

Exchange 2010/2013/2017 restore guide

with TSM (Spectrum Protect)

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Restore

Restore into a recovery database

In most cases, a restore of a mail or a mailbox is done with the use of a recovery database. This will assure that the restored data is restored outside of the production environment, and does not affect the running exchange server.

Prerequisites:

Enough space on a local drive, to hold the restored mailbox database. This should be the size of the existing .edb file + additional space to the restored logfiles. The restore will fail, if the Exchange server is unable to allocate the needed disk space.

Knowledge of which mailbox database the user is/was located in.

Create a recovery database

The Recovery database must be created with the “Exchange Management Shell”:

```
New-mailboxdatabase -Name 'RDB1' -Server Exch2013 -EdbFilePath 'E:\restore\rdb1.edb' -LogFolderPath 'E:\restore' -Recovery
```

The line above will create a recovery database with the name of “RDB1” on the exchange called “Exch2013”. It will use the drive and folder called “E:\restore” and an edbfile name called “rdb1.edb”

The names and paths should be changed to match the current environment.

Select the data for restore

Start “DP for Exchange Management Console” and go to the “recover” tab:



The default view will list all database's active backup:

View: Database Restore Show Filter Options Show Restore Options Run Interactively							
Select All Clear All Refresh Active Backups Search:							
Name	Restore Into	Mounted As	From DB Copy	Backup Type	Backup Location	Backup Date	Size (GB)
Mailbox Database 0405262174			No	Full	TSM	18-02-2015 13:29	0,27
Mailbox Database 0405262174			No	Incremental	TSM	18-02-2015 13:52	0,01
Mailbox Database 0405262174			No	Incremental	TSM	18-02-2015 13:57	0,01
db1			No	Full	TSM	18-02-2015 13:29	0,27
db1			No	Incremental	TSM	18-02-2015 13:52	0,01
db1			No	Incremental	TSM	18-02-2015 13:57	0,01
db2			No	Full	TSM	18-02-2015 13:29	0,27
db2			No	Incremental	TSM	18-02-2015 13:52	0,01
db2			No	Incremental	TSM	18-02-2015 13:57	0,01

This will be the latest full, followed by one or more incremental backup. If an older copy is needed, select the “Active Backups” button. This will list all backups of all databases:

Notice the “backup state” section, some will be listed as inactive, as they are an older version of the one called “active”.

Name	Restore Into	Mounted As	From DB Copy	Backup Type	Backup Location	Backup Date	Size (GB)	Instant Restore Supported	Backup State	Management Class
Mailbox Database 0405262174			No	Full	TSM	18-02-2015 13:17	0.28	No	Inactive	EXCHANGE140
Mailbox Database 0405262174			No	Full	TSM	18-02-2015 13:25	0.26	No	Inactive	EXCHANGE140
Mailbox Database 0405262174			No	Incremental	TSM	18-02-2015 13:28	0.0078	No	Inactive	EXCHANGE140
Mailbox Database 0405262174			No	Full	TSM	18-02-2015 13:29	0.27	No	Active	EXCHANGE140

The general rule is, that when a new full backup is being performed, the existing full (plus incremental) will be marked as “inactive”. When an object is marked as “inactive” the “management class” will apply, and determine when it will be deleted. As shown above, the default management class is called “exchange14d” that will keep inactive backups for 14 days.

If needed a filter can be applied to the view, to limit the amount of data being displayed. Select “show filter options” and fill out the filter as required:

Logical Operator	Column Name	Operator	Value
	Name	=	db1

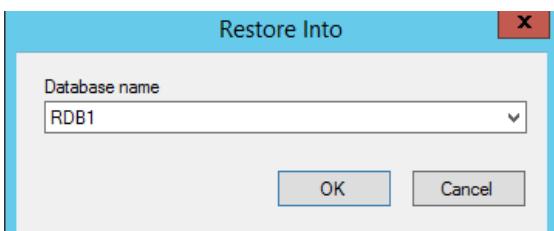
There are several ways of using it, depending on the need. Click “apply filter” in order to apply it.

Start the restore

When data the data has been found and marked, it is very important, that the recovery database is selected as target for the restore. Right on the objects and choose “restore into”:



Choose the previously created recovery database in the box:

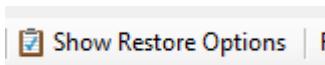


And click “ok”

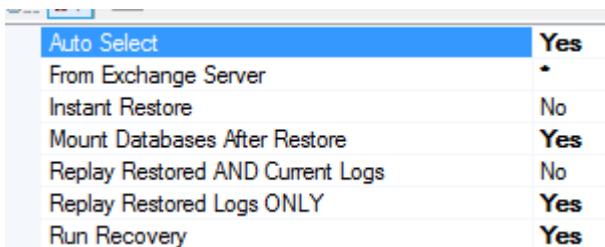
Make sure all of the selected objects is target for the same recovery database:

Name	Restore Into	Mounted As	From DB Copy	Backup Type
db1			No	Full
db1			No	Full
db1			No	Incremental
db1	RDB1		No	Full
db1	RDB1		No	Incremental
db1	RDB1		No	Incremental

Now click the “show restore options” button:

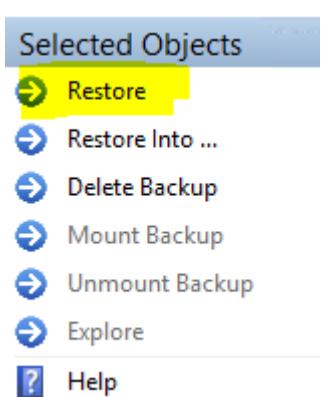


In the case a recovery database, as this one, is being used, make sure the settings are as so:



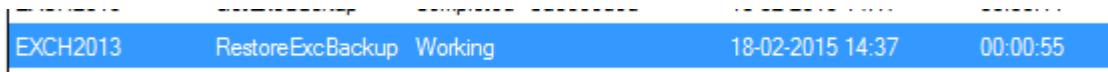
This will make sure, that only the restored logs is applied, and are being used to bring the database ahead in time. When it is done, the database will automatically be mounted.

Now select “restore”:

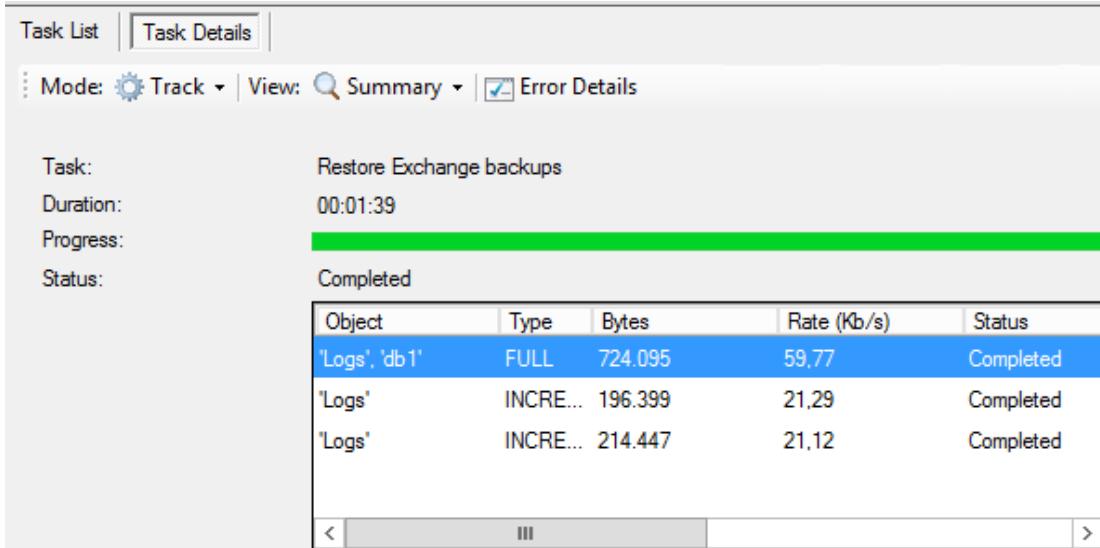


A warning will be displayed, accept this one, as no local vss backups is being used.

The restore will start, and is listed in the task view:



When it's done, it can be found in the "task details" view:



Object	Type	Bytes	Rate (Kb/s)	Status
'Logs', 'db1'	FULL	724.095	59.77	Completed
'Logs'	INCRE...	196.399	21.29	Completed
'Logs'	INCRE...	214.447	21.12	Completed

The database is now restored and mounted on the exchange server.

Extract data from a recovery database

When a mailbox database has been restored into a recovery database, it will contain a copy of the original mailbox database.

In order to merge or extract data from the recovery database into the current mailbox database, the Exchange Management Console must be used.

To view all the mailboxes in the restored recovery database, use:

```
Get-MailboxStatistics -Database RDB1
```

In our case this will display:

```
[PS] C:\Windows\system32>Get-MailboxStatistics -Database RDB1
DisplayName          ItemCount   StorageLimitStatus
-----          -----
SystemMailbox{e0a9c644... 1
Personal Archive - Hea... 0
HealthMailbox4fd10d2b8... 29
Personal Archive - Hea... 0
HealthMailboxe0a9c644d... 1
jens jensen.          6
```

To search for a specific display name, use:

```
Get-MailboxStatistics -Database RDB1 | ?{$_DisplayName -like 'jens*'}
```

And only the "jens jensen" will be listed. This can be helpful if the mailbox database contains many users.

More information can be found at: <https://technet.microsoft.com/en-us/library/bb124612>

We will now restore the entire mailbox from the user:

```
New-MailboxRestoreRequest -SourceDatabase RDB1 -SourceStoreMailbox 'jens Jensen.' -TargetMailbox db1test
```

```
[PS] C:\Windows\system32>New-MailboxRestoreRequest -SourceDatabase RDB1 -SourceStoreMailbox 'jens jensen.' -TargetMailbox db2test
Name                                TargetMailbox          Status
MailboxRestore                       half.local\Users\jens jensen.  Queued
[PS] C:\Windows\system32>
```

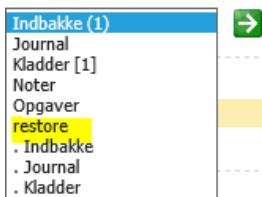
To verify the process, run:

```
Get-MailboxRestoreRequest | Get-MailboxRestoreRequestStatistics
```

```
[PS] C:\Windows\system32>Get-MailboxRestoreRequest | Get-MailboxRestoreRequestStatistics
Name                                StatusDetail      TargetAlias          PercentComplete
MailboxRestore                       Completed        db2test             100
[PS] C:\Windows\system32>
```

If the inbox should be restore to another user, but into a subfolder, it can be done like so:

```
New-MailboxRestoreRequest -SourceDatabase RDB1 -SourceStoreMailbox 'jens jensen.' -TargetMailbox db2test -TargetRootFolder Restore -AllowLegacyDNMismatch
```



More information can be found at

<https://technet.microsoft.com/en-us/library/ff829875%28v=exchg.150%29.aspx>

It is also possible to restore a single folder, including well-known folders like:

- Inbox
- SentItems
- DeletedItems
- Calendar
- Contacts
- Drafts
- Journal
- Tasks
- Notes
- JunkEmail
- CommunicationHistory
- Voicemail
- Fax
- Conflicts
- SyncIssues
- LocalFailures
- ServerFailures

If they are restored with "#Inbox#", localization will not apply meaning "inbox" will be equal to "indbakke"

It could be made like so:

```
New-MailboxRestoreRequest -SourceDatabase RDB1 -SourceStoreMailbox test -TargetMailbox administrator -IncludeFolders '#Inbox#'
```

If needed, there is also an “*ExcludeFolders*” that works in the same way.

Please notice the difference between the “*DisplayName*” and “*Mailbox*” when using the “*New-MailboxRestoreRequest*”.

If it's not done in the correct way, it may report that the mailbox is missing. A more detailed search can be made like so:

```
Get-MailboxStatistics -Database RDB1 | ?{$_._DisplayName -like 'hans*'} | Format-List
```

It will output information like so:

```
[PS] C:\Windows\system32>Get-MailboxStatistics -Database RDB1 | ?{$_._DisplayName -like 'hans*'} | format-list
RunspaceId          : ce6121fb-2946-4344-8a37-dced40f2cfab
AssociatedItemCount : 14
DeletedItemCount    : 0
DisconnectDate      :
DisconnectReason    :
DisplayName          : hans hansens
ItemCount            : 14
LastLoggedOnUserAccount:
LastLogoffTime      :
LastLogonTime        :
LegacyDN             :
MailboxGuid          : ad62f68f-f08d-4526-b1fc-a27249afca7c
MailboxType          : Private
ObjectClass          :
```

The *MailboxGuid* can be usefull as this is accepted in the *SourceStoreMailbox* parameter:

The *SourceStoreMailbox* parameter specifies the identity of the mailbox from which you want to restore content. This parameter accepts the following values:

- MailboxGUID
- LegacyExchangeDN
- DisplayName

This means it can be done like so:

```
[PS] C:\Windows\system32>New-MailboxRestoreRequest -SourceDatabase RDB1 -SourceStoreMailbox 'ad62f68f-f08d-4526-b1fc-a27249afca7c' -TargetMailbox 'test' -TargetRootFolder 'hans hansens mailbox' -AllowLegacyDNMismatch
```

Name	TargetMailbox	Status
MailboxRestore	half.local\Users\Test\test. Testen	Queued

The *TargetMailbox* is different:

The *TargetMailbox* parameter specifies the identity of the mailbox or mail user to which you want to restore content. The target mailbox or mail user needs to exist before you can run this command successfully. This parameter accepts the following values:

- GUID
- Alias
- LegacyExchangeDN
- *Domain\Account Name*
- SMTP address

Normally the Alias is used, as this would the logon name.

A reverse search can be made with “get-mailbox” like:

Get-mailbox –anr db2test

[PS] C:\Windows\system32>Get-Mailbox –anr db2test			
Name	Alias	ServerName	ProhibitSendQuota
hans hansen.	db2test	exch2013	Unlimited

The “-anr” is used to search across multiple attributes:

The *Anr* parameter specifies a string on which to perform an ambiguous name resolution (ANR) search. You can specify a partial string and search for objects with an attribute that matches that string. The default attributes searched are:

- **CommonName (CN)**
- **DisplayName**
- **FirstName**
- **LastName**
- **Alias**

When the restore is complete, the recovery database can be removed:

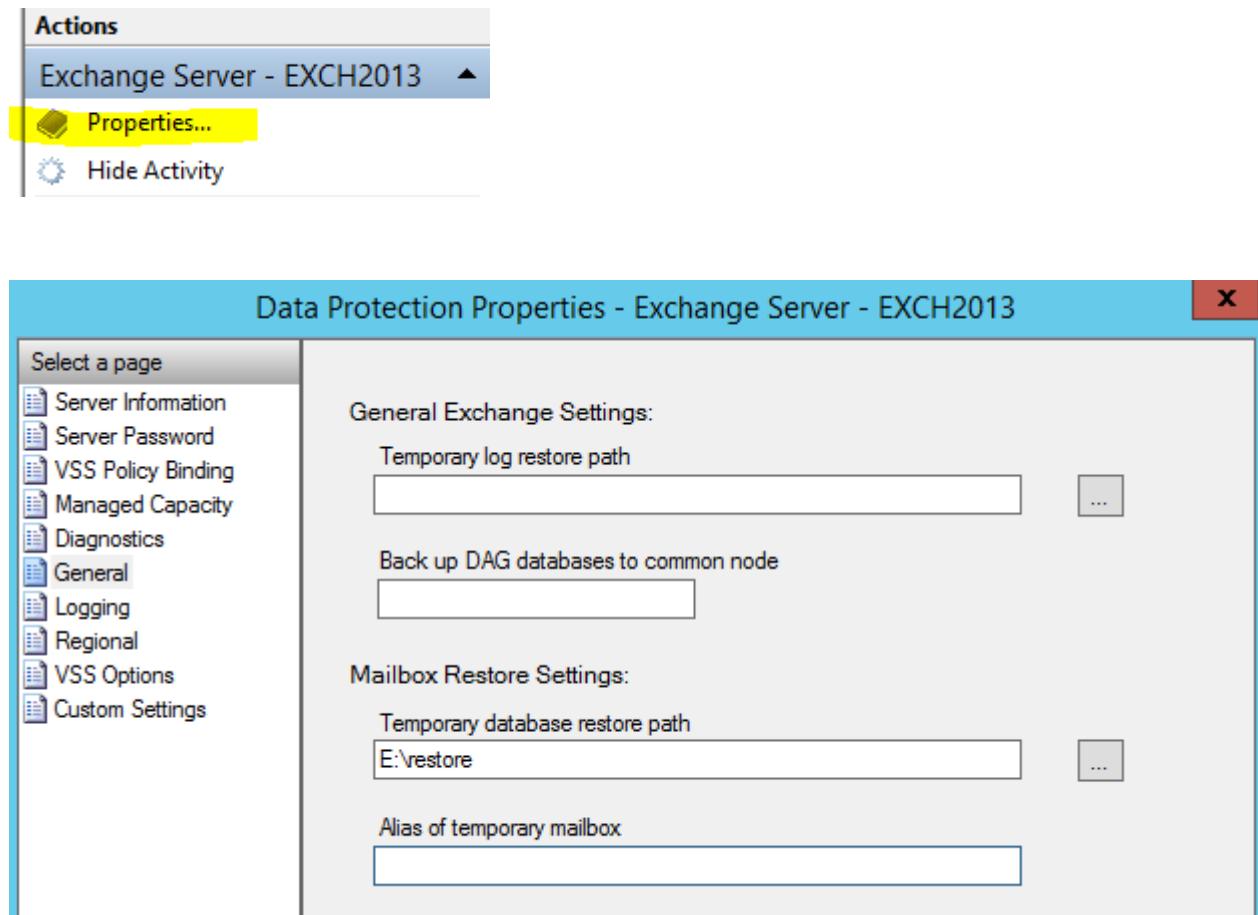
Remove-MailboxDatabase –Identity RDB1

```
[PS] C:\Windows\system32>Remove-MailboxDatabase –Identity RDB1
Confirm
Are you sure you want to perform this action?
Removing mailbox database "RDB1".
[Y] Yes [A] Yes to All [N] No [L] No to All [?] Help <default is "Y">: y
WARNING: The specified database has been removed. You must remove the database file located in E:\restore\rdb1.edb from
your computer manually if it exists. Specified database: RDB1
[PS] C:\Windows\system32>
```

Mailbox database browser:

Prerequisite

Set the temporary database restore path:



Actions

Exchange Server - EXCH2013 ▲

Properties...

Hide Activity

Data Protection Properties - Exchange Server - EXCH2013

Select a page

- Server Information
- Server Password
- VSS Policy Binding
- Managed Capacity
- Diagnostics
- General
- Logging
- Regional
- VSS Options
- Custom Settings

General Exchange Settings:

Temporary log restore path

Back up DAG databases to common node

Mailbox Restore Settings:

Temporary database restore path

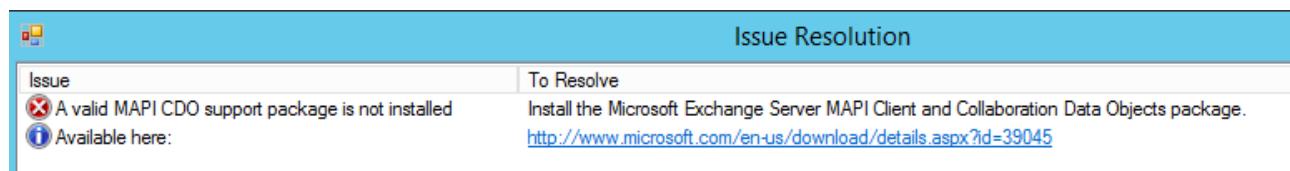
E:\restore

Alias of temporary mailbox

It is very important that the location can hold the size of any existing databases, as the entire database will be restored into this location. There should be some overhead available to the restored logs also.

Alias of temporary mailbox Specifies the alias of a mailbox to use as a temporary storage location during mailbox restore operations. The temporary mailbox is used during restore operations of mailboxes that were deleted, re-created, or moved since the time of the backup. **By default, the mailbox restore operation uses the administrator user's mailbox as a temporary storage location.**

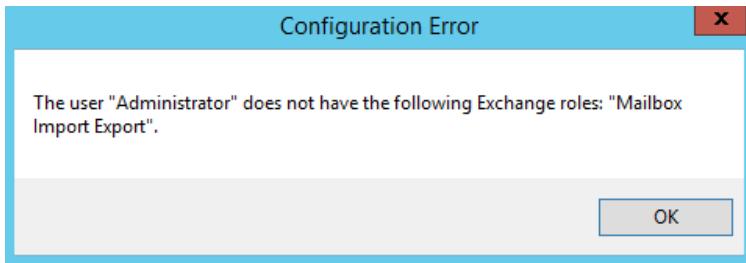
Make sure CDO packages is installed:



Issue Resolution

Issue	To Resolve
✖ A valid MAPI CDO support package is not installed	Install the Microsoft Exchange Server MAPI Client and Collaboration Data Objects package. http://www.microsoft.com/en-us/download/details.aspx?id=39045
ℹ Available here:	

The user running the restore needs the Exchange roles: "Mail Import Export"



It can be added like so: Create a role group:

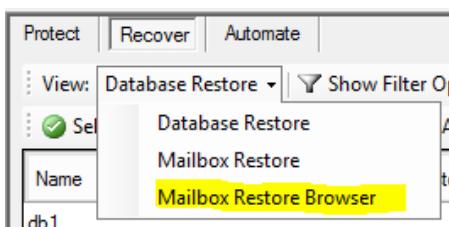
```
New-RoleGroup "Mailbox Import-Export Management" -Roles "Mailbox Import Export"
```

Add the user:

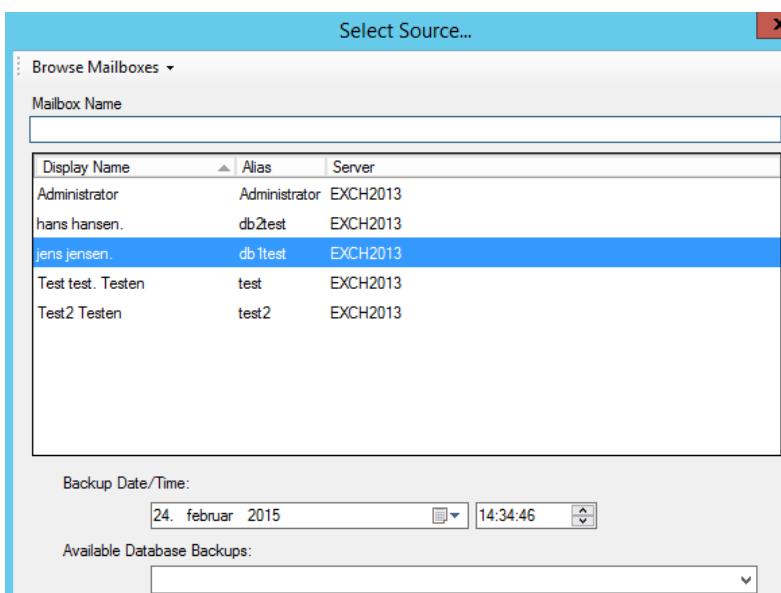
```
Add-RoleGroupMember "Mailbox Import-Export Management" -Member <user account>
```

```
[PS] C:\Windows\system32>New-RoleGroup "Mailbox Import-Export Management" -Roles "Mailbox Import Export"
Name          AssignedRoles          RoleAssignments          ManagedBy
Mailbox Import-Export Mana... <Mailbox Import Export> <Mailbox Import Export-Mai... <half.local\Microsoft Exch...
[PS] C:\Windows\system32>Add-RoleGroupMember "Mailbox Import-Export Management" -Member half\administrator
[PS] C:\Windows\system32>
```

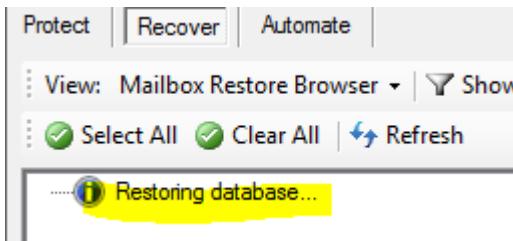
Start the restore:



Specify the user and the data wanted for restore:



The DP client will now restore the mailboxdatabase from the tsm server, this make take several hours depending on the size and the connection available:



The client will make a recovery mailboxdatabase that is used for the restore:

[PS] C:\Windows\system32>Get-MailboxDatabase			
Name	Server	Recovery	ReplicationType
Mailbox Database 0405262174	EXCH2013	False	None
db1	EXCH2013	False	None
db2	EXCH2013	False	None
TSMRDB-EXCH2013	EXCH2013	True	None

When the restore is complete, the mailbox selected previously will be opened:

A screenshot of the DP client showing an open mailbox. The left pane displays a tree view of mailbox folders: Source (TSMRDB-EXCH2013) -> db1test -> Conversation Action Settings, Indbakke, Journal, Kalender, Kladder, Kontakter, Noter, Opgaver, Sendte elementer, Slettede elementer, Udbakke, and Uønsket e-mail. The right pane shows a list of messages with columns: From, Subject, and Received At. Two messages are listed: 'Test test. Testen' (Subject: VS: This is a test ... Received At: 02/19/2015 11:52:41) and 'hans hansen.' (Subject: VS: test af teast Received At: 02/19/2015 11:52:40). Below the message list, a preview pane shows the content of the first message, starting with 'Fra: Test test. Testen'.

Folders and mails, including attachments can be browsed.

When the item has been located, it can be restored in few different ways:

A screenshot of the Exchange Management Shell. On the left, a tree view shows a source database 'Source (TSMRDB-EXCH2013)' containing a mailbox 'db1test'. Inside 'db1test', there are several folders like 'Conversation Action Settings', 'Indbakke', 'Journal', 'Kalender', 'Kladder', 'Kontakter', 'Noter', 'Opgaver', and 'Søgte elementer'. On the right, a list of messages is shown with columns 'From', 'Subject', and 'Received At'. A message from 'Test' to 'hans' is selected. A context menu is open over this message, with options: 'Restore Messages to Original Mailbox...', 'Restore Mail to SMTP Server...', and 'Save Mail Message Content...'.

The “save mail message content” will just save the mail to a local destination.

The “restore to Original Mailbox” will use MAPI to restore it directly into the exchange database:

A screenshot of the 'Restore Progress' window. It shows a progress bar for 'Restoring Message 1/1 (0 errors)'. Below it, there are two more progress bars: 'Folder \'Indbakke\' 1/1' and 'Folder \'Indbakke\'\ Message 1/1', both of which are fully green. Underneath these, there is a 'Current message progress' bar. At the bottom, there is a 'Details' section containing log text: 'Operation started on: 25-02-2015 14:47', 'Restoring Folder "Indbakke" 1/1...', 'Restore messages : folder Indbakke, number messages restored: 0. ...', 'Restore messages : folder Indbakke, number messages restored: 1. ...', 'Restore messages : folder Indbakke, number messages restored: 1. Done', 'Ended Successfully', 'Operation ended on: 25-02-2015 14:47', 'Total messages: 1 (0 errors)', and 'Total restore time: 00:00:02'.

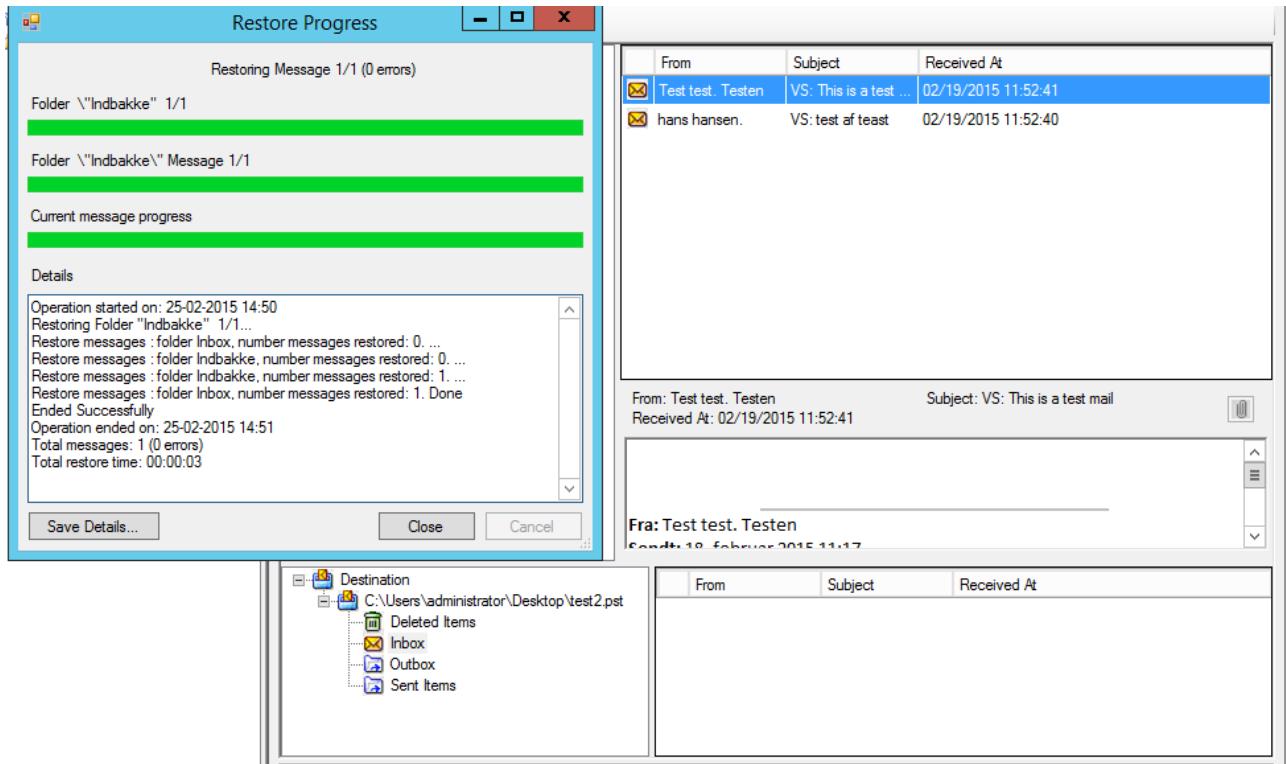
It's also possible to restore it into a local PST file:

A screenshot of the 'Browse Destination' window. It shows a context menu with two options: 'Open Exchange Mailbox...' and 'Open non-unicode PST File...'. The 'Open non-unicode PST File...' option is highlighted.

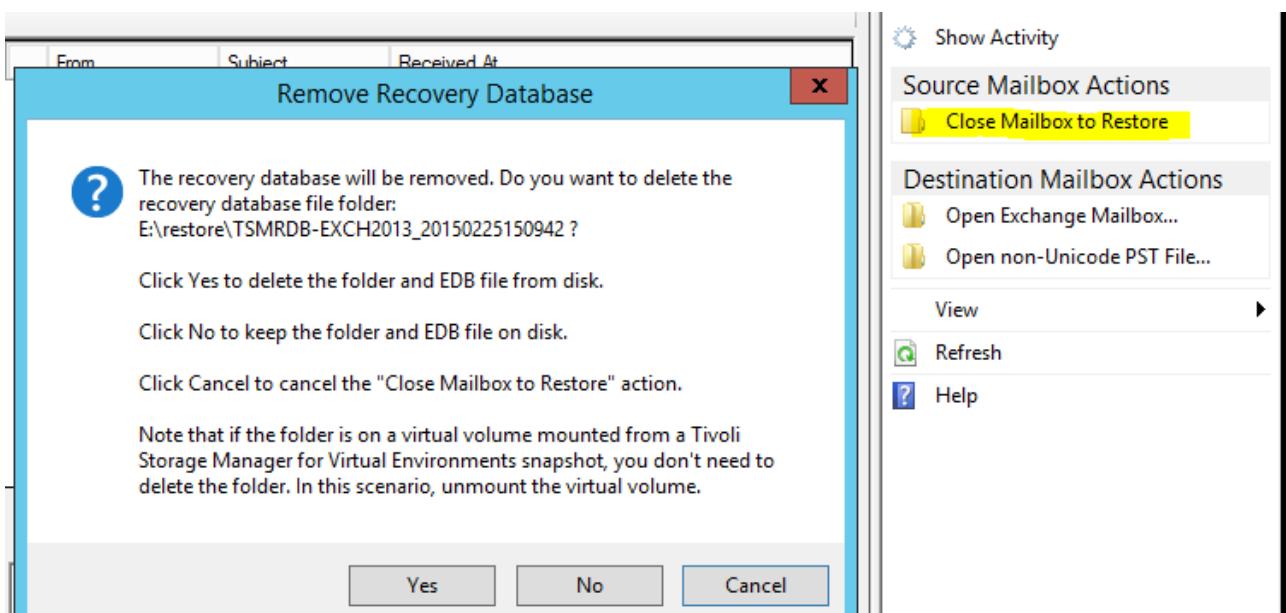
Select “open non-unicode PST file” and select where to save it. This will create a PST file:

A screenshot of the 'Destination' window. It shows a tree view of a folder structure. At the top level, there is a folder 'Destination'. Inside 'Destination', there is a folder 'C:\Users\administrator\Desktop\test2.pst'. This folder contains sub-folders: 'Deleted Items', 'Inbox', 'Outbox', and 'Sent Items'.

Then items can be dragged into the folder in the section below:



When the restore is done, the recovery database can be closed:



But the recovery database can be kept for further restores or be deleted.