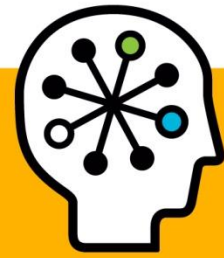




HP Data Protector A.06.11 support for Microsoft Exchange Server 2010

White paper



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Introduction

This white paper describes how to back up and restore Microsoft Exchange Server 2010 Mailbox Databases using Data Protector A.06.11.

You can back up and restore Microsoft Exchange Server 2010 data only using the Data Protector Microsoft Volume Shadow Copy Service integration. Microsoft Exchange 2010 no longer uses the streaming backup API – which was also used by the Data Protector Exchange Server integration – but instead uses the Volume Shadow Copy Service.

Microsoft Exchange Server 2010 concepts

Microsoft Exchange Server 2010 introduces the Database Availability Group (DAG), which is an evolution of the Exchange Server 2007 SCR and CCR concept. Each DAG can consist of up to 16 systems, which can host multiple active and/or passive database copies. Passive copies are kept consistent with the active copy and the DAG heals itself automatically if data on a particular node gets corrupted. For example, if a passive copy gets corrupted, the passive copy is re-seeded. If an active copy can no longer be healed, one of the passive copies becomes the active copy. Both, the active copy and the related passive copies represent the same database and can be exchanged during restore. This means that you can restore an active copy from a passive copy backup or the reverse.

The most common scenarios involving Data Protector would therefore include (but are not limited to):

- backing up passive copies thus avoiding additional loads on the active copy during backup
- restoring a lost or corrupt passive copy, avoiding large volumes of network traffic when passive copies are re-seeded
- restoring the database to a point in time (for example for investigation purposes)

See [Restore scenarios](#) for additional restore scenarios.

Microsoft Volume Shadow Copy Service integration

The Data Protector Volume Shadow Copy Service (VSS) integration can back up whole VSS writers or individual components of these writers. See the *Integration guide for Microsoft applications* or the *ZDB integration guide* for more details on VSS, including VSS concepts, configuration, operation, and general limitations.

Using this integration, you can back up the Microsoft Exchange Server 2010 writers. Two writers are used for Exchange Server 2010 backup and restore:

- Microsoft Exchange Writer (used for active copies)
- Microsoft Exchange Replica Writer (used for passive copies)

Using the Exchange writers, only databases from a physical node (system) in a DAG can be backed up. The DAG—which is a virtual entity and not recognized by Data Protector A.06.11—cannot be backed up.

Installation and configuration

Installing

1. Install the Data Protector A.06.11 MS Volume Shadow Copy Service Integration component on all DAG nodes (systems where Microsoft Exchange Server 2010 is installed) which you want to back up.
2. Rename or move the file `Omni_MicrosoftExchangeWriter.dll`, which is located in `Data_Protector_home/bin`, on all DAG nodes. This library is needed for Exchange Server 2007. If this library is present, it is loaded by Data Protector, which results in an error for Exchange Server 2010.

To be able to back up passive copies (which need the Exchange Replica Writer) using a VSS transportable backup, ensure that Microsoft Exchange Management tools are installed on the *backup system* or copy the following files from the Microsoft Exchange Server 2010 installation to the backup system:

```
Ese.dll, Eseutil.exe, Exchmem.dll
```

and set the path to the installation folder using the `omnirc` variable `OB2VSS_EXCHANGE_ESEUTIL_PATH`.

Licensing

As you need to back up individual clients, you need one online-extension license for each system on which the Data Protector MS Volume Shadow Copy Integration component is installed.

Configuring

To configure the integration for ZDB and ensure that disk resolving works, it is recommended that you run the following command on the clients that you will back up from:

```
omnidbvss -resolve -apphost ClientName
```

where *ClientName* is the name of the Microsoft Exchange Server 2010 system, for example `server1.company.com`. For details, see the `omnidbvss` reference page.

If the command is not run in advance, Data Protector will automatically run this command during the first ZDB session which may slow down the backup session.

Backup

With Data Protector A.06.11, you can back up an entire Exchange Writer or Exchange Replica Writer on a physical client or individual Mailbox Database copies (either active or passive).

You cannot select the database files or logs of a Mailbox Database individually.

The following Microsoft Exchange Server 2010 backup types are supported:

- Full
- Incremental (only with the software provider)
- Differential (only with the software provider)
- Copy

Limitations

- From the GUI, the additional options **Perform consistency check** and **Throttle check for 1 second** cannot be set for the Microsoft Exchange Replica Writer. The Perform consistency check option is enabled by default.
- For ZDB, the Strict and Non-strict configuration check modes are not supported. Select **Disabled** in the **Configuration check mode** drop-down list to disable the check. When this option is disabled, Data Protector does not check if there are files on the source volume that were not selected for backup or instant recovery.
- You cannot combine a backup chain from full and incremental backups from different Microsoft Exchange servers. You can also not combine a restore chain from passive and active copies.

Creating a backup specification

To create a backup specification, follow the procedure described in the VSS chapter of the *HP Data Protector integration guide for Microsoft applications* or the *HP Data Protector ZDB integration guide*.

When selecting the backup object (database), consider the following:

- To create a backup specification for an *active copy*, select the Microsoft Exchange Writer.
- To create a backup specification for a *passive copy*, select the Microsoft Exchange Replica Writer.

Important

After a failover, a passive copy becomes an active copy and an active copy becomes passive. In such a case, the database backup object will fail, as the backup specification is not automatically updated and Data Protector tries to back up an active copy using the Exchange Replica writer which is intended for passive copies.

You must manually update the backup specification and select the correct writer.

Scheduling and running a backup

See the *HP Data Protector integration guide for Microsoft applications* or the *HP Data Protector ZDB integration guide* for more information on how to schedule and run a backup.

Restore

Follow the standard restore procedure as described in the *HP Data Protector integration guide for Microsoft applications* or the *HP Data Protector ZDB integration guide*. The restore scenarios in this white paper describe only Microsoft Exchange Server 2010 specifics.

Restore scenarios

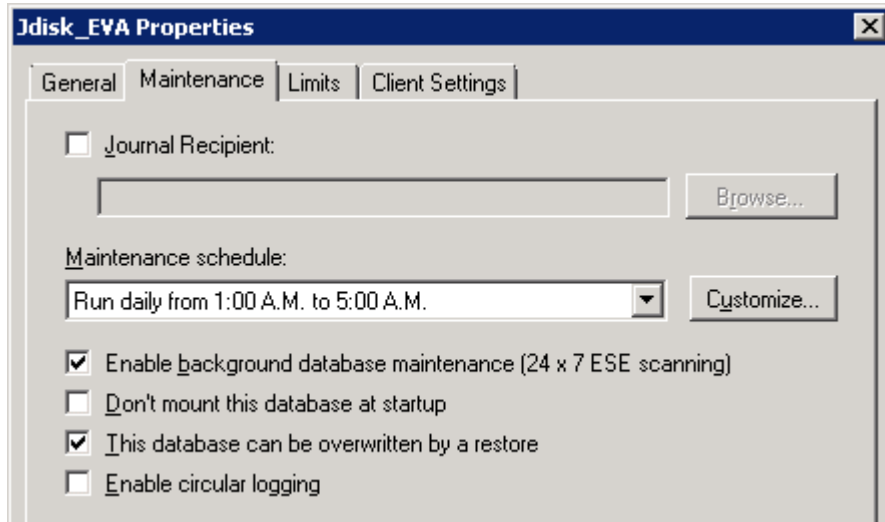
Restoring a passive copy

You can restore a passive copy from a chain of active or passive copy backups.

Restore when both the database files and logs are lost

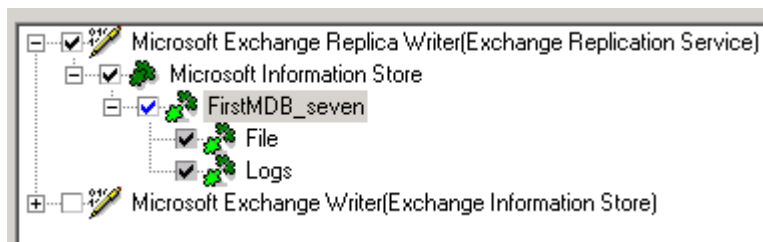
1. Suspend the database replication using the Exchange Management Console.
2. Right click the database that you want to restore and open the Properties window. In the Maintenance page, select **This database can be overwritten by a restore**.

Figure 1. Enabling restore for a database



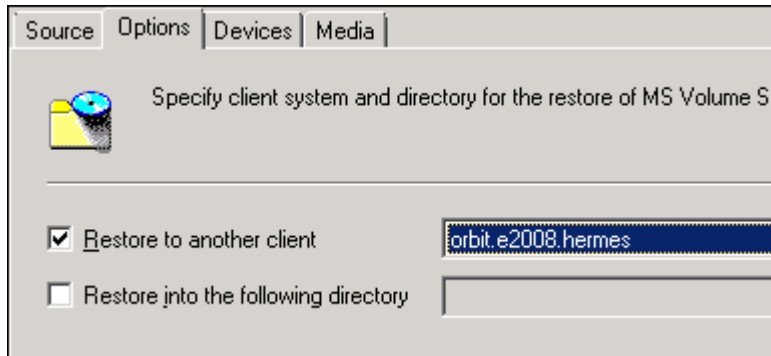
3. In the Data Protector GUI, select the Restore context. In the scoping pane click **MS Volume Shadow Copy** and select the client from which the database was backed up. You can select any client, not only the one to which you restore.
4. Depending on whether you backed up an active or passive copy, expand **Microsoft Exchange Writer** or **Microsoft Exchange Replica Writer** and select the backed up database copy.

Figure 2. Selecting a whole database



To perform a restore to a different client than the one from which the backup was performed, go to the Options page and select the client from the **Restore to another client** drop-down list.

Figure 3. Restoring to another client



5. Specify the device and media options. For details, press **F1**.
6. Start the restore.
7. Resume the replication.

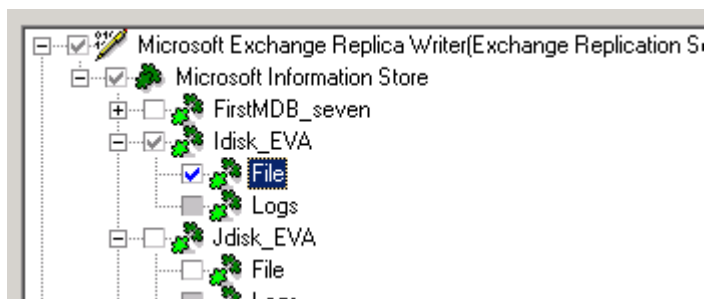
Restore when only database files are lost

If only database files are lost, but the logs are still available on the system, you can restore only the database files:

1. Suspend the database replication using the Exchange Management Console.
2. Right click the database that you want to restore and open the Properties window. In the Maintenance tab, select **This database can be overwritten by a restore**.
3. In the Data Protector GUI, select the Restore context. In the scoping pane, expand **MS Volume Shadow Copy** and select the client from which the database was backed up. You can select any client, not only the one to which you restore.
4. Depending on whether you backed up an active or passive copy, expand **Microsoft Exchange Writer** or **Microsoft Exchange Replica Writer** and expand the database backup copy.

Select **File**. See [Figure 4](#).

Figure 4. Selecting the File component



To perform a restore to a different client than the one from which the backup was performed, go to the Options page and select the destination client from the **Restore to another client** drop-down list. See [Figure 3](#).

5. Specify the device and media options. For details, press **F1**.

6. Start the restore.
7. Resume the replication

Restoring an active copy

Restoring an active copy may be needed when all passive copies fail together with the active copy.

You can restore an active copy from a chain of full and incremental backups of an active or any passive copy.

Important

As the passive copy is not always immediately updated, a point-in-time recovery (database and transaction logs files are restored) using such a backup image may not result in the last state of the active copy as it was at the time of the backup.

Restore when both the database files and logs are lost

1. Dismount the database using the Exchange Management Console.
2. Suspend the database replication. In the Exchange management console, right click the database that you will restore and open the Properties window. In the Maintenance page, select **This database can be overwritten by a restore**. See [Figure 1](#).
3. In the Data Protector GUI, select the Restore context. In the scoping pane, expand **MS Volume Shadow Copy** and select the client from which the database was backed up. You can select any client, not only the one to which you restore.
4. Depending on whether you backed up an active or passive copy, expand the **Microsoft Exchange Writer** or **Microsoft Exchange Replica Writer** and select the database.

If the system you backed up from currently hosts the active copy, the backed up copy will be automatically restored as an active copy.

If the system you backed up from currently hosts a passive copy (for example, if a failover occurred), select the client which hosts the current active copy from the **Restore to another client** drop-down list. See [Figure 3](#).

5. Specify the device and media options. For details, press **F1**.
6. Start the restore.
7. Mount the database using the Exchange Management Console.
8. Resume the replication.

Restore when only database files are lost

1. Dismount the database using the Exchange Management Console.
2. Suspend the database replication. In the Exchange management console, right click the database that you will restore and open the Properties window. In the Maintenance page, select **This database can be overwritten by a restore**. See [Figure 1](#).
3. In the Data Protector GUI, select the Restore context. In the scoping pane, expand **MS Volume Shadow Copy** and select the client from which the database was backed up. You can select any client, not only the one to which you restore.
4. Depending on whether you backed up an active or passive copy, expand **Microsoft Exchange Writer** or **Microsoft Exchange Replica Writer** and expand the backed up database.

Select **File**.

If the system you backed up from currently hosts the active copy, the backed up copy will be automatically restored as an active copy.

If the system you backed up from currently hosts a passive copy (for example, if a failover occurred), select the client which hosts the current active copy from the **Restore to another client** drop-down list. See [Figure 3](#).

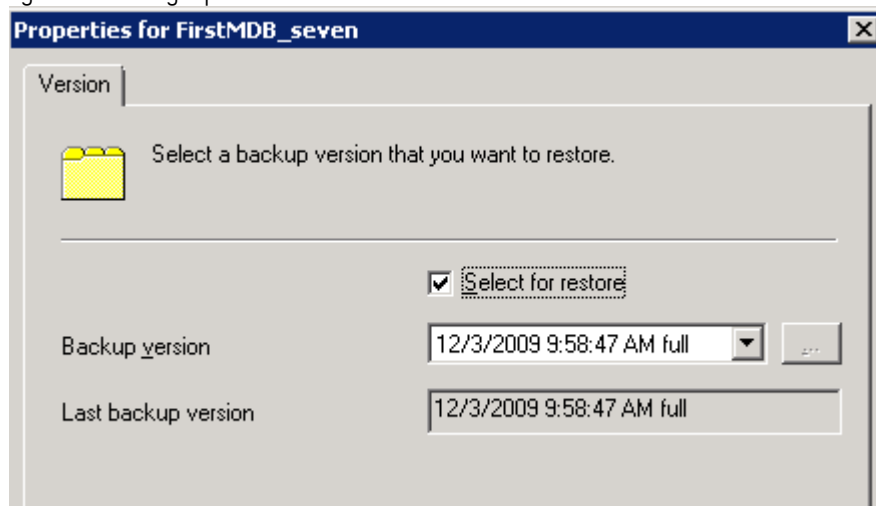
5. Specify the device and media options. For details, press **F1**.
6. Start the restore.
7. Resume the replication.

Point-in-time restore

For a point-in-time restore, both active and the passive copies must be restored to the same point in time or you must manually perform a full re-seed for passive copies. To avoid a full re-seed of passive copies, you *must restore the active and passive copies from the same backup copy*.

1. Dismount the database using the Exchange Management Console.
2. Right click the database that you want to restore and open the Properties window. In the Maintenance page, select **This database can be overwritten by a restore**. See [Figure 1](#).
3. Suspend the database replication.
4. Restore the active copy. See [Restoring an active copy](#).
When selecting the database backup copy to be used for restore, right click the database and select **Properties**.
Select the point in time to which to restore the active copy.

Figure 5. Selecting a point in time



5. If you do not want to perform a full re-seed of the passive copies, restore the passive copies. See [Restoring a passive copy](#).
When selecting the database backup copy to be used for restore, select the same database backup copy that was used for the active copy, right click the database, and select **Properties**. Select the same point in time as was selected for the active copy.
6. Mount the active database using the Exchange Management Console.
7. Resume the replication.

Instant recovery

Use the standard instant recovery procedure as described in the VSS chapter of the *HP Data Protector ZDB integration guide*. For general prerequisites and conditions (dismounting the Microsoft Exchange Server databases, suspending the replication, etc.), see [Restore scenarios](#). Additional instant recovery limitations are listed in this section.

Limitations

- You can perform instant recovery only on the client where the ZDB was created. The only exception is when performing an instant recovery of an EVA snapclone, which can be restored to a different client using the Data Protector CLI.
Instant recovery of an EVA snapclone to a different client is not supported through the Data Protector GUI.
- With the Disk Array XP provider in the resync mode or with EVAs, each connected to its own system, you cannot perform a point-in-time recovery from a single ZDB session. To be able to recover both an active copy and passive copies to the same point in time, you need multiple ZDB sessions that were performed at the same time, one for the active and one for each passive copy.

Instant recovery of an EVA snapclone to a different client using the CLI

1. Use the `omnidbvss` command to get details about the session that you want to use for instant recovery. For example:

```
omnidbvss -get session 2009/12/16-10
```

```
=====
Session ID:                2009/12/16-10
Barlist Name:              Xdisk_XPcompliant_trans
Bar Hostname:              server1.company.com
Backup Type:               FULL
Instant Restore:           TRUE
Disk-Only:                 FALSE
```

Component Name

```
=====
[0]      /Microsoft Exchange Writer(Exchange Information
Store)/Microsoft Information Store/Xdisk_XPbox/Logs
[1]      /Microsoft Exchange Writer(Exchange Information
Store)/Microsoft Information Store/Xdisk_XPbox/File
```

The objects that were backed up in this session are listed under Component Name.

See the `omndbvss` reference page in the *HP Data Protector command line interface reference* for details on the `omnidbvss` command.

2. Run the `omnir` command:

```
omnir -vss -barhost ClientName1 -session sessionID -tree TreeName1
[-tree TreeName2...] -conf_check disabled -destination ClientName2
-instant_restore INSTANT_RECOVERY_OPTIONS
```

See the `omnir` reference page in the *HP Data Protector command line interface reference* for details on the `omnir` command.

To recover the components from the above example, run:

```
omnir -vss -barhost server1.company.com -session 2009/12/16-10
-tree /Microsoft Exchange Writer(Exchange Information
Store)/Microsoft Information Store/Xdisk_XPbox/Logs -tree
/Microsoft Exchange Writer(Exchange Information Store)/Microsoft
Information Store/Xdisk_XPbox/File -conf_check disabled
-destination server2.company.com -instant_restore
```

Troubleshooting

For general VSS troubleshooting, see the VSS chapter of the *HP Data Protector integration guide for Microsoft applications*. For ZDB and instant recovery related troubleshooting, see the *HP Data Protector Zero Downtime Backup integration guide*.

Problem

After a failover in a DAG occurs, Data Protector reports that some Microsoft Exchange writer components could not be found:

```
[Major] From: OB2BAR_VSSBAR@server5.company.com "MSVSSW" Time:
12/7/2009 1:16:40 PM
    Failed to find component that would match tree:
    '/Microsoft Exchange Replica Writer(Exchange Replication
Service) '.
```

Action

You can solve the issue in two different ways:

- Update the backup specifications to use the correct writers.
- Perform a failover so that the database returns to the original state (active or passive), the issue will no longer be reported.

For more information

Visit the following Data Protector online resources to get more information:

www.hp.com/go/dataprotector

www.hp.com/go/imhub/dataprotector

HP Data Protector guides

To get more information on this topic consider the following Data Protector guides, available either in the `/docs` directory on the HP Data Protector installation DVD, as part of the `English Documentation & Help` component, or online.

- *HP Data Protector integration guide for Microsoft applications*
- *HP Data Protector zero downtime backup integration guide*

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