HP Data Protector

Software Version: 8.10

Troubleshooting guide

Document Release Date: November 2016

Software Release Date: November 2016

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Contents

About this guide

This guide describes how to troubleshoot problems you may encounter when using Data Protector. It contains general problems and proposed actions to solve them.

Note: This guide does not contain troubleshooting information that is specific to the Data Protector installation, integrations, zero downtime backup functionality, and disaster recovery. The related information is covered in the respective guides.

Intended audience

This guide is intended for backup administrators responsible for maintaining and backing up systems on the network.

Document conventions and symbols

Table 1: Document conventions

Convention	Element
Blue text: “Document conventions” (page 13)	Cross-reference links and e-mail addresses
Blue, underlined text: http://www.hp.com	Website addresses
Bold text	• Keys that are pressed • Text typed into a GUI element, such as a box • GUI elements that are clicked or selected, such as menu and list items, buttons, tabs, and check boxes
Italic text	Text emphasis
`Monospace` text	• File and directory names • System output • Code • Commands, their arguments, and argument values
`Monospace, italic` text	• Code variables • Command variables
`Monospace, bold` text	Emphasized monospace text

Caution: Indicates that failure to follow directions could result in damage to equipment or data.

Important: Provides clarifying information or specific instructions.

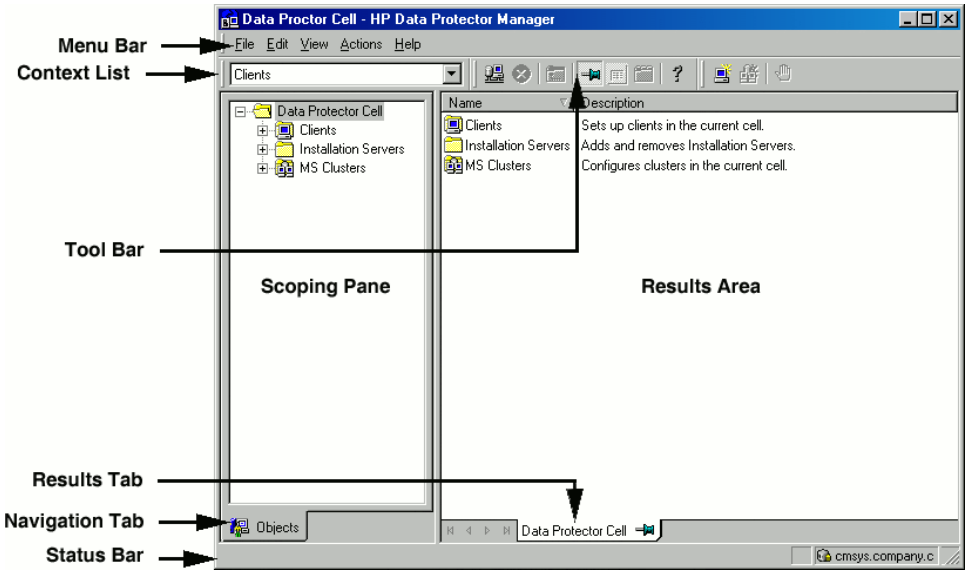
Note: Provides additional information.

Tip: Provides helpful hints and shortcuts.

Data Protector graphical user interface

Data Protector provides a cross-platform (Windows and UNIX) graphical user interface. For information about the Data Protector graphical user interface, see the HP Data Protector Help.

Figure 1: Data Protector graphical user interface



General information

General information about Data Protector can be found at http://www.hp.com/go/dataprotector.

HP technical support

For worldwide technical support information, see the HP support website:

http://www.hp.com/support

Before contacting HP, collect the following information:

- Product model names and numbers
- Technical support registration number (if applicable)
- Product serial numbers
- Error messages
- Operating system type and revision level
- Detailed questions

Subscription service

HP recommends that you register your product at the Subscriber's Choice for Business website:

http://www.hp.com/go/e-updates

After registering, you will receive e-mail notification of product enhancements, new driver versions, firmware updates, and other product resources.

HP websites

For additional information, see the following HP websites:

- http://www.hp.com
- http://www.hp.com/go/software
- http://support.openview.hp.com/selfsolve/manuals
- http://www.hp.com/support/downloads

Chapter 1: About Troubleshooting Data Protector

If you encounter problems when using Data Protector, you can often solve them yourself. This guide is intended to help you.

How to troubleshoot

To solve problems quickly and efficiently:

1. Make yourself familiar with the general troubleshooting information.
2. Check if your problem is described in the HP Data Protector Help file or the troubleshooting sections of applicable guides:
   - To troubleshoot installation and upgrade, see the *HP Data Protector Installation and Licensing Guide*.
   - To troubleshoot application integration sessions, see the *HP Data Protector Integration Guide*.
   - To troubleshoot zero downtime backup and instant recovery, see the *HP Data Protector Zero Downtime Backup Administrator's Guide* and *HP Data Protector Zero Downtime Backup Integration Guide*.
   - To troubleshoot disaster recovery, see the *HP Data Protector Disaster Recovery Guide*.
3. If you cannot find a solution to your problem, report the problem to the HP Customer Support Service. On how to prepare the required data for the support organization, "Before Calling Your Support Representative" on page 84.

Tip: For an overview and hints on performance aspects of Data Protector, see the *HP Data Protector Help* index: “performance”.

General checks

Before proceeding, ensure that:

- You are not running into known limitations that cannot currently be overcome. For specific information on Data Protector limitations and recommendations, as well as known Data Protector and non-Data Protector problems, see the *HP Data Protector Product Announcements, Software Notes, and References*.
- Your problem is not related to third-party hardware or software. In this case, contact the respective vendor for support.

- You have the latest Data Protector patches installed. Patches can be obtained from: http://support.hp.com

  On how to check which Data Protector patches are installed on your system, see the HP Data Protector Help index: “patches”.

- You have appropriate operating system patches installed.

  The required operating system patches are listed in the *HP Data Protector Product Announcements, Software Notes, and References*.

- For application backups, the backup is not failing because the application is down.
- The debug logs or redo logs filesystem has not overflown.
- The application data filesystem has not overflown.
- The system is not running low on memory.

About Data Protector Log Files

If you encounter a problem using Data Protector, the information in the log files can help you determine the problem.

Location of log files

Most Data Protector log files are located in:

Windows Vista, Windows 7, Windows 8, Windows Server 2008, Windows Server 2012: *Data_Protector_program_data*\log

Other Windows systems: *Data_Protector_home*\log

HP-UX, Solaris, and Linux systems: /var/opt/omni/log and /var/opt/omni/server/log (the latter only on HP-UX and Linux systems)

Other UNIX systems and Mac OS X systems: /usr/omni/log

Format of log files

Most Data Protector log file entries are of the following format:

time_stamp process.PID.Thread_ID source_file_info Data Protector_version log_entry_message

Example

```
03/16/2013 8:47:00 AM INET.3048.3036 ["inetnt/allow_deny.c /main/dp61/6":467] A.08.10
b330 A request 0 (BDF) came from host computer.company.com (10.17.xx.xxx) which is
not in AllowList: not proceeding with this request!
```

Contents of log files

The table below describes the Data Protector log files:

Table 2: Data Protector log files

Log file	Description
`debug.log`	Contains unexpected conditions. While some can help you, the information is mainly used by the support organization.
`inet.log`	Contains local security related events for the client, such as denied requests. On UNIX systems, it contains also all requests made to the Data Protector Inet service.
`enhincr.log`	Contains information on enhanced incremental backup activities, for example, detailed error information for problems with the enhanced incremental backup repository.
`Ob2EventLog.txt`	Contains Data Protector events and notifications. The Event Log represents a centralized Data Protector event depository.
`media.log`	Each time a medium is used for backup, initialized, or imported, a new entry is created in this log file. The file can be used when recovering the IDB to find the medium with the IDB backup and to find out which media have been used after the last backup of the IDB.
`omnisv.log`	Contains information on when Data Protector services were stopped and started.
`security.log`	Contains security related events on the Cell Manager. Some events may be a result of normal operation and simply mean that an operation was attempted that is not allowed by a particular user. On the other hand, events can indicate that deliberate break-in attempts may be in progress.
`purge.log`	Contains traces of the background purge of the IDB.
PostgreSQL logs	Contain the IDB logs. The files reside on the Cell Manager in: **Windows systems:***Data_Protector_program_data*`\server\db80\pg\pg_log` **UNIX systems:**`/var/opt/omni/server/db80/pg/pg_log`
`pgbouncer.log`	Contains the pgBouncer logs.
Application Server logs	Contain the application server logs for components such as Advanced Scheduler and Missed Job Executions. The files reside in: **Windows systems:***Data_Protector_program_data*`\log\AppServer` **UNIX systems:**`/var/opt/omni/log/AppServer`

`sanconf.log`	Contains session reports generated by the `sanconf` command.
`sm.log`	Contains details on internal errors that occurred during backup and restore sessions, such as errors in parsing backup specifications.
`upgrade.log`	This log is created during upgrade and contains upgrade core part (UCP) and upgrade detail part (UDP) messages.
`DPIDBsetup_`*`PID`*`.log` (UNIX systems specific)	This log is created during upgrade and contains traces of the upgrade process.
`IS_install.log`	Contains a trace of remote installation and resides on the Installation Server.
`sap.log`, `oracle8.log`, `informix.log`, `sybase.log`, `db2.log`	Application specific logs contain traces of integration calls between the application and Data Protector. The files reside on the application systems.

About Data Protector Telemetry Files

Data Protector gathers and collects the following high-level information for telemetrics:

- Host OS version
- Data Protector components and its versions
- Devices or Media Servers - Are associated to a client in the Cell Manager. It includes the host name details where the device is attached, name of the device, library name, pool name where the media is placed, and device type.
- Schedules - The schedule telemetry exposes information grouped by backup and session types. It represents the number of full and incremental backup processes scheduled every year by backup and session types.
- Capacity Based Licensing (CBL) - CBL is leveraged to gather information on used capacity. For more information, see the HP Data Protector Installation Guide.
- License categories - Lists the number of licenses available in Data Protector.

Note: The customer related internal information is gathered, but the Host information is masked or replaced with a character numeric format.

Once the telemetric data is collected, the data is uploaded to Support using the debug logs. For further information, see the Using the omnidlc command from the CLI to process debug files or the *HP Data Protector Command Line Interface Reference*.

Enabling telemetry files

You can enable the telemetry files from the **Clients** context or **Internal Database** context.

To enable telemetry files from the **Clients** context:

1. In the Scoping Pane, expand the **Clients** folder and select the client for which telemetry files are required.
2. Right-click on the selection and select the required operation: **Collect Debug Files** or **Calculate Debug Files Space**

   The Debug File Collector - Options (Or) Debug File Space Calculation -Options page is displayed.
3. Select **Telemetry files**.

OR

To enable telemetry files from the **Internal Database** context:

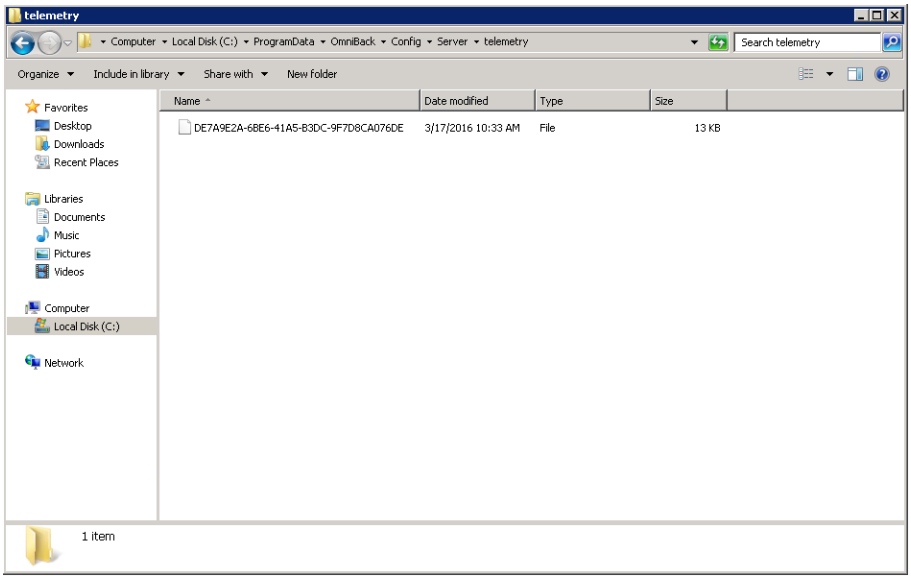
1. In the Scoping Pane, expand the **Sessions** folder and select the session for which telemetry files are required.
2. Right-click on the selection and select **Collect Debug Files** operation.

   The Debug File Collector - Options page is displayed.
3. Select **Telemetry files**.

The telemetry data files are stored in the following location (see Telemetry data files location):

`Data_Protector_program_data/config/server/telemetry`

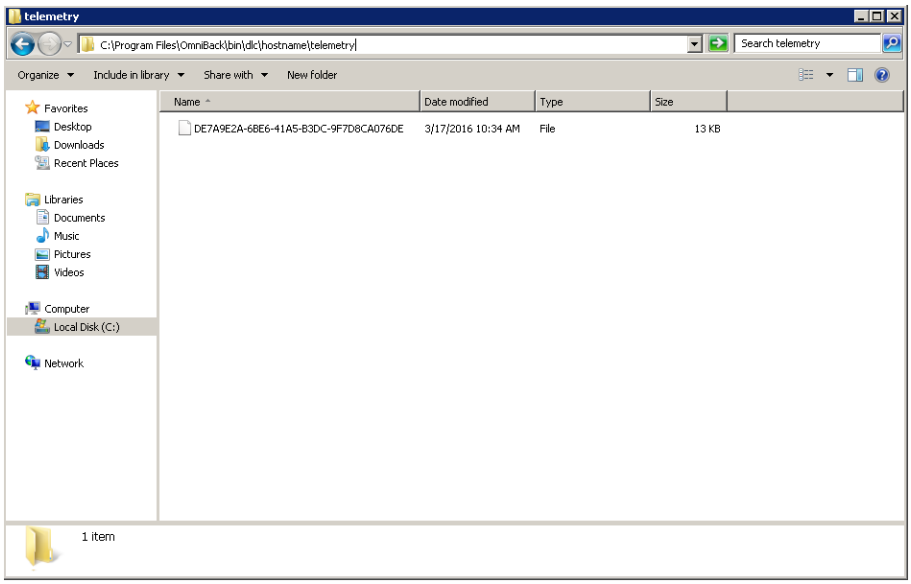
Telemetry data files location



The unpacked telemetry files are saved in the following location (see Unpacked telemetry files location):

`dlc/<hostname>/telemetry`

Unpacked telemetry files location



Note: The Cell Manager performance will not be impacted significantly during the collection of telemetry data.

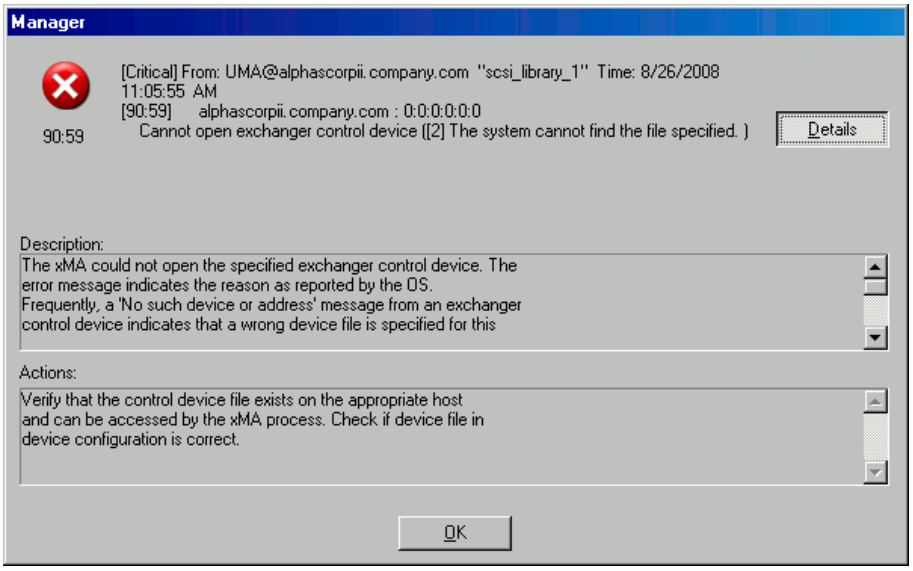
About Data Protector Error Messages

Many Data Protector error messages have troubleshooting information associated with them, providing detailed explanations of errors and suggestions for correcting problems. Such messages contain an error number that can be used to access this information.

Error messages in the Data Protector GUI

Some error messages in the session output provide the error number, presented as a clickable link. If you click the link, the error message dialog displays more information about the error. Click **Details** for a detailed description of the error and suggested actions.

Figure 2: Sample error message dialog



Error messages in the Data Protector CLI

If you receive an error message containing the error number in the Data Protector CLI, you can look up the error details in the troubleshooting file. This is a text file containing all Data Protector error messages, each of them with a description and possible actions.

The troubleshooting file is located on the Cell Manager:

Windows systems:*Data_Protector_home*\help\enu\Trouble.txt

UNIX systems:/opt/omni/gui/help/C/Trouble.txt

Example

```
MESSAGE:
[12:1051] Client security violation. Access denied.

DESCRIPTION:
The target host is secured and has been accessed by a host that is not on its list of
cell authorities.

ACTION:
* Check and update the client's list of cell authorities.
* In case your client has been locked out, edit the allow_hosts file manually.
```

About Data Protector Customization

Sometimes you can solve Data Protector issues by customizing its global or omnirc options.

Global options

Global options are a set of parameters, such as timeouts and limits, that define behavior of the entire Data Protector cell. They can be set on the Cell Manager.

Note: Most users should be able to operate the Data Protector without changing the global options.

Global options can be set in two ways:

- "Customizing the Data Protector Global Options" on page 25
- "Customizing Options By Editing The Global File" on page 26

Most often used global options

The following list includes the most often used global options. See the global options file for a complete description.

Global option	Description
`MaxSessions`	Specifies the maximum number of Data Protector sessions (of any type) that can concurrently run in the cell. Default: `1000`.
`MaxBSessions`	Specifies the maximum number of Data Protector backup sessions that can concurrently run in the cell. Default: `100`.
`MaxMAperSM`	Specifies the maximum number of Data Protector backup devices that can be concurrently used in one backup, object copy, object consolidation, or restore session. Default: `100`.
`MaxDAperMA`	Specifies the maximum Disk Agent concurrency (device concurrency) for Data Protector backup, object copy, and object consolidations sessions. Default: `32`.
`DCDirAllocation`	Determines the algorithm used for selecting the DC (Detail Catalog) directory for a new DC binary file: `Fill in sequence`, `Balance size` (default), `Balance number`. For more information on the DC directory selection algorithms, see the *HP Data Protector Help* index: “maintenance of DCBF”.
`MediaView`	Changes the fields and their order in the Media Management context.

`InitOnLoosePolicy`	Enables Data Protector to automatically initialize blank or unknown media if the loose media policy is used.
`DailyMaintenanceTime`	Determines the time after which the daily maintenance tasks can begin. Default: `12:00` (noon). For a list of daily maintenance tasks, see the *HP Data Protector Help* index: "checks performed by Data Protector".
`DailyCheckTime`	Determines the time after which the daily check can begin. Default: `12:30 P.M.`. You can also disable the daily check. For a list of daily check tasks, see the *HP Data Protector Help* index: "checks performed by Data Protector".
`SessionStatusWhenNoObjectToCopy` and `SessionStatusWhenNoObjectToConsolidate`	Enable you to control the session status of object copy and object consolidation sessions if there are no objects to copy or to consolidate. If the value is set to: • `0` (default), then the session will be marked as failed and a critical error will be displayed. • `1`, then the session will be marked as successful and a warning will be displayed. • `2`, then the session will be marked as successful and a normal message will be displayed.
DeleteUnprotectedMediaMinimumAge	Controls the minimum age of the media to be even considered for deletion by the "delete unprotected media" command. All media below the minimum age are skipped. By default, the value is set to 1 day.

Omnirc options

The omnirc options are useful for troubleshooting or overriding other settings affecting the behavior of the Data Protector client only. However, use them only if your operating environment demands it. The Disk Agents and Media Agents use the values of these options.

The `omnirc` options can be set on each client in the file:

Windows Vista, Windows 7, Windows 8, Windows Server 2008, Windows Server 2012: *`Data_Protector_program_data`*`\omnirc`

Other Windows systems: *`Data_Protector_home`*`\omnirc`

HP-UX, Solaris, and Linux systems: `/opt/omni/.omnirc`

Other UNIX systems and Mac OS X systems: `/usr/omni/.omnirc`

How to use omnirc options?

To set omnirc options:

1. Depending on the platform, copy the template `omnirc.tmpl` or `.omnirc.TMPL` to `omnirc` or `.omnirc`, respectively.
2. Edit the file `omnirc` or `.omnirc`. Uncomment the line of the desired option by removing the "#" mark, and set the desired value.
3. After setting the options:
   - When creating the `omnirc` file (either by copying or by using an editor), verify its permissions. On UNIX systems, permissions will be set according to your umask settings and may be such that some processes may be unable to read the file.

     Set the permissions to `644` manually.
   - When changing the `omnirc` file, restart the Data Protector services/daemons on the Data Protector client where you modified the omnirc file. This is mandatory for the crs daemon on UNIX systems and recommended for Data Protector CRS and Inet services on Windows systems. Specifically on Windows, restarting is not required when adding or changing entries, only when removing entries (or renaming the file).

Note: When using special characters in option names in the omnirc file, take into account operating system specific limitations regarding supported characters for setting environment variables. For example, on UNIX systems, variables cannot contain any of the following characters: `Space Tab / : * " < > |`.

On how to set omnirc options during disaster recovery, see the *HP Data Protector Disaster Recovery Guide*.

Most often used omnirc options

The following list includes the most often used omnirc options. See the omnirc file for a complete description.

Omnirc option	Description
`OB2_SSH_ENABLED`	To enable secure remote installation using secure shell (SSH), set this option to `1` on the Installation Server. The default value is `0` (not set).
`OB2_ENCRYPT_PVT_KEY`	To use encrypted private keys for secure remote installation, set this option to `1` on the Installation Server. The default value is `0` (not set).

OB2_ENCRYPT_MEDIUM_STRICT	Enables you to control whether to strictly use drive-based encryption in backup, object consolidation, object copy, and automated media copy sessions. The option is only considered when the GUI option Drive-based encryption is selected for the current session. If the value is set to 1, then: • if the selected tape drive does not support encryption, the session will be aborted by default. • if the selected tape drive supports encryption, but the medium in it does not support encryption, a mount request will be issued (in case of a standalone tape drive) or the next available medium will be checked for encryption support first and eventually a mount request will be issued if no media with encryption support are found (in case of a tape library). • if the selected tape drive and the medium in it both support encryption, the data writing operation will be performed in an encrypted mode. If the value is set to 0, then: • if the selected tape drive does not support encryption, the data writing operation will be performed in an unencrypted mode. • if the selected tape drive supports encryption, but the medium in it does not support encryption, the data writing operation will be performed in an unencrypted mode. • if the selected tape drive and the medium in it both support encryption, the data writing operation will be performed in an encrypted mode.
OB2_ENCRYPT_FORCE_FORMAT	Enables you to control the formatting behavior when using Data Protector drive-based encryption. If the value is set to: • 0 (default), a formatting operation aborts. • 1, a formatting operation is forced.
OB2_AES_COMPATIBILITY_MODE	Data restored from AES encrypted backups created using Data Protector versions (DP 7.03_108, 8.14, 8.14_209, 8.14_210) is not useful. Correcting this requires a manual intervention. To restore AES-256 software encrypted backups created using Data Protector versions (DP 7.03_108, 8.14, 8.14_209, 8.14_210), set this option to 1 in the omnirc file on the client that needs to be restored. To restore AES-256 software encrypted backups created using other Data Protector versions, set this option to 0 (or) remove this option from the omnirc file, and restart the inet daemon on that specific client.

OB2BLKPADDING_n	Specifies the number of empty blocks written to media at the initialization time. When copying media, this helps to prevent the target media from running out of space before all data is copied.
OB2DEVSLEEP	Changes the sleep time between each retry while loading a device.
OB2ENCODE	Enables you to always use data encoding, regardless of how the backup options are set in the backup specification.
OB2OEXECOFF	Enables you to restrict or disable any object `pre-` and `post-exec` scripts defined in backup specifications for a specific client.
OB2REXECOFF	Enables you to disable any remote session `pre-` and `post-exec` scripts for a specific client.
OB2CHECKCHANGETIME (UNIX systems specific)	Defines when to use the "last inode change" time for incremental backups.
OB2INCRDIFFTIME (UNIX systems specific)	Specifies an "incremental latency" period that is enforced when checking the "last inode change" time with incremental backups. This option takes effect only when the `OB2CHECKCHANGETIME` option is set to `2`.
OB2RECONNECT_ACK	Defines how long Data Protector should wait for a message of acknowledgment (default: `1200` seconds). If the agent does not get an acknowledgment in this time, it assumes that the socket connection is no longer valid.
OB2RECONNECT_RETRY	Defines how long a Data Protector Disk Agent or Media Agent should try to reconnect after a connection failure. Default: `600` seconds.

OB2SHMEM_IPCGLOBAL	This option should be set to `1` on HP-UX clients that have both the Disk Agent and a Media Agent installed in case the following error occurs during backup:
	`Cannot allocate/attach shared memory (IPC Cannot Allocate Shared Memory Segment)`
	`System error: [13] Permission denied) => aborting`

OB2VXDIRECT	Enables direct reading (without cache) for Advanced VxFS filesystems, which improves performance.
OB2_CLP_MAX_ENTRIES (Windows systems specific)	Sets the number of entries the Windows NTFS Change Log Provider can hold in memory. The amount of memory that the Change Log Provider uses depends on the filename length of all entries. Minimum: `15 000` entries (this represents approximately 25 MB of RAM). Default: `100 000` entries (approximately 120 MB of RAM). If the number is changed to a smaller value so that not all entries can be kept in memory, the backup time may increase.

OB2_CLP_CREATE_EI_REPOSITORY (Windows systems specific)	Specifies whether the Windows NTFS Change Log Provider creates the Enhanced Incremental Repository the first time it runs. Set this option to 1 to create the Enhanced Incremental Repository. Default: 0 (not created). With this option set, the backup time increases, since the Enhanced Incremental Repository is always updated. However, this enables a fallback to a conventional enhanced incremental backup.
OB2_ENHINC_SQLITE_MAX_ROWS	Specifies the maximum number of rows in the enhanced incremental backup database (SQLite on Windows, HP-UX, and Linux systems) that can be stored in the internal memory cache. If the backup consists of a large number (millions) of directories, this option is used to improve the Disk Agent performance by increasing the maximum number of rows stored in the cache.
OB2SANCONFSCSITIMEOUT (Windows systems specific)	Sets the timeout for sanconf related operations. It must be set on all clients affected by sanconf before running the command. Default: 20 seconds.
OB2PORTRANGE	Limits the range of port numbers that Data Protector uses when allocating listen ports dynamically. This option is typically set to enable the administration of a cell through a firewall. Note that the firewall needs to be configured separately and that the specified range does not affect the Inet listen port.
OB2PORTRANGESPEC	Limits the range of port numbers that specific Data Protector processes use. Note that the firewall needs to be configured separately and that the specified range does not affect the Inet listen port. For examples of port range configuration, see the*HP Data Protector Help* index: “firewall support”.

Customizing the Data Protector Global Options

In the Data Protector Global Options table, you can modify values of global options or add new ones.

Prerequisites

- Your user account must be a member of a Data Protector Admin user group.

Setting the global options using GUI

Steps

To set global options using the GUI:

1. In the Context List, click **Internal Database**.
2. In the Scoping Pane, under **Internal Database**, click **Global Options**.

   In Results area, the **Data Protector Global Options** table is displayed, consisting of six columns:

   - Group - represents the contextual section the option belongs to.
   - In use - indicates the status of an option. Selected options are active, while the empty check box indicates the inactive options that are commented out in the global options file.
   - Name
   - Origin - indicates the file which the option is loaded from. If the column is hidden, display it using filters in the table headings.
   - Value - represents the value to which the option is currently set.
   - Description - informs you how to use the option.
3. To modify an option - in the Results Pane, in the Value column - click on the value you want to change, and enter a new one.

   To add an option, click **Add new option**, fill in the dialog box with option parameters and click **Add**.
4. At the bottom of the Results Pane, click **Save**.

You can also modify multiple rows before saving.

To change the table appearance, use the filters in the table headings.

In case anything goes wrong during the saving process, a copy of the original global options file named `global.old` is made in the global options folder.

Customizing Options By Editing The Global File

Besides using the GUI, you can edit the `global` file in a text editor to set the Data Protector global options.

Caution: HP recommends using the GUI to set the global options, as it ensures validation of changes upon saving and reduces the chance of issues arising from the out-of-range or invalid settings, accidental deletions, typographical or spelling errors.

Steps

1. Open any text editor
2. In the text editor, open the `global` file, located in the default Data Protector server configuration directory, in the `options` subdirectory.

3. To activate an option, remove the # mark in front of its name and set it to the desired value.
4. Save the file in the Unicode format.

Chapter 2: Troubleshooting Networking and Communication

Hostname resolution problems

An important aspect of the TCP/IP configuration process is the setup of a hostname resolution mechanism.

For successful communication, host A needs to resolve host B by its fully qualified domain name (FQDN). Resolving a host means that host A can interpret the FQDN of host B and determine its IP address.

Hostname resolution must be provided at least for the following:

- Each client must be able to resolve the address of the Cell Manager and the clients with Media Agents.
- The Cell Manager must be able to resolve the names of all clients in the cell.
- The MoM Server, if used, must additionally be able to resolve the names of all Cell Managers in the MoM environment.

Checking the TCP/IP setup

Once you have the TCP/IP protocol installed, you can use the `ping` and `ipconfig` (Windows systems) or `ifconfig` (UNIX systems) utilities to verify the TCP/IP configuration.

Note that on some systems the `ping` command cannot be used for IPv6 addresses, the `ping6` command should be used instead.

Testing DNS resolution

Test DNS resolution among hosts by running:

```
omnicheck -dns
```

This will check all DNS connections needed for normal Data Protector operation.

For more information on the command, see the `omnicheck` man page or the *HP Data Protector Command Line Interface Reference*.

Connected system presents itself as client X

Problem

The response to the `omnicheck` command is: *client_1* `connects to` *client_2*`, but connected system presents itself as` *client_3* The `hosts` file on `client_1` is not correctly configured or the hostname of `client_2` does not match its DNS name.
Action
Consult your network administrator. Depending on how your environment is configured to perform name resolution, the problem needs to be resolved either in your DNS configuration or the `hosts` file on the affected clients, located in: **Windows systems:***%SystemRoot%*`\system32\drivers\etc` **UNIX systems:**`/etc`

Client A failed to connect to client B

Problem
The response to the `omnicheck` command is: *client_1* `failed to connect to` *client_2* The `hosts` file on `client_1` is not correctly configured or `client_2` is unreachable (for example disconnected).
Action
Configure the `hosts` file correctly or connect the disconnected system.

Cannot connect to client X

Problem
The response to the `omnicheck` command is: *client_1* `cannot connect to` *client_2* This means that the packet has been sent, but not received because of a timeout.
Action
Check for network problems on the remote host and resolve them.

Checking time settings in the cell

Problem

Data Protector uses timestamps extensively for communication between various cell components (Cell Manager, clients). If the system clocks on the Cell Manager and clients differ significantly, such as weeks or even months (for example, if you changed settings for testing purposes, the system clock was not updated after a restore of a virtual machine and so on), unexpected results may occur, including communication errors, failures to search or restore backups, and similar.
Action
Check the system time settings and make sure that the system clocks do not differ significantly. Note that if the clock on the client is not synchronized with the clock on the Cell Manager, the certificate may become invalid, thus resulting in failed authentication. For example, when the clock on the Cell Manager is ahead of the clock on the client, the certificate created during installation is not yet valid for the client attempting to connect to it.

Recovering from power outages

The IDB is not reachable after a system recovery

Problem
The database is capable to recover into a consistent state after such unexpected events as power outages, severe operating system or hardware failures, and so on. However, the first access to the database (after the system recovery) might fail with an internal error. This is a temporary problem which occurs only once.
Action
Access the database again.

Data Protector sessions are actually not running but remain marked as `In Progress`

Problem
In the Internal Database context of the Data Protector GUI, the session status of one or more Data Protector sessions that are actually not running remains marked as `In Progress`.
Action
1. Close the Data Protector GUI. 2. Execute the `omnidbutil -clear` command to set the status of all sessions that are actually not running but are marked as `In Progress` to `Failed`. 3. Restart the Data Protector GUI.

The hpdp-idb-cp service fails to start

Problem
The hpdp-idb-cp service does not start.
Action
1. Stop the Data Protector services. 2. Delete the following file: **Windows systems**: *Data_Protector_program_data*\log\hpdp-idb-cp.pid **UNIX systems**: /var/opt/omni/log/pgbouncer.pid 3. Restart the Data Protector services.

Novell Open Enterprise Server (OES) problems

TSA login denied

Problem

The following message is displayed:
`From: VRDA@computer.company.com`
`"/media/nss/NSS_VOLUME_5"`
`TSA: Cannot connect to Target Service (login denied).`

Action
Run the HPLOGIN utility `/usr/omni/bin/hplogin` with the correct user credentials.

Other problems

Client fails with “Connection reset by peer”

Problem
On Windows systems, default configuration parameters of the TCP/IP protocol may cause problems with connectivity. This may happen due to a high network or computer use, unreliable network, or especially when connecting to a different operating system. The following error is reported: `[10054] Connection reset by peer.`

Action
You can configure the TCP/IP protocol to use 8 instead of the default 5 retransmissions. It is better not to use higher values because each increment doubles the timeout. The setting applies to all network connections, not only to connections used by Data Protector. If the Cell Manager is running on a Windows system, apply the change on the Cell Manager system first. If the problem persists or if the Cell Manager is running on a UNIX system, apply the change to the problematic Windows clients. 1. Add the `DWORD` parameter `TcpMaxDataRetransmissions` and set its value to `0x00000008(8)` under the following registry key: `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet \Services\Tcpip\Parameters` 2. Restart the system. **Caution:** Making a mistake when editing the registry may cause your system to become unstable or even unusable.

Client fails with “The client is not a member of any cell”

Problem
When performing a Data Protector operation on a client and the Cell Manager information is not found on the client, the operation fails with the following error: `The Client is not a member of any cell.`
Action
• If the client is listed in the Clients context of the Data Protector GUI: a. In the Clients context, expand **Clients**, right-click the client, and click **Delete**. b. A dialog asks you if you also want to uninstall Data Protector from the client. Click **No**. c. Right-click **Clients** and click **Import Client**. d. Specify the client and click **Finish**. • If the client is not listed in the Clients context: a. In the Clients context, right-click **Clients** and click **Import Client**. b. Specify the client and click **Finish**.

Excessive logging to the inet.log file

Problem
If clients are not secured and the Cell Manager is configured in the HP Serviceguard environment or has multiple names or IP addresses, the `inet.log` file may contain many entries of the following type: `A request 3 (vbda.exe) came from host computer.company.com which is not a cell manager of this client.` This happens because a client that is not secured recognizes only the primary hostname of the Cell Manager. Requests from any other client are allowed, but are logged to the `inet.log` file.
Action
Secure the client. Requests from the clients listed in the `allow_hosts` file will not be logged to `inet.log`. Requests from other clients will be denied. For instructions, see the *HP Data Protector Help* index: “securing client systems”. If this workaround is for any reason not possible in your environment, you can secure the clients and specify * as an IP address range for the systems you want to allow access. This means that your clients will accept requests from all systems (any IP address) and will practically not be secured, but you will resolve the excessive logging issue. **Important:** All possible hostnames for the Cell Manager nodes should be listed in the `allow_hosts` file on each client that is being secured. This enables access to the client also in case of a failover. If you accidentally lock out a client, you can manually edit the `allow_hosts` file on that client. For more information, see the *HP Data Protector Help* index: “client security”.

StoreonceSoftware device fails with "StoreOnce device offline"

Problem
If the Encrypted Control Communication is already enabled with the StoreOnceSoftware (SOS) service, and the default `hpdpcert.pem` is used, the upgrade to Data Protector 8.14 completes and SOS does not accept any further connections.
Action
To ensure that SOS connections are accepted after the upgrade to Data Protector 8.14 completes, see the *HP Data Protector 8.10 Installation Guide* (*Chapter 6: Maintaining the installation* > *Security considerations* > *Managing encrypted control communication*).

The enabling or disabling of Encryption Control Communication can fail from omnicc if short hostnames are specified

Problem
If the name resolution on the host where `omnicc` command is executed does not expand hostnames as Cell Manager does, the enabling/disabling of the Encrypted Control Communication can incorrectly report success without performing the action.
Action
Perform one of the following steps: • Fix hostname expansion on the client where `omnicc` command is executed. • Specify fully qualified client hostname in command line. • Run `omnicc` command on another host, where hostnames are expanded correctly • Use GUI for enabling or disabling Encryption Control Communication.

Installation session fails with error message

Problem

With encrypted control communication enabled, the installation session fails if the installation Server is shared between two cells. The following error message appears:
`Cannot start session`
`ErrorNo <3069>`
`Error Text <[12:3069] Certificate verification has failed. The certificate is signed by an untrusted certificate authority (CA).>`

Action
To successfully complete the installation session, ensure one of the following: • The Installation Server that is used for installation is part of the current cell. • Encrypted control communication is configured to establish trust between the clients in the cell and the Installation Server.

Chapter 3: Troubleshooting Data Protector Services and Daemons

Introduction

The Data Protector services (Windows systems) and daemons (UNIX systems) run on the Cell Manager. Run the `omnisv -status` command to check whether services/daemons are running.

If the Data Protector services/daemons seem to be stopped or have not been installed on the target Data Protector client, make sure that you do not have a name resolution problem.

For more information, see "Troubleshooting Networking and Communication" on page 28.

A list of Data Protector processes

The following table shows which processes run while Data Protector is idle or performing some basic operations, such as a backup, a restore, or a media management session.

		Always	Backup	Restore	Media management
Cell Manager	**Windows**	omniinet.exe mmd.exe crs.exe kms.exe hpdp-idb hpdp-idb-cp hpdp-as	bsm.exe	rsm.exe	msm.exe
	UNIX	mmd crs kms hpdp-idb (postgres) hpdp-idb-cp (pgbouncer) hpdp-as (standalone.sh)	bsm	rsm	msm

Disk Agent client	**Windows**	omniinet.exe	vbda.exe	vrda.exe	
	UNIX		vbda	vrda	
Media Agent client	**Windows**	omniinet.exe	bma.exe	rma.exe	mma.exe
	UNIX		bma	rma	mma

Problems starting Data Protector services on Windows

You do not have permission to start the services

Problem

The following error displays:
`Could not start the` *`ServiceName`* `on` *`SystemName`*`.`
`Access is denied.`

Action
The system administrator should grant you the permission to start, stop, and modify services on the system that you administer.

Changed service account properties

Problem

If the service account does not have the permission to start the service or if the service account properties (for example, the password) have been changed, the following error displays:
`The Data Protector Inet service failed to start due to the following error:`
`The service did not start due to a logon failure.`

Action
In the **Windows Control Panel** > **Administrative Tools** > **Services**, modify the service parameters. If the problem persists, contact your system administrator to set up the account with appropriate permissions. The account should be a member of the `Admin` group and should have the `Log on as a service` user right.

A specific service has not been found

Problem

The location of the service is registered in the `ImagePath` registry key. If the executable does not exist in the location specified under this key, the following error displays: `Could not start the ServiceName on SystemName. The system can not find the file specified!`
Action
Reinstall Data Protector on the Cell Manager, preserving the IDB.

MMD fails upon starting the CRS service

Problem
If the Data Protector CRS service fails to start and `mmd.exe` invokes a `Dr.Watson` diagnosis, the database log files are probably corrupted.
Action
1. Delete the `mmd.ctx` file from the default Data Protector Internal Database directory. 2. Restart the services using the `omnisv -stop` and `omnisv -start` command.

Problems starting Data Protector daemons on UNIX

The following daemons run on the UNIX Cell Manager:

- In the directory `/opt/omni/lbin`:
  - Data Protector CRS daemon: `crs`
  - Data Protector IDB daemons: `hpdp-idb (postgres)`, `hpdp-idb-cp (pgbouncer)`, `hpdp-as (standalone.sh)`
  - Data Protector Media Management daemon: `mmd`

Normally, these daemons are started automatically during the system startup.

The Data Protector Inet process (`/opt/omni/lbin/inet`) is started by the system inet daemon when an application tries to connect to the Data Protector port (by default 5555).

To manually stop, start, or check the status of the Data Protector daemons, log on to the Cell Manager as `root` and from the `/opt/omni/sbin` directory, run:

- `omnisv -stop`
- `omnisv -start`
- `omnisv -status`

Data Protector Cell Manager daemon could not be started

Problem
The output of the `omnisv -start` command is: `Could not start the Cell Manager daemon.`
Action
See the `omni_start.log` file for details. The file resides at the default Data Protector temporary files directory. Ensure that the following configuration files exist: • `/etc/opt/omni/server/options/global` • `/etc/opt/omni/server/options/users/UserList` • `/etc/opt/omni/server/options/ClassSpec`

The hpdp-idb service fails to start, reporting shared memory deficiency

Problem

On HP-UX systems, the hpdp-idb service fails to start and the following error is logged to the PostgreSQL log file (`/var/opt/omni/server/db80/pg/pg_log`):
`FATAL: could not create shared memory segment: Not enough space`
`DETAIL: Failed system call was shmget(key=7112001, size=2473459712, 03600).`
The issue appears because the hpdp-idb service cannot obtain the requested amount of shared memory due to memory fragmentation on the system.

Action
Restart the system to defragment the memory.

MMD fails upon starting the CRS service

Problem

The Data Protector CRS service fails to start and the following error is displayed: `[Critical] From: CRS@computer.company.com "" Time: 03/04/13 11:47:24 Unable to start MMD: Unknown internal error..` The database log files are probably corrupted.
Action
1. Delete the `mmd.ctx` file from the default Data Protector Internal Database directory. 2. Restart the services using the `omnisv -stop` and `omnisv -start` command.

Other problems with Data Protector processes

Data Protector performance on UNIX is impacted if Name Server Caching is disabled

Problem
Data Protector performance on UNIX systems can be negatively affected if the Name Server Caching (nscd) daemon is disabled. UNIX and Windows systems do not have a default name server cache. Data Protector operations create many DNS requests which may be impacted if the Name Server Caching (nscd) daemon is disabled.
Action
1. Ensure that the Name Server Caching (nscd) daemon is enabled and configured. The configuration of nscd varies by platform. For more information, see your platform's documentation. 2. Check the DNS settings and ensure that the DNS search order is correctly configured with the local domain first in the `etc/resolv.conf` file. 3. Restart the services using the `omnisv -stop` and `omnisv -start` command.

When performing a backup, the backup session stops after a certain period of time and the BSM stops responding

Problem
This issue may be caused by firewall closing an inactive connection.
Action

Ensure that the connection remains active so that the firewall does not close it. Set the following omnirc options:

```
OB2IPCKEEPALIVE=1
OB2IPCKEEPALIVETIME=number_of_seconds
OB2IPCKEEPALIVEINTERVAL=number_of_seconds
```

`OB2IPCKEEPALIVETIME` specifies how long the connection may remain inactive before the first keep-alive packet is sent and `OB2IPCKEEPALIVEINTERVAL` specifies the interval for sending successive keep-alive packets if no acknowledgment is received. The options must be set on the Cell Manager system.

Chapter 4: Troubleshooting User Interface

Graphical user interface problems

Data Protector graphical user interface problems are usually a result of services not running or not installed, or problems with network communication.

Connectivity and accessibility problems

No permission to access the Cell Manager

Problem

The following message displays:
`Your Data Protector administrator set your user rights so that you do not have access to any Data Protector functionality.`
`Contact your Data Protector administrator for details.`

Action
Contact the Data Protector administrator to add you as a user and give you appropriate user rights in the cell. On how to configure user groups, see the *HP Data Protector Help* index: “user groups”.

Connection to a remote system refused

Problem
On Windows, the response of the `telnet` *`hostname`* `5555` command is `Connection refused`.
Action
• If the `Data Protector Inet` service is not running on the remote system, run the `omnisv -start` command to start it. • If Data Protector is not installed on the remote system, install it.

Inet is not responding on the Cell Manager

Problem

The following message displays: `Cannot access the system (inet is not responding). The Cell Manager host is not reachable, is not up and running, or has no Data Protector software installed and configured on it.`
Action
If the problem is not communication between the systems, check the installation using `telnet`. Some components may not have been installed (properly). Check the installation steps in the *HP Data Protector Installation and Licensing Guide*. If the installation is correct, run the `omnisv -status` command to check whether the services on the Cell Manager are running properly.

Unable to start the filesystem browse agent

Problem
The following error occurs when a Data Protector user with sufficient privileges tries to save the backup specification and start the backup: `Unable to start filesystem browse agent`
Action
The Data Protector user must have the impersonation details configured properly in Inet.

Command-line interface problems

Data Protector commands cannot be invoked

Problem
After you attempt to invoke a Data Protector command in the Command Prompt or Terminal window, the command-line interpreter reports that the command cannot be found.
Action
Extend the value of the `PATH` environment variable in your operating system configuration with the paths to the command locations. This action enables you to invoke the Data Protector commands from any directory. If the value has not been extended, the commands can only be invoked from their locations, listed in the `omniintro` reference page in the *HP Data Protector Command Line Interface Reference* and the `omniintro` man page.

Chapter 5: Troubleshooting Devices and Media

Backup devices are subject to specific Data Protector licenses. For details, see the *HP Data Protector Product Announcements, Software Notes, and References*.

Problems involving device SCSI addresses are explained in detail in *Appendix B* of the *HP Data Protector Installation and Licensing Guide*.

General device and media problems

Cannot access exchanger control device on Windows

Problem
Data Protector uses the SCSI mini-port driver to control backup drives and libraries. Data Protector may fail to manage devices if other device drivers are loaded on the same system. When device operations such as media formatting or scanning are started, the following error displays: `Cannot access exchanger control device`
Action
On the system where the devices are located, list all physical devices configured on the system: *Data_Protector_home*`\bin\devbra -dev` If any of the SCSI addresses have the status value `CLAIMED`, they are used by another device driver. Disable the Windows robotics driver. For instructions, see the *HP Data Protector Help* index: “robotics drivers”.

SCSI device remains locked and session fails

Problem
SCSI drive or robotic control remains locked due to an incomplete SCSI reserve or release operation. The following message is displayed: `Cannot open device` If there is a Media Agent failure, the reserved device cannot be released again. Data Protector may fail to unlock the SCSI drive or robotic control and the subsequent session cannot use it.
Action
Ensure that no other application is using this device. To unlock the SCSI drive or SCSI robotic control, the device has to be power cycled.

Device open problem

Problem
When trying to use a DDS device, the following error displays: `Cannot open device (not owner)`
Action
Check whether you are using a medium that is incompatible with the Media Recognition System. Media used with DDS drives must comply with the Media Recognition System.

Using unsupported SCSI HBAs/FC HBAs on Windows

Problem
The system fails due to the usage of unsupported SCSI HBAs/FC HBAs with backup devices. Typically, the problem occurs when the SCSI device was accessed by more than one Media Agent at the same time or when the length of the transferred data defined by the devices block size was larger than the length supported by the SCSI HBA/FC HBA.
Action
You can change the block size of the device. For instructions, see the *HP Data Protector Help*: “setting advanced options for devices and media”. For information on supported SCSI HBAs/FC HBAs, see the *HP Data Protector Product Announcements, Software Notes, and References*.

Library reconfiguration failure

Problem
Configuration errors are reported during modification of an existing library configuration using the `sanconf` command after the device list file has been altered. The library configuration remains only partially created.
Action

You can recover the previous library configuration if you reuse the file with a list of hosts in your SAN environment and scan the hosts with `sanconf` again.

1. Scan the hosts in the cell:

   ```
   sanconf -list_devices mySAN.txt -hostsfile hosts.txt
   ```

2. Configure your library using the saved configuration file:

   ```
   sanconf -configure mySAN.txt -library LibrarySerialNumberLibraryName
   [RoboticControlHostName] [DeviceTypeNumber] -hostsfile hosts.txt
   ```

   The previous successful library configuration is automatically recovered.

If you add, remove, or modify the library later and configuration with the `sanconf` command fails, you can repeat the above procedure to restore the successful configuration.

An encrypted medium is marked as poor after a read or write operation

Problem

During a read or write operation on a medium that was written to using drive-based encryption, the session fails and the medium is automatically marked as poor.

The following error displays:

```
Cannot read from device ([5] I/O error)
```

This happens if a read or write operation was performed on a platform that does not support drive-based encryption. The medium quality is not affected. For an up-to-date list of supported platforms, see the latest support matrices at http://support.openview.hp.com/selfsolve/manuals.

Action

To correct the media condition status, reset the media condition by using the `omnimm -reset_poor_medium` option.

For details, see the `omnimm` man page or the *HP Data Protector Command Line Interface Reference*.

Creating null devices using Data Protector GUI and CLI

Problem

In operating systems such as UNIX , a null device is a special file that removes all the data written to it. Hence data is not available to any process that reads from this file and results in end-of-file immediately. However, the report for this write operation is shown as successful.

For troubleshooting purposes, if no actual data output is needed, null devices can be created upon request by HP support. This document provides information on creating null devices using the Data Protector GUI and CLI.

Action

Caution: Null devices should be created and used as a temporary solution, and removed after successfully completing the troubleshooting operation. Otherwise, if used accidentally for production backups, this process results in immediate data loss.

Complete the following steps in Data Protector GUI:

1. In the Context List, click **Devices & Media**.
2. In the Scoping Pane, right-click **Devices** and then click **Add Device** to open the wizard.
3. In the **Device Name** text box, enter the name of the device.
4. In the **Description** text box, enter a description (optional).
5. In the **Device Type** list, select the Standalone device type.
6. Click **Next**.
7. Specify the name null and click **Add**.
8. Click **Next**.
9. In the **Media Type** list, retain the default values.
10. For the **Default Media Pool**, retain the default values.
11. Click **Finish** to exit the wizard.

    The name of the device is displayed in the list of configured devices. You can scan the device to verify the configuration.
12. After creating a null device using theData Protector GUI, export the configuration of the specified backup device to an ASCII file. You can export the configuration using the following CLI command:

    ```
    omnidownload -device BackupDevice [-file FileName]
    ```

    For example, `omnidownload -device ThisIsNULLDevice -file NULL.dev`

Creating null devices using CLI

Null devices that are created using the Data Protector GUI can be replicated on another system using the CLI.

The `omnidownload` command enables you to display information about backup devices or to download the configuration of the specified backup device to an ASCII file. This command downloads information about a backup device and a library from the Data Protector Internal Database (IDB). This command is available on systems that have the Data Protector User Interface component installed.

Used together with the `omniupload` utility, this command enables you to create and maintain backup devices using the Command-Line Interface.

The `omniupload` utility, uploads a backup device file to the Data Protector Internal Database (IDB). Information on Data Protector backup devices is stored in the IDB. To configure a backup device, information on this device must be downloaded into a file. This is done using the `omnidownload` command. The file is then modified and uploaded back to the IDB.

For details, see the *HP Data Protector Command Line Interface Reference*.

Complete the following steps:

1. After creating a file device using theData Protector GUI, use the following command to list the available devices:

   ```
   omnidownload -list_devices
   ```

   This command displays information about the Data Protector backup devices. The report includes the following information for each device: device name, client, device type, and pool.

2. Download or export the configuration of the created backup device to an ASCII file using the following CLI command:

   ```
   omnidownload -device BackupDevice [-file FileName]
   ```

   For example: `omnidownload -device ThisIsNULLDevice -file NULL.dev`

   This command updates the ASCII file or text file with all the backup device configuration details.

   For example:

   ```
   NAME "ThisIsNULLDevice"
   DESCRIPTION " "
    HOST dppvt5140.company.com
    POLICY Standalone
    TYPE File
   POOL "Default File"
    ENCRCAPABLE
   DRIVES
   "null"
   DEVSERIAL ""
   RESTOREDEVICEPOOL NO
   COPYDEVICEPOOL NO
   ```

Note: Ensure that the value specified for HOST is a regular client in the Cell Manager. If you export the device on one cell manager and import it to a new or different Cell Manager, then you must change the HOST name to the new media agent host, which is part of the new Cell Manager.

3. If a new or different Cell Manager is being used, then modify the hostname in the ASCII or text file and then upload the ASCII file to the system using the following command:

   ```
   omniupload -create_device FileName
   ```

   For example: `omniupload -create_device NULL.dev`

Various media problems

Problem
Various media problems.
Action

Use the Medium Quality Statistics functionality to detect problems with media while they are still in their early stages.

Before each medium is ejected from a drive, Data Protector uses the `SCSI log sense` command to query medium read and write statistical information. The information is written to the `media.log` file.

The medium quality statistics feature is disabled by default. To enable it, set the global option `Ob2TapeStatistics` to `1`.

For instructions, see "Global options" on page 20.

If you receive media related errors during read or write operations, or if the medium is marked as poor, you can check the `media.log` file for media errors statistics.

`Media.log` contains the following error statistics, where `n` is the number of errors:

Error statistics	Description
`errsubdel=n`	errors corrected with substantial delays
`errposdel=n`	errors corrected with possible delays
`total=n`	total number of re-writes
`toterrcorr=n`	total number of errors corrected and recovered while writing
`totcorralgproc=n`	total number of times correction algorithm processed
`totb=n`	total bytes processed (write)
`totuncorrerr=n`	total number of uncorrected errors (write)

If a parameter has the value `-1`, the device does not support this statistics parameter. If all parameters have the value `-1`, either an error occurred during the tape quality statistics processing or the device does not support medium quality statistics.

For `total bytes processed`, statistical results are reported in bytes for most devices. However, LTO and DDS devices report data sets and groups, respectively, and not bytes.

Examples

Here are a few examples from the `media.log` file for different device types.

DLT/SDLT devices

Log sense write report for DLT/SDLT devices - total bytes processed.

```
Media ID from tape= 0fa003bd:3e00dbb4:2310:0001; Medium Label= DLT10; Logical
drive= dlt1; Errors corrected no delay= 0; Errors corrected delay= 0; Total= 13639;
Total errors corrected= 13639; Total correction algorithm processed= 0; Total bytes
processed= 46774780560; Total uncorrected errors= 0
```

46774780560 bytes of native data after compression were processed (a full DLT8000 tape).

LTO devices

Log sense write report for LTO devices - total data sets processed.

```
Media ID from tape=0fa003bd:3e0057e6:05b7:0001; Medium Label= ULT2; Logical
drive=ultrium1; Errors corrected no delay= 0; Errors corrected delay= 0; Total=
0;Total errors corrected= 0; Total correction algorithm processed= 0; Total bytes
processed= 47246; Total uncorrected errors= 0
```

One data set is 404352 bytes. To calculate the amount of total bytes processed, use the following formula:

```
47246 data sets * 404352 bytes = 19104014592 bytes after compression (a full tape)
```

DDS devices

Log sense write report for DDS devices - total groups processed.

```
Media ID from tape= 0fa0049f:3df881e9:41f3:0001; Medium Label= Default DDS_5;
Logical drive= DDS; Errors corrected no delay= -1; Errors corrected delay= -1;
Total= -1; Total errors corrected= 0; Total correction algorithm processed= 154;
Total bytes processed= 2244; Total uncorrected errors= 0
```

DDS1/2: One group is 126632 bytes.

DDS3/4: One group is 384296 bytes.

To calculate the amount of total bytes processed, use the following formula:

```
2244 groups * 126632 bytes = 284162208 bytes after compression (a 359 MB backup on
DDS2)
```

359 MB of data was backed up, resulting in 271 MB of native data on tape.

Medium header sanity check errors

Problem

By default, Data Protector performs a medium header sanity check before a medium is ejected from a drive.

In case the medium header sanity check detects any header consistency errors on the medium, an error message is displayed. All objects on this medium are marked as failed, and the status of sessions that include objects from this medium, are also changed.

If the medium header is corrupt, all objects on the affected medium are marked as failed and the medium is marked as poor.

Action

Export the medium from the IDB and restart the failed session using a different medium.

Problems with device serial number

Problem

When performing any operation involving the problematic backup device (such as backup, restore, format, scan, and so on) or robotics, the following error displays:

`Device DeviceName could not be opened (Serial number has changed).`

The error is reported when the device path points to a device with a different serial number than the number stored in the IDB. This can happen in the following cases:

- You misconfigured the device (for example, using the omniupload command, or if you configured an incorrect device file).
- You replaced the physical device without updating the corresponding logical device (reloading the new serial number).
- You physically replaced a SCSI tape drive located in a SCSI library. Either the option Automatically discover changed SCSI address is not enabled or the omnirc option `OB2MADETECTDRIVESWAP` is set to 0.
- A path in a multipath device is misconfigured.

Action

1. In the Data Protector GUI, switch to the Devices & Media context.
2. In the Scoping Pane, expand **Devices**, right click the problematic device, and click **Properties**.
3. Click the Control tab and enable the Automatically discover changed SCSI address option.
4. Click **Reload** to update the device serial number in the IDB.

   In case of a physically replaced SCSI tape drive located in a SCSI library, make sure that the omnirc option `OB2MADETECTDRIVESWAP` is set to 1 (Default). You do not need to reload the device serial number.

Cannot restore or copy corrupt data

Problem
By default, CRC values are always checked when available on a tape and data found corrupt by CRC mismatch is never restored or copied. However, in certain situations, you may still want to restore or copy such data.
Action
Temporarily set the omnirc option `OB2CRCCHECK` on the Media Agent host to 0. After the recovery of corrupt objects (data) revert the setting to the default value (1).

Common hardware-related problems

Problem
Common hardware-related problems.
Action
Check the SCSI communication between the system and the device, such as adapters or SCSI cables and their length. Try running an OS-provided command, such as `tar`, to verify that the system and the device are communicating.

ADIC/GRAU DAS and STK ACS libraries problems

ADIC/GRAU DAS library installation failed

Problem
ADIC/GRAU DAS library installation failed.
Action

1. Install a Media Agent on the client controlling the GRAU robotics (PC/robot).
2. Install a Media Agent on the clients where a drive is connected (PC/drive).
3. Copy `aci.dll` + `winrpc.dll` + `ezrpcw32.dll` to *`%SystemRoot%`*`\system32` and *`Data_Protector_home`*`\bin` directory.
4. Create the `aci` directory on PC/robot.
5. Copy `dasadmin.exe`, `portmapper`, and `portinst` to the `aci` directory.
6. Start `portinst` to install `portmapper` (only on PC/robot).
7. Install the `mmd` patch on the Cell Manager.
8. Restart the system.
9. In Windows **Control Panel** > **Administrative Tools** > **Services**, check if `portmapper` and both `rpc` services are running.
10. On the OS/2 system within the GRAU library, edit the file `/das/etc/config`. Add a client called `OMNIBACK` containing the IP address of the PC/robot.

You cannot see any drives

Problem
You cannot see any drives.
Action

Run the following commands from PC/robot:

1. `dasadmin listd`
2. `dasadmin all DLT7000 UP AMUCLIENT`
3. `dasadmin mount VOLSER` (then push the `UNLOAD` button on the drive)
4. `dasadmin dismount VOLSER` or `dasadmin dismount -d DRIVENAME`)

Where:

- *AMUCLIENT* = `OMNIBACK`
- *VOLSER* is for example `001565`
- *DRIVENAME* is for example `DLT7001`
- `all` stands for allocate

If you are not successful with these commands (communication to DAS Server (OS/2)), try running these commands on the OS/2 system from the `/das/bin/ directory`.

When running these commands from the OS/2 system, use *AMUCLIENT* `= AMUCLIENT`.

1. Log in to the AMU client. Common logins are:

   `user: Administrator pwd: administrator`

   `user: Supervisor pwd: supervisor`

2. It may be necessary to set the media type:

   set `ACI_MEDIA_TYPE` set `ACI_MEDIA_TYPE=DECDLT`

3. Restart the library:

   a. Shut down OS/2 and then switch off the robotics.

   b. Restart OS/2 and when OS/2 is ready, the AMU log will display that the robotics is not ready. Switch on the robotics.

GRAU CAPs are not configured properly

Problem
GRAU CAPs are not configured properly.
Action

You can only move media from the CAP to a slot and then to a drive using the devices robotics. Use the `import` and `export` commands, for example:

```
import CAP: I01

import CAP range: I01-I03

export CAP: E01

export CAP range: E01-E03
```

The library operations fail

Problem
The library operations fail.
Action
Use the following syntax when using the Data Protector`uma` utility to manage the GRAU and STK library drives: `uma -pol` *`POLNUMBER`* `-ioctl` *`LIBRARYNAME`* `-type` *`MEDIATYPE`* where *`POLNUMBER`* is `8` for GRAU and `9` for STK. For example: `uma -pol 8 -ioctl grauamu` The default media type is DLT.

Chapter 6: Troubleshooting Backup and Restore Sessions

Full backups are performed instead of incrementals

You specified an incremental backup, but a full backup is performed. There are several possible reasons for this behavior:

No previous full backup

Problem
Before performing an incremental backup of an object, Data Protector requires a full backup as a base for comparison to determine which files have changed and consequently need to be included in the incremental backup. If a protected full backup is not available, a full backup is performed.
Action
Ensure that a protected full backup of the object exists.

The description has changed

Problem
A backup object is defined by the client, mount point, and description. If any of these three values changes, Data Protector considers it as a new backup object and performs a full backup instead of an incremental.
Action
Use the same description for full and incremental backups.

Trees have changed

Problem
A protected full backup already exists but with different trees than the incremental backup. There are two possible reasons for this: • You have changed the trees in the backup specification of the protected full backup. • You have created multiple backup specifications with the same backup object but different trees specified for the backup object.
Action

If you have multiple backup specifications with the same backup object, change the (automatically generated) universal description of the backup object. Data Protector will consider them as new objects and a full backup will be run. After a full backup is performed, incremental backups will be possible.

The backup owner is different

Problem
If your backups are configured to run as private, the user starting the backup is the owner of the data. For example, if user A performs a full backup and user B tries to start an incremental backup, the incremental backup will be performed as a full backup. This is because the data for user A is private and cannot be used as a base for user Bs incremental backup.
Action
Specify backup ownership in the advanced backup specification options. The backup owner should be in the Admin user group. This user will become the owner of all backups based on this backup specification, regardless of who actually starts the backup session. For instructions, see the *HP Data Protector Help* index: “setting backup options”.

Enhanced incremental is not performed after the upgrade

Problem
This problem may occur on Windows, HP-UX, and Linux systems. If you upgraded Data Protector from version A.06.11, the old enhanced incremental backup repository cannot be used with the new product version anymore. Therefore, a full backup is performed. During a the full backup, a new enhanced incremental backup repository is created at the following location: **Windows systems:***Data_Protector_home*\enhincrdb **UNIX systems:**/var/opt/omni/enhincrdb
Action
Run the full backup. The new enhanced incremental backup repository will be created and you will be able to perform enhanced incremental backups.

Data Protector fails to start a session

Interactive session fails to start

Problem
Every time a backup is started, the permission to start a backup session is required and checked for the user who is currently running Data Protector. If the user does not have this permission, the session cannot be started.

Action
Make sure the user is in a user group with appropriate user rights. On how to configure user groups, see the *HP Data Protector Help* index: “user groups”.

Scheduled sessions no longer run

Problem
Scheduled sessions no longer run since the Data Protector system account, which is supposed to start scheduled sessions, is not in the `Admin` user group on the Cell Manager. This account is added to the Data Protector Admin group on the Cell Manager at installation time. If this is modified and the permission for this account is removed, or if the service account changes, scheduled sessions no longer run.
Action
Add the Data Protector account to the `Admin` user group on the Cell Manager.

Session fails with status No licenses available

Problem
A backup session is started only after Data Protector has checked the available licenses. If no licenses are available, the session fails and Data Protector issues the session status `No licenses available`.
Action
Obtain information on available licenses by running: `omnicc -check_licenses -detail` Request new licenses and apply them. For licensing details, see the *HP Data Protector Installation and Licensing Guide*.

Scheduled backups do not start (UNIX systems specific)

Problem
On a UNIX system, scheduled backups do not start.
Action
Run the `crontab -l` command to check whether the `omnitrig` program is included in the `crontab` file. If the following line does not display, the omnitrig entry was automatically added by Data Protector: `0,15,30,45 * * * * /opt/omni/sbin/omnitrig` Stop and start the Data Protector daemons by running `omnisv -stop` and `omnisv -start`.

Mount request is issued although media are in the device

During a backup session, Data Protector issues a mount request, although media are available in the backup device. There are several possible reasons for this:

The media in the device are in a media pool that has the Non Appendable policy

Problem
Although there is still available space on the media, the media will not be used because of the `Non Appendable` policy of the pool.
Action
Modify the media pool policy to `Appendable` to enable the appending of backups until the media are full.

The media in the device are not formatted

Problem
By default, media are not formatted automatically. If no formatted media are available, a mount request is issued.
Action
Format the media. For instructions, see the *HP Data Protector Help* index: “formatting media”.

The media in the device are different from those in the preallocation list

Problem
The media in the device are formatted but are different from those in the preallocation list of the backup specification, and the media pool specified has the `Strict` policy. If you use a preallocation list of media in combination with the `Strict` media policy, the exact media specified in the preallocation list need to be available in the device when a backup is started.
Action

- To use media available in the device in combination with the preallocation list, modify the media pool policy to `Loose`.
- To use any available media in the device, remove the preallocation list from the backup specification. Do this by changing backup device options in the backup specification.

Mount request is issued for a file library

File library device disk full

Problem
When using a file library device, you may receive a mount request with the following message: `There is no disk space available for file library File Library Device. Add some new disk space to this library.`
Action
Create more space on the disk where the file library is located: • Free some space on the disk where the files are being backed up. • Add more disks to the system where the file library device resides.

File name problems

File names or session messages are not displayed correctly in the Data Protector GUI

Problem
Some file names or session messages containing non-ASCII characters are displayed incorrectly. This happens when an inappropriate character encoding is used to display file names and session messages in the Data Protector GUI.
Action
Specify the appropriate encoding. From the View menu, select **Encoding** and select the appropriate coded character set.

Cluster problems

IDB services are not synchronized

Problem
On UNIX systems, when performing a restore of the IDB to a different location in an HP Serviceguard environment and one or more cluster nodes are offline, the IDB services are not synchronized for all nodes after the session completes.
Action
To synchronize the location of the IDB data files for all nodes in a cluster environment, execute the `omnidbutil -sync_srv` command on the active cluster node.

An incremental filesystem backup of a cluster shared volume using the Windows NTFS Change Log Provider falls back to a full backup after a cluster failover

Problem

When performing an incremental filesystem backup of a cluster shared volume that has the option **Use native Filesystem Change Log Provider if available** selected in a backup specification, a full backup is performed instead and the following error message is displayed:
`[Major] From: VBDA@Host Name "F:" Time: Date Time`
`The Change Log Provider could not use the Directory Database. This session will use the normal file system traversal.`

Action

To make sure that incremental backups are correctly performed, create a symbolic link of the Change Log Provider database to a separate cluster shared volume as follows:

1. Select a shared disk to which you can direct the Change Log Provider database for shared volumes. In case of the Data Protector cluster Cell Manager, you can choose the Data Protector shared disk.
2. Create a directory on the shared disk, for example: `E:\Omniback\clp`.
3. Go to the directory *`Data_Protector_home`*`\clp` and create a symbolic link to the created directory.

   For example, to back up a shared disk `J`, execute

   ```
   mklink /D J E:\Omniback\clp\J
   ```

   where `E:\Omniback\clp\J` is a symbolic link created for a shared disk `J`, and `E` is a cluster shared volume accessible from the other cluster nodes.

Create the Change Log Provider database link for the shared volume on all cluster nodes on which incremental backups are performed after a cluster failover.

Restore problems if the Cell Manager is configured in a cluster

Problem
A backup with a cluster-aware Data Protector Cell Manager was performed with the `Restart backup of all objects` backup option enabled. A failover occurred during the backup and the backup session was restarted on another cluster node and successfully finished. When trying to restore from the last backup, the following error is reported although the session finished successfully: `You have selected a version that was not successfully completed. If you restore from such a backup, some or all the files may not be restored correctly.` If the system times on the Cell Manager cluster nodes are not synchronized, it is possible that the failed backup has a newer timestamp than the restarted backup. When selecting data for restore, the last backup version is selected by default, resulting in a restore from the failed backup.
Action
To restore from the last successful backup, select the correct backup version for restore. To prevent such errors, it is recommended to configure a time server on your network. This will ensure automatic synchronization of the system times on your Cell Manager cluster nodes.

Backup of CONFIGURATION object of a Microsoft Cluster Server node fails

Problem

On a Windows Server 2008 or Windows Server 2012 system, backup of the CONFIGURATION object on a cluster node fails with the following error:
`[Minor] From: VBDA@computer.company.com "CONFIGURATION:" Time: Date Time`
`[81:141] \Registry\0.Cluster`
`Cannot export configuration object: (Details unknown.) = backup incomplete`

Action
Restart the Data Protector Inet service under the user account that is used to run Cluster Service, and restart the backup.

Other problems

Backup protection expiration

Problem
When scheduling backups, you have set the same protection period for full and incremental backups, which means that incremental backups are protected for the same duration as the relevant full backup. Consequently, your data will actually only be protected until the full backup expires. You cannot restore incremental backups that are based on expired full backups.
Action
Configure the protection for your full backups so that they are protected for longer than your incremental backups. The time difference between the protection for the full backup and the incremental backup should be the amount of time between the full backup and the last incremental backup before the next full backup. For example, if you run incremental backups Monday through Friday and full backups on Saturday, you should set the protection of the full backup to at least 6 days more than for the incremental backups. This will keep your full backup protected and available until your last incremental backup expires.

Enhanced incremental backup fails because of a large number of files

Problem

On HP-UX systems, enhanced incremental backup fails when a large number of files is being backed up.
Action

To enable that a Disk Agent accesses more memory for the enhanced incremental backup, set the tunable kernel parameter `maxdsiz` as follows:
HP-UX 11.11 systems:
`kmtune set maxdsiz=2147483648`
`kmtune set maxdsiz_64bit=2147483648`
HP-UX 11.23/11.31 systems:
`kctune set maxdsiz=2147483648`
`kctune set maxdsiz_64bit=2147483648`

Intermittent connection refused error

Problem
The backup session aborts with a critical error: `Cannot connect to Media Agent on system computer.company.com, port 40005 (IPC Cannot Connect System error: [10061] Connection refused)` This problem may occur if a Media Agent is running on a non-server edition of Windows and the Disk Agent concurrency is set to more than 5. Due to the TCP/IP implementation on non-server editions of Windows operating systems, the operating system can accept only 5 incoming connections simultaneously.
Action
Set the Disk Agent concurrency to 5 or less. It is recommended to use server editions of Windows for systems involved in intensive backup operations, such as the Cell Manager, Media Agent clients, application agent clients, file servers, and so forth.

Unexpected mounted filesystems detected when restoring a disk image

Problem

When restoring a disk image, you get a message that the disk image being restored is a mounted filesystem and will not be restored:

```
Object is a mounted filesystem = not restored.
```

This happens when an application on the disk image leaves some patterns on the disk image. The patterns confuse the system call that verifies whether the filesystem on the disk image is mounted or not, so the system call reports that there is a mounted filesystem on the disk image.

Action

Before you start a restore, erase the disk image on the Data Protector client with the disk image being restored:

```
prealloc null_file 65536
```

```
dd if=null_file of=device_file
```

where *device_file*is a device file for the disk image being restored.

Problems with application database restores

Problem

When trying to restore a database, it fails with one of the following messages:

- `Cannot connect to target database`
- `Cannot create restore set`

A poorly configured DNS environment could cause problems with database applications. The problem is as follows:

When backing up a database, the agent that starts on the client where the database is located logs the client name to the database as *computer.company.com*.

At restore time, the Restore Session Manager tries to restore to *computer.company.com*, but it cannot because it knows this client only as *computer*. The client name cannot be expanded to the full name because the DNS is improperly configured.

This situation can also be the other way around, where DNS is configured on the Cell Manager and not on the Application Client.

Action

Set up the TCP/IP protocol and configure DNS properly. For information, see Appendix B in the *HP Data Protector Installation and Licensing Guide*.

Backup failure on HP-UX

Problem

The following error occurs during the backup:
`Cannot allocate/attach shared memory (IPC Cannot Allocate Shared Memory Segment)`
`System error: [13] Permission denied) = aborting`

Action
Set the `OB2SHMEM_IPCGLOBAL omnirc` option to 1 on HP-UX clients that have both, the Disk Agent and a Media Agent installed, or have one of the supported integration and a Media Agent installed.

Asynchronous reading does not improve backup performance

Problem
With the **Asynchronous reading** (Windows specific) option selected in the backup specification, there is no backup performance improvement, or there may even be performance degradation.
Action
1. Check if the omnirc option `OB2DAASYNC` is set to 0. Either set the option to 1 to always use asynchronous reading, or comment out the option and use the **Asynchronous reading** option in the backup specification. 2. Consider if asynchronous reading is suitable for your backup environment. In general, asynchronous reading is suitable for files larger than 1 MB. Additionally, you can try to fine-tune the omnirc option `OB2DAASYNC_SECTORS`. As a rule, the size of your files (in bytes) should be 2-3 times larger than the value of the option.

Backup of the IIS configuration object fails on Windows systems

Problem

On a Windows Vista, Windows 7, Windows 8, Windows Server 2008, or Windows Server 2012 system, while backing up the IIS configuration object, Data Protector reports the following error:
`[Minor]`
`From: VBDA@computer.company.com "CONFIGURATION:" Time: Date & Time [81:141]`
`\IISDatabase Cannot export configuration object: (Details unknown.) = backup incomplete.`

Action
Install the **IIS 6 Metabase Compatibility** component under **IIS 6 Management Compatibility** and restart the backup.

Restore of a subtree from a volume with hard links present fails

Problem

Restore of a subtree from a volume with hard links present fails with the following error message:
`Lost connection to Filesystem restore DA named ""`
`incomplete.`

Action
Set the global option `RepositionWithinRestoredObject` to `0` if you are restoring trees with hard links. Although setting this option to 0 may make the restores slightly slower, it is needed whenever restoring hard links. By default, this option is set to 1.

On Mac OS X, backup sessions fail due to insufficient amount of shared memory

Problem
On Mac OS X, if you increase the device block size, the backup session may fail with the following error message: `[80:1003] Cannot allocate/attach shared memory (IPC Cannot Create Shared Memory Segment System error: [12] Cannot allocate memory ) => aborting.`
Action
Increase the kernel parameter `kern.sysv.shmmax` (maximum size of a shared memory segment) to a larger value. HP recommends to set the parameter to 32 MB.

Interrupted file backup or file cannot be found

Problem

When trying to backup a system reserved partition and multiple full volume objects, the backup fails with either of the following error message:
`- Cannot read <number> bytes at offset <number>(:1): ([21] The device is not ready. ).`
`- Cannot open: ([2] The system cannot find the file specified. ) => not backed up.`
Note: The problem occurs only if the VSS option is enabled and if the system reserved partition does not have enough space to hold multiple snapshots.

Problem
Action
Set the omnirc variable `OB2_DISABLE_REGLIST_FOR_FULL_VOLUME` to `1` and restart the backup. If the error persists, see the following Microsoft webpage for information on how to resolve this problem: http://support.microsoft.com/kb/2930294

Chapter 7: Troubleshooting Object Operations Sessions

Object copy problems

Fewer objects are copied than expected

Problem
With post-backup or scheduled object copy, the number of objects that match the selected filters is higher than the number of objects that are actually copied. The following message is displayed: `Too many objects match specified filters.`
Action
• Tighten the criteria for object version selection. • Increase the maximum number of objects copied in a session by setting the global option `CopyAutomatedMaxObjects`. For instructions, see "Global options" on page 20.

Not all objects in the selected library are copied

Problem
With post-backup or scheduled object copy, some objects that reside on media in the selected library are not copied. This happens if an object does not have a complete media set in the selected library.
Action
Insert the missing media into the selected library, or select the library that has a complete media set for these objects.

Mount request for additional media is issued

Problem
In an interactive object copy session from the Media starting point, you selected a specific medium. A mount request for additional media is issued. This happens if an object residing on the medium spans to another medium.

Action
Insert the required medium into the device and confirm the mount request.

When creating an object copy, the protection end time is prolonged

Problem
When creating an object copy, the protection end time is not inherited from the original object. The protection length is copied, but the start time is set at the object copy creation time and not at the object creation time. This results in a longer protection then for the original. The more time passes between the original backup and the object copy session, the bigger the difference between the protection end times. For example, if the object was created on September 5, with the protection set to 14 days, the protection will expire on September 19. If the object copy session was started on September 10, the object copy protection will expire on September 24. In some cases, such behavior is not desirable and the protection end time must be preserved.
Action
Set the global option `CopyDataProtectionEndtimeEqualToBackup` to `1` to ensure that the object copy protection end time is equal to backup object protection end time. By default, the option is set to 0. Increase the maximum number of allowed files.

Replicating session with multiple objects stops responding

Problem

When replicating a session onto another device, the session stops responding. The session output provides the following information:
 	
`[Normal] From: BMA@company.com "d2d1_1_gw1 [GW 26177:1:15198446278003495809]" Time: 3/21/2013 9:13:06 AM`
 	
`COMPLETED Media Agent "d2d1_1_gw1 [GW 26177:1:15198446278003495809]"`
 	
The problem is known to occur in a dual IP stack network configurations with HP-UX Media Agent.

Action

When configuring a dual IP stack network, add a separate entry for IPv6 localhost addresses to the `/etc/hosts` file on the Media Agent client.

For example, you have the following entry in your `hosts` file:

```
::1 localhost loopback
```

To resolve the issue, add the following line for IPv6 addresses:

```
::1 ipv6-localhost ipv6-loopback
```

Object consolidation problems

Object consolidation of many points in time opens too many files

Problem

If you start an object consolidation operation with many points in time, Data Protector reads all media necessary to complete the operation. This opens all files at the same time. When Data Protector opens more files than the number allowed by your operating system, a message similar to the following one is displayed:
`|Major| From: RMA@computer.company.com "AFL1_ConsolidateConc2_bs128" Time: time /omni/temp/Cons_Media/AFL1/`
`0a1109ab54417fab351d15500c6.fd`
`Cannot open device ([24] Too many open files)`

Action

Increase the maximum number of allowed files.

HP-UX systems:

1. Set the maximum number of open files using the System Administration Manager (SAM):
   a. Select **Kernel Configuration > Configurable parameters** and then, **Actions** > **Modify Configurable Parameter**.
   b. Enter the new **maxfiles_lim** and **maxfiles** values in the **formula/value** field.
2. Restart your computer after applying the new values.

Solaris systems:

1. Set the maximum number of open files by editing the `/etc/system` file. Add the following lines:

   ```
   set rlim_fd_cur=value

   set rlim_fd_max=value
   ```

2. Restart your computer after applying the new values.

Chapter 8: Troubleshooting the Data Protector Internal Database

You can find a list of IDB directories in the `omniintro` reference page of the *HP Data Protector Command Line Interface Reference.*

Problems due to missing directories

Cannot open database/file or database network communication error

Problem
If one or several IDB data files or directories are missing, the following errors are displayed when Data Protector tries to access the IDB: • `Cannot open database/file` • `Database network communication error`
Action
Reinstall the IDB data files and directories: 1. Reinstall Data Protector. 2. Restart the Cell Manager.

Cannot access the Cell Manager

Problem
When the Data Protector GUI tries to connect to the Cell Manager, the following error message is displayed if the Data Protector temporary directory is missing: `Cannot access the Cell Manager system. (inet is not responding) The Cell Manager host is not reachable or is not up and running or has no Data Protector software installed and configured on it.`
Action

1. On the Cell Manager, close the Data Protector GUI.
2. Initiate the maintenance mode:

   ```
   omnisv -maintenance
   ```

3. Manually create the directory `tmp` in:

   Windows systems:*Data_Protector_program_data*

   UNIX systems:`/var/opt/omni`

4. Quit the maintenance mode:

   ```
   omnisv -maintenance -stop
   ```

5. Restart the Data Protector GUI.

Problems during backup or import

File names are not logged to the IDB during backup

Problem
When performing backups using Data Protector, file names are not logged to the IDB if: • You have selected the `No Log` option for backup. • The DCBF part of the IDB is running out of space, or the disk where the IDB is located is running low on disk space. An error in the session output informs you about this.
Action
• Check if you have selected the `No Log` option for backup. • Check the session messages of the backup session for warnings and errors.

The BSM or RSM is terminated during the IDB backup or import

Problem

If the BSM or RSM get terminated during the IDB backup or import session, the following error is displayed:

```
IPC Read Error System Error: [10054] Connection reset by peer
```

In the Internal Database context of the Data Protector GUI, the session status is still marked as `In Progress` but the session is actually not running.

Action

1. Close the Data Protector GUI.
2. Execute the `omnidbutil -clear` command to set the status of all sessions that are actually not running but are marked as `In Progress to Failed`.
3. Execute the `omnidbutil -show_locked_devs` command to see if any devices and media are locked by Data Protector.
4. If there are, execute the `omnidbutil -free_locked_devs` to unlock them.
5. Restart the Data Protector GUI.

The MMD is terminated during the IDB backup or import

Problem

If the media management daemon (MMD) is terminated during the IDB backup or import session, the following errors are displayed:

- `Lost connection to MMD`
- `IPC Read Error System Error: [10054] Connection reset by peer`

If the MMD services/processes are not running:

- The output of the `omnisv -status` command indicated that the MMD service/process is down.
- You notice the following:

  Windows systems: In the Windows Task Manager, the Data Protector MMD process (`mmd.exe`) is not displayed.

  UNIX systems: When listing the Data Protector processes using the `ps -ef | grep omni` command, the Data Protector MMD process (`/opt/omni/lbin/mmd`) is not displayed.

Action

1. Close the Data Protector GUI.
2. Execute the `omnisv -stop` command to stop the Data Protector services/processes.
3. Execute the `omnisv -start` command to start the Data Protector services/processes.
4. Execute the `omnisv -status` command to check if all the services/processes are running.

The DC binary files are corrupted or missing

Problem

When browsing backed up objects in the Restore context of the Data Protector GUI, the following error displays:

```
Open of Detail Catalog Binary File failed
```

- The `omnidbcheck -bf` command reports that one or several DC binary files are missing or are of incorrect size, or the `omnidbcheck -dc` command reports that one or several DC binary files are corrupted.
- The `debug.log` file on the Cell Manager contains one or several entries on Data Protector not being able to open a DC binary file.

Action

Recreate DC binary files by importing catalog from media.

For instructions, see the *HP Data Protector Help* index: “minor IDB corruptions in DCBF”.

The Internal Database backup fails

Problem

The session for backing up the Data Protector Internal Database fails with the following error:

```
[Critical] From: OB2BAR_POSTGRES_BAR@computer.company.com "DPIDB" Time: 4/2/2013
4:05:20 PM

                 Error while running the PSQL script

[Normal] From: BSM@computer.company.com "idb" Time: 4/2/2013 4:05:20 PM

                 OB2BAR application on "computer.company.com" disconnected.

[Critical] From: BSM@computer.company.com "idb" Time: 4/2/2013 4:05:20 PM

                 None of the Disk Agents completed successfully. Session has
failed.
```

If the Data Protector Inet service is running under a domain user account, the problem is most probably caused by insufficient Security Policy privileges for that account.

Action

Grant the Windows domain user account that is used for the Data Protector Inet service the following Windows operating system Security Policy privileges, and restart the session afterwards:

- Impersonate a client after authentication
- Replace a process level token

For more information, see the *HP Data Protector Help* index: “Inet user impersonation”.

Performance problems

Browsing for restore is slow

Problem

When browsing object versions and single files for restore in the Data Protector GUI, it takes a long time before the information is read from the IDB and displayed. This happens because the number of object versions of the selected object in the IDB is too large.

Action

Set the time interval for browsing object versions for restore:

- For a specific restore, set the Search interval option in the Source page.
- Globally, for all subsequent restores:

  a. In the File menu, click **Preferences**.

  b. Click the **Restore** tab.

  c. Set the **Search interval** option and click **OK**.

Problems with the IDB growth

The IDB is running out of space

Problem
A part of the IDB is running out of space. The IDB Space Low notification is issued.
Action
Extend the IDB size.

The DCBF part of the IDB is growing too fast

Problem
In the `Client Statistics` report, the **Data Written [GB]** or the **# Files** figures are `considerably` larger for some systems.
Action
To reduce the size of the DCBF part of the IDB, purge the DCBF for all media with expired catalog protection in the IDB, by running the `omnidbutil -purge -dcbf` command on the Cell Manager. Be sure that no Data Protector sessions are running during the purge session. To reduce the growth of the DCBF part of the IDB, change the **Logging** level to **Log Directories**.

Other problems

Interprocess communication problem because Database Session Manager is not running

Problem
While the Data Protector GUI is accessing the IDB, if the Database Session Manager process on the Cell Manager dies or is terminated, the following error displays: `Interprocess communication problem` On the Cell Manager, you notice the following: **Windows systems:** In the Windows Task Manager, the Data Protector process `dbsm.exe` is not displayed. **UNIX systems:** When listing the Data Protector processes using the `ps -ef | grep omni` command, `/opt/omni/lbin/dbsm` is not displayed.

Action
Restart the Data Protector GUI.

MMDB and CDB are not synchronized

Problem
In a MoM environment, the MMDB and CDB may be out of sync as a result of the CMMDB restore.
Action
On the system with the CMMDB installed, execute: `omnidbutil -cdbsync` *`CellManagerHostname`* If the CMMDB was changed, execute the command for each Cell Manager in this MoM cell by specifying each Cell Manager in the cell as the *CellManagerHostname* argument.

IDB is corrupted

Problem
Any of the following messages can be displayed: • `Database is corrupted.` • `Interprocess communication problem.` • `Cannot open Database/File.` • `Error - Details Unknown.`
Action
Recover the IDB.

Merging of a MMDB into the CMMDB fails

Problem
After executing the `omnidbutil -mergemmdb` command, merging of a MMDB into the CMMDB fails with the following error: `Could not establish connection.`
Action

Before using the `omnidbutil -mergemmdb`, a remote database connection needs to be enabled. To enable establishing a connection, modify the configuration file and restart the services:

1. On MoM client, navigate to the `pg` subdirectory of the defaultData Protector Internal Database directory.
2. Open the `pg_hba.conf` file in text editor and add the following line:

   `host hpdpidb hpdpidb_app MoM_Server_IP_Address/32 trust`
3. Restart the services on MoM client:

   `omnisv -stop`

   `omnisv -start`

During IDB restore the session completes with errors

Problem

Backup the IDB to a standalone device. When doing IDB restore, the session completes with errors.

After completing upgrade, files for the patch are added in the following location:

`C:\ProgramData\OmniBack\Config\Server\install`

For example `patch_CC`

This is backed up by IDB backup. However, when you try to restore that file (overwrite) you get "`Access denied`" error.

Action

If restoring Data Protector configuration files to original location do the following:

1. Go to `<dp_data>\Config\Server\install\` and identify following files:

   `patch_CC`, `patch_CORE`, `patch_CS`, `patch_DA`, `patch_DOC`, `patch_MA`, `patch_NETAPP`, `patch_SMISA`, `patch_VEPA`
2. For all these files, deselect the hidden flag option.
3. Perform IDB restore.
4. Set hidden flag again for the files mentioned earlier.

Note: This problem only exists on Windows CMs thus workaround is applicable only for Windows. The same workaround applies if files are restored to another location and these files already exist on those locations.

Chapter 9: Troubleshooting Reporting and Notifications

Reporting and notification problems

Data Protector GUI stops responding when the send method is e-mail on Windows

Problem
If you use Microsoft Outlook XP with the latest security patch installed, the following problem appears: when you add a report to a report group specifying e-mail as a send method, and then try to start the report group, the GUI stops responding. The same happens if you configure a notification and select the e-mail send method. The cause of the problem is that Outlook requires user interaction before sending an e-mail notification. This feature cannot be disabled since it is a part of the Outlook security policy.
Action
• If an SMTP server is available on your network, specify `E-mail (SMTP)` as the send method. This method is the recommended e-mail send method. • Use the Data Protector CLI to start reports: `omnirpt -report licensing -email email_address` When a warning asking whether you allow sending e-mail on your behalf appears, click **Yes** to receive the report. For more information on how to customize security settings, see the *HP Data Protector Product Announcements, Software Notes, and References*.

SNMP send method fails

Problem
When sending a report as an SNMP trap, the report does not reach the destination.
Action
Use the SNMP trap send method only for reports that do not exceed the maximum size of the configured SNMP trap.

Chapter 10: Troubleshooting HP Data Protector Help

Introduction

The HP Data Protector Help consists of two parts:

- Help topics provide conceptual information, step-by-step procedures, and examples.
- Context-sensitive Help is the dynamic, context-sensitive part of the Help, explaining screens and options in the Data Protector GUI. It is displayed by the Data Protector GUI component called Help Navigator.

The Help is available in two formats: Microsoft HTML Help and WebHelp. Current preferences for the Help viewer in the Data Protector GUI determine which format is used.

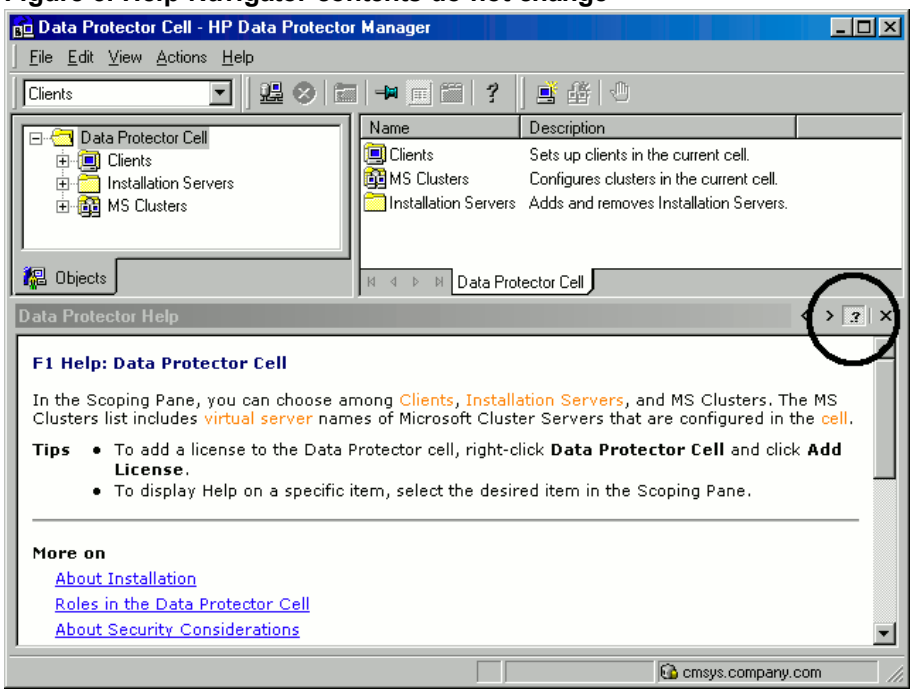
Troubleshooting Help

The Help Navigator contents do not change in parallel with the Data Protector windows

Problem

The Help Navigator contents do not change in parallel with the Data Protector windows.

Figure 3: Help Navigator contents do not change



Action

- If you use the Microsoft HTML Help viewer for viewing the *HP Data Protector Help* in the HTML Help format (default selection), ensure that the button shown in the figure "Troubleshooting HP Data Protector Help" on the previous page is selected.
- If you use the system default web browser for viewing the *HP Data Protector Help* in the WebHelp format, go to **File** menu, click **Preferences** and select the **Enable context-sensitive Help Navigator** option. Then restart the Help Navigator.

Chapter 11: Before calling support

Before Calling Your Support Representative

If you cannot solve your problem, report it. Before contacting the HP Customer Support Service, ensure that:

- You have performed the general checks.

  See "General checks" on page 13.

- You have also checked if your problem is described in the troubleshooting sections of applicable user guides.
- You have collected the relevant data about the problem you will send to the HP Customer Support Service: a description of your problem, including the session output (or equivalent output, depending on the type of problem), and a description of your environment.

The HP Customer Support Service will then provide you with further instructions. You might be asked to:

1. Run Data Protector in the debug mode.
2. Prepare the generated data for sending to the HP Customer Support Service.

These procedures are described in the following sections. Note that you only need to perform these procedures when the HP Customer Support Service requests this.

About Debugging

Collect debugs only when the support organization requires them to resolve a technical issue. When Data Protector runs in the debug mode, it creates debug information that consumes a large amount of disk space. Consult the support organization about the required detail level and environmental conditions for debugging.

Enabling debugging

You can start Data Protector in the debug mode in different ways. For debugging options, see "Debug syntax" on the next page.

Important: When Data Protector runs in the debug mode, debug information is generated for every action. For example, if you start a backup session in the debug mode, Disk Agents deliver output on each client backed up in this backup specification.

Note: To enable debugging of network share backup and restore sessions on Windows Vista, Windows 7, Windows 8, Windows Server 2008, and Windows Server 2012 systems, write permissions for the operating system account running such sessions must be assigned to the folder

Data_Protector_program_data\tmp.

Using the Data Protector GUI

In the File menu, click **Preferences**, and then click the **Debug** tab. Specify the debug options and restart the GUI. The GUI will restart in the debug mode.

Using the trace configuration file

Edit the trace configuration file, located at:

Windows systems: *Data_Protector_program_data*\Config\server\Options\trace

UNIX systems: /etc/opt/omni/server/options/trace

Using the OB2OPTS variable

Debugging parameters for Data Protector integrations can be set using the OB2OPTS environment variable. You will be instructed how to set this variable by your Support Representative.

Using the scheduler

To debug scheduled sessions, edit the schedule file, located in:

Windows systems: *Data_Protector_program_data*\Config\server\Schedules or *Data_Protector_program_data*\Config\server\Barschedules

UNIX systems: /etc/opt/omni/server/schedules or /etc/opt/omni/server/barschedules

Add debugging parameters in the first line of the file.

Note: Before you edit the file, make a copy of it, as the changes have to be reverted when debugging is no longer desired.

Example

```
-debug 1-200 sch.txt
-full
-only 2010
          -day 14 -month Dec
          -at 22:00
```

Debug syntax

Almost all Data Protector commands can be started with an additional -debug parameter that has the following syntax:

-debug 1-200[,C:*n*][,T:*s*][,U] *XYZ* [*Host*]

where:

- 1-200 is the debug range. Specify the range 1-200 unless instructed otherwise. Specify optional parameters as a part of the range parameter, separated by commas:
  - `C:`*`n`* limits the size of debug files to *n* kilobytes. The minimum value is 4 (4 kB) and the default value is 1024 (1 MB). For more information, see "Limiting the maximum size of debugs" below.
  - `T:`*`s`* is the timestamp resolution, where the default value is 1, 1000 means the resolution is one millisecond and 0 means timestamps are turned off.

    On some platforms, millisecond resolution might not be available.
  - `U` is the Unicode flag. If it is specified, the debug files on Windows are written in the Unicode format.
- *`XYZ`* is the debug postfix, for example `DBG_01.txt`.
- *`host`* is a list of clients where debugging is turned on.

Use this option to run the debugging only on the clients specified. Delimit multiple clients by spaces. Enclose the list in quotes, for example: `"computer1.company.com computer2.company.com"`.

Limiting the maximum size of debugs

Data Protector can run in a special debug mode called circular debugging. In this mode, debug messages are added until the size of the debug file reaches a preset size (*n*). The counter is then reset and the oldest debug messages are overwritten. This limits the debug file size, but does not affect the latest records.

Using this mode is recommended only if the problem occurs near the end of the session or if Data Protector aborts or finishes soon after the problem has occurred.

With circular debugging turned on, an estimate of the maximum required disk space is as follows:

System	Maximum disk space required
Media Agent client	2**n* [kB] for each running Media Agent in a backup or restore session
Disk Agent client	2**n* [kB] for each mount point in a backup or restore session
Cell Manager	2**n* [kB]
Integration client	2**n* [kB] * *Parallelism*

For Inet and CRS debugging, the upper limit cannot be reliably determined because separate debug files are produced for various actions.

Names and locations of debug files

The debug postfix option is used for creating debug files in the default Data Protector temporary files directory:

Windows Vista, Windows 7, Windows 8, Windows Server 2008, Windows Server 2012: *`Data_Protector_program_data`*`\tmp`

Other Windows systems: *Data_Protector_home*\tmp

UNIX systems: /tmp

The files are named

OB2DBG_*DID*__*Program*_*Host*_*PID*_*XYZ*

where:

- *DID* (debugging ID) is the process ID of the first process that accepts the debugging parameters. This is the ID of the debugging session and is used by all further processes.
- *Program* is the code name of the Data Protector program writing the debug file.
- *Host* is the client where the debug file is created.
- *PID* is the process ID.
- *XYZ* is the postfix as specified in the -debug parameter.

Once the backup or restore session ID *SID* is determined, it is added to the file name:

OB2DBG_*DID*_*SID*_*Program*_*Host*_*PID*_*XYZ*

Processes that add the *SID* are BMA/RMA, xBDA/xRDA, and other processes started by the session, but not by the BSM/RSM itself.

Note: The session ID helps you identify sets of debug files. Other debug files may belong to the same session and you may need to provide them as well.

A ctrace.log file is generated on the Cell Manager, containing information where (on which clients) debug files are generated and which debug prefixes are used. Note that this file does not contain a complete list of all generated files.

To change the default location of debug files on a per-system basis, use the omnirc option OB2DBGDIR.

Debugging Inet

Note: If you enable Inet debugs, all integrations will generate debug files.

Windows systems:

Launch the Windows Service Control Manager and restart the Data Protector Inet service with the following startup parameters:

-debug 1-200 *POSTFIX*

UNIX systems:

Edit the /etc/inetd.conf file:

1. Change the line:

   ```
   omni stream tcp nowait root /opt/omni/lbin/inet inet -log
   /var/opt/omni/log/inet.log
   ```

   to

   ```
   omni stream tcp nowait root /opt/omni/lbin/inet inet -log
   /var/opt/omni/log/inet.log -debug 1-200 DBG_01.txt
   ```

2. Save the file and run the `/etc/inetd -c` command to apply the changes.

Debugging the CRS

Note: Use the `-debug` option carefully because debug files can become quite large. CRS is a multithreaded process, and each created CRS thread produces its own debug file.

Windows systems:

Launch the Windows Service Control Manager and restart the `Data Protector CRS` service with the following startup parameters:

`-debug 1-200 POSTFIXCell_Manager_name`

UNIX systems:

1. Stop the CRS by running:

   ```
   /opt/omni/lbin/crs -shutdown
   ```

2. Restart the CRS with the debug option by running:

   ```
   /opt/omni/lbin/crs -debug 1-200 POSTFIX
   ```

Microsoft Cluster Server Environment:

In the Data Protector shared directory, edit the file:

Data_Protector_program_data`\Config\server\options\Trace`

Add the following lines:

```
ranges=1-500

postfix=DBG

select=CRS
```

Using the Cluster Administrator utility, take the CRS service resource (OBVS_MCRS) offline.

Caution: Do not stop the CRS from Windows Service Control Manager, as this will cause the Data Protector cluster group to failover.

HP Serviceguard Environment:

1. In the file `/etc/opt/omni/server/options/trace`, uncomment and set the required debugging options. Save and close the file.
2. Start the debugging:

   ```
   /opt/omni/lbin/crs -redebug
   ```

To stop the debugging, set all debugging options in the trace file to an empty string, save the file, and then run the `/opt/omni/lbin/crs -redebug` command.

Debugging Advanced Scheduler and Missed Job Executions

To debug Advanced Scheduler and Missed Job Executions, view the Application Server Logs.

Open `server.log` and review the output for more information, error codes and error messages.

For more information, see Location of log files.

Preparing the Generated Data to Be Sent to the HP Customer Support Service

The HP Customer Support Service might ask you to gather and send them data they need to resolve a technical issue. Since Data Protector operates in large network environments, the data might sometimes be difficult to gather. The Data Protector `omnidlc` command is a tool for collecting and packing log, debug, and getinfo files. Use this command if this is requested by the HP Customer Support Service.

The `omnidlc` command can be run from the Data Protector CLI or from the Data Protector GUI. Both methods are described in this section.

Note: The `omnidlc` command cannot be used to collect the Data Protector installation execution traces. For details of how to create and collect these, see the *HP Data Protector Installation and Licensing Guide*.

About the omnidlc command

After Data Protector debug data has been generated, the `omnidlc` command can be used to collect Data Protector debug, log, and getinfo files from the Data Protector cell (by default, from every client). The command transfers the data from selected clients to the Cell Manager where it is then packed.

The command can also selectively collect the data, for example, only log files from a certain client, or only debug files that were created during a particular Data Protector session.

Note: When object consolidation is scheduled as part of a post-backup session, backup and consolidation sessions get different session IDs. However, the debug ID is the same for both backup and consolidation. In this case, if you run the `omnidlc` command and specify the consolidation session ID using the `-session` parameter, debugs will be collected for both backup and consolidation.

Limitations

- The command can only be run on Cell Managers.
- In a MoM environment, you can only collect data for each Data Protector cell separately by running the command from the respective Cell Manager.
- If you moved debug files from the default directory, specify the new location using the `-debug_loc` *`Directory1`* option. Otherwise, debug files will not be collected.
- When a debug and log file collector is used on HP OpenVMS, the following applies:
  - The OpenVMS ODS-2 disk structure file name can contain the maximum of 39 characters.
  - As OpenVMS systems do not have the `get_info` utility, the `get_info.out` file is blank and is not collected.
  - The `omnidlc` command run with the `-session` option does not collect the debug files produced during specified session, because session names are not part of the OpenVMS debug filename. Instead, all available logs are collected.

Using the omnidlc command from the CLI to process debug files

The omnidlc command syntax

`omnidlc {-session` *`SessionID`* `| -did` *`DebugID`* `| -postfix` *`String`* `| -no_filter} [-hosts` *`List`*`] [-pack` *`Filename`* `| -depot [`*`Directory`*`] | -space | -delete_dbg | -telemetry_files] [-no_logs] [-no_getinfo] [-no_compress] [-no_config] [-no_debugs] | [-debug_loc` *`Directory1`* `[`*`Directory2`*`]...] [-verbose] [-add_info [-any |` *`Host`*`]` *`Path`*`]`

`omnidlc -localpack [`*`Filename`*`]`

`omnidlc -unpack [`*`Filename`*`]`

`omnidlc -uncompress` *`Filename`*

`omnidlc [-hosts` *`List`*`] -del_ctracelog`

The options are explained in the following sections.

Limiting the scope of collected data

To limit the scope of collected data, use the following `omnidlc` command options:

`{-session` *`SessionID`* `| -did` *`DebugID`* `| -postfix` *`String`* `| -no_filter} [-hosts` *`List`*`] [-no_getinfo] [-no_config] [-no_logs] [-no_debugs] [-debug_loc` *`Directory1`* `[`*`Directory2`*`]...]`

You can combine the following features:

- To collect data only from the selected clients, use the `-hosts List` option. Specify the names of the clients, separated by spaces.

  In a cluster environment, use the `-hosts` option, specifying the cluster nodes. If this option is not used, the data is collected from the active node only.

- To exclude the getinfo, the configuration information, log, or debug log files from the collected data, use the `-no_getinfo`, `-no_config`, `-no_logs`, or `-no_debugs` option, respectively. Note that `-no_getinfo` is not applicable for HP OpenVMS systems.

- To collect the debug files only from a specific session, use the `-session SessionID` option. Note that on OpenVMS, all available logs are collected.

- To collect the debug files matching a specific debug ID, use the `-did DebugID` option.

- To collect the debug files matching a specific postfix, use the `-postfix String` option.

- To collect all debug files, use the `-no_filter` option.

- To collect debug files not only from the default debug files directory but also from other directories, use the `-debug_loc Directory1[Directory2]...` option. Note that the subdirectories are excluded from the search. If a specified directory does not exist on a particular client, the directory is ignored.

Segmentation of data

If a file to be sent to the Cell Manager is larger than `2` GB, the file is split into `2` GB-sized chunks. An extension ranging from `s001` to `s999` is appended to each chunk. A second extension (`.gz`) is added if the files are compressed.

On the Cell Manager side, if the size of all collected compressed or uncompressed files exceeds `2` GB, the collected files are packed in `2` GB-sized packages with an extension ranging from `s001` to `s999`.

Disabling compression of the collected data

By default, the collected data is compressed before it is sent to the Cell Manager. To disable the compression, use the `-no_compress` option.

Saving packed data

By default, the data is sent over the network to the Cell Manager, where it is packed and saved in the current directory as the file `dlc.pck`.

The packed file includes a generated directory structure that includes the hostnames, paths, and the collected files of the clients involved.

Limitations

- The size of the resulting packed file cannot exceed 2 GB. In such a case, do not pack the data.

Use the `-pack Filename` option to pack and save the data:

- With a different file name. Specify the *Filename* as a file name.
- In a different directory and with a different file name. Specify the *Filename* as a full pathname.

Saving unpacked data

To leave the data unpacked and save it, use the `-depot [Directory]` option. The files are collected within the `dlc` subdirectory. If the *Directory* is not specified, the files are saved on the Cell Manager within the `dlc` directory in the default Data Protector temporary files directory.

The directories for the packed or unpacked files are generated as follows:

```
./dlc/client_1/tmp/debug_files
./dlc/client_1/log/log_files
./dlc/client_1/getinfo/get_info.txt
./dlc/client_2/tmp/debug_files
./dlc/client_2/log/log_files
./dlc/client_2/getinfo/get_info.txt
...
```

Estimating the required space

To display the amount of disk space required on the Cell Manager to gather the data, use the `-space` option.

Deleting debug files on clients

To delete the collected data on the clients, use the `-delete_dbg` option. Note that only debug files are deleted; getinfo and log files are not deleted. On HP OpenVMS, if run together with the `-session` option, the `omnidlc` command does not delete any debugs from the debug files directory.

Packing telemetry files on the Cell Manager

To collect and pack telemetry files on the Cell Manager, use the `-telemetry_files` option. Note that the telemetry files cannot be created when the `-depot` option is used.

Deleting information about debug files

To delete `ctrace.log` files containing the information where (on which clients) debug logs are generated and which debug prefixes are used, use the `-del_ctracelog` option. Note that if used together with the `-hosts List` option, the command deletes `ctrace.log` files on specified clients only. Otherwise, `ctrace.log` files on all clients in a cell are deleted.

Note: Use this option for `ctrace.log` files cleanup. Note that if this file is deleted, the debug log collector will only get debugs from the default `dlc` residing in the default Data Protectortemporary files directory and not from other debug directories you specified.

Problems and workarounds

Debug log collection fails

Problem

During the debug log collection operation, `omnidlc` is unable to connect to a client. The following error is displayed:
`Collection from client1.company.com started.`
`Error: Data retrieval from client1.company.com failed.`
`Warning: Collection from client1.company.com incomplete.`
The problem occurs when a Cell Manager name specified in the configuration file on a client does not match the name of the Cell Manager that requested the debug log collection.

Action
Add the Cell Manager hostname to the `omnidlc_hosts` file located in the default Data Protector client configuration directory.

Additional operations

- To pack unpacked data, compressed or uncompressed, that was sent to the Cell Manager (using the `-depot` option), use the `-localpack [Filename]` option.

  This option packs the directory structure of the current directory (must be the directory containing the `dlc` directory generated by the `-depot` option). If the *`Filename`* argument is not specified, the file `dlc.pck` is created in the current directory.

  This option is equivalent to the `-pack` option, but should be used only if the data was collected using the `-depot` option.

- To get the additional information (for example, screenshots, pictures and the like) from a specified

directory on client, use the `-add_info [-any | Host] Path` option.

The `-any` option is used when the directory path is the same for all clients.

- To unpack data, use the `-unpack [Filename]` option.

  If the `Filename` argument is not specified, the `dlc.pck` file from the current directory is unpacked. The data is always unpacked to the `dlc` directory in the current directory.

  Use this option when the collected data was packed on the Cell Manager either using the `-pack` or `-localpack` option.

- To uncompress a compressed single file, use the `-uncompress Filename` option. Packed data must be unpacked first.

- To enable verbose output, use the `-verbose` option.

Using the Data Protector GUI to process debug files

During debug sessions, the following types of files can be generated: debug, log, and getinfo

The following debug file operations can be performed in the Data Protector GUI:

- "Invoking debug file operations" on the next page

  Debug file operations can be started from different locations within the Data Protector GUI.

- "Collecting debug files" on the next page

  Debug files are collected from client systems and stored on the Cell Manager.

- "Calculating debug files space" on page 96

  The space required on the Cell Manager for the collected files is calculated.

- "Deleting debug files" on page 97

  Debug files are deleted from the client systems.

They can be invoked from the **Internal Database** context or the **Clients** context.

The GUI operations use various options of the `omnidlc` command. Additional operations can be performed on collected files by using the `omnidlc` command directly in the command line interface. For further information, see "Using the omnidlc command from the CLI to process debug files" on page 90 or the *HP Data Protector Command Line Interface Reference*.

When performing any of the operations in the following sections, the `omnidlc` syntax used can be seen in a **Results** window.

Invoking debug file operations

To access debug file operations from the **Clients** context:

1. In the Scoping Pane, expand the **Clients** folder and select the client for which debug file operations are required.
2. Select the operation to perform:
   - Right-click on the selection and select the required operation: **Collect Debug Files**, **Calculate Debug Files Space** or **Delete Debug Files.**

     or

   - From the menu bar, select **Actions -> Debug Files** and then **Collect**, **Check Space** or **Delete**

To access debug file operations from the **Internal Database** context:

1. In the Scoping Pane, expand the **Sessions** folder and select the session for which debug file operations are required.
2. Select the operation to perform:
   - Right-click on the selection and select the required operation: **Collect Debug Files**, **Calculate Debug Files Space**, or **Delete Debug Files**.

     or

   - From the menu bar, select **Actions -> Debug Files** and then **Collect**, **Check Space**, or **Delete**.

In each case, selecting an operation starts a wizard that guides you through the required steps.

Collecting debug files

To collect debug files:

1. Start the Debug File Collector wizard as described in "Invoking debug file operations" above.

   If you started from the Internal Database context by selecting a session, the session will be pre-selected in the Filter section of the wizard Clients page and the clients involved in the session will be selected.

   If you started from the Client context, the clients that you selected there will be pre-selected in the wizard Clients page.

2. In the Clients page, to limit the clients involved:

   a. Select only the client(s) from which you want to collect files. If clients were pre-selected, you can de-select any of them.

b. In **Filters**, select the filter criteria: **SessionID**, **DebugID**, **Postfix**, or **No filter**, and enter the required identifier. If **No filter** is selected, all debug files on the selected client(s) will be collected. If a session ID was pre-selected for you, you cannot change this.

c. Click **Next**.

3. In the Directories page:

a. Enter any other directories that should be checked for debug files in addition to the default debug files directory and click **Add**.

b. In the directory tree, select any other directories whose contents you want collected (the contents of sub-directories are not collected).

c. Click **Next**.

4. In the Options and Operation page:

a. De-select any debug collection options you don't want to use. For information on the `omnidlc` options, see the *HP Data Protector Command Line Interface Reference*.

b. Select the operation to be used for storing the debug files on the Cell Manager:

- **Create Depot** stores the files (not packed) in the default Data Protector temporary files directory, within a `dlc` subdirectory.

  To specify an alternative location, enter an existing directory in **Target Path**. If you want to use the default location, make sure that the text box is clear.

  Using this option allows you to review the collected files and remove any of them before sending the information to support. You can subsequently create a pack file using the CLI command `omnidlc -localpack [Filename]` (for more information, see the *HP Data Protector Command Line Interface Reference*.

- **Create Pack File** creates a pack file containing the collected files.

  Specify the full path for the file in **Target Path**.

c. Click **Finish**.

Calculating debug files space

You can calculate the total space required on the Cell Manager for a debug file collection before actually performing the collection, by entering all the required collection information in the Debug File Space Calculation wizard. After the calculation has been performed, you have the option to start the collection using the specified criteria.

To calculate the total space required on the Cell Manager for a debug files collection:

1. Start the Debug File Space Calculation wizard as described in "Invoking debug file operations" on page 95.
2. In the Clients page, to limit the clients involved:
   a. Select only the client(s) from which you want to collect files. If clients were pre-selected, you can de-select any of them.
   b. In **Filters**, select the filter criteria: **SessionID**, **DebugID**, **Postfix**, or **No filter**, and enter the required identifier. If **No filter** is selected, all debug files on the selected client(s) will be collected. If a session was pre-selected for you, you cannot change this.
   c. Click **Next**.
3. In the Directories page:
   a. Enter any other directories that should be checked for debug files in addition to the default debug files directory and click **Add**.
   b. In the directory tree, select any other directories whose contents you want collected (the contents of sub-directories are not collected).
   c. Click **Next**.
4. In the Options page:
   a. De-select any debug collection options you don't want to use. For information on the `omnidlc` options, see the *HP Data Protector Command Line Interface Reference*.
   b. Click **Next**.

The results of the check are displayed in the **Results** tab.

After the calculation, a dialog box appears asking if you want to start the debug file collection.

To start debug file collection using the options selected for the space calculation:

- Click **Yes**.

  The default operation behavior (Create Pack file) will be used on the Cell Manager. See "Collecting debug files" on page 95.

Deleting debug files

To delete debug files from clients:

1. Start the Delete Debug Files wizard as described in "Invoking debug file operations" on page 95.
2. In the Clients page, to limit which files are deleted:

a. Select only the client(s) from which to delete files.

b. In **Filters**, select the filter criteria: **SessionID**, **DebugID**, **Postfix** or **No filter** and enter the required identifier.

If **No filter** is selected, all debug files on the selected client(s) will be deleted.

c. Click **Next**.

3. In the Directories page:

a. Enter any other directories from which debug files should be deleted, in addition to the default debug files directory, and click **Add**.

b. Click **Finish**.

Examples of Using the omnidlc Command

1. To collect and compress all debug, log, and getinfo files from the cell and pack them in the `dlc.pck` file in the current directory on the Cell Manager, using verbose output, run:

```
omnidlc -no_filter -verbose
```

2. To collect only log and debug files from the clients `client1.company.com` and `client2.company.com` to the directory `c:\depot` on the Cell Manager, without compressing and packing the files, run:

```
omnidlc -no_filter -hosts client1.company.com client2.company.com -depot c:\depot
-no_getinfo -no_compress
```

3. To collect log, debug, and getinfo files from the client `client1.company.com`, compress and pack them to the file `c:\pack\pack.pck` on the Cell Manager, run:

```
omnidlc -hosts client1.company.com -pack c:\pack\pack.pck
```

4. To collect log, debug, and getinfo files from the default location and debug files from the additional directories, `C:\tmp` and `/temp/debugs`, from the clients `client1.company.com` and `client2.company.com`, and to compress and pack the files on the Cell Manager, run:

```
omnidlc -hosts client1.company.com client2.company.com -debug_loc C:\tmp
/tmp/debugs
```

5. To delete all debug files for the session with the ID `2012/02/16-11`, run:

```
omnidlc -session 2012/02/16-11 -delete_dbg
```

6. To display disk space needed on the Cell Manager for the uncompressed debug files with the debug ID `2351` from the client `client.company.com`, run:

```
omnidlc -did 2351 -hosts client.company.com -space -no_getinfo -no_logs -no_
compress
```

7. To pack the additional file located in the `C:\debug` directory on the client `client1.company.com` together with debug log files for the session with the ID `2012/02/12-24`, run:

   ```
   omnidlc -session 2012/02/12-24 -add_info -host client1.company.com C:\debug
   ```

8. To pack the directory structure in the current directory (must be the directory containing the `dlc` directory generated by the `-depot` option) to the `dlc.pck` file in the same directory, run:

   ```
   omnidlc -localpack
   ```

9. To collect and pack telemetry files in `C:\tmp\dlc.dlc` on the Cell Manager `cellmanager.company.com`, run:

   ```
   omnidlc -no_filter -hosts cellmanager.company.com -no_compress -no_logs -no_config
   -no_getinfo -no_verbose -telemetry_files -pack C:\tmp\dlc.dlc
   ```

10. To unpack the `dlc.pck` file to the `dlc` directory of the current directory, run:

    ```
    omnidlc -unpack
    ```

Processing Debug Files using the Data Protector GUI

During debug sessions, the following types of files can be generated: debug, log, and getinfo.

The following debug file operations can be performed in the Data Protector GUI:

- "Invoking debug file operations" on the next page

  Debug file operations can be started from different locations within the Data Protector GUI.

- "Collecting debug files" on the next page

  Debug files are collected from client systems and stored on the Cell Manager.

- "Calculating debug files space" on page 101

  The space required on the Cell Manager for the collected files is calculated.

- "Deleting debug files" on page 102

  Debug files are deleted from the client systems.

They can be invoked from the **Internal Database** context or the **Clients** context.

The GUI operations use various options of the `omnidlc` command. Additional operations can be performed on collected files by using the `omnidlc` command directly in the command line interface. For further information, see "Using the omnidlc command from the CLI to process debug files" on page 90 or the *HP Data Protector Command Line Interface Reference*.

When performing any of the operations in the following sections, the `omnidlc` syntax used can be seen in a **Results** window.

Invoking debug file operations

To access debug file operations from the **Internal Database** context:

1. In the Scoping Pane, expand the **Sessions** folder and select the session for which debug file operations are required.
2. Select the operation to perform:
   - Right-click on the selection and select the required operation: **Collect Debug Files**, **Calculate Debug Files Space** or **Delete Debug Files.**

     or

   - From the menu bar, select **Actions -> Debug Files** and then **Collect**, **Check Space** or **Delete.**

To access debug file operations from the Clients context:

1. In the Scoping Pane, expand the **Clients** folder and select the client for which debug file operations are required.
2. Select the operation to perform:
   - Right-click on the selection and select the required operation: **Collect Debug Files**, **Calculate Debug Files Space** or **Delete Debug Files.**

     or

   - From the menu bar, select **Actions -> Debug Files** and then **Collect**, **Check Space** or **Delete.**

In each case, selecting an operation starts a Wizard that guides you through the required steps.

Collecting debug files

1. Start the Debug File Collector wizard as described in "Invoking debug file operations" above.

   If you started from the Internal Database context by selecting a session, the session will be pre-selected in the Filter section of the wizard Clients page and the clients involved in the session will be selected.

   If you started from the Client context, the clients that you selected there will be pre-selected in the wizard Clients panel.

2. In the Clients page, to limit the clients involved:

a. Select only the client(s) from which you want to collect files. If clients were pre-selected, you can de-select any of them.

b. In **Filters**, select the filter criteria: **SessionID**, **DebugID**, **Postfix** or **No filter** and enter the required identifier. If **No filter** is selected, all debug files on the selected client(s) will be collected. If a session ID was pre-selected for you, you cannot change this.

c. Click **Next**.

3. In the Directories page:

a. Enter any other directories that should be checked for debug files in addition to the default debug files directory and click **Add**.

b. In the directory tree, select any other directories whose contents you want collected (the contents of sub-directories are not collected).

c. Click **Next**.

4. In the Options and Operation page:

a. De-select any debug collection options you don't want to use. When first opened, the selections match the standard defaults used by the `omnidlc` command. For information on these, see the *HP Data Protector Command Line Interface Reference*.

b. Select the operation to be used for storing the debug files on the Cell Manager:

- **Create Depot** stores files (not packed) in the default Data Protector temporary files directory within a `dlc` subdirectory.

  To specify an alternative location, enter an existing directory in **Target Path**. If you want to use the default location, make sure that the text box is clear.

  Using this option allows you to review the collected files and remove any of them before sending the information to support. You can subsequently create a pack file using the CLI command `omnidlc -localpack [`*`filename`*`]` (for more information on this, see the *HP Data Protector Command Line Interface Reference*.

- **Create Pack File** creates a pack file containing the collected files.

  Specify the full path for the file in **Target Path**.

c. Click **Finish**.

Calculating debug files space

You can calculate the total space required on the Cell Manager for a debug file collection before actually performing the collection, by entering all the required collection information in the Debug File Space Calculation wizard. After the calculation has been performed, you have the option to start the collection using the specified criteria.

To calculate the total space required on the Cell Manager for a debug files collection:

1. Start the Debug File Space Calculation wizard as described in "Invoking debug file operations" on page 100.
2. In the Clients page, to limit the clients involved:
   a. Select only the client(s) from which you want to collect files. If clients were pre-selected, you can de-select any of them.
   b. In **Filters**, select the filter criteria: **SessionID**, **DebugID**, **Postfix** or **No filter** and enter the required identifier. If **No filter** is selected, all debug files on the selected client(s) will be collected. If a session was pre-selected for you, you cannot change this.
   c. Click **Next**.
3. In the Directories page:
   a. Enter any other directories that should be checked for debug files in addition to the default debug files directory and click **Add**.
   b. In the directory tree, select any other directories whose contents you want collected (the contents of sub-directories are not collected).
   c. Click **Next**.
4. In the Options page:
   a. De-select any debug collection options you don't want to use. When first opened, the selections match the standard defaults used by the `omnidlc` command. For information on these, see the *HP Data Protector Command Line Interface Reference*.
   b. Click **Next**.

The results of the check are displayed in the **Results** tab.

After the calculation, a dialog box appears asking if you want to start the debug file collection.

To start debug file collection using the options selected for the space calculation:

- Click **Yes**.

  The default operation behavior (Create Pack file) will be used on the Cell Manager. See "Collecting debug files" on page 100.

Deleting debug files

To delete debug files from clients:

1. Start the Delete Debug Files wizard as described in "Invoking debug file operations" on page 100.
2. In the Clients page, to limit which files are deleted:
   a. Select only the client(s) from which to delete files.
   b. In **Filters**, select the filter criteria: **SessionID**, **DebugID**, **Postfix** or **No filter** and enter the required identifier.

      If **No filter** is selected, all debug files on the selected client(s) will be deleted.
   c. Click **Next**.
3. In the Directories page:
   a. Enter any other directories from which debug files should be deleted, in addition to the default debug files directory, and click **Add**.
   b. Click **Finish**.

Example of Collecting Data to Be Sent to the HP Customer Support Service

To collect debug, log, and getinfo files for problems occurring during backup sessions involving one client and the Cell Manager:

1. Reduce the error environment as much as possible:
   - Create a backup specification that contains just one or a few files or directories.
   - Include only one failing client in the debug run.
2. Create an `info` text file that contains the following:
   - Hardware identification of the Cell Manager, Media Agent, and Disk Agent clients. For example, `HP-9000 T-600 Series`; `Vectra XA`.
   - The SCSI controller's name, for example, `onboard_type/Adaptec xxx/...` for Windows Media Agent clients.
   - Topology information obtained from the `omnicellinfo -cell` command output.
   - The output of the `devbra -dev` command if you have issues with backup devices.
3. Discuss the technical issue with the support organization and request the following information:
   - Debug level (For example, `1-200`. This is a command option needed later.).
   - Debug scope (For example, client only, Cell Manager only, every system.).

4. Exit all user interfaces and stop all other backup activities in the cell.
5. To collect Inet or CRS debugs as well, restart the Inet or CRS service on the Cell Manager in the debug mode.
6. On the Cell Manager, start the GUI in the debug mode:

   ```
   manager -debug 1-200 error_run.txt
   ```

   You can define the postfix of the debug file names created by substituting the `error_run` text with your preference.
7. Reproduce the problem using Data Protector.
8. Exit all user interfaces to quit the debug mode.

   If you collected Inet and CRS debugs as well, restart the Data Protector services on the Cell Manager without the debug option.
9. On the Cell Manager, run:

   ```
   omnidlc -postfix error_run.txt
   ```

   The command compresses the log, getinfo, and debug files with the `error_run.txt` postfix on the client and sends them over the network to the Cell Manager, where they are packed and saved in the `dlc.pck` file in the current directory.
10. E-mail the packed files (`dlc.pck`) to the support organization.
11. Delete the created debug files (with the `error_run.txt` postfix) on the client by running the following command on the Cell Manager:

    ```
    omnidlc -postfix error_run.txt -delete_dbg
    ```

Glossary

[

[%=DP.DP_AbbCompanyName%] [%=DP.HW_SW_P9000_XP_special%] Agent

A [%=DP.DP_BriefProductName%] software component that executes all tasks needed by the [%=DP.DP_BriefProductName%] [%=DP.HW_SW_P9000_XP_full%] integration. It communicates with the [%=DP.HW_SW_P9000_XP_abbrev%] storage system via the RAID Manager Library.

[%=DP.DP_AbbCompanyName%] Business Copy (BC) [%=DP.HW_SW_P6000_EVA_special%] ([%=DP.HW_SW_P6000_EVA_full%] specific term)

A local replication software solution that enables creation of point-in-time copies (replicas) of the source volumes using the snapshot and clone capabilities of the [%=DP.HW_SW_P6000_EVA_special%] firmware. See also replica, source volume, snapshot, and [%=DP.DP_AbbCompanyName%] Continuous Access + Business Copy (CA+BC) [%=DP.HW_SW_P6000_EVA_special%].

[%=DP.DP_AbbCompanyName%] Business Copy (BC) [%=DP.HW_SW_P9000_XP_special%] ([%=DP.HW_SW_P9000_XP_full%] specific term)

An [%=DP.HW_SW_P4000_LH_full%] configuration that enables creation and maintenance of internal copies of LDEVs for various purposes, such as data duplication and backup. The copies (secondary volumes or S-VOLs) can be separated from the primary volumes (P-VOLs) and connected to a different system. For [%=DP.DP_BriefProductName%] zero downtime backup purposes, P-VOLs should be available to the application system, and one of the S-VOL sets should be available to the backup system. See also LDEV, [%=DP.DP_AbbCompanyName%] Continuous Access (CA) [%=DP.HW_SW_P9000_XP_special%], Main Control Unit (MCU), application system, and backup system.

[%=DP.DP_AbbCompanyName%] Command View (CV) EVA ([%=DP.HW_SW_P6000_EVA_full%] specific term)

The user interface that enables you to configure, manage, and monitor your [%=DP.HW_SW_P6000_EVA_special%] storage system. It is used to perform various storage management tasks, for example, creating virtual disk families, managing storage system hardware, and creating snapshots, snapclones, or mirrorcloens of virtual disks. The [%=DP.DP_AbbCompanyName%] Command View EVA software runs on the [%=DP.DP_AbbCompanyName%] Storage Management Appliance, and is accessed by a Web browser. See also [%=DP.DP_AbbCompanyName%] P6000 / [%=DP.DP_AbbCompanyName%] 3PAR SMI-S Agent and [%=DP.DP_AbbCompanyName%] SMI-S [%=DP.HW_SW_P6000_EVA_abbrev%] provider.

[%=DP.DP_AbbCompanyName%] Continuous Access (CA) [%=DP.HW_SW_P9000_XP_special%] ([%=DP.HW_SW_P9000_XP_full%] specific term)

An [%=DP.HW_SW_P9000_XP_full%] confgiuration that enables creation and maintenance of remote copies of LDEVs for purposes such as data duplication, backup, and disaster recovery. [%=DP.DP_AbbCompanyName%] CA [%=DP.HW_SW_P9000_XP_special%] operations involve main (primary) disk array units and remote (secondary) disk

array units. The main disk array units are connected to the application system and contain primary volumes (P-VOLs), which store original data. The remote disk aray units are connected to the backup system and contain secondary volumes (S-VOLs). See also [%=DP.DP_ AbbCompanyName%] BC [%=DP.HW_ SW_P9000_XP_special%] ([%=DP.HW_SW_P9000_XP_full%] specific term), Main Control Unit (MCU), and LDEV.

[%=DP.DP_AbbCompanyName%] Continuous Access + Business Copy (CA+BC) [%=DP.HW_SW_P6000_EVA_ special%] ([%=DP.HW_SW_P6000_ EVA_full%] specific term)

An [%=DP.HW_SW_P6000_EVA_full%] configuration that enables creation and maintainance of copies (replicas) of the source volumes on a remote [%=DP.HW_SW_P6000_EVA_ special%], and later use of these copies as the source for local replication on this remote array. See also [%=DP.DP_ AbbCompanyName%] BC [%=DP.HW_ SW_P6000_EVA_special%], replica, and source volume.

[%=DP.DP_AbbCompanyName%] P6000 / [%=DP.DP_ AbbCompanyName%] 3PAR SMI-S Agent

A [%=DP.DP_BriefProductName%] software module that executes all tasks required for the [%=DP.HW_SW_ P6000_EVA_full%] integration. With the P6000 / 3PAR SMI-S Agent, the control over the array is established through an appropriate SMI-S provider, which directs communication between incoming requests and the storage system's native interface. See also [%=DP.DP_ AbbCompanyName%] Command View (CV) EVA and [%=DP.DP_ AbbCompanyName%] SMI-S [%=DP.HW_SW_P6000_EVA_ abbrev%] provider.

[%=DP.DP_AbbCompanyName%] SMI-S [%=DP.HW_SW_P6000_EVA_ abbrev%] provider

An interface used for controlling [%=DP.HW_SW_P6000_EVA_full%]. SMI-S [%=DP.HW_SW_P6000_EVA_ abbrev%] provider runs as a separate service on the [%=DP.DP_ AbbCompanyName%] Storage Management Appliance system and acts as a gateway between incoming requests and [%=DP.DP_AbbCompanyName%] Command View EVA. With the [%=DP.DP_BriefProductName%] [%=DP.HW_SW_P6000_EVA_full%] integration, SMI-S [%=DP.HW_SW_ P6000_EVA_abbrev%] provider accepts standardized requests from the [%=DP.DP_AbbCompanyName%] P6000 / [%=DP.DP_ AbbCompanyName%] 3PAR SMI-S Agent, communicates with [%=DP.DP_ AbbCompanyName%] Command View EVA for information or method invocation, and returns standardized responses. See also [%=DP.DP_ AbbCompanyName%] P6000 / [%=DP.DP_AbbCompanyName%] 3PAR SMI-S Agent and [%=DP.DP_ AbbCompanyName%] Command View (CV) EVA.

[%=DP.DP_BriefProductName%] user account

You can use [%=DP.DP_ BriefProductName%] only if you have a [%=DP.DP_BriefProductName%] user account, which restricts unauthorized access to [%=DP.DP_ BriefProductName%] and to backed up data. [%=DP.DP_BriefProductName%] administrators create this account specifying a user logon name, the systems from which the user can log on, and a [%=DP.DP_BriefProductName%]

user group membership. This is checked whenever the user starts the [%=DP.DP_BriefProductName%] user interface or performs specific tasks.

[%=DP.PROD_HomeDir%]

A reference to the directory containing [%=DP.DP_BriefProductName%] program files (on Windows Vista, Windows 7, Windows 8, Windows Server 2008, and Windows Server 2012) or the directory containing [%=DP.DP_BriefProductName%] program files and data files (on other Windows operating systems). Its default path is %ProgramFiles%\OmniBack, but the path can be changed in the [%=DP.DP_BriefProductName%] Setup Wizard at installation time. See also [%=DP.PROD_ProgDataDir%].

[%=DP.PROD_ProgDataDir%]

A reference to the directory containing [%=DP.DP_BriefProductName%] data files on Windows Vista, Windows 7, Windows 8, Windows Server 2008, and Windows Server 2012. Its default path is %ProgramData%\OmniBack, but the path can be changed in the [%=DP.DP_BriefProductName%] Setup Wizard at installation time. See also [%=DP.PROD_HomeDir%].

A

access rights

See user rights.

ACSLS (StorageTek specific term)

The Automated Cartridge System Library Server (ACSLS) software that manages the Automated Cartridge System (ACS).

Active Directory (Windows specific term)

The directory service in a Windows network. It contains information about resources on the network and makes them accessible to users and applications. The directory services provide a consistent way to name, describe, locate, access, and manage resources regardless of the physical system they reside on.

AES 256-bit encryption

The [%=DP.DP_BriefProductName%] software encryption, based on the AES-CTR (Advanced Encryption Standard in Counter Mode) encryption algorithm that uses random keys of 256-bit length. The same key is used for both encryption and decryption. With AES 256-bit encryption, data is encrypted before it is transferred over a network and before it is written to media.

AML (ADIC/GRAU specific term)

Automated Mixed-Media library.

AMU (ADIC/GRAU specific term)

Archive Management Unit.

application agent

A component needed on a client system to back up or restore online database integrations. See also Disk Agent.

application system (ZDB specific term)

A system the application or database runs on. The application or database data is located on source volumes. See also backup system and source volume.

archive logging (Lotus Domino Server specific term)

Lotus Domino Server database mode where transaction log files are overwritten only after they have been backed up.

archived log files ([%=DP.DP_BriefProductName%] specific term)

Files that keep track of changes made to the [%=DP.DP_BriefProductName%]

Internal Database (IDB). They are used for online or offline IDB restore and recovery where the IDB needs to be recreated either in its latest possible state, beyond the time of the most recent IDB backup session, or in a state between the times of two consecutive IDB backup sessions.

archived redo log (Oracle specific term)

Also called offline redo log. If the Oracle database operates in the ARCHIVELOG mode, as each online redo log is filled, it is copied to an archived log destination. This copy is the archived redo log. The presence or absence of an archived redo log is determined by the mode the database is using: ARCHIVELOG - The filled online redo log files are archived before they are reused. The database can be recovered if an instance or a disk fails. A "hot" backup can be performed only when the database is running in this mode. NOARCHIVELOG - The filled online redo log files are not archived. See also online redo log.

ASR set

A collection of files stored on several diskettes, required for proper reconfiguration of the replacement disk (disk partitioning and logical volume configuration) and automatic recovery of the original system configuration and user data that was backed up during the full client backup. These files are stored as an ASR archive file on the Cell Manager as well as on the backup medium. After a disaster occurs, the ASR archive file is extracted to diskettes which you need to perform ASR.

audit logs

Data files to which auditing information is stored.

audit report

User-readable output of auditing information created from data stored in audit log files.

auditing information

Data about every backup session that was performed over an extended, user-defined period for the whole [%=DP.DP_BriefProductName%] cell.

autochanger

See library.

autoloader

See library.

Automatic Storage Management (ASM) (Oracle specific term)

A filesystem and volume manager integrated into Oracle which manages Oracle database files. It eliminates complexity associated with data and disk management and optimizes performance by providing striping and mirroring capabilities.

auxiliary disk

A bootable disk that has a minimal operating system with networking and [%=DP.DP_BriefProductName%] Disk Agent installed. It can be carried around and used to boot the target system in Phase 1 of Disk Delivery Disaster Recovery of UNIX clients.

B

BACKINT (SAP R/3 specific term)

A [%=DP.DP_BriefProductName%] interface program that lets the SAP R/3 backup programs communicate with the [%=DP.DP_BriefProductName%] software via calls to an open interface. For backup and restore, SAP R/3 programs issue commands through the

[%=DP.DP_BriefProductName%] backint interface.

backup API (Oracle specific term)

The Oracle interface between the Oracle backup/restore utility and the backup/restore media management layer. The interface defines a set of routines to allow reading and writing of data to media and also to allow creation, searching, and removing of backup files.

backup chain

See restore chain.

backup device

A device configured for use with [%=DP.DP_BriefProductName%] that can write data to and read data from storage media. This can be, for example, a standalone DDS/DAT drive or a library.

backup generation

One backup generation includes one full backup and all incremental backups until the next full backup.

backup ID

An identifier of an integration object that equals the session ID of the backup of this object. The backup ID is preserved when an object is copied, exported, or imported.

backup object

A backup unit that contains all items backed up from one disk volume (logical disk or mount point). The backed up items can be any number of files, directories, or the entire disk or mount point. Additionally, a backup object can be a database/application entity or a disk image (rawdisk). A backup object is defined by: client name (hostname of the [%=DP.DP_BriefProductName%] client where the backup object resides), mount point (for filesystem objects - the access point in a directory structure on the client where the backup object is located (drive on Windows systems and mount point on UNIX systems), for integration objects - backup stream identification, indicating the backed up database/application items), description (for filesystem objects - uniquely defines objects with identical client name and mount point, for integration objects - displays the integration type), and type (for filesystem objects - filesystem type, for integration objects - "Bar").

backup owner

Each backup object in the IDB has an owner. The default owner of a backup is the user who starts the backup session.

backup session

A process that creates a copy of data on storage media. The activities are specified in a backup specification or an interactive session. The result of a backup session is a set of media, which was written to, also called the backup or media set. See also backup specification, incremental backup, and full backup.

backup set

A complete set of integration objects associated with a backup.

backup set (Oracle specific term)

A logical grouping of backed up files that are created using the RMAN backup command. A backup set is a complete set of files associated with a backup. The files can be multiplexed to increase performance. A backup set contains either datafiles or archived logs, but not both together.

backup specification

A list of objects to be backed up, together with a set of devices or drives to be used;

backup options for all objects in the specification; and days and time that you want backups to be performed. The objects are entire disks/volumes or parts of them such as files, directories, or even the Windows Registry (for example). File selection lists, such as include-lists and exclude-lists, can be specified. All clients configured in one backup specification are backed up at the same time in one backup session using the same backup type (full or incremental).

backup system (ZDB specific term)

A system connected to target volumes of one or multiple application systems. The backup system is typically connected to a backup device to perform the backup of the data in a replica. See also application system, target volume, and replica.

backup types

See incremental backup, differential backup, transaction backup, full backup, and delta backup.

backup view

[%=DP.DP_BriefProductName%] provides different views of your backup specifications: By Type - according to the type of data available for backups/templates. Default view. By Group - according to the group to which backup specifications/templates belong. By Name - according to the name of backup specifications/templates. By Manager - if you are running MoM, you can also set the Backup view according to the Cell Manager to which backup specifications/templates belong.

BC (EMC Symmetrix specific term)

Business Continuances are processes that allow customers to access and manage instant copies of EMC Symmetrix standard devices.

BC Process (EMC Symmetrix specific term)

A protected storage environment solution, which uses specially configured EMC Symmetrix devices as mirrors or Business Continuance Volumes to protect data on EMC Symmetrix standard devices. See also BCV.

BCV (EMC Symmetrix specific term)

Business Continuance Volumes, or BCV devices, are dedicated SLDs that are pre-configured in the ICDA on which the business continuation operation runs. BCV devices are assigned separate SCSI addresses, differing from the addresses used by the SLDs they mirror. The BCV devices are used as splitable mirrors of the primary EMC Symmetrix SLDs that need to be protected. See also BC and BC Process.

Boolean operators

The Boolean operators for the full text search functionality of the [%=DP.DP_BriefProductName%] Help system are AND, OR, NOT, and NEAR. Used when searching, they enable you to define your query precisely by creating a relationship between search terms. If no operator is specified in a multi-word search, AND is used by default. For example, the query manual disaster recovery is equivalent to manual AND disaster AND recovery.

boot volume/disk/partition

A volume/disk/partition containing files required for the initial step of the boot process. Microsoft terminology defines the boot volume/disk/partition as a volume/disk/partition containing the operating system files.

BRARCHIVE (SAP R/3 specific term)

An SAP R/3 backup tool that allows you to archive redo log files. BRARCHIVE also saves all the logs and profiles of the

archiving process. See also BRBACKUP and BRRESTORE.

BRBACKUP (SAP R/3 specific term)

An SAP R/3 backup tool that allows an online or offline backup of the control file, of individual data files, or of all tablespaces and, if necessary, of the online redo log files. See also BRARCHIVE and BRRESTORE.

BRRESTORE (SAP R/3 specific term)

An SAP R/3 tool that can be used to restore files of the following type: Database data files, control files, and online redo log files saved with BRBACKUP; Redo log files archived with BRARCHIVE; Non-database files saved with BRBACKUP. You can specify files, tablespaces, complete backups, log sequence numbers of redo log files, or the session ID of the backup. See also BRARCHIVE and BRBACKUP.

BSM

The [%=DP.DP_BriefProductName%] Backup Session Manager, which controls the backup session. This process always runs on the Cell Manager system.

C

CAP (StorageTek specific term)

The Cartridge Access Port built into the door panel of a library. The purpose is to enter or eject media.

Catalog Database (CDB)

A part of the [%=DP.DP_BriefProductName%] Internal Database (IDB) that contains information about backup, restore, object copy, object consolidation, object verification, and media management sessions. This part of the IDB is always local to the cell. It is stored in the embedded database. See also MMDB.

catalog protection

Defines how long information about backed up data (such as filenames and file attributes) is kept in the IDB. See also data protection.

CDB

See Catalog Database (CDB).

CDF file (UNIX systems specific term)

A Context Dependent File is a file consisting of several files grouped under the same pathname. The system ordinarily selects one of the files using the context of the process. This mechanism allows machine dependent executables, system data, and device files to work correctly from all hosts in a cluster while using the same pathname.

cell

A set of systems that are under the control of a Cell Manager. The cell typically represents the systems on a site or an organizational entity, which are connected to the same LAN. Central control is available to administer the backup and restore policies and tasks.

Cell Manager

The main system in the cell where the essential [%=DP.DP_BriefProductName%] software is installed and from which all backup and restore activities are managed. The GUI used for management tasks can be located on a different system. Each cell has one Cell Manager system.

centralized licensing

[%=DP.DP_BriefProductName%] allows you to configure centralized licensing for the whole enterprise environment consisting of several cells. All

[%=DP.DP_BriefProductName%] licenses are installed and kept on the Enterprise Cell Manager system. You can then allocate licenses to specific cells to suit your needs. See also MoM.

Centralized Media Management Database (CMMDB)

See CMMDB.

Certificate Server

A Windows certificate server can be installed and configured to provide certificates for clients. It provides customizable services for issuing and managing certificates for the enterprise. These services issue, revoke, and manage certificates employed in public key-based cryptography technologies.

Change Journal (Windows specific term)

A Windows filesystem feature that logs a record of each change as it occurs to the files and directories on a local NTFS volume.

Change Log Provider

A module that can be queried to determine which objects on a filesystem have been created, modified, or deleted.

channel (Oracle specific term)

An Oracle Recovery Manager resource allocation. Every allocated channel starts a new Oracle process, which performs backup, restore, and recovery actions. The type of channel allocated determines the type of media used: type 'disk' or type 'sbt_tape'. If the specified channel is of type 'sbt_tape' and Oracle is integrated with [%=DP.DP_BriefProductName%], the server process will attempt to read backups from or write data files to [%=DP.DP_BriefProductName%].

circular logging (Microsoft Exchange Server and Lotus Domino Server specific term)

Circular logging is a Microsoft Exchange Server database and Lotus Domino Server database mode, in which the transaction log file contents are periodically overwritten after the corresponding data is committed to the database. Circular logging reduces disk storage space requirements.

client backup

A backup of all volumes (filesystems) mounted on a [%=DP.DP_BriefProductName%] client. What is actually backed up depends on how you select objects in a backup specification. If you select the check box next to the client system name, a single backup object of the Client System type is created. As a result, at the time of the backup, [%=DP.DP_BriefProductName%] first detects all volumes that are mounted on the selected client and then backs them up. On Windows clients, CONFIGURATION is also backed up. If you individually select all volumes that are mounted on the client system, a separate backup object of the Filesystem type is created for each volume. As a result, at the time of the backup, only the selected volumes are backed up. Volumes that have been potentially mounted on the client after the backup specification was created are not backed up.

client or client system

Any system configured with any [%=DP.DP_BriefProductName%] functionality and configured in a cell.

cluster continuous replication (Microsoft Exchange Server specific term)

Cluster continuous replication (CCR) is a high availability solution that uses cluster management and failover options to create and maintain an exact copy (CCR copy) of a storage group. A storage group is replicated to a separate server. CCR removes any single point of failure in your Exchange back-end servers. You can perform backups using VSS on your passive Exchange Server node where a CCR copy is located and thus reducing the load on the active node. A CCR copy is used for disaster recovery since you can switch to the CCR copy in a few seconds. A replicated storage group is represented as a new instance of Exchange writer called Exchange Replication Service and can be backed up (using VSS) like an ordinary storage group. See also Exchange Replication Service and local continuous replication.

cluster-aware application

It is an application that supports the cluster Application Programming Interface. Each cluster-aware application declares its own critical resources (disk volumes (on Microsoft Cluster Server), volume groups (on HP Serviceguard), application services, IP names and addresses ...).

CMD script for Informix Server (Informix Server specific term)

A Windows CMD script that is created in INFORMIXDIR when an Informix Server database is configured. The CMD script is a set of system commands that export environment variables for Informix Server.

CMMDB

The [%=DP.DP_BriefProductName%] Centralized Media Management Database (CMMDB) is the result of merging MMDBs from several cells in the MoM environment. It allows you to share high-end devices and media across multiple cells in a MoM environment. One cell can control the robotics, serving the devices that are connected to systems in other cells. The CMMDB must reside on the Manager-of-Managers. A reliable network connection between the MoM cell and the other [%=DP.DP_BriefProductName%] cells is highly recommended. See also MoM.

COM+ Class Registration Database (Windows specific term)

The COM+ Class Registration Database and the Windows Registry store COM+ application attributes, class attributes, and computer-level attributes. This guaranties consistency among these attributes and provides common operation on top of these attributes.

command device ([%=DP.HW_SW_P9000_XP_full%] specific term)

A dedicated volume in the disk array which acts as the interface between a management application and the disk array's storage system. It cannot be used for data storage and only accepts requests for operations that are then executed by the disk array.

command-line interface (CLI)

A set commands that you can use in shell scripts to perform [%=DP.DP_BriefProductName%] configuration, backup, restore, and management tasks.

concurrency

See Disk Agent concurrency.

container ([%=DP.HW_SW_P6000_EVA_full%] specific term)

Space on a disk array, which is pre-allocated for later use as a standard

snapshot, vsnap, or snapclone.

control file (Oracle and SAP R/3 specific term)

A data file that contains entries specifying the physical structure of the database. It provides database consistency information used for recovery.

copy set ([%=DP.HW_SW_P6000_EVA_full%] specific term)

A pair that consists of the source volumes on a local [%=DP.HW_SW_P6000_EVA_special%] and their replica on a remote [%=DP.HW_SW_P6000_EVA_special%]. See also source volume, replica, and [%=DP.DP_AbbCompanyName%] Continuous Access + Business Copy (CA+BC) [%=DP.HW_SW_P6000_EVA_special%].

CRS

The [%=DP.DP_BriefProductName%] Cell Request Server process (service), which runs on the Cell Manager, starts and controls the backup and restore sessions. The service is started as soon as [%=DP.DP_BriefProductName%] is installed on the Cell Manager. The CRS runs under the account root on UNIX systems. On Windows systems it runs under the account of the user, specified at installation time.

CSM

The [%=DP.DP_BriefProductName%] Copy and Consolidation Session Manager process controls the object copy and object consolidation sessions and runs on the Cell Manager system.

D

data file (Oracle and SAP R/3 specific term)

A physical file created by Oracle that contains data structures such as tables and indexes. A data file can only belong to one Oracle database.

data protection

Defines how long the backed up data on media remains protected, that is, [%=DP.DP_BriefProductName%] will not overwrite it. When the protection expires, [%=DP.DP_BriefProductName%] will be able to reuse the media in one of the next backup sessions. See also catalog protection.

data replication (DR) group ([%=DP.HW_SW_P6000_EVA_full%] specific term)

A logical grouping of [%=DP.HW_SW_P6000_EVA_full%] virtual disks. It can contain up to eight copy sets provided they have common characteristics and share a common [%=DP.DP_AbbCompanyName%] CA [%=DP.HW_SW_P6000_EVA_special%] log. See also copy set.

data stream

Sequence of data transferred over the communication channel.

database library

A [%=DP.DP_BriefProductName%] set of routines that enables data transfer between [%=DP.DP_BriefProductName%] and a server of an online database integration, for example, Oracle Server.

database parallelism

More than one database is backed up at a time if the number of available devices

allows you to perform backups in parallel.

database server

A computer with a large database stored on it, such as the SAP R/3 or Microsoft SQL database. A server has a database that can be accessed by clients.

Dbobject (Informix Server specific term)

An Informix Server physical database object. It can be a blobspace, dbspace, or logical log file.

DC directory

A directory that contains DC binary files, one for each configured Data Protector backup medium. DC directories constitute the Detail Catalog Binary Files part of the Data Protector Internal Database. See also Detail Catalog Binary Files (DCBF) and Internal Database (IDB).

DCBF

See Detail Catalog Binary Files (DCBF).

delta backup

A delta backup is a backup containing all the changes made to the database from the last backup of any type. See also backup types.

Detail Catalog Binary Files (DCBF)

A part of the Data Protector Internal Database that stores names, versions, and metadata of the backed up items. It consists of DC directories with DC binary files. See also DC directory and Internal Database (IDB).

device

See backup device.

device chain

A device chain consists of several standalone devices configured for sequential use. When a medium in one device gets full, the backup automatically continues on a medium in the next device in the device chain.

device group (EMC Symmetrix specific term)

A logical unit representing several EMC Symmetrix devices. A device cannot belong to more than a single device group. All devices in a device group must be on the same EMC Symmetrix unit. You can use a device group to: -Identify and work with a subset of the available EMC Symmetrix devices. -Get configuration, status, and performance statistics by device group. -Issue control operations that apply to all devices in the device group.

device streaming

A device is streaming if it can feed enough data to the medium to keep it moving forward continuously. Otherwise, the tape has to be stopped, the device waits for more data, reverses the tape a little and resumes writing to the tape, and so on. If data is written to the tape slower than it is delivered to the device then the device is streaming. Streaming significantly improves the use of space and the performance of the device.

DHCP server

A system running the Dynamic Host Configuration Protocol (DHCP) providing dynamic IP address assignment and network configuration for DHCP clients.

differential backup

An incremental backup that backs up changes made since the last full backup. To perform this type of backup, specify the Incr1 backup type. See also incremental backup.

differential backup (Microsfot SQL Server specific term)

A database backup that records only the data changes made to the database after the last full database backup. See also backup types.

differential database backup

A differential database backup records only those data changes made to the database after the last full database backup.

directory junction (Windows specific term)

Directory junctions use the reparse point concept of Windows. An NTFS 5 directory junction allows you to redirect a directory/file request to another location.

disaster recovery

A process to restore a client's main system disk to a state close to the time when a (full) backup was performed.

disaster recovery operating system

See DR OS.

Disk Agent

A component needed on a client to back it up and restore it. The Disk Agent controls reading from and writing to a disk. During a backup session, the Disk Agent reads data from a disk and sends it to the Media Agent, which then moves it to the device. During a restore session the Disk Agent receives data from the Media Agent and writes it to the disk. During an object verification session the Disk Agent receives data from the Media Agent and performs the verification process, but no data is written to disk.

Disk Agent concurrency

The number of Disk Agents that are allowed to send data to one Media Agent concurrently.

disk group (Veritas Volume Manager specific term)

The basic unit of data storage in VxVM system. A disk group can consist of one or more physical volumes. There can be more than one disk group on the system.

disk image (rawdisk) backup

A high-speed backup where [%=DP.DP_BriefProductName%] backs up files as bitmap images. A disk image (rawdisk) backup does not track the files and directory structure stored on the disk, but stores a disk image structure on byte level. You can perform a disk image backup of either specific disk sections or a complete disk.

disk quota

A concept to manage disk space consumption for all or a subset of users on a computer system. This concept is used by several operating system platforms.

disk staging

The process of backing up data in several phases to improve the performance of backups and restores, reduce costs of storing the backed up data, and increase the data availability and accessibility for restore. The backup stages consist of backing up data to one media type first (for example disk) and later copying it to a different media type (for example tape).

distributed file media format

A media format, available with the file library, which supports a space efficient type of synthetic backup called virtual full backup. Using this format is a prerequisite for virtual full backup. See also virtual full backup.

Distributed File System (DFS)

A service that connects file shares into a single namespace. The file shares can

reside on the same or on different computers. DFS provides client access to the resources in a location-transparent manner.

DMZ

The Demilitarized Zone (DMZ) is a network inserted as a "neutral zone" between a company's private network (intranet) and the outside public network (Internet). It prevents outside users from getting direct access to company servers in the intranet.

DNS server

In the DNS client-server model, this is the server containing information about a portion of the DNS database that makes computer names available to client resolvers querying for name resolution across the Internet.

DR image

Data required for temporary disaster recovery operating system (DR OS) installation and configuration.

DR OS

An operating system environment in which disaster recovery runs. It provides [%=DP.DP_BriefProductName%] with a basic runtime environment (disk, network, tape, and filesystem access). It has to be installed on disk or loaded into memory and configured before the [%=DP.DP_BriefProductName%] disaster recovery can be performed. DR OS can be either temporary or active. A temporary DR OS is used exclusively as a host environment for some other operating system restore along with the target operating system configuration data. It is deleted after the target system is restored to the original system configuration. An active DR OS not only hosts the [%=DP.DP_BriefProductName%] disaster recovery process but can also be a part of the restored system because it replaces its own configuration data with the original configuration data.

drive

A physical unit that receives data from a computer system and can write it onto a magnetic medium. It can also read the data from the medium and send it to the computer system.

drive index

A number that identifies the mechanical position of a drive inside a library device. This number is used by the robotic control to access a drive.

drive-based encryption

The [%=DP.DP_BriefProductName%] drive-based encryption uses the encryption functionality of the drive. While performing the backup, the drive encrypts both the data and the metadata that is written to the medium.

E

EMC Symmetrix Agent

A [%=DP.DP_BriefProductName%] software module that prepares the EMC Symmetrix environment for backup and restore operations.

emergency boot file (Informix Server specific term)

The Informix Server configuration file ixbar.<server_id> that resides in the directory <INFORMIXDIR>/etc (on Windows systems) or <INFORMIXDIR>\etc (on UNIX systems). <INFORMIXDIR> is the Informix Server home directory and <server_id> is the value of the SERVERNUM configuration parameter. Each line of the emergency boot file corresponds to one backup object.

encrypted control communication

[%=DP.DP_BriefProductName%] secure communication between the clients in the [%=DP.DP_ BriefProductName%] cell is based on a Secure Socket Layer (SSL) that uses export grade SSLv3 algorithms to encrypt control communication. Control communication in a [%=DP.DP_ BriefProductName%] cell is all communication between [%=DP.DP_ BriefProductName%] processes, except the data transfer from Disk Agent (and Integrations) to Media Agent, and the other way round.

encryption key

A 256-bit randomly generated number used by the [%=DP.DP_ BriefProductName%] encryption algorithm to encode information during backups for which AES 256-bit software encryption or drive-based encryption has been specified. The same key is used for subsequent decryption of the information. Encryption keys for a [%=DP.DP_ BriefProductName%] cell are stored in a central keystore on the Cell Manager.

encryption KeyID-StoreID

Combined identifier used by the [%=DP.DP_BriefProductName%] Key Management Server to identify and administer encryption keys used by [%=DP.DP_BriefProductName%]. KeyID identifies the key within the keystore. StoreID identifies the keystore on the Cell Manager. If [%=DP.DP_ BriefProductName%] has been upgraded from an earlier version with encryption functionality, there may be several StoreIDs used on the same Cell Manager.

enhanced incremental backup

Conventional incremental backup backs up files that have changed since a previous backup, but has certain limitations in detection of changes. Unlike conventional incremental backup, enhanced incremental backup reliably detects and backs up also renamed and moved files, as well as files with changes in attributes.

enterprise backup environment

Several cells can be grouped together and managed from a central cell. The enterprise backup environment includes all clients located in several [%=DP.DP_ BriefProductName%] cells which are managed and administered from a central cell using the Manager-of-Managers concept. See also MoM.

Event Log ([%=DP.DP_ BriefProductName%] Event Log)

A central repository of all [%=DP.DP_ BriefProductName%]-related notifications. By default, all notifications are sent to the Event Log. The events are logged on the Cell Manager into the Ob2EventLog.txt file residing in the default [%=DP.DP_ BriefProductName%] server log files directory. The Event Log is accessible only to users of the [%=DP.DP_ BriefProductName%] admin user group and to users who are granted the [%=DP.DP_BriefProductName%] Reporting and notifications user rights. You can view or delete all events in the Event Log.

Event Logs (Windows specific term)

Files in which Windows logs all events, such as the starting or stopping of services and the logging on and off of users. [%=DP.DP_BriefProductName%] can back up Windows Event Logs as part of the Windows configuration backup.

Exchange Replication Service (Microsoft Exchange Server specific term)

The Microsoft Exchange Server service that represents storage groups that were replicated using either local continuous replication (LCR) or cluster continuous replication (CCR) technology. See also cluster continuous replication and local continuous replication.

exchanger

See library.

exporting media

A process that removes all data about backup sessions, such as systems, objects, and filenames, which reside on the media from the IDB. Information about the media and their relation to a pool is also removed from the IDB. The data on the media remains unchanged. See also importing media.

Extensible Storage Engine (ESE) (Microsoft Exchange Server specific term)

A database technology used as a storage system for information exchange in Microsoft Exchange Server.

F

failover

Transferring of the most important cluster data, called group (on Windows systems) or package (on UNIX systems) from one cluster node to another. A failover can occur mostly because of software or hardware failures or maintenance on the primary node.

failover ([%=DP.HW_SW_P6000_EVA_full%] specific term)

An operation that reverses the roles of source and destination in [%=DP.DP_AbbCompanyName%] Continuous Access + Business Copy (CA+BC) [%=DP.HW_SW_P6000_EVA_special%] configurations. See also [%=DP.DP_AbbCompanyName%] Continuous Access + Business Copy (CA+BC) [%=DP.HW_SW_P6000_EVA_special%].

FC bridge

See Fibre Channel bridge.

Fibre Channel

An ANSI standard for high-speed computer interconnection. Using either optical or copper cables, it allows the high speed bi-directional transmission of large data files and can be deployed between sites kilometers apart. Fibre Channel connects nodes using three physical topologies: point-to-point, loop, and switched.

Fibre Channel bridge

A Fibre Channel bridge or multiplexer provides the ability to migrate existing parallel SCSI devices, like RAID arrays, solid state disks (SSD), and tape libraries to a Fibre Channel environment. On one side of the bridge or multiplexer there is a Fibre Channel interface while on the other side there are parallel SCSI ports. The bridge or multiplexer enables SCSI packets to be moved between the Fibre Channel and parallel SCSI devices.

file depot

A file containing the data from a backup to a file library device.

file jukebox device

A device residing on disk consisting of multiple slots used to store file media.

file library device

A device which resides on a disk emulating a library with several media,

hence containing multiple files, referred to as file depots.

File Replication Service (FRS)

A Windows service that replicates the domain controller store logon scripts and group policies. FRS also enables replication of Distributed File System (DFS) shares between systems and allows any server to perform replication activity.

file tree walk

The process of traversing a filesystem to determine which objects have been created, modified, or deleted.

file version

The same file can be backed up multiple times in case of full backups and incremental backups (if the file changed). If the log level ALL is selected for backup, [%=DP.DP_BriefProductName%] retains one entry in the IDB for the filename itself and one for each version (date/time) of the file.

filesystem

The organization of files on a hard disk. A filesystem is backed up so that the file attributes and the file contents are stored on the backup media.

first-level mirror ([%=DP.HW_SW_ P9000_XP_full%] specific term)

A mirror of an internal disk (LDEV) of a disk array of the [%=DP.HW_SW_ P9000_XP_full%] which can be further mirrored itself, producing second-level mirrors. For [%=DP.DP_ BriefProductName%] zero downtime backup and instant recovery purposes, only first-level mirrors can be used. See also primary volume and mirror unit (MU) number.

flash recovery area (Oracle specific term)

A directory, filesystem, or Automatic Storage Management (ASM) disk group managed by Oracle that serves as a centralized storage area for files related to backup, restore, and database recovery (recovery files). See also recovery files.

formatting

A process that erases any data contained on a medium and prepares it for use with [%=DP.DP_BriefProductName%]. Information about media (media ID, description, and location) is saved in the IDB as well as on the respective media (media header). Use the Force operation option to reformat [%=DP.DP_ BriefProductName%] media with non-protected data. [%=DP.DP_ BriefProductName%] media with protected data are not formatted until the protection expires or the media are unprotected/recycled.

free pool

An auxiliary source of media for use by media pools when they run out of media. The media pools must be configured to use free pools.

full backup

A backup in which all selected objects are backed up, whether or not they have been recently modified. See also backup types.

full database backup

A backup of all data in a database, not only the data that has been changed after the last (full or incremental) backup of the database. A full database backup does not depend on any other backup.

full mailbox backup

A full mailbox backup is a backup of the entire mailbox content.

full ZDB

A ZDB-to-tape or ZDB-to-disk+tape session in which all selected objects are streamed to tape, even if there are no changes from the previous backup. See also incremental ZDB.

G

global options

A set of options that define behavior of the entire [%=DP.DP_BriefProductName%] cell. The options are stored in a plain text file on the Cell Manager.

group (Microsoft Cluster Server specific term)

A collection of resources (for example disk volumes, application services, IP names and addresses) that are needed to run a specific cluster-aware applications.

GUI

A graphical user interface provided by [%=DP.DP_BriefProductName%] for easy access to all configuration, administration, and operation tasks. It is available for Microsoft Windows operating systems.

H

hard recovery (Microsoft Exchange Server specific term)

A Microsoft Exchange Server database recovery that is performed after a restore by the database engine, using transaction log files.

heartbeat

A cluster data set with a time stamp carrying information about the operational status of a particular cluster node. This data set or packet is distributed among all cluster nodes.

Hierarchical Storage Management (HSM)

A method for optimizing the use of expensive hard disk storage by migrating less frequently used data to less expensive optical platters. When needed, the data is migrated back to hard disk storage. This balances the need for fast retrieval from hard disk with the lower cost of optical platters.

Holidays file

A file that contains information about holidays. You can set different holidays by editing the holidays file that resides on the Cell Manager in the default [%=DP.DP_BriefProductName%] server configuration directory.

hosting system

A working [%=DP.DP_BriefProductName%] client used for Disk Delivery Disaster Recovery with a [%=DP.DP_BriefProductName%] Disk Agent installed.

I

ICDA (EMC Symmetrix specific term)

EMC's Symmetrix Integrated Cached Disk Arrays (ICDA) is a disk array device that combines a set of physical disks, a number of FWD SCSI channels, an internal cache memory, and control and diagnostic software commonly referred to as the microcode.

IDB

See Internal Database (IDB).

IDB recovery file

A file that maintains information about completed IDB backup sessions and the backup media and backup devices used in them. If available, it significantly simplifies and speeds up offline recovery of the Internal Database in case of a Cell Manager disaster. Its filename is obdrindex.dat.

importing media

A process that re-reads all data about backup sessions which are on the medium back into the IDB. This then allows for fast and convenient access to the data on the media. See also exporting media.

incremental (re-)establish (EMC Symmetrix specific term)

A BCV or SRDF control operation. In BCV control operations, an incremental establish causes the BCV device to be synchronized incrementally and to function as an EMC Symmetrix mirrored medium. The EMC Symmetrix devices must have been previously paired. In SRDF control operations, an incremental establish causes the target (R2) device to be synchronized incrementally and to function as an EMC Symmetrix mirrored medium. The EMC Symmetrix devices must have been previously paired.

incremental backup

A backup that selects only files that have changed since a previous backup. Several levels of incremental backup are available, which enables detailed control of restore chain length. See also backup types.

incremental backup (Microsoft Exchange Server specific term)

A backup of the Microsoft Exchange Server data that has changed since the last full or incremental backup. With the incremental backup, only the transaction log files are backed up. See also backup types.

incremental mailbox backup

An incremental mailbox backup backs up all the changes made to the mailbox after the last backup of any type.

incremental restore (EMC Symmetrix specific term)

A BCV or SRDF control operation. In BCV control operations, an incremental restore reassigns a BCV device as the next available mirror of the standard device in the pair. However, the standard devices are updated with only the data that was written to the BCV device during the time of the original pair split, and the data that was written to the standard device during the split is overwritten with data from the BCV mirror. In SRDF control operations, an incremental restore reassigns a target (R2) device as the next available mirror of the source (R1) device in the pair. However, the source (R1) devices are updated with only the data that was written to the target (R2) device during the time of the original pair split, and the data that was written to the source (R1) device during the split is overwritten with data from the target (R2) mirror.

incremental ZDB

A filesystem ZDB-to-tape or ZDB-to-disk+tape session in which only changes from the last protected full or incremental backup are streamed to tape. See also full ZDB.

Incremental1 Mailbox Backup

An incremental1 mailbox backup backs up all the changes made to the mailbox after the last full backup.

Inet

A process that runs on each UNIX system or service that runs on each Windows system in the [%=DP.DP_ BriefProductName%] cell. It is responsible for communication between systems in the cell and for starting other processes needed for backup and restore. The Inet service is started as soon as [%=DP.DP_ BriefProductName%] is installed on a system. The Inet process is started by the inetd daemon.

Information Store (Microsoft Exchange Server specific term)

The Microsoft Exchange Server service that is responsible for storage management. Information Store in Microsoft Exchange Server manages two kinds of stores: mailbox stores and public folder stores. A mailbox store consists of mailboxes that belong to individual users. A public folder store contains public folders and messages that are shared among several users. See also Key Management Service and Site Replication Service.

Informix Server (Informix Server specific term)

Refers to Informix Dynamic Server.

initializing

See formatting.

Installation Server

A computer system that holds a repository of the [%=DP.DP_ BriefProductName%] installation packages for a specific architecture. The Installation Server is used for remote installation of [%=DP.DP_ BriefProductName%] clients. In mixed environments at least two Installation Servers are needed: one for UNIX systems and one for Windows systems.

instant recovery (ZDB specific term)

A process in which a replica, produced by a ZDB-to-disk or a ZDB-to-disk+tape sessions, is used to restore the contents of the source volumes to their states at the time at which the replica was created, avoiding the need to perform a restore from tape. Depending on the application/database concerned, this may be all that is required, or other steps, such as the application of transaction log files, may be required for full recovery. See also replica, zero downtime backup (ZDB), ZDB to disk, and ZDB to disk+tape.

integration object

A backup object of a [%=DP.DP_ BriefProductName%] integration, such as Oracle or SAP MaxDB.

Internal Database (IDB)

An entity in [%=DP.DP_ BriefProductName%] that keeps information regarding which data was backed up, to which media it was backed up, how and when backup, restore, and other sessions were run, which devices, libraries, and disk arrays are configured, and so on. It is implemented with an embedded database and a collection of proprietary data files which reside on the Cell Manager. See also DC directory and Detail Catalog Binary Files (DCBF).

Internet Information Server (IIS) (Windows specific term)

Microsoft Internet Information Server is a network file and application server that supports multiple protocols. Primarily, IIS transmits information in Hypertext Markup Language (HTML) pages by using the Hypertext Transport Protocol (HTTP).

ISQL (Sybase specific term)

A Sybase utility used to perform system administration tasks on Sybase SQL Server.

J

jukebox

See library.

jukebox device

A device consisting of multiple slots used to store either optical or file media. When being used to store file media, the jukebox device is known as the 'file jukebox device'.

K

Key Management Service (Microsoft Exchange Server specific term)

The Microsoft Exchange Server service that provides encryption functionality for enhanced security. See also Information Store and Site Replication Service.

keychain

A tool that eliminates the supply of a passphrase manually when decrypting the private key. It needs to be installed and configured on the Installation Server if you perform remote installation using secure shell.

keystore

All encryption keys are centrally stored in the keystore on the Cell Manager and administered by the Key Management Server (KMS).

KMS

Key Management Server (KMS) is a centralized service that runs on the Cell Manager and provides key management for the [%=DP.DP_BriefProductName%] encryption functionality. The service is started as soon as [%=DP.DP_BriefProductName%] is installed on the Cell Manager.

L

LBO (Symmetric specific term)

A Backup Object (LBO) is an object of data storage/retrieval in the EMC Symmetrix environment. It is stored/retrieved by EMC Symmetrix as one entity and can only be restored as a whole.

LDEV ([%=DP.HW_SW_P9000_XP_full%] specific term)

A logical partition of a physical disk of a disk array of the [%=DP.HW_SW_P9000_XP_full%]. An LDEV is the entity that can be replicated using the split-mirror or snapshot functionality of such disk array. See also [%=DP.DP_AbbCompanyName%] Business Copy (BC) [%=DP.HW_SW_P9000_XP_special%], [%=DP.DP_AbbCompanyName%] Continuous Access (CA) [%=DP.HW_SW_P9000_XP_special%], and replica.

library

Also called autochanger, jukebox, autoloader, or exchanger. A library contains media in repository slots. Each slot holds one medium (for example, DDS/DAT). Media are moved between slots and drives by a robotic mechanism, allowing random access to media. The library can contain multiple drives.

lights-out operation or unattended operation

A backup or restore operation that takes place outside of normal business hours without an operator. This implies that no operator personnel is present to work with the backup application or service mount requests, for example.

LISTENER.ORA (Oracle specific term)

An Oracle configuration file that describes one or more Transparent Network Substrate (TNS) listeners on a server.

load balancing

By default, [%=DP.DP_BriefProductName%] automatically balances the usage of devices selected for backup, so that they are used evenly. Load balancing optimizes the device usage by balancing the number of objects written to each device. Since load balancing is done automatically during backup time, you do not need to manage how the data is actually backed up. You just specify the devices to be used. If you do not want to use load balancing, you can select which device will be used for each object in the backup specification. [%=DP.DP_BriefProductName%] will access the devices in the specified order.

local and remote recovery

Remote recovery is performed if all Media Agent hosts specified in the SRD file are accessible. If any of them fails, the disaster recovery process fails over to the local mode. This means that the target system is searched for locally attached devices. If only one device is found, it is automatically used. Otherwise, [%=DP.DP_BriefProductName%] prompts you to select the device, which will be used for restore.

local continuous replication (Microsoft Exchange Server specific term)

Local continuous replication (LCR) is a single-server solution that creates and maintains an exact copy (LCR copy) of a storage group. An LCR copy is located on the same server as the original storage group. When an LCR copy is created, it is kept up to date through change propagation (log replay) technology. The replication feature in LCR guarantees that logs that have not been replicated are not deleted. The implication of this behavior is that running backups in a mode that deletes logs may not actually free space if replication is sufficiently far behind in its log copying. An LCR copy is used for disaster recovery because you can switch to the LCR copy in a few seconds. If an LCR copy is used for backup and if it is located on a different disk than the original data, then the I/O load on a production database is minimal. A replicated storage group is represented as a new instance of Exchange writer called Exchange Replication Service and can be backed up (using VSS) as a normal storage group. See also cluster continuous replication and Exchange Replication Service.

lock name

You can configure the same physical device several times with different characteristics, by using different device names. The lock name is a user specified string that is used for locking all such device configurations to prevent collision if several such devices (device names) are used concurrently. Use an identical lock name for all device definitions which use the same physical device.

log_full shell script (Informix Server UNIX systems specific term)

A script provided by ON-Bar that you can use to start backing up logical log files when Informix Server issues a logfull event alarm. The Informix Server ALARMPROGRAM configuration parameter defaults to the <INFORMIXDIR>/etc/log_full.sh, where <INFORMIXDIR> is the Informix Server home directory. If you do not want logical logs to be backed up continuously, set the ALARMPROGRAM configuration

parameter to <INFORMIXDIR>/etc/no_log.sh.

logging level

An optino that determines the amount of details on files and directories written to the IDB during backup, object copying, or object consolidation. You can always restore your data, regardless of the logging level used during backup. [%=DP.DP_BriefProductName%] provides four logging levels: Log All, Log Directories, Log Files, and No Log. The different logging level settings mainly influence the IDB growth and the convenience of browsing data for restore.

logical-log files

This applies to online database backup. Logical-log files are files in which modified data is first stored before being flushed to disk. In the event of a failure, these logical-log files are used to roll forward all transactions that have been committed as well as roll back any transactions that have not been committed.

login ID (Microsoft SQL Server specific term)

The name a user needs to log on to Microsoft SQL Server. A login ID is valid if Microsoft SQL Server has an entry for that user in the system table syslogin.

login information to the Oracle Target Database (Oracle and SAP R/3 specific term)

The format of the login information is <user_name>/<password>@<service>, where: <user_name> is the name by which a user is known to Oracle Server and to other users. Every user name is associated with a password and both have to be entered to connect to an Oracle Target Database. This user must have Oracle SYSDBA or SYSOPER rights. <password> must be the same as the password specified in the Oracle password file (orapwd), which is used for authentication of users performing database administration. <service> is the name used to identify an SQL*Net server process for the target database.

login information to the Recovery Catalog Database (Oracle specific term)

The format of the login information to the Recovery (Oracle) Catalog Database is <user_name>/<password>@<service>, where the description of the user name, password, and service name is the same as in the Oracle SQL*Net V2 login information to the Oracle target database. In this case, <service> is the name of the service to the Recovery Catalog Database, not the Oracle target database. Note that the Oracle user specified here must be the owner of the Oracle Recovery Catalog.

Lotus C API (Lotus Domino Server specific term)

An interface for the exchange of backup and recovery information between Lotus Domino Server and a backup solution, like [%=DP.DP_BriefProductName%].

LVM

A Logical Volume Manager is a subsystem for structuring and mapping physical disk space to logical volumes on UNIX systems. An LVM system consists of several volume groups, where each volume group has several volumes.

M

Magic Packet

See Wake ONLAN.

mailbox (Microsoft Exchange Server specific term)

The location to which e-mail is delivered, which is set up by the administrator for

each user. If a set of personal folders is designated as the e-mail delivery location, e-mail is routed from the mailbox to this location.

mailbox store (Microsoft Exchange Server specific term)

A part of the Information Store that maintains information in user mailboxes. A mailbox store consists of a binary rich-text .edb file and a streaming native internet content .stm file.

Main Control Unit (MCU) ([%=DP.HW_SW_P9000_XP_full%] specific term)

An [%=DP.HW_SW_P9000_XP_full%] unit that contains primary volumes (P-VOLs) for the [%=DP.DP_AbbCompanyName%] CA [%=DP.HW_SW_P9000_XP_abbrev%] or [%=DP.DP_AbbCompanyName%] CA+BC [%=DP.HW_SW_P9000_XP_abbrev%] configuration and acts as a master device. See also [%=DP.DP_AbbCompanyName%] Business Copy (BC) [%=DP.HW_SW_P9000_XP_special%], [%=DP.DP_AbbCompanyName%] Continuous Access (CA) [%=DP.HW_SW_P9000_XP_special%], and LDEV.

maintenance mode

An operating mode you can initiate on the Cell Manager to prevent changes in the Internal Database. It enables you to perform various maintenance tasks, such as upgrading and patching the installation.

make_net_recovery

make_net_recovery is an Ignite-UX command, which allows you to create a recovery archive over the network onto the Ignite-UX server or any other specified system. The target system can be recovered across subnets after booting either from a bootable tape created by the Ignite-UX make_boot_tape command or the system boots directly from the Ignite-UX server. Booting directly from the Ignite-UX server can be automated with the Ignite-UX bootsys command or interactively specified on the boot console.

make_tape_recovery

make_tape_recovery is a command on Ignite-UX which creates a bootable recovery (installation) tape, customized for your system and enables you unattended disaster recovery by connecting the backup device directly to the target system and booting the target system from the bootable recovery tape. The backup device has to be locally connected to the client during the creation of the archive and recovery of the client.

Manager-of-Managers

See MoM.

MAPI (Microsoft Exchange specific term)

The MAPI (Messaging Application Programming Interface) is the programming interface that lets applications and messaging clients interact with messaging and information systems.

MCU

See Main Control Unit (MCU).

Media Agent

A process that controls reading from and writing to a device, which reads from or writes to a medium (typically a tape). During a backup session, a Media Agent receives data from the Disk Agent and sends it to the device for writing it to the medium. During a restore or object verification session, a Media Agent locates data on the backup medium and sends it to the Disk Agent for processing. For a restore session, the Disk Agent

then writes the data to the disk. A Media Agent also manages the robotics control of a library.

media allocation policy

Determines in which sequence media are used for backup. The Strict allocation policy directs [%=DP.DP_ BriefProductName%] to prompt for a specific medium. The Loose policy directs [%=DP.DP_ BriefProductName%] to prompt for any suitable medium. The Formatted First policy directs [%=DP.DP_ BriefProductName%] to give preference to unknown media, even if unprotected media are available in the library.

media condition

The quality of a medium as derived from the media condition factors. Heavy usage and age result in an increased number of read and write errors with tape media. Media need to be replaced when they are marked as POOR.

media condition factors

The user-assigned age threshold and overwrite threshold used to assert the condition of a medium.

media label

A user-defined identifier used to describe a medium.

media location

A user-defined physical location of a medium, such as "building 4" or "off-site storage".

media management session

A session performing some action on a medium, such as initializing, scanning the content, verifying data on a medium, or copying a medium.

media pool

A set of media of the same type (such as DDS) used and tracked as a group. Media are formatted and assigned to a media pool.

media set

The result of a backup session is data backed up on a group of media called media set. Depending on the media usage policy, several sessions can share the same media.

media type

The physical type of media, such as DDS or DLT.

media usage policy

The media usage policy controls how new backups are added to the already used media. It can be Appendable, Non-Appendable, or Appendable for incrementals only.

medium ID

A unique identifier assigned to a medium by [%=DP.DP_BriefProductName%].

merging

This defines one mode to resolve file conflicts during restore. If the file to be restored already exists at the destination, the one with the more recent modification date is kept. Files not present on the disk are always restored. See also overwrite.

Microsoft Exchange Server

A “client-server” messaging and a workgroup system that offers a transparent connection to many different communication systems. It provides users with an electronic mail system, individual and group scheduling, online forms, and workflow automation tools. It provides a developer with a platform on which to build custom information-sharing and messaging-service applications.

Microsoft Management Console (MMC) (Windows specific term)

An administration model for Windows-based environments. It provides a simple, consistent, and integrated administration user interface allowing management of many applications through the same GUI, provided that the applications adhere to the MMC model.

Microsoft SQL Server

A database management system designed to meet the requirements of distributed "client-server" computing.

Microsoft Volume Shadow Copy Service (VSS)

A software service that provides a unified communication interface to coordinate backup and restore of a VSS-aware application regardless of its specific features. This service collaborates with the backup application, writers, shadow copy providers, and the operating system kernel to implement the management of volume shadow copies and shadow copy sets. See also shadow copy, shadow copy provider, replica, and writer.

mirror (EMC Symmetrix and [%=DP.HW_SW_P9000_XP_full%] specific term)

See target volume.

mirror rotation ([%=DP.HW_SW_P9000_XP_full%] specific term)

See replica set rotation.

mirror unit (MU) number ([%=DP.HW_SW_P9000_XP_full%] specific term)

A non-negative integer number that determines a secondary volume (S-VOL) of an internal disk (LDEV) located on a disk array of the [%=DP.HW_SW_P9000_XP_full%]. See also first-level mirror.

mirrorclone ([%=DP.HW_SW_P6000_EVA_full%] specific term)

A dynamic replica of a storage volume, which is kept updated with changes made to the original storage volume via a local replication link. Replication between the original storage volume and its mirrorclone can be suspended. For each storage volume, a single mirrorclone can be created on the disk array.

MMD

The Media Management Daemon process (service) (MMD) runs on the [%=DP.DP_BriefProductName%] Cell Manager and controls media management and device operations. The process is started when [%=DP.DP_BriefProductName%] is installed on the Cell Manager.

MMDB

The Media Management Database (MMDB) is a part of the IDB that contains information about media, media pools, devices, libraries, library drives, and slots configured in the cell, as well as the [%=DP.DP_BriefProductName%] media used for backup. In an enterprise backup environment, this part of the database can be common to all cells. See also CMMDB and Catalog Database (CDB).

MoM

Several cells can be grouped together and managed from a central cell. The management system of the central cell is the Manager-of-Managers (MoM). The cells are called MoM clients. The MoM enables you to configure and manage multiple cells from a central point.

mount point

The access point in a directory structure for a disk or logical volume, for example /opt or d:. On UNIX systems, the mount

points are displayed using the bdf or df command.

mount request

A screen prompt that tells you to insert a specific medium into a device. Once you respond to the mount request by providing the required medium and confirm the mount request, the session continues.

MSM

The [%=DP.DP_BriefProductName%] Media Session Manager, which runs on the Cell Manager and controls media sessions, such as copying media.

multisnapping ([%=DP.HW_SW_P6000_EVA_full%] specific term)

Simultaneous creation of target volumes so that the backup data is consistent not only on each individual target volume, but also across all the volumes that constitute a snapshot. See also snapshot.

O

OBDR capable device

A device that can emulate a CD-ROM drive loaded with a bootable disk and can thus be used as a backup or boot device for disaster recovery purposes.

obdrindex.dat

See IDB recovery file.

object

See backup object.

object consolidation

The process of merging a restore chain of a backup object, consisting of a full backup and at least one incremental backup, into a new, consolidated version of this object. The process is a part of the synthetic backup procedure. The result is a synthetic full backup of the specified backup object.

object consolidation session

A process that merges a restore chain of a backup object, consisting of a full backup and at least one incremental backup, into a new, consolidated version of this object.

object copy

A copy of a specific object version that is created during an object copy session or a backup session with object mirroring.

object copy session

A process that creates an additional copy of the backed up data on a different media set. During an object copy session, the selected backed up objects are copied from the source to the target media.

object copying

The process of copying selected object versions to a specific media set. You can select object versions from one or several backup sessions to be copied.

object ID (Windows specific term)

The object IDs (OIDs) enable access to NTFS 5 files no matter where in the system the files reside. [%=DP.DP_BriefProductName%] treats the OIDs as alternate streams of the files.

object mirror

A copy of a backup object created using object mirroring. Object mirrors are often referred to as object copies.

object mirroring

The process of writing the same data to several media sets during a backup session. [%=DP.DP_BriefProductName%] enables you to mirror all or some backup objects to one or more media sets.

object verification

The process of verifying the data integrity of backup objects, from the [%=DP.DP_BriefProductName%]point of view, and the ability of [%=DP.DP_BriefProductName%] to deliver them to the required destination. The process can be used to provide a level of confidence in the ability to restore object versions created by backup, object copy, or object consolidation sessions.

object verification session

A process that verifies the data integrity of specified backup objects or object versions and the ability of selected [%=DP.DP_BriefProductName%] network components to deliver them to a specified host. Object verification sessions can be run interactively, or as specified in automated post-backup, or scheduled specifications.

offline backup

A backup during which an application database cannot be used by the application. For simple backup methods (non ZDB), the database is generally put into a quiescent state that allows use by the backup system, but not the application, for the whole backup period (~minutes/hours). For instance, for backup to tape, until streaming of data to the tape is finished. For ZDB methods, the database is also put into the quiescent state, but for the period of the data replication process only (~seconds). Normal database operation can then be resumed for the rest of the backup process. See also zero downtime backup (ZDB) and online backup.

offline recovery

Offline recovery is performed if the Cell Manager is not accessible, for example, due to network problems. Only standalone and SCSI library devices can be used for offline recovery. Cell Manager can only be recovered offline.

offline redo log

See archived redo log.

ON-Bar (Informix Server specific term)

A backup and restore system for Informix Server. ON-Bar enables you to create a copy of your Informix Server data and later restore the data. The ON-Bar backup and restore system involves the following components: the onbar command, [%=DP.DP_BriefProductName%] as the backup solution, the XBSA interface, and ON-Bar catalog tables, which are used to back up dbobjects and track instances of dbobjects through multiple backups.

ONCONFIG (Informix Server specific term)

An environment variable that specifies the name of the active ONCONFIG configuration file. If the ONCONFIG environment variable is not present, Informix Server uses the configuration values from the onconfig file located in the directory <INFORMIXDIR>\etc (on Windows systems) or <INFORMIXDIR>/etc/ (on UNIX systems).

online backup

A backup performed while a database application remains available for use. The database is placed into a special backup mode of operation for the time period that the backup application requires access to the original data objects. During this period, the database is fully operational, but there may be a small performance impact and log files may grow very quickly. For simple backup methods (non ZDB), backup mode is required for the whole backup period (~minutes/hours). For instance, for backup to tape, until streaming of data to tape is finished. For

ZDB methods, backup mode is required for the short period of the data replication process only (~seconds). Normal database operation can then be resumed for the rest of the backup process. In some cases, transaction logs may also have to be backed up to allow a consistent database to be restored. See also zero downtime backup (ZDB) and offline backup.

online recovery

A type of the Internal Database recovery that you can use when the Cell Manager is accessible. In this case, the Cell Manager runs sessions, the sessions are logged into the IDB, and you can monitor the session progress using the GUI.

online redo log (Oracle specific term)

Redo logs that have not been archived, but are either available to the instance for recording database activity or are filled and waiting to be archived or reused. See also archived redo log.

OpenSSH

A set of network connectivity tools used to access remote machines securely, by using a variety of authentication and encryption methods. It needs to be installed and configured on the Installation Server and the client if you perform remote installation using secure shell.

Oracle Data Guard (Oracle specific term)

Oracle Data Guard is Oracle's primary disaster recovery solution. Oracle Data Guard is able to maintain up to nine standby databases, each of which is a real-time copy of the production (primary) database, to protect against corruptions, data failures, human errors, and disasters. If a failure occurs on the production (primary) database, then a failover to one of the standby databases which becomes the new primary database is possible. In addition, planned downtime for maintenance can be reduced because the production processing can be moved from the current primary database to a standby database and back quickly.

Oracle instance (Oracle specific term)

Each installation of an Oracle database on one or more systems. One computer system can have several instances of a database running.

ORACLE_SID (Oracle specific term)

A unique name for an Oracle Server instance. To switch among Oracle Servers, specify the desired <ORACLE_SID>. The <ORACLE_SID> is included in the CONNECT DATA parts of the connect descriptor in a TNSNAMES.ORA file and in the definition of the TNS listener in the LISTENER.ORA file.

original system

The system configuration backed up by [%=DP.DP_BriefProductName%] before a computer disaster hits the system.

overwrite

An option that defines one mode to resolve file conflicts during restore. All files are restored from a backup even if they are older than existing files. See also merging.

ownership

The ownership of a backup determines who can restore from the backup. The user who starts an interactive backup is the session owner. If a user starts an existing backup specification without modifying it, the session is not considered interactive. In that case, if the backup owner has been defined in the backup specification, they remain the session owner. Otherwise, the session

owner becomes the user who started the backup in question. For the scheduled backups, by default, the session owner is for the UNIX Cell Manager: root.sys@<Cell Manager>, and for the Windows Cell Manager, the user that was specified during the installation of the Cell Manager. It is possible to modify the ownership, so that the specific user becomes the session owner. When copying or consolidating backup objects, the owner of the resulting objects is the user who started the original backup session.

P

P1S file

P1S file contains information on how to format and partition all disks installed in the system during Enhanced Automated Disaster Recovery (EADR). It is created during full backup and is saved on backup medium and on Cell Manager with the filename recovery.p1s.

package (HP ServiceGuard and Veritas Cluster Specific Term)

A collection of resources (for example volume groups, application services, IP names, and addresses) that are needed to run a specific cluster-aware application.

pair status ([%=DP.HW_SW_P9000_XP_full%] specific term)

The status of a disk pair (secondary volume and its corresponding primary volume) of a disk array of the [%=DP.HW_SW_P9000_XP_full%]. Depending on the circumstances, the paired disks can be in various states. The following states are particularly important for the operation of the [%=DP.DP_BriefProductName%] [%=DP.DP_AbbCompanyName%] [%=DP.HW_SW_P9000_XP_special%] Agent: PAIR - The secondary volume is prepared for zero downtime backup. If it is a mirror, it is completely synchronized, and if it is a volume to be used for snapshot storage, it is empty. SUSPENDED - The link between the disks is suspended. However, the pair relationship is still maintained, and the secondary disk can be prepared for zero downtime backup again at a later time. COPY - The disk pair is currently busy and making a transition into the PAIR state. If the secondary volume is a mirror, it is re-synchronizing with the primary volume, and if it is a volume to be used for snapshot storage, its contents are getting cleared.

parallel restore

Restoring backed up data to multiple disks at the same time (that is, in parallel) by running multiple Disk Agents, that receive data from one Media Agent. For the parallel restore to work, select data that is located on different disks or logical volumes and during backup, the data from the different objects must have been sent to the same device using a concurrency of 2 or more. During a parallel restore, the data for multiple objects selected for restore is read from media at the same time, thereby improving performance.

parallelism

The concept of reading multiple data streams from an online database.

phase 0 of disaster recovery

Preparation for disaster recovery - the prerequisite condition for a successful disaster recovery.

phase 1 of disaster recovery

Installation and configuration of DR OS, establishing previous storage structure.

phase 2 of disaster recovery

Restoration of operating system (with all the configuration information that defines the environment) and [%=DP.DP_ BriefProductName%].

phase 3 of disaster recovery

Restoration of user and application data.

physical device

A physical unit that contains either a drive or a more complex unit such as a library.

post-exec

A backup option that executes a command or script after the backup of an object or after the entire session completes. Post-exec commands are not supplied by [%=DP.DP_ BriefProductName%]. You need to create your own. They can be written as executables or batch files on Windows systems and as shell scripts on UNIX systems. See also pre-exec.

pre- and post-exec commands

Pre- and post-exec commands are used to perform additional action before and after a backup or restore session. They are not supplied by [%=DP.DP_ BriefProductName%]. You need to create your own commands. They can be written as executables or batch files on Windows systems and as shell scripts on UNIX systems.

prealloc list

A subset of media in a media pool that specifies the order in which media are used for backup.

pre-exec

A backup option that executes a command or script before the backup of an object or before the entire session is started. Pre-exec commands are not supplied by [%=DP.DP_ BriefProductName%]. You need to create your own. They can be written as executables or batch files on Windows systems and as shell scripts on UNIX systems. See also post-exec.

primary volume (P-VOL) ([%=DP.HW_ SW_P9000_XP_full%] specific term)

An internal disk (LDEV) of a disk array of the [%=DP.HW_SW_P9000_XP_full%] for which a secondary volume (S-VOL), either its mirror or a volume to be used for its snapshot storage, exists. In the [%=DP.DP_AbbCompanyName%] CA [%=DP.HW_SW_P9000_XP_special%] and [%=DP.DP_AbbCompanyName%] CA+BC [%=DP.HW_SW_P9000_XP_ special%] configurations, primary volumes are located in the Main Control Unit (MCU). See also secondary volume (S-VOL) and Main Control Unit (MCU).

protection

See data protection and catalog protection.

public folder store (Microsoft Exchange Server specific term)

The part of the Information Store that maintains information in public folders. A public folder store consists of a binary rich-text .edb file and a streaming native internet content .stm file.

public/private backed up data

When configuring a backup, you can select whether the backed up data will be: public, that is visible (and accessible for restore) to all [%=DP.DP_ BriefProductName%] users private, that is, visible (and accessible for restore) only to the owner of the backup and administrators

R

RAID

Redundant Array of Independent Disks.

RAID Manager [%=DP.HW_SW_P9000_XP_special%] ([%=DP.HW_SW_P9000_XP_full%] specific term)

A software application that provides a command-line interface to disk arrays of the [%=DP.HW_SW_P9000_XP_full%]. It offers an extensive set of commands for reporting and controlling the status of a [%=DP.HW_SW_P9000_XP_abbrev%] storage system, and for performing various operations on the disk array.

RAID Manager Library ([%=DP.HW_SW_P9000_XP_full%] specific term)

A software library that is used for accessing the configuration, status, and performance measurement data of a [%=DP.HW_SW_P9000_XP_abbrev%] storage system, and for invoking operations on the disk array. It translates function calls into sequences of low-level SCSI commands. See also [%=DP.DP_AbbCompanyName%] [%=DP.HW_SW_P9000_XP_special%] Agent.

rawdisk backup

See disk image backup.

RCU

See Remote Control Unit (RCU).

RDBMS

Relational Database Management System.

RDF1/RDF2 (EMC Symmetrix specific term)

A type of SRDF device group. Only RDF devices can be assigned to an RDF group. An RDF1 group type contains source (R1) devices and an RDF2 group type contains target (R2) devices.

Recovery Catalog (Oracle specific term)

A set of Oracle tables and views that are used by Recovery Manager to store information about Oracle databases. This information is used by Recovery Manager to manage the backup, restore, and recovery of Oracle databases. The recovery catalog contains information about the physical schema of the Oracle target database, data file and archived log backup sets, data file copies, archived redo logs, and stored scripts.

Recovery Catalog Database (Oracle specific term)

An Oracle database that contains a recovery catalog schema. You should not store the recovery catalog in your target database.

recovery files (Oracle specific term)

Recovery files are Oracle specific files that reside in the flash recovery area: the current control file, online redo logs, archived redo logs, flashback logs, control file autobackups, datafile copies, and backup pieces. See also flash recovery area.

Recovery Manager (RMAN) (Oracle specific term)

An Oracle command-line interface that directs an Oracle Server process to back up, restore, or recover the database it is connected to. RMAN uses either the recovery catalog or the control file to store information about backups. This information can be used later in restore sessions.

RecoveryInfo

When backing up Windows configuration files, [%=DP.DP_BriefProductName%] collects the information about the current

system configuration (information on disk layout, volume, and network configuration). This information is needed for disaster recovery.

recycle or unprotect

A process that removes the data protection from all backed up data on a medium, allowing [%=DP.DP_BriefProductName%] to overwrite it during one of the next backups. Data that belongs to the same session(s) but resides on other media is also unprotected. Recycling does not actually alter the data on the medium.

redo log (Oracle specific term)

Every Oracle database has a set of two or more redo log files. The set of redo log files for the database is known as the database's redo log. Oracle uses the redo log to record all changes made to data.

Remote Control Unit (RCU) ([%=DP.HW_SW_P9000_XP_full%] specific term)

An [%=DP.HW_SW_P9000_XP_full%] unit that acts as a slave device to the Main Control Unit (MCU) in the [%=DP.DP_AbbCompanyName%] CA [%=DP.HW_SW_P9000_XP_special%] or [%=DP.DP_AbbCompanyName%] CA+BC [%=DP.HW_SW_P9000_XP_special%] configuration. In bidirectional configurations, the RCU can also act as an MCU.

Removable Storage Management Database (Windows specific term)

A Windows service used for managing removable media (such as tapes and disks) and storage devices (libraries). Removable Storage allows applications to access and share the same media resources.

reparse point (Windows specific term)

A system-controlled attribute that can be associated with any directory or file. The value of a reparse attribute can have user-controlled data. The format of the data is understood by the application that stored the data and a filesystem filter that was installed to interpret the data and process such files. Whenever the filesystem encounters a file with a reparse point, it attempts to find the filesystem filter associated with the data format.

replica (ZDB specific term)

An image, at a particular point in time, of the data in source volumes that contain user-specified backup objects. Depending on the hardware or software with which it is created, the image may be an independent exact duplicate (clone) of the storage blocks at the physical disk level (for example, a split mirror), or a virtual copy (for example, a snapshot). From perspective of a basic operating system, the complete physical disk containing a backup object is replicated. However, if a volume manager is used on a UNIX system, the whole volume/disk group containing a backup object is replicated. If partitions are used on a Windows system, the whole physical volume containing the selected partition is replicated. See also snapshot, snapshot creation, split mirror, and split mirror creation.

replica set (ZDB specific term)

A group of replicas, all created using the same backup specification. See also replica and replica set rotation.

replica set rotation (ZDB specific term)

The use of a replica set for regular backup production: Each time the same backup specification requiring the use of a replica set is run, a new replica is created and

added to the set, until the maximum number for the set is reached. After that, the oldest replica in the set is replaced, maintaining the maximum number of replicas in the set. See also replica and replica set.

restore chain

Backup images that are needed to restore a backed up object to the state it was in at the selected point in time. In general, a restore chain of an object consists of its full backup image and one or more related incremental backup images.

restore session

A process that copies data from backup media to a client.

resync mode ([%=DP.HW_SW_P9000_XP_full%] VSS provider specific term)

One of two [%=DP.HW_SW_P9000_XP_abbrev%] VSS hardware provider operation modes. When the [%=DP.HW_SW_P9000_XP_abbrev%] provider is in the resync mode, the source volume (P-VOL) and its replica (S-VOL) are in the suspended mirror relationship after a backup. The maximum number of replicas (S-VOLs per a P-VOL) rotated is three provided that MU range is 0-2 or 0, 1, 2. Restore from a backup in such a configuration is possible only by re-synchronization of an S-VOL with its P-VOL. See also VSS compliant mode, source volume, primary volume (P-VOL), replica, secondary volume (S-VOL), MU number, and replica set rotation.

RMAN (Oracle specific term)

See Recovery Manager.

RSM

The [%=DP.DP_BriefProductName%] Restore Session Manager controls restore and object verification sessions. This process always runs on the Cell Manager system.

RSM (Windows specific term)

Removable Storage Manager (RSM) includes a media management service that facilitates communication among applications, robotic changers, and media libraries. It enables multiple applications to share local robotic media libraries and tape or disk drives and to manage removable media.

S

scanning

A function which identifies the media in a device. This synchronizes the MMDB with the media that are actually present at the selected locations (for example, slots in a library). It is useful to perform a scan and check the actual media in the device if someone has manually manipulated media without using [%=DP.DP_BriefProductName%] to eject or enter, for example.

Scheduler

A function that controls when and how often automatic backups occur. By setting up a schedule, you automate the start of backups.

secondary volume (S-VOL) ([%=DP.HW_SW_P9000_XP_full%] specific term)

An internal disk (LDEV) of a disk array of the [%=DP.HW_SW_P9000_XP_full%] which is paired with another LDEV: a primary volume (P-VOL). It can act as a mirror of the P-VOL or as a volume to be used for the P-VOL's snapshot storage. An S-VOL is assigned a SCSI address different from the one used for the P-VOL. In an [%=DP.DP_AbbCompanyName%] CA [%=DP.HW_SW_P9000_XP_special%] configuration, the S-VOLs

acting as mirrors can be used as failover devices in a MetroCluster configuration. See also primary volume (P-VOL) and Main Control Unit (MCU).

session

See backup session, media management session, and restore session.

session ID

An identifier of a backup, restore, object copy, object consolidation, object verification, or media management session, consisting of the date when the session ran and a unique number.

session key

This environment variable for the pre- and post-exec script is a [%=DP.DP_ BriefProductName%] unique identification of any session, including preview sessions. The session key is not recorded in the database, and it is used for specifying options for the omnimnt, omnistat, and omniabort CLI commands.

shadow copy (Microsoft VSS specific term)

A volume that represents a duplicate of the original volume at a certain point in time. The data is then backed up from the shadow copy and not from the original volume. The original volume continues to changes as the backup process continues, but the shadow copy of the volume remains constant. See also Microsoft Volume Shadow Copy Service and replica.

shadow copy provider (Microsoft VSS specific term)

An entity that performs the work on creating and representing the volume shadow copies. Providers own the shadow copy data and expose the shadow copies. Providers can be software (for example, system providers) or hardware (local disks, disk arrays). See also shadow copy.

shadow copy set (Microsoft VSS specific term)

A collection of shadow copies created at the same point in time. See also shadow copy and replica set.

shared disks

A Windows disk on another system that has been made available to other users on the network. Systems with shared disks can be backed up without a [%=DP.DP_BriefProductName%] Disk Agent installed.

Site Replication Service (Microsoft Exchange Server specific term)

The Microsoft Exchange Server service that permits compatibility with Microsoft Exchange Server 5.5 by emulating the Exchange Server 5.5 directory service. See also Information Store and Key Management Service.

slot

A mechanical position in a library. Each slot can hold a medium, such as a DLT tape. [%=DP.DP_BriefProductName%] references each slot with a number. To read a medium, a robotic mechanism moves the medium from a slot into the drive.

SMB

See split mirror backup.

SMBF

The Session Messages Binary Files (SMBF) part of the IDB stores session messages generated during backup, restore, object copy, object consolidation, object verification, and media management sessions. One binary file is created per session. The files are grouped by year and month.

SMI-S Agent (SMISA)

See [%=DP.DP_AbbCompanyName%] P6000 / [%=DP.DP_AbbCompanyName%] 3PAR SMI-S Agent.

snapshot ([%=DP.HW_SW_P4000_LH_full%], [%=DP.HW_SW_P6000_EVA_full%], [%=DP.HW_SW_P9000_XP_full%], and [%=DP.DP_AbbCompanyName%] 3PAR StoreServ Storage specific term)

A type of target volumes created using a specific replication technology. Depending on the disk array model and the chosen replication technique, a range of snapshot types with different characteristics is available. Basically, each snapshot may be either a virtual copy, still reliant upon the contents of the source volume, or an independent duplicate (clone) of the source volume. See also replica and snapshot creation.

snapshot backup

See ZDB to tape, ZDB to disk, and ZDB to disk+tape.

snapshot creation ([%=DP.HW_SW_P4000_LH_full%], [%=DP.HW_SW_P6000_EVA_full%], [%=DP.HW_SW_P9000_XP_full%], and [%=DP.DP_AbbCompanyName%] 3PAR StoreServ Storage specific term)

A replica creation process in which copies of the selected source volumes are created using storage virtualization technology. Such a replica is considered to be created at a particular point in time, and is immediately available for use. However, with certain snapshot types, a background data copying process continues to run on the disk array after the moment of the replica creation. See also snapshot.

source (R1) device (EMC Symmetrix specific term)

An EMC Symmetrix device that participates in SRDF operations with a target (R2) device. All writes to this device are mirrored to a target (R2) device in a remote EMC Symmetrix unit. An R1 device must be assigned to an RDF1 group type. See also target (R2) device.

source volume (ZDB specific term)

A storage volume containing data to be replicated.

sparse file

A file that contains data with portions of empty blocks. Examples are: -A matrix in which some or much of the data contains zeros -files from image applications -high-speed databases If sparse file processing is not enabled during restore, it might be impossible to restore this file.

split mirror (EMC Symmetrix and [%=DP.HW_SW_P9000_XP_full%] specific term)

A type of target volumes created using a specific replication technology. A split-mirror replica provides independent duplicates (clones) of the source volumes. See also replica and split mirror creation.

split mirror backup ([%=DP.HW_SW_P9000_XP_full%] specific term)

See ZDB to tape, ZDB to disk, and ZDB to disk+tape.

split mirror backup (EMC Symmetrix specific term)

See ZDB to tape.

split mirror creation (EMC Symmetrix and [%=DP.HW_SW_P9000_XP_full%] specific term)

A replica creation technique, in which a pre-configured set of target volumes (a mirror) is kept synchronized with a set of source volumes until the time at which a replica of the contents of the source volumes is required. Then, the synchronization is stopped (the mirror is split) and a split mirror replica of the source volumes at the time of the split remains in the target volumes. See also split mirror.

split mirror restore (EMC Symmetrix and [%=DP.HW_SW_P9000_XP_full%] specific term)

A process in which data backed up in a ZDB-to-tape or a ZDB-to-disk+tape session is first copied from the backup media to a replica, and from the replica to the source volumes afterwards. Individual backup objects or complete sessions can be restored using this method. See also ZDB to tape, ZDB to disk+tape, and replica.

sqlhosts file or registry (Informix Server specific term)

An Informix Server connectivity information file (on UNIX systems) or registry (on Windows systems) that contains the names of each of the database servers and any aliases to which the clients on a host computer can connect.

SRD file

A text file in the Unicode (UTF-16) format, generated during CONFIGURATION backup of a Windows system and stored on the Cell Manager. It contains system information required for installing and configuring the operating system on the target system in the case of a disaster. See also target system.

SRDF (EMC Symmetrix specific term)

The EMC Symmetrix Remote Data Facility is a business continuation process that enables effective, real-time data replication of SLDs between dislocated processing environments. These environments could be situated within the same root computer environment or separated by long distances.

SSE Agent (SSEA)

See [%=DP.DP_AbbCompanyName%] [%=DP.HW_SW_P9000_XP_special%] Agent.

sst.conf file

The file /usr/kernel/drv/sst.conf is required on each [%=DP.DP_BriefProductName%] Solaris client to which a multi-drive library device is connected. It must contain an entry for the SCSI address of the robotic mechanism of each library device connected to the client.

st.conf file

The file /kernel/drv/st.conf is required on each [%=DP.DP_BriefProductName%] Solaris client with a backup device connected. It must contain device information and a SCSI address for each backup drive connected to that client. A single SCSI entry is required for a single-drive device and multiple SCSI entries are required for a multi-drive library device.

stackers

Devices with multiple slots for media storage usually with only one drive. A stacker selects media from the stack sequentially. In contrast, a library can

randomly select media from its repository.

standalone file device

A file device is a file in a specified directory to which you back up data.

Storage Group (Microsoft Exchange Server specific term)

A collection of mailbox stores and public folder stores that share a set of transaction log files. Exchange Server manages each storage group with a separate server process.

storage volume (ZDB specific term)

A storage volume represents an object that may be presented to an operating system or some other entity (for example, a virtualization mechanism) upon which volume management systems, file systems, or other objects may exist. Typically, these can be created or exist within a storage system such as a disk array.

StorageTek ACS library (StorageTek specific term)

Automated Cartridge System is a library system (also known as Silo) consisting of one Library Management Unit (LMU) and one to 24 Library Storage Modules (LSM) connected to the unit.

switchover

See failover.

Sybase Backup Server API (Sybase specific term)

An industry-standard interface developed for the exchange of backup and recovery information between a Sybase SQL Server and a backup solution like [%=DP.DP_BriefProductName%].

Sybase SQL Server (Sybase specific term)

The server in the Sybase “client-server” architecture. The Sybase SQL Server manages multiple databases and multiple users, keeps track of the actual location of data on disks, maintains mapping of logical data description to physical data storage, and maintains data and procedure caches in memory.

SYMA

See EMC Symmetrix Agent.

synthetic backup

A backup solution that produces a synthetic full backup, an equivalent to a conventional full backup in terms of data, without putting stress on the production servers or the network. A synthetic full backup is created from a previous full backup and any number of incremental backups.

synthetic full backup

The result of an object consolidation operation, where a restore chain of a backup objects is merged into a new, synthetic full version of this object. A synthetic full backup is equivalent to a conventional full backup in terms of restore speed.

System Backup to Tape (SBT) (Oracle specific term)

An Oracle interface that handles the actions required to load, label, and unload correct backup devices when Oracle issues a backup or restore request.

system databases (Sybase specific term)

The four system databases on a newly installed Sybase SQL Server are the: -master database (master) -temporary database (tempdb) -system procedure

database (sybsystemprocs) -model database (model).

System Recovery Data file

See SRD file.

System State (Windows specific term)

The System State data comprises the Registry, COM+ Class Registration database, system startup files, and the Certificate Services database (if the server is a certificate server). If the server is a domain controller, Active Directory services and the SysVol directory are also contained in the System State data. If the server is running the Cluster service, the System State data also includes resource registry checkpoints and the quorum resource recovery log, which contains the most recent cluster database information.

system volume/disk/partition

A volume/disk/partition containing operating system files. Microsoft terminology defines the system volume/disk/partition as the volume/disk/partition containing files required for the initial step of the boot process.

SysVol (Windows specific term)

A shared directory that stores the server copy of the domain's public files, which are replicated among all domain controllers in the domain.

T

tablespace

A part of a database structure. Each database is logically divided into one or more tablespaces. Each tablespace has data files or raw volumes exclusively associated with it.

tapeless backup (ZDB specific term)

See ZDB to disk.

target (R2) device (EMC Symmetrix specific term)

An EMC Symmetrix device that participates in SRDF operations with a source (R1) device. It resides in the remote EMC Symmetrix unit. It is paired with a source (R1) device in the local EMC Symmetrix unit and receives all write data from its mirrored pair. This device is not accessed by user applications during normal I/O operations. An R2 device must be assigned to an RDF2 group type. See also source (R1) device.

target database (Oracle specific term)

In RMAN, the target database is the database that you are backing up or restoring.

target system (disaster recovery specific term)

A system after a computer disaster has occurred. The target system is typically in a non-bootable state and the goal of disaster recovery is to restore this system to the original system configuration. The difference between a faulty system and a target system is that a target system has all faulty hardware replaced.

target volume (ZDB specific term)

A storage volume to which data is replicated.

Terminal Services (Windows specific term)

Windows Terminal Services provide a multi-session environment that allows clients to access a virtual Windows desktop session and Windows-based programs running on the server.

thread (Microsoft SQL Server specific term)

An executable entity that belongs to only one process. It comprises a program counter, a user-mode stack, a kernel-mode stack, and a set of register values. Several threads can run at a time within one process.

TimeFinder (EMC Symmetrix specific term)

A business continuation process that creates an instant copy of single or multiple EMC Symmetrix Logical Devices (SLDs). The instant copy is created on specially preconfigured SLDs called BCVs and is accessible via a separate device address to the system (s).

TLU

See Tape Library Unit.

TNSNAMES.ORA (Oracle and SAP R/3 specific term)

A network configuration file that contains connect descriptors mapped to service names. The file may be maintained centrally or locally, for use by all or individual clients.

transaction

A mechanism for ensuring that a set of actions is treated as a single unit of work. Databases use transactions to keep track of database changes

transaction backup

Transaction backups generally use fewer resources than database backups, so they can be created more frequently than database backups. By applying transaction backups, you can recover the database to a specific point in time prior to when a problem occurred.

transaction backup (Sybase and SQL specific term)

A backup of the transaction log providing a record of changes made since the last full or transaction backup.

transaction log backup

Transaction log backups generally use fewer resources than database backups so they can be created more frequently than database backups. By applying transaction log backups, you can recover the database to a specific point in time.

transaction log files

Files that record transactions of the database modifications, and provide fault tolerance in case of a database disaster.

transaction log table (Sybase specific term)

A system table in which all changes to the database are automatically recorded.

transportable snapshot (Microsoft VSS specific term)

A shadow copy that is created on the application system and can be presented to the backup system which performs the backup. See also Microsoft Volume Shadow Copy Service (VSS).

U

unattended operation

See lights-out operation.

user account ([%=DP.DP_ BriefProductName%] user account)

You can use [%=DP.DP_ BriefProductName%] only if you have a [%=DP.DP_BriefProductName%] user account, which restricts unauthorized access to [%=DP.DP_ BriefProductName%] and to backed up data. [%=DP.DP_BriefProductName%]

administrators create this account specifying a user logon name, the systems from which the user can log on, and a [%=DP.DP_BriefProductName%] user group membership. This is checked whenever the user starts the [%=DP.DP_BriefProductName%] user interface or performs specific tasks.

User Account Control (UAC)

A security component in Windows Vista, Windows 7, Windows 8, Windows Server 2008, and Windows Server 2012 that limits application software to standard user privileges until an administrator authorizes an increase in privilege level.

user disk quotas

NTFS quota-management support enables an enhanced tracking mechanism and control over disk space usage on shared storage volumes. [%=DP.DP_BriefProductName%] backs up user disk quotas on the whole system and for all configured users at a time.

user group

Each [%=DP.DP_BriefProductName%] user is member of a User Group. Each User Group has a set of user rights that are given to every user in that User Group. The number of User Groups with their associated user rights can be defined as desired. [%=DP.DP_BriefProductName%] provides three default user groups: admin, operator, and user.

user profile (Windows specific term)

Configuration information retained on a user basis. This information includes desktop settings, screen colors, network connections, and so on. When the user logs on, the user profile is loaded and the Windows environment is set accordingly.

user rights

User rights or access rights are the permissions needed to perform specific [%=DP.DP_BriefProductName%] tasks. Configuring a backup, starting a backup session, or starting a restore session are typical user rights. Users have the access rights of the user group to which they belong.

user_restrictions file

A file that restricts specific user actions, which are available to [%=DP.DP_BriefProductName%] user groups according to the user rights assigned to them, to be performed only on specific systems of the [%=DP.DP_BriefProductName%] cell. Such restrictions apply only to [%=DP.DP_BriefProductName%] user groups other than admin and operator.

V

vaulting media

The process of storing media to a safe and remote place. The media are brought back to the data center when they are needed for restore or are ready for reuse in subsequent backups. The vaulting procedure depends on your company's backup strategy and policies for data protection/reliability.

verify

A function that lets you check whether the [%=DP.DP_BriefProductName%] data on a specified medium is readable. Additionally, consistency within each block can be checked if the backup was performed with the cyclic redundancy check (CRC) option ON.

Virtual Controller Software (VCS) ([%=DP.HW_SW_P6000_EVA_full%] specific term)

The firmware that manages all aspects of storage system operation, including communication with [%=DP.DP_AbbCompanyName%] Command View EVA through the HSV controllers. See also [%=DP.DP_AbbCompanyName%] Command View (CV) EVA.

Virtual Device Interface (Microsoft SQL Server specific term)

This is a Microsoft SQL Server programming interface that allows fast backup and restore of large databases.

virtual disk ([%=DP.HW_SW_P6000_EVA_full%] specific term)

A unit of storage allocated from a storage pool of a disk array of the [%=DP.HW_SW_P6000_EVA_full%]. A virtual disk is the entity that can be replicated using the snapshot functionality of such disk array. See also source volume and target volume.

virtual full backup

An efficient type of synthetic backup where data is consolidated using pointers instead of being copied. It is performed if all the backups (the full backup, incremental backups, and the resulting virtual full backup) are written to a single file library that uses distributed file medium format.

Virtual Library System (VLS)

A disk-based data storage device hosting one or more virtual tape libraries (VTLs).

virtual server

A virtual machine in a cluster environment defined in a domain by a network IP name and address. Its address is cached by the cluster software and mapped to the cluster node that is currently running the virtual server resources. This way all requests for a particular virtual server are cached by a specific cluster node.

virtual tape

An archival storage technology that backs up data to disk drives in the same way as if it were being stored on tape. Benefits of virtual tape systems include improved backup and recovery speed and lower operating costs. See also Virtual Library System (VLS) and virtual tape library (VTL).

virtual tape library (VTL)

Data storage virtualization software that is able to emulate tape devices and libraries thus providing the functionality of traditional tape-based storage. See also Virtual Library System (VLS).

volser

A VOLume SERial number is a label on the medium to identify the physical tape used in very large libraries. A volser is a naming convention specific to ADIC/GRAU and StorageTek devices.

volume group

A unit of data storage in an LVM system. A volume group can consist of one or more physical volumes. There can be more than one volume group on the system.

volume mountpoint (Windows specific term)

An empty directory on a volume that can be used to mount another volume. The volume mount point acts as a gateway to the target volume. Provided that the volume is mounted, users and applications can refer to the data on the mounted volume by the full (merged) filesystem path as if both volumes are one integral part.

Volume Shadow Copy Service

See Microsoft Volume Shadow Copy Service (VSS).

VSS

See Microsoft Volume Shadow Copy Service (VSS).

VSS compliant mode ([%=DP.HW_SW_P9000_XP_full%] VSS provider specific term)

One of two [%=DP.HW_SW_P9000_XP_abbrev%] VSS hardware provider operation modes. When the [%=DP.HW_SW_P9000_XP_abbrev%] provider is in the VSS compliant mode, the source volume (P-VOL) and its replica (S-VOL) are in simplex, unpaired state after a backup. Therefore the number of replicas (S-VOLs per a P-VOL) rotated is not limited. Restore from a backup in such a configuration is possible only by switching of the disks. See also resync mode, source volume, primary volume (P-VOL), replica, secondary volume (S-VOL), and replica set rotation.

VxFS

Veritas Journal Filesystem.

VxVM (Veritas Volume Manager)

A Veritas Volume Manager is a system for managing disk space on Solaris platforms. A VxVM system consists of an arbitrary group of one or more physical volumes organized into logical disk groups.

W

Wake ONLAN

Remote power-up support for systems running in power-save mode from some other system on the same LAN.

Web reporting

The [%=DP.DP_BriefProductName%] functionality that allows you to view reports on backup, object copy, and object consolidation status and [%=DP.DP_BriefProductName%] configuration using the Web interface.

wildcard character

A keyboard character that can be used to represent one or many characters. The asterisk (*), for example, typically represents one or more characters, and the question mark (?) typically represents a single character. Wildcard characters are often used in operating systems as a means of specifying more than one file by name.

Windows configuration backup

[%=DP.DP_BriefProductName%] allows you to back up Windows CONFIGURATION, including Windows Registry, user profiles, Event Logs, and WINS and DHCP server data (if configured on a system) in one step.

Windows Registry

A centralized database used by Windows to store configuration information for the operating system and the installed applications.

WINS server

A system running Windows Internet Name Service software that resolves Windows networking computer names to IP addresses. [%=DP.DP_BriefProductName%] can back up WINS server data as part of the Windows configuration.

writer (Microsoft VSS specific term)

A process that initiates change of data on the original volume. Writers are typically applications or system services that write persistent information on a volume.

Writers also participate in the shadow copy synchronization process by assuring data consistency.

X

XBSA Interface (Informix Server specific term)

ON-Bar and [%=DP.DP_ BriefProductName%] communicate with each other through the X/Open Backup Services Application Programmer's Interface (XBSA).

Z

ZDB

See zero downtime backup.

ZDB database (ZDB specific term)

A part of the IDB, storing ZDB related information such as source volumes, replicas and security information. The ZDB database is used for ZDB, instant recovery, and split mirror restore. See also zero downtime backup (ZDB).

ZDB to disk (ZDB specific term)

A form of zero downtime backup where the replica produced is kept on the disk array as a backup of the source volumes at a specific point in time. Multiple replicas, produced using the same backup specification at different times, can be kept in a replica set. A replica from ZDB to disk can be restored using the instant recovery process. See also zero downtime backup (ZDB), ZDB to tape, ZDB to disk+tape, instant recovery, and replica set rotation.

ZDB to disk+tape (ZDB specific term)

A form of zero downtime backup where the replica produced is kept on the disk array as a backup of the source volumes at a specific point in time, in the same way as with ZDB to disk. However, data in the replica is also streamed to a backup medium, as with ZDB to tape. If this backup method is used, data backed up in the same session can be restored using the instant recovery process, the standard [%=DP.DP_ BriefProductName%] restore from tape, or with specific disk array families, split mirror restore. See also zero downtime backup (ZDB), ZDB to disk, ZDB to tape, instant recovery, replica, and replica set rotation.

ZDB to tape (ZDB specific term)

A form of zero downtime backup where data in the replica produced is streamed to a backup medium, typically tape. Instant recovery is not possible from such a backup, so the replica need not be retained on the disk array after backup completion. The backed up data can be restored using standard [%=DP.DP_ BriefProductName%] restore from tape. With specific disk array families, split mirror restore can also be used. See also zero downtime backup (ZDB), ZDB to disk, ZDB to disk+tape, instant recovery, and replica.

zero downtime backup (ZDB)

A backup approach in which data replication techniques, provided by a disk array, are used to minimize the impact of backup operations on an application system. A replica of the data to be backed up is created first. All subsequent backup operations are performed on the replicated data rather than the original data, while the application system can be returned to normal operation. See also ZDB to disk, ZDB to tape, ZDB to disk+tape, and instant recovery.

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