Exchange Module Version 2.6

Installation and User's Guide

STOREWAY DPA

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Exchange Module Version 2.6

Installation and User's Guide

Software

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Chapter 1. Overview of the MS-Exchange backup solution

Introduction to the solution

This document comprises 2 distinct sections:

- The first part examines the backup of MS-Exchange using the StoreWay DPA agent. With the API Exchange connection, the agent allows either full Exchange database and log backups, or log backups in incremental mode. Associated with the Microsoft exmerge utility (Exchange 2000 and 2003 only, Exchange 2007 does not support the Exmerge utility), the StoreWay DPA agent enables you to backup mailboxes (export .pst files) guaranteeing their consistency. In the event of an incident or loss of data, the restoration will allow the mailbox to be reconstructed in full.

See:

"Prerequisites to using the StoreWay DPA for MS-Exchange Module" page 11

"Installing the StoreWay DPA for MS-Exchange module" page 14

"Creating the MS–Exchange application" page 15

"Backing up databases" page 19

"Backing up mailboxes" page 23

"Restoration" page 30

"Appendix" page 39

- The second part examines backup in block mode which enables, on Exchange 2003, to perform a backup and a restoration down to E-mail level. In the event of an incident or loss of data, the restoration will allow you to recover E-mails which have been lost within a mailbox.

See:

"Introduction to the StoreWay DPA for Exchange Snapshot Agent" page 40

"Installing the Snapshot agent for Exchange" page 41

"Protecting partitions and managing Snapshots" page 42

"Recovering databases" page 46

"Recovering E-mails" page 48

The following sections describe general MS-Exchange architecture and the structure of the two internal databases (MDB and DSA), together with the services (IS and DS) which manage these databases. The representation of MS-Exchange objects is also described.

See:

"Architecture MS-Exchange" page 8

"The Messaging Database (MDB)" page 9

"Overview of MS-Exchange components" page 10

Architecture MS-Exchange

MS-Exchange is based on a client-server architecture centred around two internal data bases located on the server.

Each database uses transaction log files (*logs*), which enable you to reconstruct databases in the event of an incident. These logs also optimize response times to user requests.

The structure of these databases is described in the following sections.

Databases from different versions of MS-Exchange may be incompatible.

The Messaging Database (MDB)

The MDB, *Messaging Database* is the database which manages e-mails. It lets users send e-mails and access public folders. It is also managed by the IS (*Information Store*).

The MSExchangeIS service performs the following tasks:

- Storing public folders in the public Information Store.
- Saving user messages in the private Information Store.
- Providing rules and views.
- Managing data storage capacity limits and age limits.
- Distribute the messages addressed to users on the same server as the sender.
- Forward incoming mail on other servers and systems so they can be distributed by the MTA, (*Mail Transfer Agent*).

Information Store data is organised into folders spread over two files (databases):

- **Private folders or mailboxes: priv.edb**. All incoming e-mails for one given user are returned to his mailbox. Information contained in the user mailbox are stored on the server associated with this user.
- **The public folder: pub.edb**. It contains information that can be shared by a user group. Public folders can be configured for different types of applications, such as user forums, discussion groups and managed customer service systems.

Overview of MS-Exchange components

The following table is an overview of MS-Exchange. There are log files for both databases DSA and MDB. The names of the log files take the following format:

edbxxxxx.log where **xxxxx** is a hexadecimal number between 00000 and FFFFF

Database	Service	Service name	Database file	Location
MDB	MSExchangeIS	MS-Exchange – Information Store	pub.edb	\exchsrvr\mdbdata
			priv.edb	\exchsrvr\mdbdata

Chapter 2. Prerequisites to using the StoreWay DPA for MS-Exchange Module

To be able to use the StoreWay DPA for MS-Exchange module, the following conditions apply to successfully hot backup the MS-Exchange database:

- The MS-Exchange database must be active. Its main service (SA) must be started.
- The Information Store (IS) and Directory (DS) services must also be active.
- The MS-Exchange database must not be in “circular log" mode if you wish to perform incremental backups.
- You must ensure that the MS-Exchange system time is identical to StoreWay DPA time for correct synchronization during the backup and restoration processes.

See:

"Circular log mode" page 12

Circular log mode

The MS-Exchange database can be in "Circular log" mode or not.

Le circular log mode lets you reuse old log files after writing their contents to the MS-Exchange database. The database works with 4 log files and uses log files 1 to 4, then reuses log 1 renaming it log 5 etc.

When this mode is selected, no incremental backup can be performed. Only FULL backups are authorized. It is therefore impossible to certify that all logs are backed up by the StoreWay DPA.

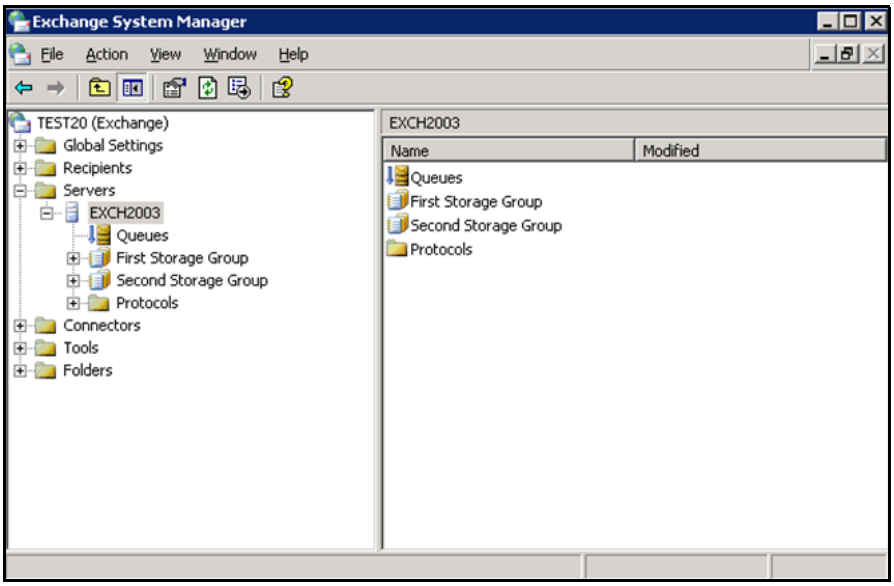
Because of this restriction, it is strongly recommended to not use the incremental backup in circular log mode. This method is, however, supported by StoreWay DPA.

To perform incremental backups in optimal conditions, it is necessary to use the MS-Exchange "non-circular log mode".

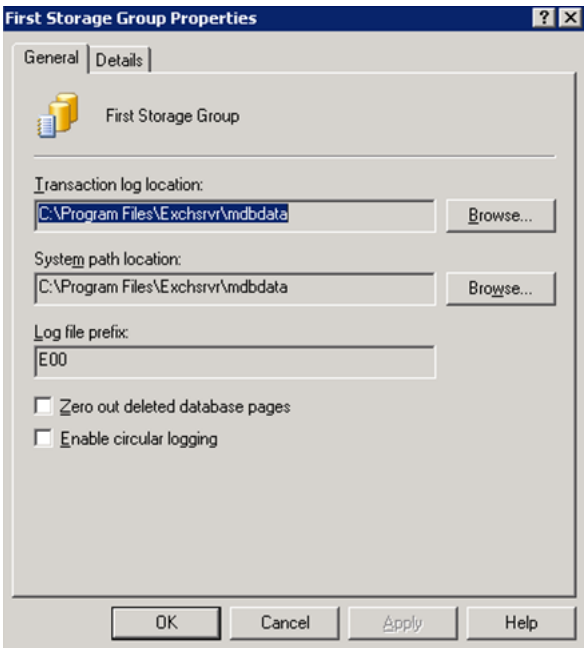
Switching to non-circular log mode

Switch to “non-circular log mode”

1 Start the MS-Exchange administration program and select the server.



2 Select the first storage group and display the properties**.**



3 Clear the **Enable circular logging** checkbox if it is selected.

4 Click **OK** to confirm.

5 Repeat this procedure if you have a second storage group.

Chapter 3. Installing the StoreWay DPA for MS-Exchange module

This chapter explains how to install the StoreWay DPA for MS-Exchange agent. To backup an MS-Exchange application, the StoreWay DPA does not require a logon account.

1 Insert the CD-ROM **StoreWay DPA Initial Setup (Windows) – Agents (Windows, Linux, Netware) Graphical User Interface Setup – ASM & Disaster Recovery Agents** in the CD-ROM drive of the machine where you want to install the client agent for MS-EXCHANGE.

The install.htm page is displayed.

NOTE: If this page is not displayed within a few seconds after inserting the CD-ROM, click the " Workstation " icon on your computer desktop, then in the CD-ROM drive, double click the " install.htm " file in “setup”.

2 Follow the setup program. Select the MS-Exchange application.

3 During the setup, a dialog box opens concerning the backup of Exchange Mailboxes (see "Backing up mailboxes" page 23), notifying the use of Microsoft’s **exmerge** utility.

File locations:

We recommend you save these files in the StoreWay DPA agent installation directory, by default **C:\Program Files\dpa**:

> **Exmerge.exe** agent bin directory "**~\dpa\bin**"

> **Exmerge.ini** agent config directory "**~\dpa\config**"

> **Exchmem.dll** agent directory bin "**~\dpa\bin**"

In this case, delete all other **Exmerge.exe** and **Exmerge.ini** files.

When the agent is installed, go the following chapter which describes the creation of the MS-Exchange application in the StoreWay DPA.

Chapter 4. Creating the MS–Exchange application

See:

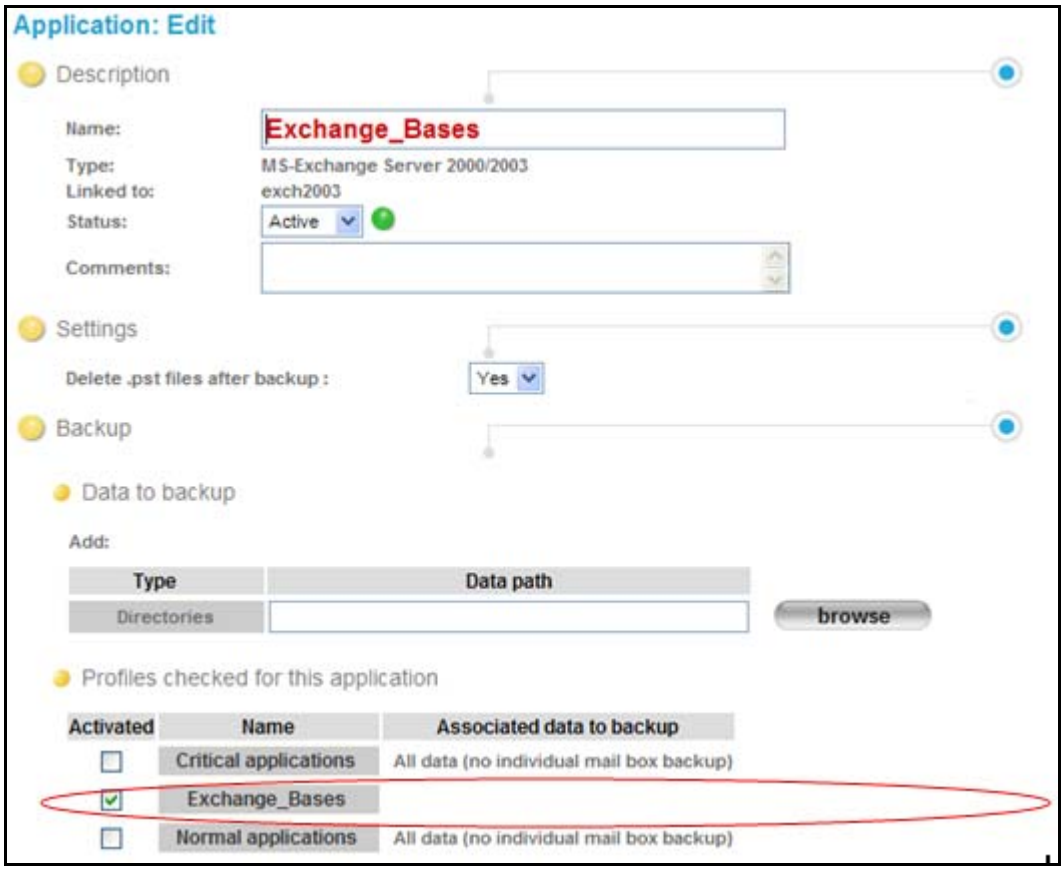
"Declaring the application" page 16

"Navigating in the created application" page 18

Declaring the application

You declare StoreWay DPA applications in the entity configuration page using the **settings/System** menu. This menu is only accessible for the StoreWay DPA administrator. If you are not authorized to access this account, ask your administrator to declare it for you.

1. Select **settings/Systems**.
2. Click the **Create a new application** icon: .
3. Select the application from the **Application: create** list.
4. Click **create**.
5. In the description fields:
   - Enter the application name.
   - Select from the drop-down list, the system which is hosting the application (Warning: by default, systems are proposed alphabetically).
   - Enter a comment (optional).
6. In the **backup** section:
   - **Data to backup**: Specify the data to backup on this application; enter, for example “/” in the **data path** field to back up all application data.
   - **Parameters: Delete temporary .pst files after the backup**: this parameter does not work if the backup is set to **Mailbox** mode (/Mailboxes). This mode lets you keep the latest version of each mailbox exported in .pst format using the **exmerge** utility on the Exchange server in the Mailboxes directory created by the StoreWay DPA agent (by default in **~\dpa**.
   - **Activated profiles for this application**: Select the application profile the application will be attached to (full application backup without mailbox granularity).
7. Click **create**. The application appears in **Edition mode**.



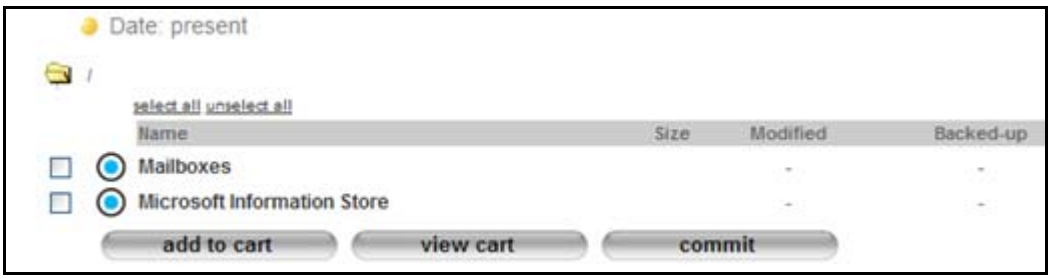
NOTE: *You can also configure data to backup once the application is created:*

- Either on the associated backup profile;
- Or by clicking **browse** in **Edition mode**: to select data, select the relevant checkbox and click **Add to cart**, then **Apply**.

In both cases, leave the **Data to backup** field empty for now.

Navigating in the created application

> To navigate in the Exchange Database application (Exchange_Bases in our case), click **Browse** in the **Application Edit** mode window.



Meta Objects Mailboxes and Microsoft Information Store:

- **Mailboxes**: regroups all Exchange mailboxes in .pst format (exmerge export), if exmerge is installed.
- **Microsoft Information Store**: contains the different Exchange Storage Groups (by default 1 = First Storage Group).
- Display of 2 configured Storage Groups.

Chapter 5. Backing up databases

See:

"Backup method" page 20

"Full/incremental backup" page 21

"Backup policy" page 22

Backup method

To perform a full backup of your MS-Exchange server, you need to:

> Back up the System State (registry).

> Back up the applicative environment (exchsrv directory).

> Back up the Exchange application (logs and bases).

Position the correspondences on your StoreWay DPA.

As such, you need to declare on the StoreWay DPA:

> The system (MS-Exchange server)

> Two applications (one System State application and one Exchange application)

> Three profiles (an associated profile for the System State application, an associated profile for the Exchange application, a profile for the Exchange environment).

Two stages are necessary to backup the MS-Exchange application using the StoreWay DPA:

> The environment is backed up via the MS-Exchange System, i.e.: the StoreWay DPA client system on which the MS-Exchange server is installed.

> MS-Exchange databases are backed up using MS-Exchange applications linked to the system.

The manner in which backups are performed is shown in a *Backup Profile*. For more details on *Backup Profiles*, consult the StoreWay DPA Online help.

Backing up the environment and registry database

The environment must be backed up when **MS-Exchange** system files are backed up. This is a cold backup because the system is backed up as for a batch of files. The environment is backed up by selecting **exchsrvr** as the object to back up. This directory is located in the Exchange installation directory. The *.edb, *.log files are backed up by the MS-Exchange application. The registry database is backed up by creating an **MS Windows System State** type application (see the user guide: **Windows System State**).

Position exclusion filters on the backed up data using the Exchange application, on the Exchange system backup file (partition c:\)., i.e.: edb and *.log (syntax: .*\.edb$|.*\.log$).

Backing up databases

Databases are backed up by the MS-Exchange application which performs a hot backup.

This backup is a joint MS-Exchange and StoreWay DPA backup which consists of a communication with MS-Exchange via its API to perform a consistent database backup without stopping them.

When the StoreWay DPA backs up several objects, it chooses the order of priority base from a "priority index".

Full / incremental backup

The StoreWay DPA performs full and incremental backups.

When it performs a backup on an Exchange database, the StoreWay DPA regroups the logs in a "Log file" object.

From one backup to the next, each time a log is generated, this log has a different name,

Advantage: the incremental backup is small and very rapid, only requiring very little disk space on the Exchange server to store logs.

- Full backup = backup of databases + logs + a purge of backed up logs.
- Incremental backup = backup of logs + a purge of backed up logs.

Backup policy

Frequency

When you program backups of your MS-Exchange application, and you select the backup type (full or incremental), remember that the MS-Exchange database can be quite big. It is not recommended to perform total backups without a valid reason. The best solution is to perform regular incremental backups (at least daily). A full backup is essential, however, if you need to perform a restoration.

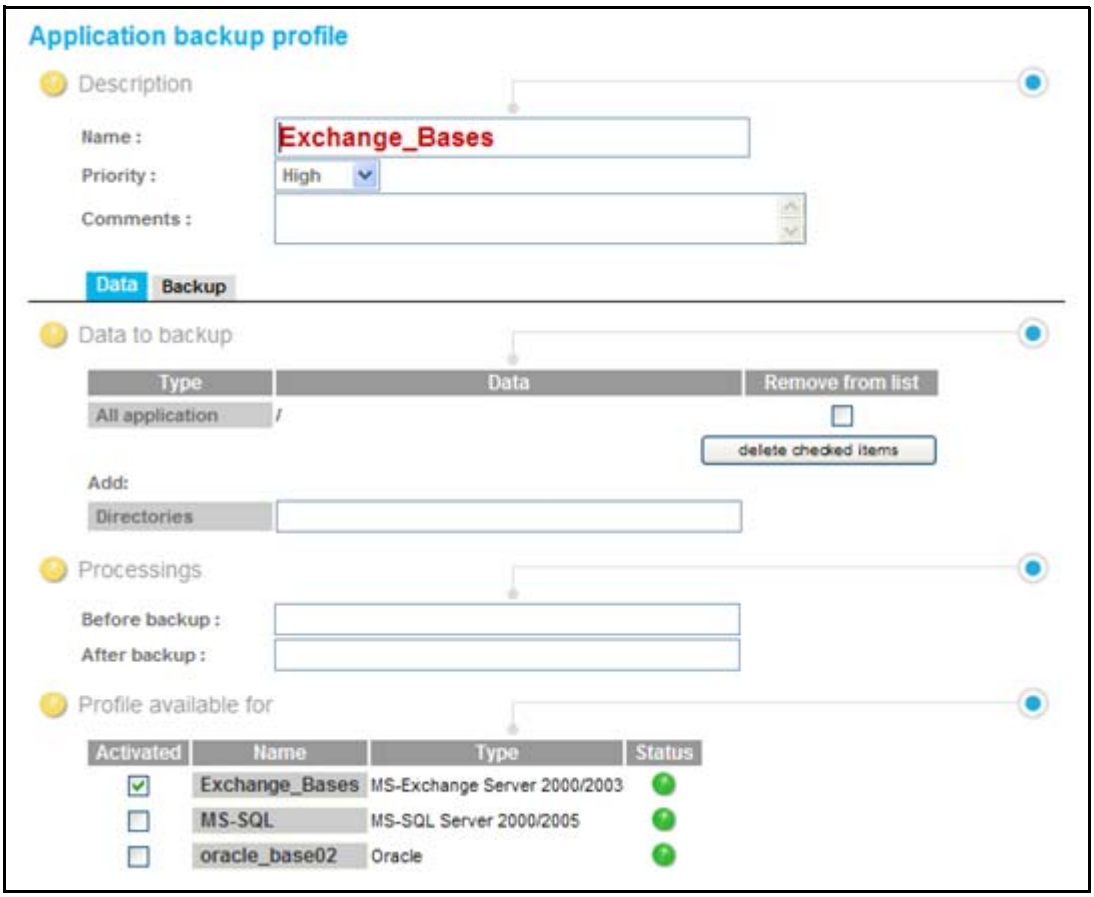
A backup (incremental or full) saves logs, then deletes them from the disk only if they are committed by the database.

Objects to back up

You must backup the root directory in the MS-Exchange application tree to backup all databases at the same time. This root directory is indicated by the object "/" ("slash" character). You must always indicate "/" as the sole object to backup for the MS-Exchange application, whether it is in the application file itself or the in the *Backup Profile* associated with the application.

EXAMPLE: The profile "Exchange Bases" associated with the "Exchange_Bases" application, data is selected at profile level and the entire application is taken into account (object "/" in the list of data to backup).

In this example, "/" is selected; only databases and logs objects are backed up, without Mailbox granularity, as specified.



Chapter 6. Backing up mailboxes

The StoreWay DPA can backup and restore user mailboxes without stopping databases and without logging off the user in question.

This chapter presents the three backup and restoration methods of user mailboxes. **This chapter only applies to Exchange 2000 and 2003**. Exchange 2007 does not support Exmerge.

See:

"Mailbox backup overview" page 24

"Mailbox backup prerequisites" page 25

"Mailbox backup configuration" page 26

Mailbox backup overview

Two different and complementary mailbox backup solutions can be used according to your needs, based on the Exmerge utility provided by Microsoft:

- If you only want to backup **critical mailboxes**, use the graphical "Mailboxes" feature in StoreWay DPA for MS-Exchange. This is the process recommended for up to approximately 50 Mailboxes.
- If all server mailboxes must be backed up, you can also use the “Mailboxes” feature. However, for performance reasons, we recommend you backup the mailbox export directory using the MS-Exchange server file system.

  WARNING: If you choose this solution, free disk space must be at least equal to the size of all mailboxes to back up.

We recommend you perform a backup of mailboxes in addition to the full database backup which will be used in the event of a complete system crash. To do this, you need to declare two Exchange applications:

- One to backup the complete database (see previous section),
- The other to back up critical mailboxes.

Back up this application on a specific profile and only select critical mailboxes in the list of objects to back up.

Mailbox backup prerequisites

WARNING: We strongly recommend you perform a database and server backup in addition to mailboxes if you want to retrieve all your data in this event of a major incident.

Mailbox retention

We recommend you activate the MS-Exchange option which allows you to keep the user mailbox for a limited number of days after its removal. This operation enables the rapid restoration of an individual mailbox.

Exporting mailboxes

Before using one of these methods, you need to export mailboxes. Check the following points:

- The user performing the backups must have the user rights to export.
- Disk space must be sufficient to contain the exported mailboxes.
- The Exmerge utility must function in autonomous mode without StoreWay DPA backup.
- The Exchange server must have the necessary files on a local disk for the Microsoft exmerge utility to function, in particular **exmerge.exe** and **exchmem.dll**. If this is not the case, copy the Exmerge files to the StoreWay DPA agent bin directory (by default: **C:\Program Files\dpa\StoreWay DPA**).

User privileges

To backup and restore mailboxes, the user who starts the " StoreWay DPA backup" process must have sufficient user privileges:

- The user is a member of the **Administrator, Enterprise Administrators or Domain Admins** groups, and must have "Receive As" and "Send As" rights.

Configuration advice

We recommend you start the "StoreWay DPA Backup" service as a dedicated user to avoid any authentication problems.

1. Create a new account without mailbox.
2. This account must be part of the **Domain Admins, Organization Administrators** groups and the **Exchange** group. (This account must also have the necessary rights to backup the Exchange database, mailboxes, the system state, but also the files).
3. This account must have “Send As”, “Receive As” privileges on the Exchange server.

Mailbox backup configuration

See:

"File Exmerge.ini and Mailboxes.txt" page 26

File Exmerge.ini and Mailboxes.txt

To configure individual Exchange mailbox backup, you need to download the optional **Exmerge** component available from the on the Microsoft website:

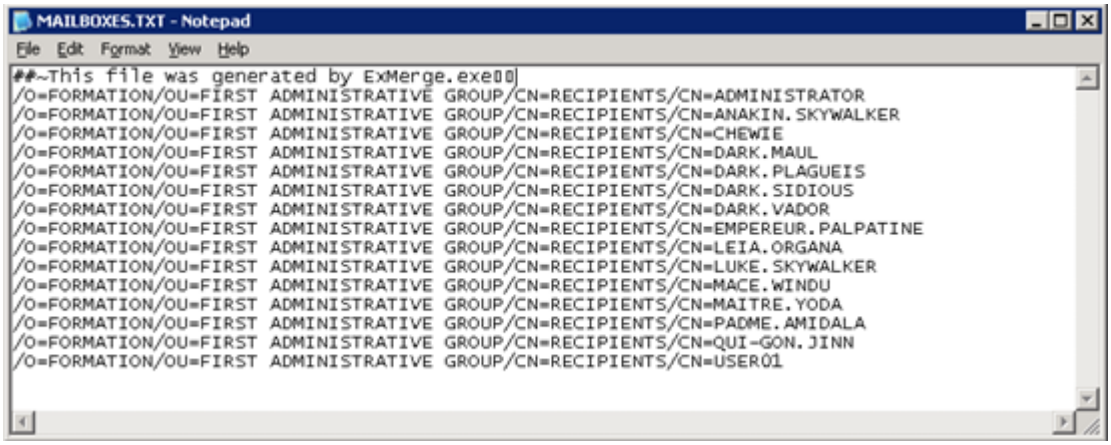
http://www.microsoft.com/downloads/details.aspx?FamilyID=429163ec-dcdf-47dc-96da-1c12d67327d5&DisplayLang=en

1. Download the **exmerge.exe** file and extract files to the backup agent **bin** directory.
2. Copy the **exchmem.dll** file available in the Exchange **bin** directory to the backup agent **bin** directory.
3. Start **exmerge.exe** and follow the wizard procedures:
4. Enter the Exchange server name
5. Select the mailboxes to back up. If there is insufficient disk space, select only a few mailboxes and repeat the complete operation as many times as necessary.
6. Select the agent Mailboxes directory.
7. Click **Save Settings** to backup the **EXMERGE.INI** configuration and the selection of mailboxes to backup (MAILBOXES.TXT).
8. Move the **EXMERGE.INI** file in the **agent** directory to the agent **config** directory.
9. For non-Anglophone Exchange configurations add these lines (this example is for French localizations):

```
LocalisedPersonalFoldersServiceName=Dossiers personnels
LocalisedExchangeServerServiceName=Banque de messages Microsoft Exchange
```

   - LocalisedPersonalFoldersServiceName
   - LocalisedExchangeServerServiceName

10. Check the **DefaultLocaleID** parameter is correct.



11. Open the MAILBOXES.TXT file to check the mailbox selection to be backed up.

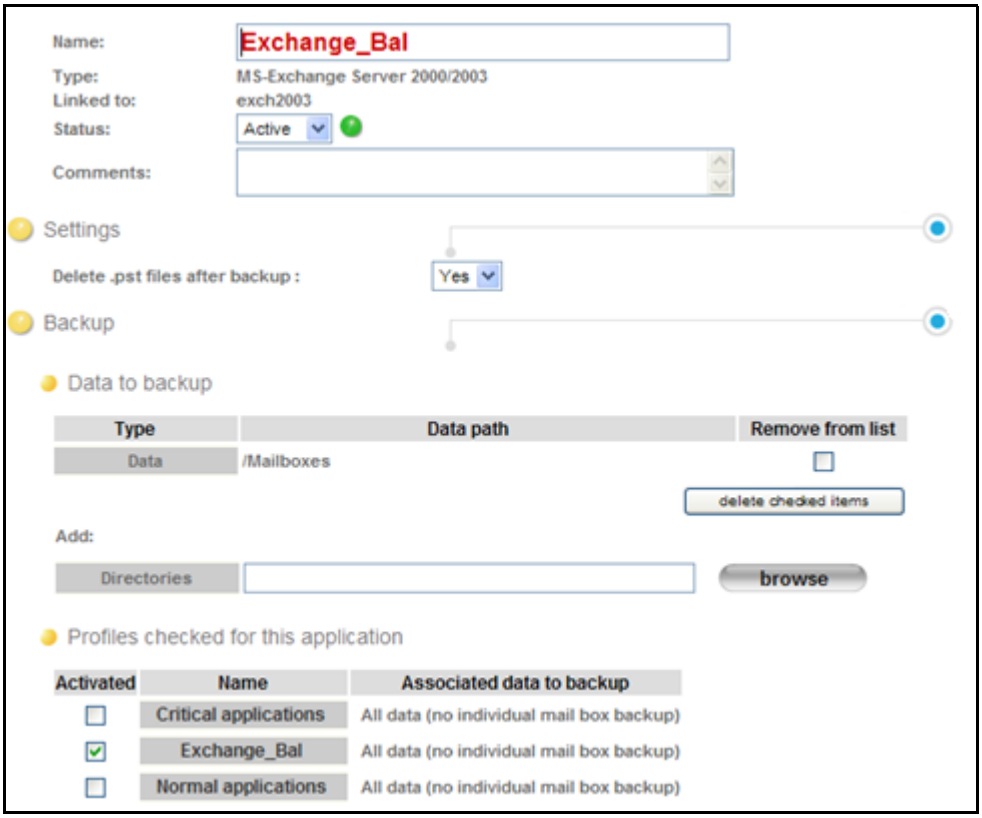
NOTE: If you modify the selection of mailboxes to back up, repeat the above procedure again.

Creating the "Exchange_BAL" application

An **Exchange_Bases** application is already created (see chapter 5) associated with Exchange_Bases profile, enabling **edb** and **log** backups.

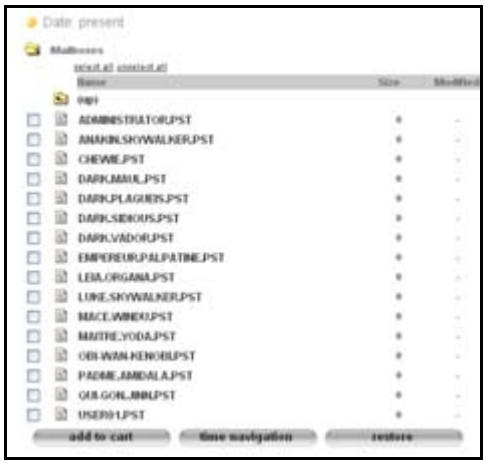
The **Exchange_Bal** application ensures a granular backup of Exchange Mailboxes. This feature is recommended to backup critical mailboxes (limited to 50). Otherwise, we recommend you backup using the file system method.

1 In the **settings/System** menu, click the **create new application** button to create a new application:



Selecting mailboxes

Browse the application to select valid mailboxes for backup or select the Mailboxes meta_object (limited to 50 mailboxes).



When you backup Mailboxes using the **exmerge** utility, a **Mailboxes** directory is created in the StoreWay DPA agent installation directory: **C:\Program Files\dpa\Mailboxes**, in which mailbox exports are performed.

By default, all mailboxes are visible with a size of 48 KB. This is a actually a generic sizing. During the backup process, an **exmerge** call is performed, exporting each mailbox one by one and backing them up successfully. You therefore need available space at least equal to the biggest mailbox on the partition agent on which it is installed.

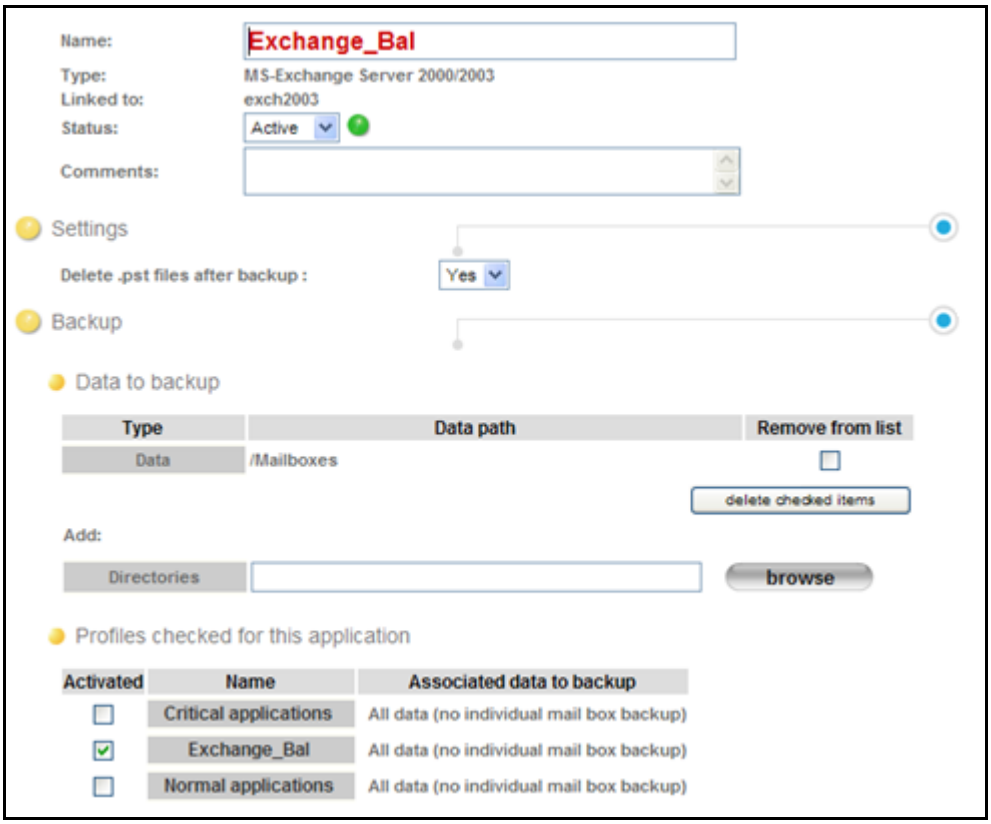
If the mailbox delete option is configured or not; the last export of each mailbox will be kept in this directory. You must therefore ensure that there is sufficient space on the partition where the agent is installed. This parameter enables you to keep the latest version of each mailbox on the local Exchange.

Creating the Exchange_Bal backup profile

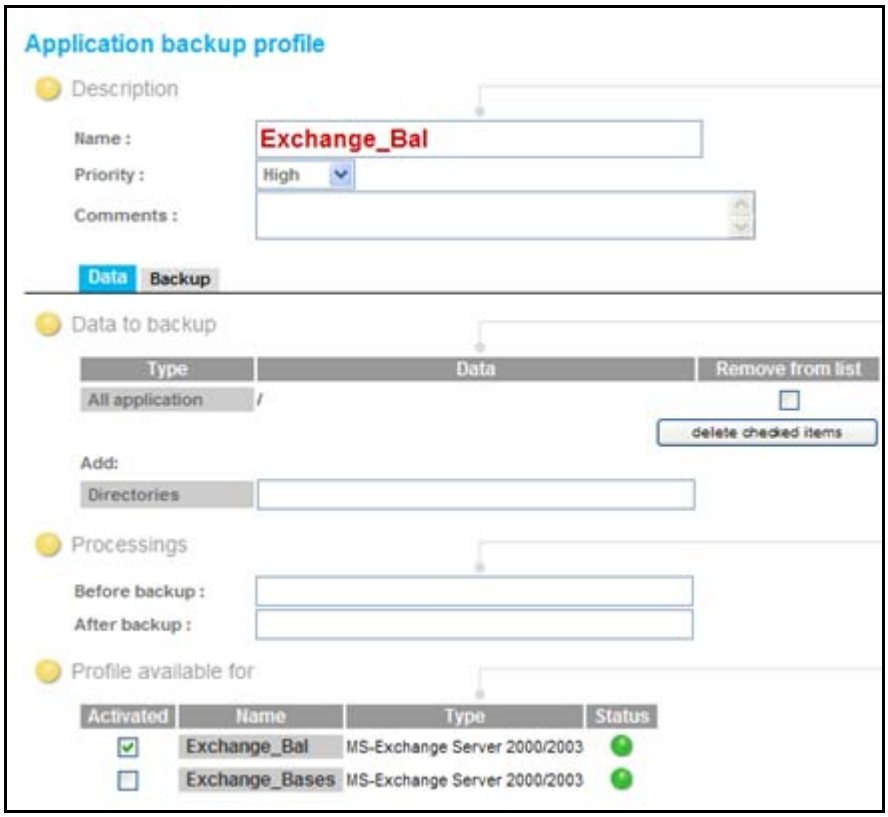
An Exchange_Bases profile has already been created (see chapter 5) dedicated to the Exchange_Bases application. Create a new Exchange_Bal profile (**settings/ Backups/Backup profiles**, click the **create application profile** icon and create an application type profile called “Exchange_Bal”), associated with the Exchange_Bal application to ensure granular Exchange mailbox backups.

NOTE: We strongly recommend backing up Exchange_Bases first. During incremental weekly backups, only logs are backed up. The backup is therefore very rapid and in the event of a major problem, the database backup, which has much greater volume, will allow you to recover the entire application.

Exchange_Bal Application



Exchange_Bal Profile



Chapter 7. Restoration

StoreWay DPA for MS-Exchange allows you to restore simply and rapidly all information contained in the MS-Exchange database. You can not only retrieve a missing database after a handling error or the loss of a disk, but also restore a database to the state it was in at a given date.

This chapter outlines some restoration principles, describes the **User interface** and details the method for restoring data. Recommendations are also provided to ensure the smooth restoration process. Finally, a restoration of the directory backup is given as an example.

See:

"Restoration overview" page 31

"Restoration restrictions" page 32

"Restoring a storage group" page 33

"Restoring one or several mailboxes" page 36

"Restoring a storage group without logs file" page 37

"Restoring the MS-Exchange server" page 38

Restoration overview

Database restoration means:

- At least one full backup.
- If necessary, an incremental log backup.

The smallest restoration unit (granularity) is the database file (*.edb).

To perform a database restoration, you need to overwrite the existing database.

A restoration must be followed by a full backup. This condition is linked to how MS-Exchange operates.

Internal database formats change between the different versions of MS-Exchange. As such, the restoration must be performed with an identical version of MS-Exchange to that used to backup.

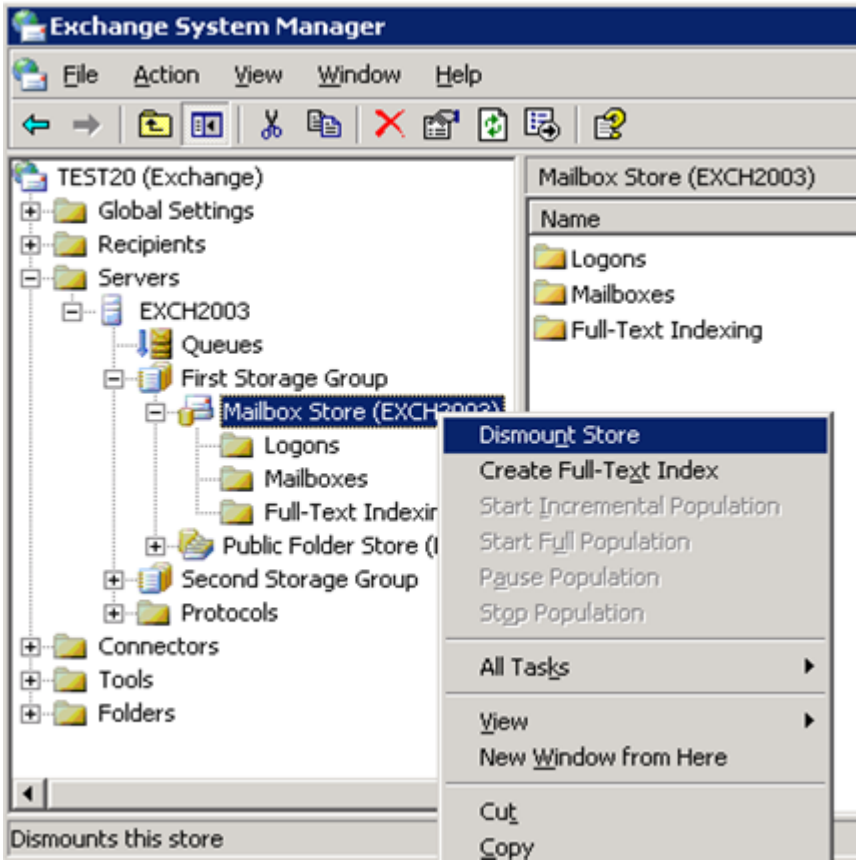
Restoration restrictions

- If, during a full backup, a database is dismounted in a group, this database is marked "missing". For reasons of log consistency, it is not possible to restore all data databases in the same group at the same time if these bases were backed up by different full backups (this can occur if, during a full backup, a group database is dismounted). In this case, after restoring, the database in question will not be correctly restored, and it will be necessary to perform a new restoration to only restore this database (and its logs).
- Closing the browser stops the launch of successive restorations.

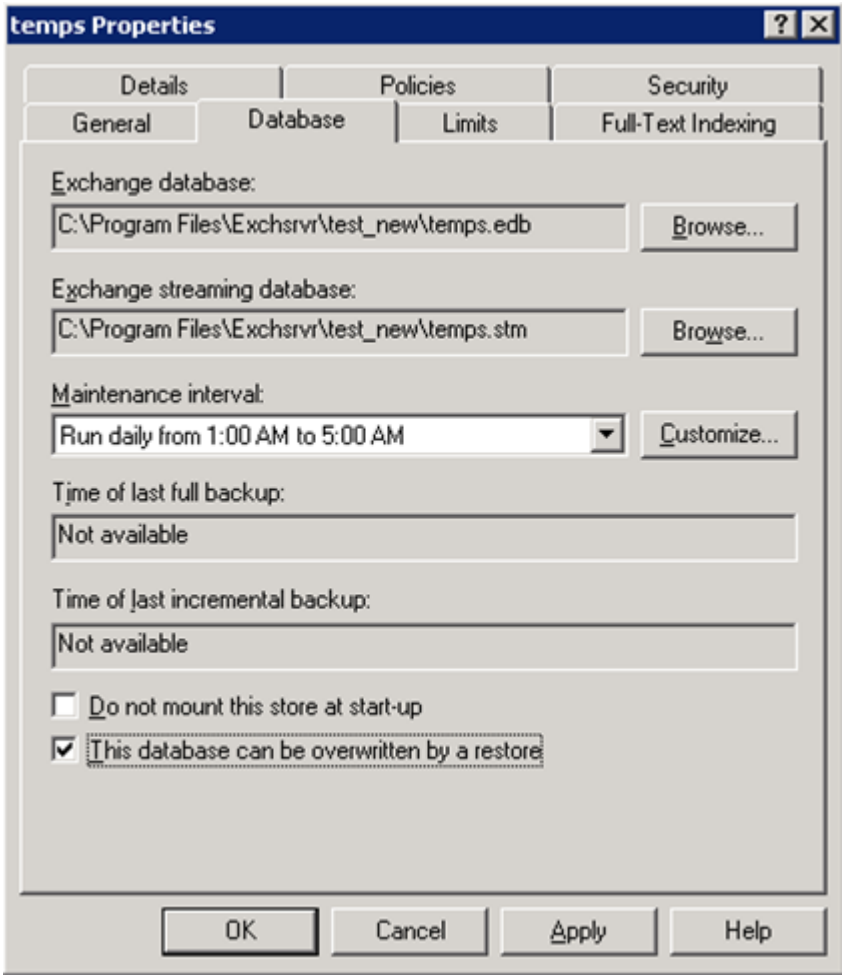
Restoring a storage group

1 Before restoring an Exchange database, perform these operations:

- In the Exchange Storage Manager, dismount the store.



- Authorize overwriting by a database restore.



2 In the StoreWay DPA interface, open a restoration interface for the Exchange_Bases application.

3 Position the time navigation on the required restoration date.

- Select the mailbox database corresponding to the last full backup performed up to this date in addition to log files corresponding to all incremental backups performed since:
- You can also select "Public folder store" to restore public folders.

4 Select restoration options:

Once the databases and logs to restore are selected, the restoration options are as follows:

- Automatic recovery at the end of restoration shows if the restoration must perform an automatic recovery, or if the Exchange administrator will do it manually: value **YES** or **NO** (allows you to replay logs at the end of the restoration).

- **Mounting databases at the end of restoration** shows if the database mounting must be performed automatically at the end of the restoration: value **YES** or **NO** (allows automatic database remounting).
- **Temporary restoration logs directory** shows if a temporary directory which will be used to restore Exchange logs (ensure there is enough available disk space before the restoration starts).

NOTE: The manual Recovery option (**NO**) at the end of the restoration is for advanced users only. In general, it is recommended to leave this parameter to **YES**.

5 Click **restore** to start the restoration.

In the Exchange System Manager interface, the restored database is remounted.

6 Restoring two storage groups

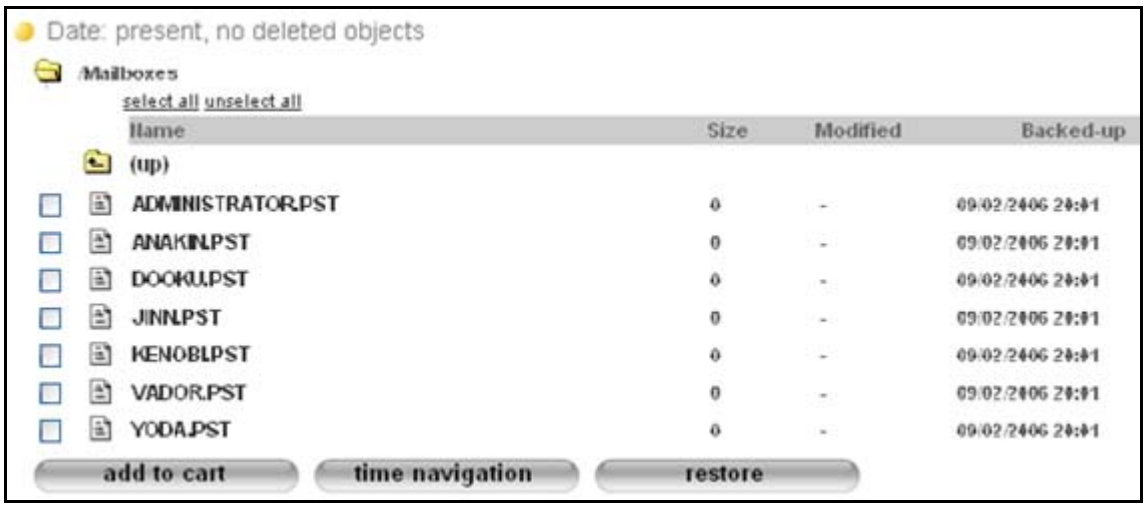
- If you want to restore 2 storage groups, you must first restore a first group by adding the database and the logs cart.
- Once the restoration is started and finished, click **back to browsing** and navigate to the second storage group. There, select the database and the logs.
- When you display the contents of the cart, select the 2 elements already restored and click **remove from cart**, you will now only have the data from the second group to restore.

You can restore a backup without backing up the logs. We will expand on this in the following chapter.

NOTE: After any restoration, we recommend you to perform a full backup of the MS-Exchange application.

Restoring one or several mailboxes

1 Open a restoration interface on the " Exchange_Bal " application on which Mailboxes are backed up.



2 Select the mailbox(es) you wish to restore, then start the restoration specifying the following parameters:

You **MUST** specify a destination path for the .pst files. This directory must already be created.

Choose **NO** for the first 2 restoration parameters (**Automatic recovery at the end of the restoration** and **Mounting databases at the end of the restoration**):

.PST objects will be restored in the chosen directory on the Exchange server (c:\resto in our example).

3 You can now exploit the restored .pst, either with **exmerge import**, or by opening the object with MS Outlook for example.

Restoring a storage group without logs file

This type of restoration remains exceptional because the user must use MS-Exchange tools. This chapter shows how to restore only using the **Mailbox Store** object in the StoreWay DPA interface.

To do this, the user must have the **isinteg.exe** and **eseutil.exe** tools.

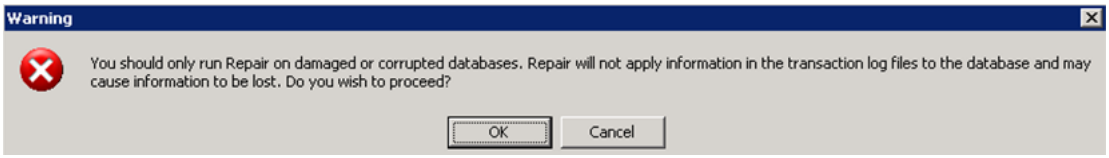
WARNING: This paragraph is for advanced users so you need to know about the two **isinteg.exe** and **eseutil.exe** tools before proceeding.

1 At the end of the restoration of the Mailbox Store object:

- Open a DOS command window.
- Go to the MS-Exchange bin directory.
- Enter the following command:

```
ESEUTIL.exe /P "Exchange_data_path\priv1.edb" /S "
Exchange_data_path\priv1.stm" /T c:\tempdb.edb
```

The following window opens.



2 Click **OK** to continue. The utility starts several job sequences.

The end of the program execution displays the following message:

Repair finished. The corrupted database has been repaired!

NOTE: We recommend you immediately execute a full database backup.

3 Remount the Mailbox Store.

NOTE: The Isinteg.exe utility searches for consistency errors in an offline information store. You can also repair detected problems with Isinteg.exe, see the Microsoft support website http://support.microsoft.com/?scid=kb%3Bfr%3B182081&x=14&y=15

Restoring the MS-Exchange server

You can restore the MS-Exchange server in the case of a serious incident which leads to the loss of the disk or even your operating system.

1. Reinstall Windows if required.

   You can restore Windows, using the option StoreWay DPA **Disaster Recovery for Windows**. See the user guide for this option (**Disaster Recovery Windows**).

2. Reinstall the MS-Exchange Server, in an identical manner to the missing server (same version of Exchange, same Service Pack level, same domain, same organisation, same Site name, same directory name...). Ensure the SA service is started.

3. Restore the exchsrvr directory, to retrieve the server parameters and configuration.

   Consult the online help for more information on the restoration in a file system.

4. Restore MS-Exchange databases.

5. Start MS-Exchange services.

Chapter 8. Appendix

FAQ

Can I backup data on client machines (personal Mailboxes)?

No. However, *.pst files can be backed up from time to time at file system level. It should be on the local user machine where backups are defined.

Why aren't all files backed up?

Special files such as res1.log, res2.log, edb.chk, and temp.edb are not backed up because they are not part of the restoration process.

Is there a size limit for backed up databases?

No, there is no limit for StoreWay DPA for MS-Exchange.

However, there are limits concerning MS-Exchange databases

(See Microsoft documentation).

Can I perform backups at any time?

Full backups can be performed without restriction. However, it is not possible to perform an incremental backup immediately after a restoration.

Should I back up configuration files?

Yes. Certain configuration files must be backed using the Exchange file system as shown in chapter 3, in the section on backup methods.

What should I do if the database does not mount after the restoration?

Open a DOS command window and go to the directory where **eseutil** is located and run this command:

```
eseutil.exe –cc /t
```

Chapter 9. Introduction to the StoreWay DPA for Exchange Snapshot Agent

Associated with the StoreWay DPA Exchange 2000/2003 Snapshot agent, StoreWay DPA DiskSafe provides the possibility of backing up in block mode to integrate the partition hosting the Exchange data.

This means that a Snapshot image can be mounted extremely rapidly and reliably of all Exchange data.

The Message Recovery for Exchange utility allows you to restore in two modes: **merge** or **copy** of E-mails by mounting a Snapshot across the Exchange Recovery Storage Group (RSG).

NOTE: This requires Exchange 2003 SP1 minimum.

Prerequisites

StoreWay DPA DiskSafe must be installed and operational: the application partition must be protected (see the DiskSafe documentation: Module DiskSafe).

Chapter 10. Installing the Snapshot agent for Exchange

Prerequisites to installing the Snapshot agent

> The Snapshot agent must be installed on the server hosting the Exchange application.

> Exchange must be active before installing the agent.

> You must be an administrator or have sufficient privileges to install the StoreWay DPA Exchange 2000/2003 Snapshot agent.

NOTE: **You cannot install the SnapShot agent on Exchange 2007.**

Installing the Snapshot agent

The 30-day evaluation license number for the Snapshot Agent Exchange is :

6WJ14HNBMF9K9L95X9LL53VXE

Install the Snapshot agent

1. Insert the CD-ROM **StoreWay DPA Initial Setup (Windows), Agents (Windows, Linux, Netware, MAC OS), Graphical User Interface Setup, ASM & Disaster Recovery Agents Windows) Version X.X.XXX** on the Windows server you wish to protect.

   A web page opens.

   NOTE: If the web page does not open, start the installation from the CD, by starting the install.htm script program from the CD-ROM.

   Select **Exchange 2000/2003 Snapshot agent** and follow the wizard.

   Enter the permanent licencse number or alternatively enter the 30-day evaluation license number for the Snapshot Agent Exchange (see above for this license key).

2. Start the **StoreWay DPA Exchange 2000/2003 Snapshot agent**.

   Menu **Start/Programs/SAN Client/Tools/Snapshot for Exchange Configuration**.

3. Enter the Exchange administrator user name and password:

4. Click **OK** to finalize the configuration.

Chapter 11. Protecting partitions and managing Snapshots

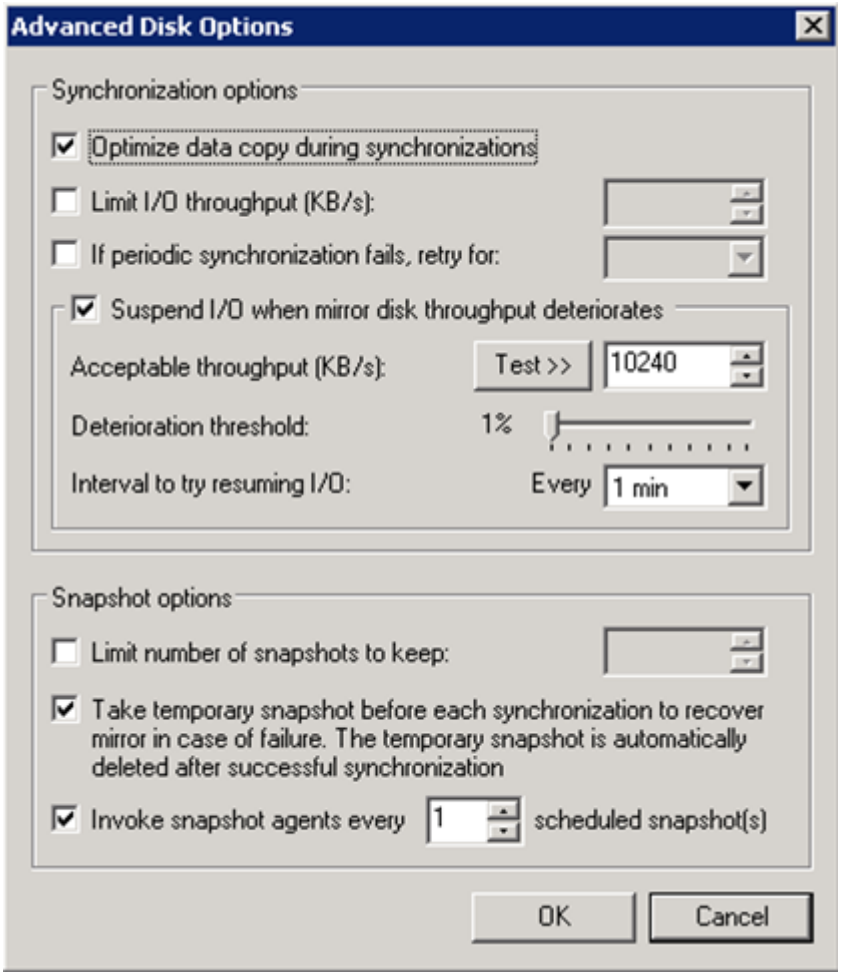
See:

"Protecting the application partition" page 43

"Mounting a Snapshot" page 45

Protecting the application partition

> On DiskSafe, select the checkbox **Invoke Snapshot agents every ...** to guarantee the application consistency when a Snapshot is taken (synchronization points).

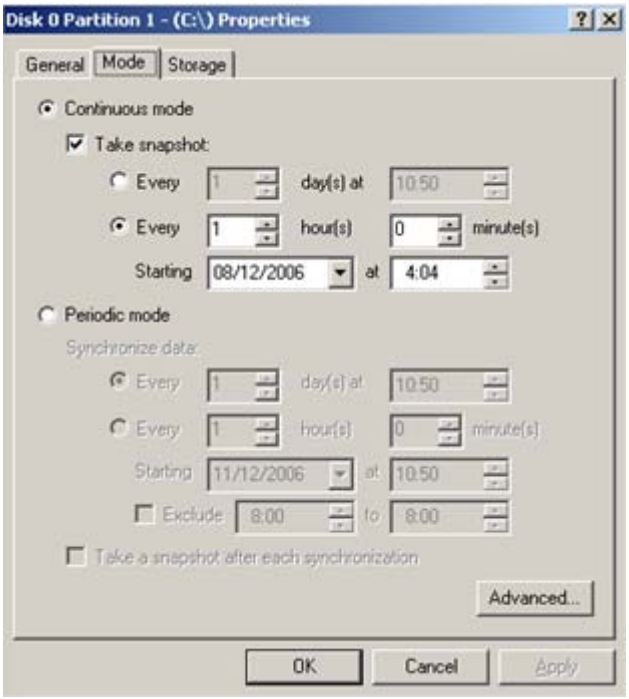


Start an immediate synchronisation.

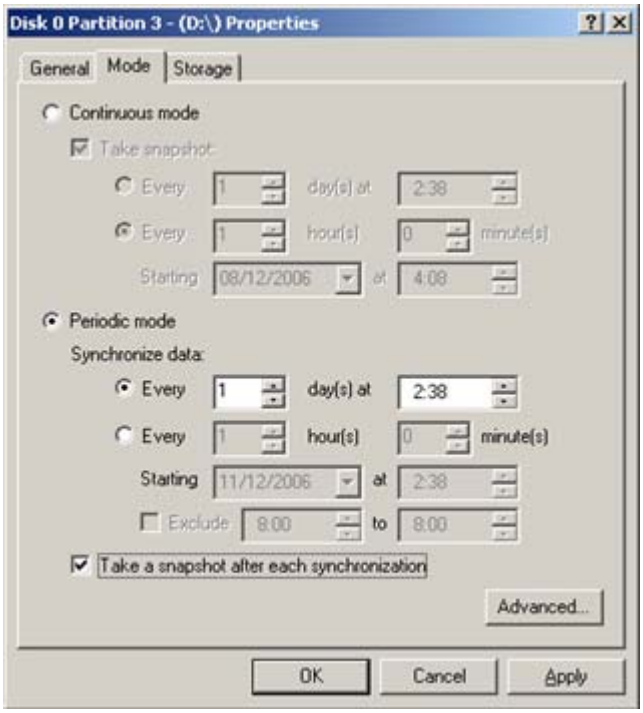
> In **DiskSafe / Protected Storage / Disks** right click the disk hosting the application. and select **Advanced / Take Snapshot**.

Modify and / or validate synchronization schedules

1. On **DiskSafe / Protected Storage / Disks** – right click the disk hosting the application.
2. Open **Properties** then select the **Mode** tab to modify synchronization schedules. There are two modes available:



- **Continuous mode** with the Snapshot **frequency** option and start times.
- The Continuous mode enables real-time synchronization of the partition hosting the Exchange data (**MDBDATA**): ***.edb**.
- This mode must include regular scheduled Snapshots (StoreWay DPA DiskSafe allows you to manage up to 32 Snapshots online on the StoreWay DPA disk) to manage the versioning in the event of an integrity problem with the databases.
- **Note**: It is important to take scheduled Snapshots.



- **Periodic mode** with the Snapshot **frequency** option and start times.
- The Periodic mode enables scheduled synchronizations at specific intervals of time of the partition hosting the Exchange data (**MDBDATA**): ***.edb**.
- It is important to follow these synchronizations with a Snapshot (DiskSafe for StoreWay DPA allows you to manage up to 32 Snapshots online on the StoreWay DPA disk) to manage the versioning in the event of an integrity problem with the databases.
- **Note**: It is important to take scheduled Snapshots.

For more information see the **DiskSafe** documentation.

Mounting a Snapshot

Display available Snapshots

1. On DiskSafe click **Snapshots/Disks.**
2. Click the protected disk to display the list of Snapshots.
3. Right click the Snapshot then click **Mount Snapshot** to immediately mount it as a local system disk.

   NOTE: If the disk was not immediately mounted, select the partition on Disk Management on the system disk manager to allocate a letter to the partition.
4. Display this new "local" disk: the system allocates the first available "letter". You will se that it has the same characteristics as your system disk. Partitions D and G represent the same data, G being the Snapshot of partition D.

Check the protected disk and its mirror

1. On **DiskSafe/Protected Storage/Disks** right click the disk hosting the application.
2. Select **Properties**, then the **Storage** tab to display details of the Primary (local) disk and the Mirror Disk (StoreWay DPA Disk).

Chapter 12. Recovering databases

Recovering databases can be performed using two methods which both retrieve the application partition:

> Total recovery.

> Partial recovery: typically allows you to restore **priv.edb** or **pub.edb** files.

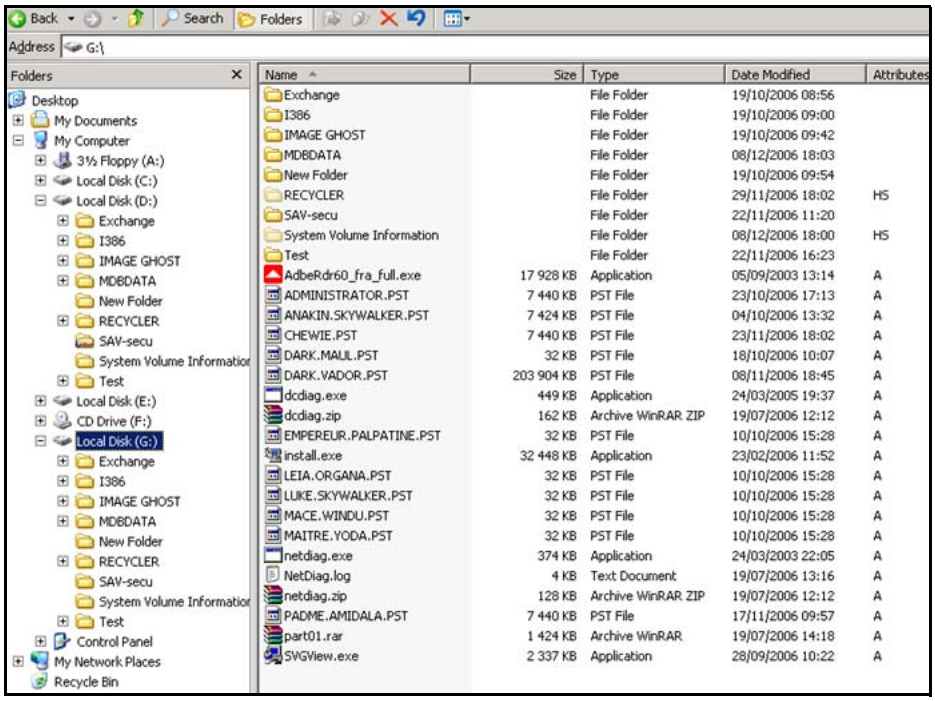
Total recovery of the application partition

1. Start DiskSafe by right-clicking and selecting **Manage** on the workstation or **Start/Programs/DiskSafe**.
2. On **DiskSafe/Protected Storage/Disks** right click the disk hosting the application and click **Restore**. The options are:
   - Restoration on the Original Primary disk
   - Restoration to another partition (new target)
3. Select the restoration mode and click **restore**.
4. At the end of the restoration, reboot the system.

Partial Exchange data recovery

1. Start DiskSafe by right-clicking and selecting **Manage** on the workstation or **Start/Programs/DiskSafe**.
2. On **DiskSafe/Protected Storage/Disks** right click the disk hosting the application and click **Restore.**
3. Click **Mount Snapshot** to mount the partition on which Exchange (MDBDATA) application data are hosted: in our case (D:\).
   - The selected Snapshot will be mounted based on the required data recovery date and time.
   - Once the Snapshot is mounted, **Yes** appears on the line corresponding to the selected Snapshot.
   - Depending on Windows parameters, you can see that the Snapshot is flagged as being mounted, but that the mounted disk is not visible in the Windows Explorer or Workstation. In this case, you need to select the partition on Disk Management in the System Disk Manager to allocate a letter to the partition which enables you to display it on Windows as a local disk.
   - The mirror partition is visible on the server workstation where it is associated with the first available letter.
4. You simply need to explore the new disk to select data to restore by copying and pasting this data to its original location.

   The screen below displays the 2 partitions D:\: D:\ "in the present" and G:\ the mounted Snapshot of D:\ at the chosen time (cloned to H:\ or J:\ – X:\).



5 You can now select the entire MDBDATA directory to restore the complete Exchange application (data applications).

WARNING: **You must stop Exchange beforehand**.

Chapter 13. Recovering E-mails

See:

"Prerequisites to recovering e-mails" page 49

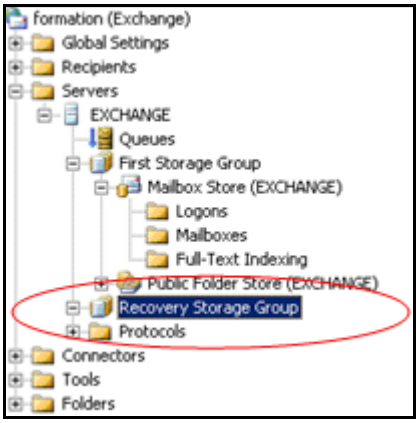
"Installing the MRME agent" page 50

"Recovery process overview" page 51

Prerequisites to recovering e-mails

WARNING: This solution only applies to Exchange 2003 SP1 or higher.

- The StoreWay DPA DiskSafe agent must be installed.
- The StoreWay DPA Snapshot agent must be installed.
- You must be an administrator or have the required privileges to install the Message Recovery for Microsoft Exchange (MRME) agent.
- The Recovery Storage Group must already be created on Exchange 2003, as the following screen shows:



Installing the MRME agent

The MRME aget is supplied with a specific user license if you have ordered this option.

If you are not inpossession of a permanent license, you can use the 30-day evaluation license for this product: **R3408XTN3D5L3PGH6JCCMQU9K**

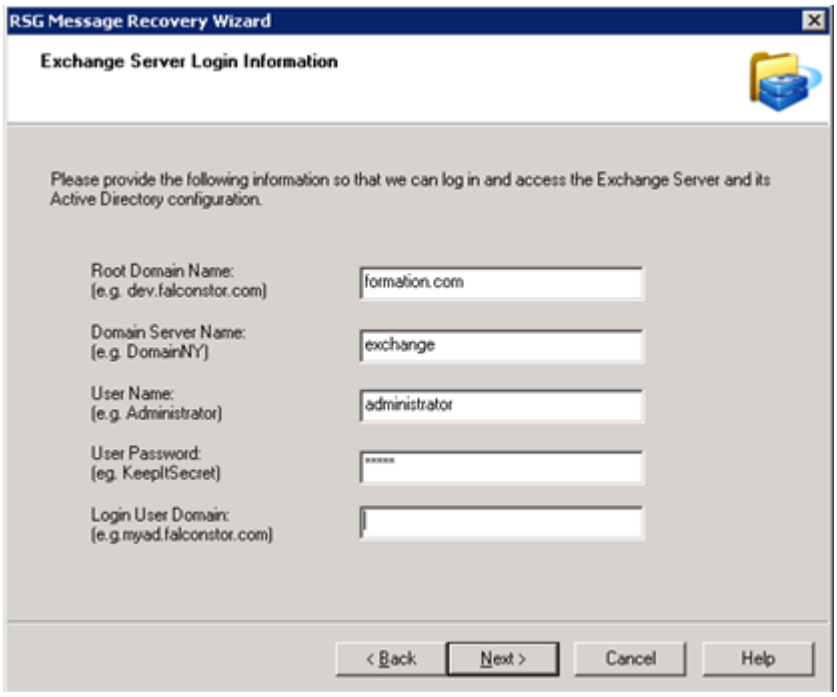
1. Insert the **StoreWay DPA Initial Setup (Windows), Agents (Windows, Linux, Netware, MAC OS), Graphical User Interface Setup, ASM & Disaster Recovery Agents Windows) Version X.X.XXX** CD-ROM into the drive and start the setup program if it does not start automatically.
2. Click **Next** and follow the Wizard.

Recovery process overview

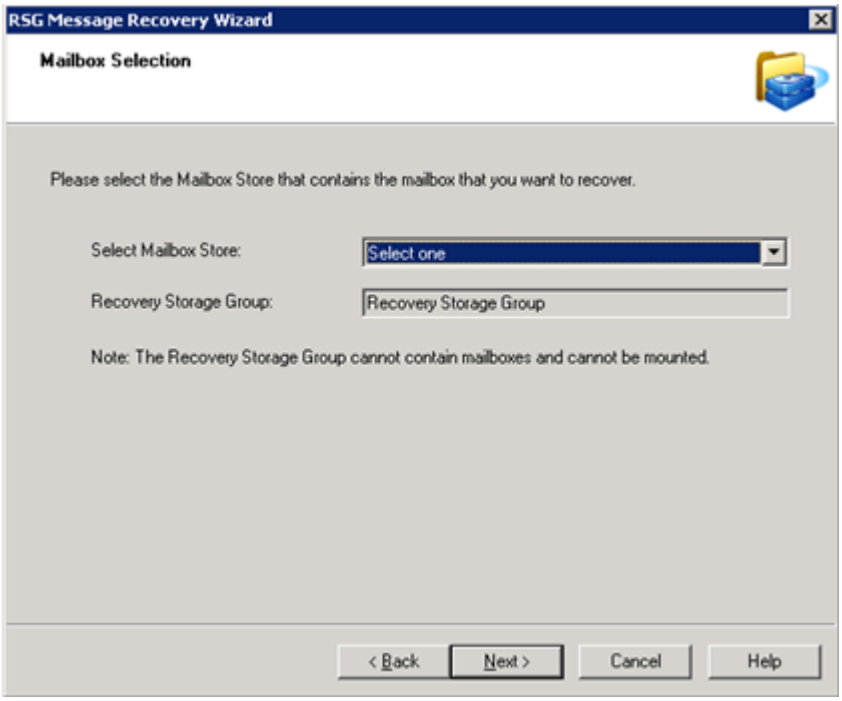
The "mirror" partition will be mounted and mapped on the 1st available letter. The mirror disk is considered as a local disk. The StoreWay DPA Snapshot agent guarantees application consistency when this Snapshot is taken.

Recovering individual mailbox E-mails takes place from the partition Snapshot which contains the **priv.edb** database containing the mounted mailboxes using **RSGen** to merge or copy E-mails in the selected mailboxes.

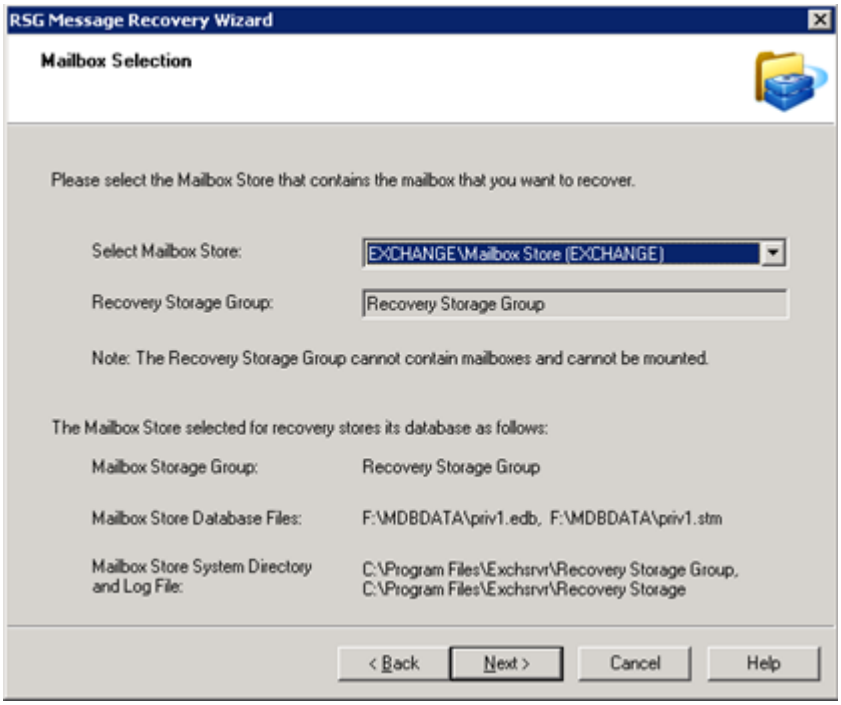
1. Start the application **Start / Programs / Message Recovery for Microsoft Exchange**
2. Select **File Recovery Email using a Recovery Storage Group**.
3. Enter Exchange Server Login information in the screen below:



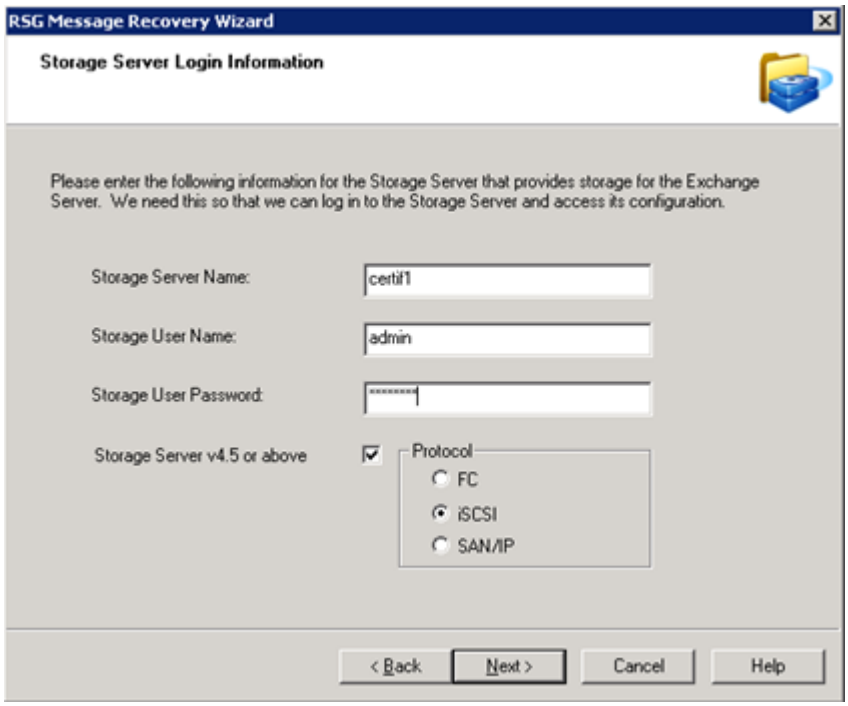
4. Select the Mailbox Store.



5 Click **Next**.

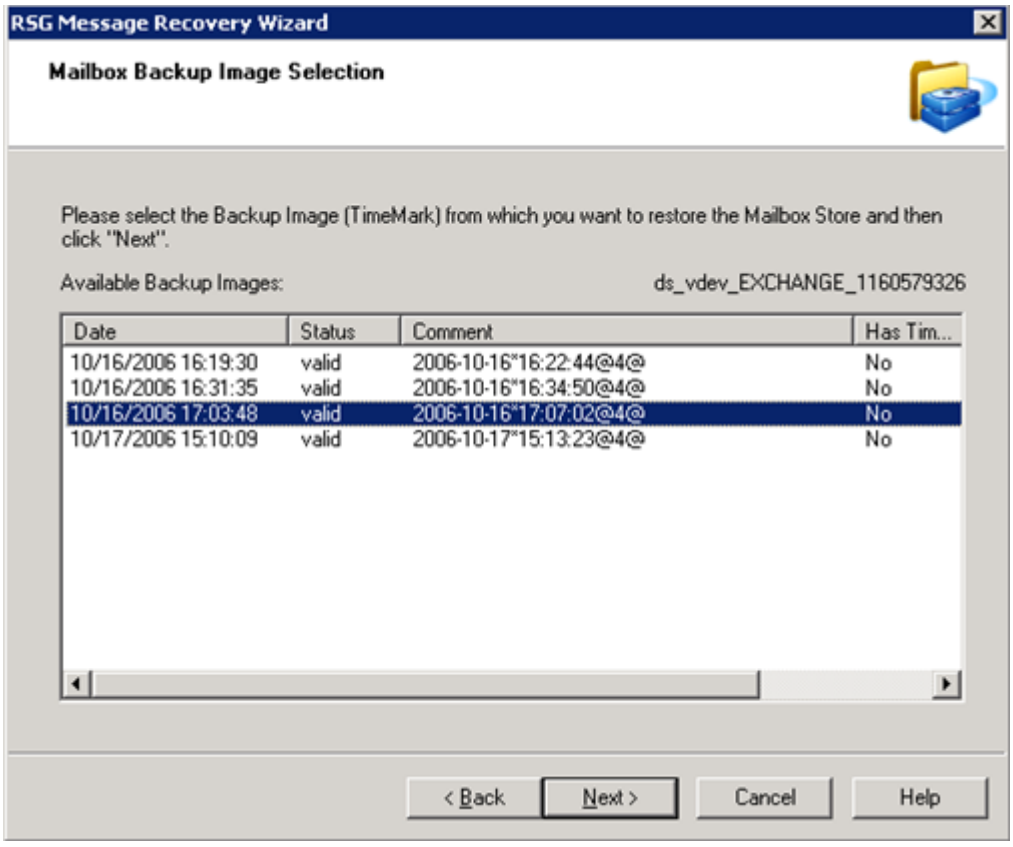


6 Enter StoreWay DPA login details (admin, user name and password).



7 Click **Next** to start the operation.

8 Select the Snapshot to mount, from which data will be restored.



9 The finish summary is displayed. Validate the operation: the Mailbox Store is available from the Recovery Storage Group.

10 Click **Finish**.

Mounting and mapping the Snapshot (Drive Local/RSG)

1. Access the Mailbox Store in the Exchange System Manager.
2. To mount the data base, click **Yes**.
3. Wait for the database to mount (until you see a message confirming the store is mounted).
4. Access the user Mailboxes.
5. Select the Mailbox containing the mails to reintegrate into the First Storage Group mailbox.
6. Right click **Exchange Tasks** to merge or copy the mails.

   NOTE: You do not need to close the Exchange mailbox.
7. Start the Exchange Task Wizard:
8. Choose the **Merge Data** or **Copy Data** mode:

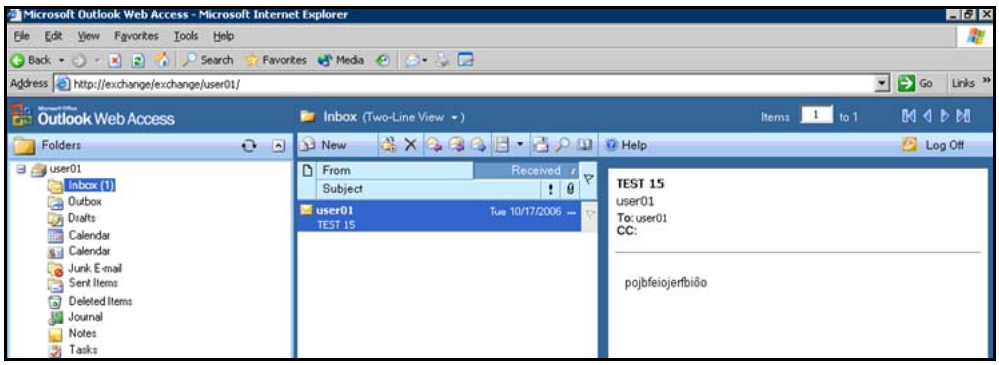
Case #1 Merge Data mode

1. Select **Merge Data** then **Next**.

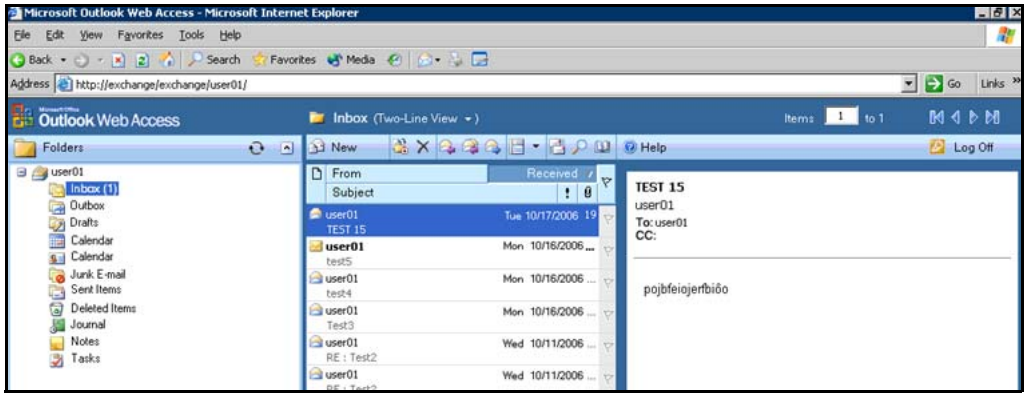
   NOTE: You can, if necessary, enter the required recovery period by indicating start and finish dates.

   WARNING: This process can use significant resources on the Exchange server, in terms of memory, CPU).
2. Click **Next** to start the process.
3. Wait then click **Next** to obtain the Wizard completion screen

   Below is the example of a User View (user01) on Outlook Web Access: Missing E-mail merged with the current E-mail before or after the loss of information:



After the loss of information and before the merge.

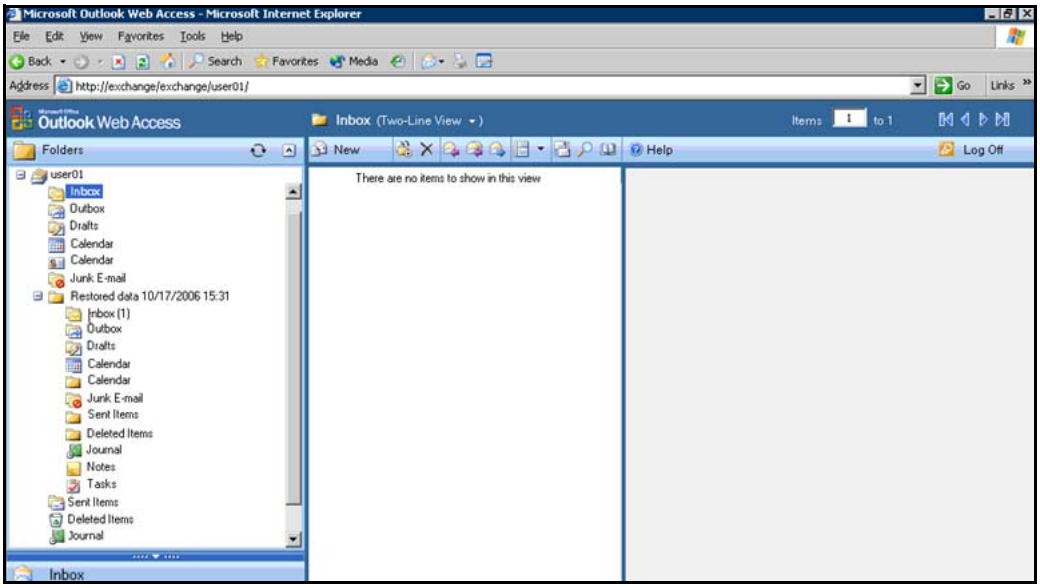


After the loss of information and after the restoration with a merge.

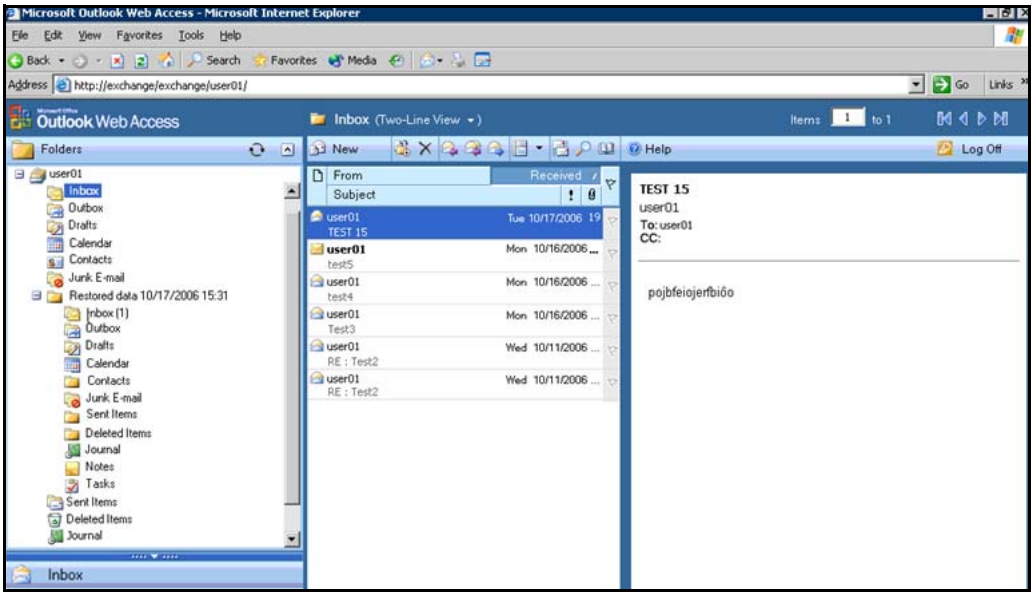
Case #2: Copy Data mode

1. Click **Next** to start the process.
2. Wait then click **Next** to obtain the final screen

   Below is an example of a User View (user01) on Outlook Web Access Missing E-mail merged with the current E-mail before or after the loss of information. Note the presence of a new directory called "Restored data + date + time":



3. View restored E-mails by opening this new directory.



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