set** dialog box which displays the databases that have already been assigned; plus any newly discovered databases that have not been assigned. The unassigned databases are those that have no entry in the Subclient column.

4. To assign these databases, click the Subclient box of each database that you want to assign and select the desired subclient from the list. Alternatively, you can select a range of databases and use **Change all selected databases to** list to assign a single subclient to all the databases in one step.

   Regardless of the assignment method, your choices always include:

   ○ The default subclient

   ○ Any user-defined subclients

   ○ The Do Not Backup subclient

   If you choose the Do Not Backup subclient, the database will not back up.

5. For the Notes Document *i*DataAgent, click the **Restore View Name** box for the database element that you want to assign to the subclient to make the list arrow appear. Click again to open the list. Select an option from the list. Alternatively, you can select a range of databases and use **Change all restore View names to** list to assign a single name to all the selected databases in one step.

6. To register your database assignments with the system, click **Apply**.

7. If you have no other databases to assign, click **OK**.

ENABLE OR DISABLE OPERATIONS

Required Capability: See Capabilities and Permitted Actions

Level	Capability
CommCell	Administrative Management with CommCell level association
Client Computer Group	Administrative Management with Client Computer Group level association
Client	Agent Management with Client level association
Agent	Agent Management with Agent level association
Subclient	Agent Management with Subclient level association

To enable or disable activity control at the CommCell, client computer group, client, agent, or subclient levels:

1. From the CommCell Browser, right-click the CommServe, client computer group, client computer, agent, or subclient, and then click **Properties** from the short-cut menu.

2. From the Activity Control tab of the associated Properties dialog box, select or clear option(s), as desired.

3. Click **OK**.

Disabled data management and/or data recovery operations are displayed with client and/or agent icon changes in the CommCell Browser. For a comprehensive list of all icons in the CommCell Console, see CommCell Console Icons.

ENABLE OR DISABLE SOFTWARE COMPRESSION FOR A SUBCLIENT

Before you Begin

- Do not enable/disable software compression for a subclient that is being backed up/archived.

Required Capability: Capabilities and Permitted Actions

To enable software compression for a subclient:

1. From the CommCell Browser, right-click the subclient for which you wish to enable software compression and then click **Properties**.

2. Click the **Storage Device** tab and from the Data Storage Policy tab, select the storage policy from the **Storage Policy** list.

   If applicable for the selected agent, click the Log Storage Policy tab and select a storage policy from the **Transaction Log Storage Policy** list.

3. Then click the Storage Device (Data Transfer Option) tab and choose the appropriate compression option for this subclient.

4. Click **OK** to save your changes.

This task is now complete.

REMOVE A PROCESS FROM PRE/POST PROCESSING OF DATA PROTECTION/ARCHIVE OPERATIONS

Before You Begin

- We recommend not removing a pre/post process for a subclient that is currently running a data protection or archive operation.

- Review the Overview and Agent-Specific Guidelines for your agent before removing pre/post processes for data protection/archive operations.

Required Capability: Capabilities and Permitted Actions

To remove a process from Pre/Post processing of data protection/archive operations:

1. From the CommCell Browser, right-click the subclient for which you want to remove a pre/post process, and then click **Properties** from the shortcut menu.

2. Click the Pre/Post Process tab of the Subclient Properties dialog box.

3. Click the text inside the space that corresponds to one of the following phases for which you want a pre/post process removed, then press the **Delete** key:
   - PreScan
   - PreArchive
   - PreCopy
   - PreSnap
   - PostBackup
   - PostScan
   - PostArchive

○ PostCopy

○ PostSnap

4. Repeat Step 3 for any additional processes that you want to remove.

5. Click **OK**.

RENAME A SUBCLIENT

Before You Begin

- You can rename a subclient at any time. However, we recommend that you don't rename a subclient while a data protection or archive operation is running on that subclient.

- In cases where a subclient is renamed using the same name as a deleted subclient, the system will append a Unix time stamp to the deleted subclient's name in data protection job history reports and views to distinguish the two subclients. For example, *subclientname*_1104257351.

Required Capability: See Capabilities and Permitted Actions

To rename a subclient:

1. From the CommCell Browser, right-click the subclient that you want to rename, and then click **Properties** from the shortcut menu.

2. From the Subclient Properties (General) tab, or the QR Agent Subclient Properties (General) tab, type the new name in the **Subclient Name** field, and then click **OK**.

The CommCell Browser updates the subclient with its new name. The new name will also be reflected in any associated schedules and reports.

SET THE NETWORK BANDWIDTH AND NETWORK AGENTS FOR A DATA PROTECTION OPERATION

Before you Begin

- Do not modify the network bandwidth and network agents for a subclient or instance that is being backed up.

Required Capability: Capabilities and Permitted Actions

To Set the Network Bandwidth and Network Agents for a Data Protection Operation:

1. From the CommCell Browser, right-click a subclient and then click **Properties.**

   For the DB2, DB2 DPF, Informix, Oracle, Oracle RAC, SAP, or Sybase *i*DataAgent, right-click an instance and then click **Properties.**

2. Click the **Storage Device** Data Transfer Option tab.

   For the QR Agent:

   ○ To control network bandwidth settings, use the Throttle Network Bandwidth section in the General tab of the Subclient Properties dialog box.

   ○ To control the number of network agents, you must create a nQRNetworkAgents registry key.

3. Enter a number of **Network Agents** that must be used to perform data protection operations on the subclient/instance.

4. Click the **Throttle Network Bandwidth (MB/HR)** option and then enter the throughput as needed. Note that throttling is done on a per Network Agent basis.

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

This task is now complete.

VIEW DATA PATHS ASSOCIATED WITH A SUBCLIENT

Required Capability: See Capabilities and Permitted Actions

To view data paths:

1. From the CommCell Browser, right-click the subclient whose data paths you want to view, then click **Properties** from the shortcut menu.

2. Click the Storage Device tab of the Subclient Properties dialog box.

3. From the **Data [or Logs] Storage Policy** tab, click **Show Data Paths** to view the data paths used by the subclient to access the storage media for data protection operations. Click **Close** to exit the Data Paths dialog box.

4. Click **OK** to exit the Subclient Properties Storage Device tab.

VIEW SUBCLIENT CONTENT

Required Capability: See Capabilities and Permitted Actions

To view content of a subclient:

1. From the CommCell Browser, right-click the subclient whose content you want to view, then click **Properties**.

2. From the Subclient Properties dialog box, click the **Content** tab (or **Databases** tab for Lotus Notes) to view the contents of the subclient.

3. Click **OK** to close the dialog box.

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OVERVIEW

You can view the backup and restore history of *i*DataAgents, BackupSets/Instances, and subclients.

The **Backup Job History Filter** dialog box allows you view detailed, historical information about backup jobs. Once you have chosen your filter options, they are displayed in the **Backup Job History** window.

For information on Job Details displayed in the Job History, see Viewing Job Information.

From this window, you can right-click a backup job to:

- Browse the data backed up by the backup set or instance from the **Backup Job History** window. This is provided as right-click option for each job. (This menu option, when selected, initiates the **Browse Options** dialog box preset with the values needed to browse the data.)
- Browse the snapshots created during SnapProtect backup
- View items that failed during the backup job
- View details of the backup job
- View files that were not indexed during a backup job that performed content indexing
- View associated media
- View events of the backup job
- View a list of items that were backed up
- View a list of items that were moved to media for a SnapProtect backup job
- View the log files of the backup job.
- View the RMAN log of an Oracle backup job.
- View the BRTools log of a SAP for Oracle job. You can view the BRTools log for only those jobs that were initiated from the CommCell Console.

ITEMS THAT WERE BACKED UP

The **View backup file list** option allows you to view a list of the files that were backed up during a backup job, along with the data sizes of each backed up file. The **View backed up messages** option allows you to view a list of messages that were backed up by using, along with the alias name, display name, email address, sender name, and recipient of each message.

From these windows you can conduct searches based on a particular string, allowing to find particular files quickly and easily.

It is not recommended that this option is used to view a very large list of items that were backed up (such as lists that total over 100,000 items). It is suggested that the Browse option is used to find a list of backed up items in such cases.

See View the Items That Were Protected During a Data Protection Operation for step-by-step instructions.

ITEMS THAT FAILED

The items that failed for a data protection operation include individual files that may fail the job even though a particular job completed successfully. You can determine the degree of success for these jobs using this window.

Filters can be used in conjunction with the "Items That Failed" list on the data protection Job History Report to eliminate backup or archive failures by excluding items which consistently fail that are not integral to the operation of the system or applications. Some items fail because they are locked by the operating system or application and cannot be opened at the time of the data protection operation. This often occurs with certain system-related files and database

application files.

Also, keep in mind that you will need to run a full backup after adding failed files to the filter in order to remove them.

A listing of files and folders that failed is not available for the Quick Recovery Agent, or the Image Level and Image Level ProxyHost *i*DataAgents. These agents do not perform a file level backup/copy.

Certain application related files can never be backed up by the File System *i*DataAgent due to the nature of the data. For example, Microsoft SQL Server database files cannot be backed up by the File System *i*DataAgent. In this and other similar circumstances, consider entering files such as these as exclusions in the corresponding subclient filter.

See View the Items That Failed For a Data Protection Operation for step-by-step instructions.

PRUNING BACKUP HISTORY INFORMATION

You can prune backup history information based on the number of days established in the **Days to keep the backup job histories** option from the **Media Management Configuration (Service Configuration)** dialog box available in the **Control Panel**.
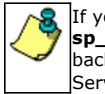
If you have installed the SQL Server *i*DataAgent, do not use the stored procedure **sp_delete_backuphistory, sp_delete_database_backuphistory** and **sp_delete_backup_and_restore_history** provided by Microsoft clean up backup history. By default backup history is automatically pruned from the CommServe database and the Microsoft SQL Server, as necessary.

SUPPORTED FEATURES

- NAS *i*DataAgents do not support the ability to view items that failed.
- The Image Level and Image Level ProxyHost *i*DataAgents do not support the ability to Browse the data of a selected backup job in Backup Job History.

CONTENT INDEXING HISTORY INFORMATION

Content Indexing history can also be viewed of *i*DataAgents, BackupSets/Instances, and subclients. The following information is displayed:

ITEMS THAT WERE SUCCESSFULLY CONTENT INDEXED

You can view the list of items that were successfully content indexed during a Content Indexing operation for a particular job. for step-by-step instructions, see View the Items that Were Successfully Content Indexed.

CONTENT INDEXING FAILURES

Content Indexing failures allows you to look at the messages, files and documents that could not be indexed during a content indexing operation. Content Indexing looks at each file (of the supported data types) and indexes its contents allowing advanced searches of backed up/archived/migrated data.

Files that were not indexed, (perhaps because the file's content could not be read) are added to the Content Indexing Failures list, and are viewable from the View Content Index (Failed Items) option in the Job History window. For step-by-step instruction, see View the Items that Failed to Content Index.

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Resubmit a Backup Job

VIEW BACKUP JOB HISTORY

▶ To view backup history:

1. From the CommCell Browser, right-click the entity (client computer, *i*DataAgent, backup set or subclient) whose backup history you want to view, click **View**, and then click **View Backup History.**

2. From the Backup History filter window select the filter options, if any, that you want to apply, and then click OK. The system displays the Backup Job History window.

3. Click **OK**.

VIEW THE ITEMS THAT WERE PROTECTED DURING A DATA PROTECTION OPERATION

This option is available for File System-like agents.

Required Capability: none required

▶ To view the list of items that were protected during a data protection operation.

1. From the CommCell Browser, right-click the entity whose history of data protection operations you want to view, click **View**, and then click the necessary options to view a job history.

2. From the Job History Filter dialog box, select the filter options, if any, that you want to apply, and then click **OK**.

3. From the Job History window, right-click the operation whose list of protected items you want to view, and then select **View backup file list/View Backed Up Messages.** The **Backup file List** window displays a list of the backed up files/messages that were included in the backup job. You can use the **Search** option to find items in the window.

4. Click **File** -> **Exit**.

5. Click **Close** from the **Job History** window.

VIEW THE ITEMS THAT FAILED FOR A DATA PROTECTION OPERATION

A listing of files and folders that failed is not available for the Quick Recovery Agent, nor the Image Level and Image Level ProxyHost *i*DataAgents. These agents do not perform a file level backup/copy.

▶ To view the list of items that failed for a data protection operation:

1. From the CommCell Browser, right-click the entity whose history of data protection operations you want to view, click **View**, and then click to view a job history.

2. From the Job History Filter dialog box, select the filter options, if any, that you want to apply, and then click **OK**.

3. From the Job History window, right-click the operation whose list of failed items you want to view, and then select **View Failed Items**. The **Unsuccessful Backup Files** window (for DataArchiver Agents, **Items On Which Archive Failed**) displays those items that failed. If no items failed, a message to that effect is displayed.

4. Click **Close**.

VIEW JOB HISTORY DETAILS

Required Capability: See Capabilities and Permitted Actions

▶ To view the details of a job history:

1. From the CommCell Browser, right-click the entity (e.g., subclient, client computer, etc.) whose job history you want to view, click **View**, and then click job history.

2. From the Job History Filter dialog box, select the filter options that you want to apply and click **OK**.

3. From the Data Management Job History window, right-click the job whose job details you want to view, and then click **View Job Details**.

4. The Job Details dialog box appears, displaying detailed job history in General, Details, Phase Details and Attempts tabs for the selected job.

5. Click **OK**.

> If viewing the details of a job with a pending or failed status, the **Reason for Job Delay** field will contain an Error Code, which, if clicked, will launch the customer support website displaying troubleshooting article(s) related to the specific issue.

VIEW THE MEDIA OR MOUNT PATHS OF A JOB HISTORY

To view media or mount paths associated with a job history:

1. From the CommCell Browser, right-click the entity (e.g., subclient, client computer, etc.) whose job history you want to view, click **View**, and then select the appropriate history.

2. From the Job History window select the filter options, if any, that you want to apply, and then click **OK**.

3. From the job history widow, right-click the backup whose media or mount paths you want to view, and then click **View Media**.

4. The Media Used By Job ID window displays a list of media or mount paths used by the operation.

5. Click **OK**.

VIEW THE EVENTS OF A JOB HISTORY

Required Capability: See Capabilities and Permitted Actions

To view the events associated with a job:

1. From the CommCell Browser, right-click the entity (e.g., subclient, client computer, etc.) whose job history you want to view, click **View**, and then click **Job History**.

2. From the Job History Filter dialog box, select the filter options that you want to apply and click **OK**.

3. From the Data Management Job History window, right-click the job whose job details you want to view, and then click **View Events**.

4. The All Found Events window gets displayed. If no events where found for the back up, a message is displayed to that effect.

5. Click **Close**.

VIEW THE ITEMS THAT WERE MOVED TO MEDIA DURING SNAPPROTECT BACKUP

> This option is available for the SnapProtect Backup.

To view the list of items that were moved to tape during SnapProtect Backup.

1. From the CommCell Browser, right-click the entity whose history of data protection operations you want to view, click **View**, and then click the necessary options to view a job history.

2. From the Job History Filter dialog box, select the filter options, if any, that you want to apply, and then click **OK**.

3. From the Job History window, right-click the operation whose list of items moved to media you want to view, and then select **View Backup Copy file listing.** The **Backup file List** window displays a list of the backed up files that were included in the backup copy job. You can use the **Search** option to find items in the window.

> ● To view the files moved to media for a backup copy job, right-click the SnapProtect backup job corresponding to the Backup Copy job and select **View Backup Copy file listing**.
> ● View backup items will not display anything for a Backup Copy job.

4. Click **File** -> **Exit**.

5. Click **Close** from the **Job History** window.

VIEW THE LOG FILES OF A JOB HISTORY

Required Capability: See Capabilities and Permitted Actions

➤ To view the log files of a Job History:

1. From the CommCell Browser, right-click the entity whose job history you want to view, and then click to view a job history.

2. From the job history filter window select the filter options, if any, that you want to apply, and then click **OK**.

3. From the job history window, right-click the job whose log files you want to view, and then click **View Logs**.

4. The contents of the log file related to the selected job history are displayed in the **Log File for Job _n_** window.

VIEW THE ITEMS THAT WERE SUCCESSFULLY CONTENT INDEXED

This option is available for operations that performed content indexing.

➤ To view the list items that were not indexed during content indexing:

1. From the CommCell Browser, right-click the entity whose operations you want to view, click **View**, and then click the necessary options to view a job history.

2. From the Job History Filter dialog box, select the filter options, if any, that you want to apply, and then click **OK**.

3. From the Job History window, right-click the job for which you want to view the successfully content indexed items, select **View Content Index**, and click **Successful Items**.

4. Click **Close**.

5. Click **Close** from the **Job History** window.

VIEW THE ITEMS THAT FAILED TO CONTENT INDEX

This option is available for operations that performed content indexing.

➤ To view the list of items that failed to content index:

1. From the CommCell Browser, right-click the entity whose operations you want to view, click **View**, and then click the necessary options to view a job history.

2. From the Job History Filter dialog box, select the filter options, if any, that you want to apply, and then click **OK**.

3. From the Job History window, right-click the job for which you want to view the list of items failed to content index, select **View Content Index**, and click **Failed Items**.

4. Click **Close**.

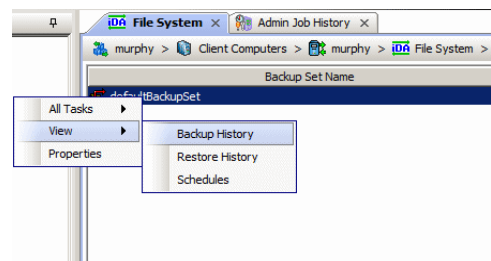5. Click **Close** from the **Job History** window.

RESUBMIT A BACKUP JOB

➤ To resubmit a backup job:

1. From the CommCell Browser, right-click the subclient whose backup history you want to view, click **View**, and then click **View Backup History.**

   Additionally, you can view the backup history for a client computer, _i_DataAgent, or backup set . However, the dialogs displayed may be different.

   Note, if viewing the backup history for a client computer, right-click the comptuer name and select **Job History.**


2. From the Backup History filter window select the filter options, if any, that you want to apply, and then click OK. The system displays the Backup Job History window.

   Note: If viewing the job history for a client computer, ensure that the **Backup** radio button is selected.

3. The Backup Job History window displays with the specified filter options.

4. Right-click on any job, and select **Resubmit Job**.
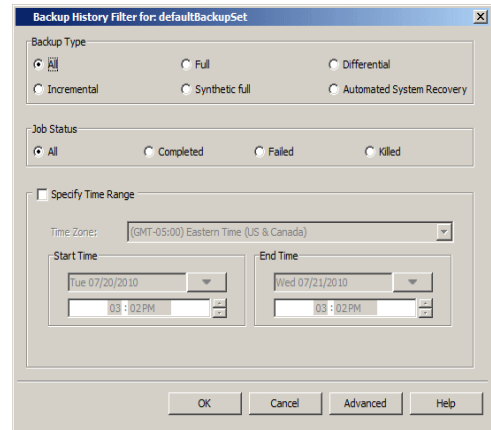
5. From the Backup Options dialog box, select the job options appropriate for the job you want to restart.
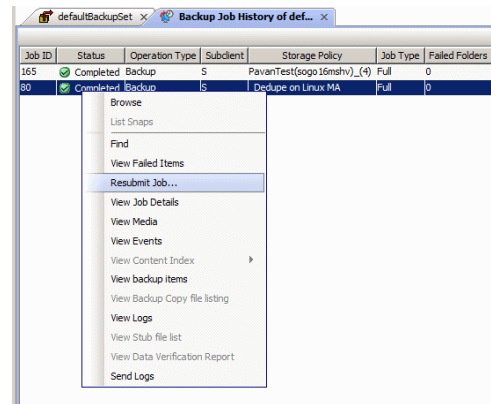
6. If you need to run the backup operation immediately, select **Immediate** from the **Job Initiation** tab. Go to step 11.

7. If you need to schedule the restore operation, select **Schedule** from the Job Initiation tab and click **Configure**.

8. From the **Schedule Details** dialog box that appears, select the appropriate scheduling options.
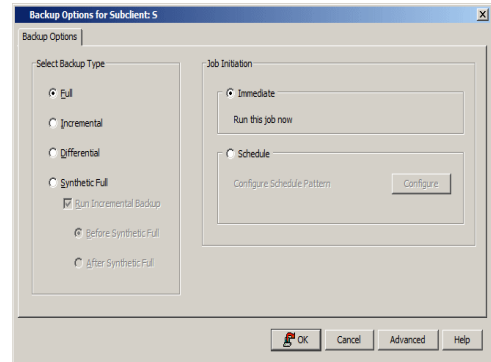
   Click **Options** to view the Advanced Schedule Options dialog box.

9. From the **Advanced Schedule Options** dialog box:
   - **Range of recurrence**: Specify the date on which you want this schedule to take effect.
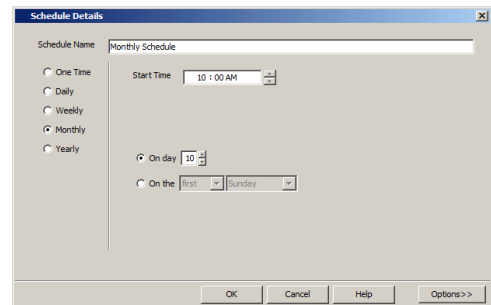
- **Repeat**: Select the value for which you want to run the job repeatedly on the day in which the job is scheduled to run.
- **Time Zone**: Select a specific time zone from which the job schedule time will be based.

Click **OK** to close the **Advanced Schedule Options** dialog box.
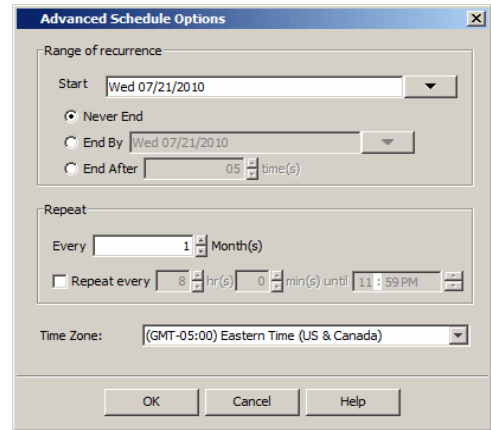
10. Click **OK** to close the **Schedule Details** window.

11. Click **OK** to close the job restart window.

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OVERVIEW

The **Restore History Filter** dialog box allows you to view detailed, historical information about restore jobs.

For information on Job Details displayed in the Job History, see Viewing Job Information.

Once you have chosen your filter options, they are displayed in the **Restore Job History** window. From this window you can right-click a restore job to:

- View Restore Items; items in the job that were **Successful**, **Failed**, **Skipped** or **All**. These items, if any, will be listed in the **Restored Files** window.
- View Job Details of the restore job. The job details will be listed in the **Job Details** window.
- View Events of the restore job. The job events will be listed in the **All Found Events** window.
- View Log files of the restore job. The job log files will be listed in the **Log File** window.
- View the RMAN Log of an Oracle restore job. The RMAN Log will be listed in the **Oracle Restore Log** window.
- View the BRTools log of a SAP for Oracle restore job. You can view the BRTools log for only those jobs that were initiated from the CommCell Console.

ITEMS THAT ARE RESTORED

When viewing files that are restored in the **Restored Files** window, each of the files is listed with the restore status level appended at the end of the file path. The possible status levels are: RESTORED, FAILED and OLDER.

Successfully restored files will be listed with RESTORED appended to the file path. If files are not restored/recovered due to errors, the file paths will be appended with FAILED. Under some circumstances, the system may not restore/recover certain files because they are older versions of the same files already present in the files system; these files are appended with the word OLDER.

SUPPORTED FEATURES

Consider the following.

- NAS *i*DataAgents do not support the ability to view failed/successful item lists.
- Restore Job History will not display Oracle rman_util jobs at the instance level.

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View Restore Job History

View the Events of a Job History

View the Media of a Job History

View the Log Files of a Job History

VIEW RESTORE JOB HISTORY

To view the restored items associated with a job:

1. From the CommCell Browser, right-click the entity (e.g., subclient, client computer, etc.) whose job restore history you want to view, click **View**, and then click **Restore History**.

2. From the Job History filter window, select the filter options, if any, that you want to apply, and then click **OK**.

3. From the Job History window, right-click the job whose restored items you want to view; click **View Restore Items**, and select from the type of items to view: **Successful**, **Failed**, **Skipped** or **All**.

4. The **Restored Files** window will display the selected type of restored items for the job.

5. Click **OK**.

VIEW THE EVENTS OF A JOB HISTORY

Required Capability: See Capabilities and Permitted Actions

▶ To view the events associated with a job:

1. From the CommCell Browser, right-click the entity (e.g., subclient, client computer, etc.) whose job history you want to view, click **View**, and then click **Job History**.

2. From the Job History Filter dialog box, select the filter options that you want to apply and click **OK**.

3. From the Data Management Job History window, right-click the job whose job details you want to view, and then click **View Events**.

4. The All Found Events window gets displayed. If no events where found for the back up, a message is displayed to that effect.

5. Click **Close**.

VIEW THE MEDIA OR MOUNT PATHS OF A JOB HISTORY

▶ To view media or mount paths associated with a job history:

1. From the CommCell Browser, right-click the entity (e.g., subclient, client computer, etc.) whose job history you want to view, click **View**, and then select the appropriate history.

2. From the Job History window select the filter options, if any, that you want to apply, and then click **OK**.

3. From the job history widow, right-click the backup whose media or mount paths you want to view, and then click **View Media**.

4. The Media Used By Job ID window displays a list of media or mount paths used by the operation.

5. Click **OK**.

VIEW THE LOG FILES OF A JOB HISTORY

Required Capability: See Capabilities and Permitted Actions

▶ To view the log files of a Job History:

1. From the CommCell Browser, right-click the entity whose job history you want to view, and then click to view a job history.

2. From the job history filter window select the filter options, if any, that you want to apply, and then click **OK**.

3. From the job history window, right-click the job whose log files you want to view, and then click **View Logs**.

4. The contents of the log file related to the selected job history are displayed in the **Log File for Job *n*** window.

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