Introduction to Exchange 2013 Recovery Database Feature

Exchange Server 2003 and 2007 users must be familiar with *Recovery Storage Group (RSG)*. Yes, that allowed backing up a mailbox on different store and then mounting it to healthy Server. However, the concept is quite similar in Exchange 2010 and 2013, the difference is in the name which is now *Recovery Database (RDB)*.

Overview:

Recovery Database in Exchange Server 2013 is a unique mailbox store that has restored backup of a normal mailbox mounted on it (RDB is not visible at user's end). If there is a normal mailbox DB named MDB01 at original location, a recovery mailbox MDB01 will exist.

What is the Difference between Normal Mailbox Database and Recovery Database?

Following attributes of RDB distinguishes it from a mailbox database:

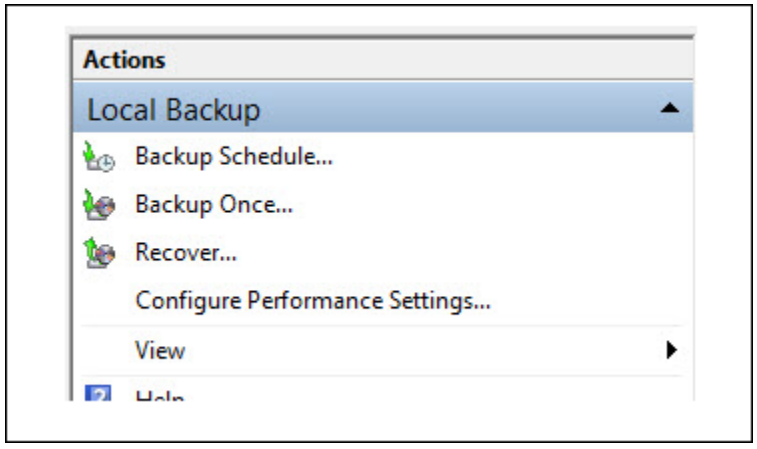
- It is created using Exchange Management Shell.
- Send/Receive service is blocked for RDB.
- No provision to add any information to it.
- Send/Receive service is blocked for RDB.
- It is invisible to end user (no client access)
- No System settings or mailbox policies exist.
- Online maintenance and backups are not performed.
- It cannot be used for public folder recovery.
- RDBs' are not connected with original mailboxes.

Restore Data Using RDB:

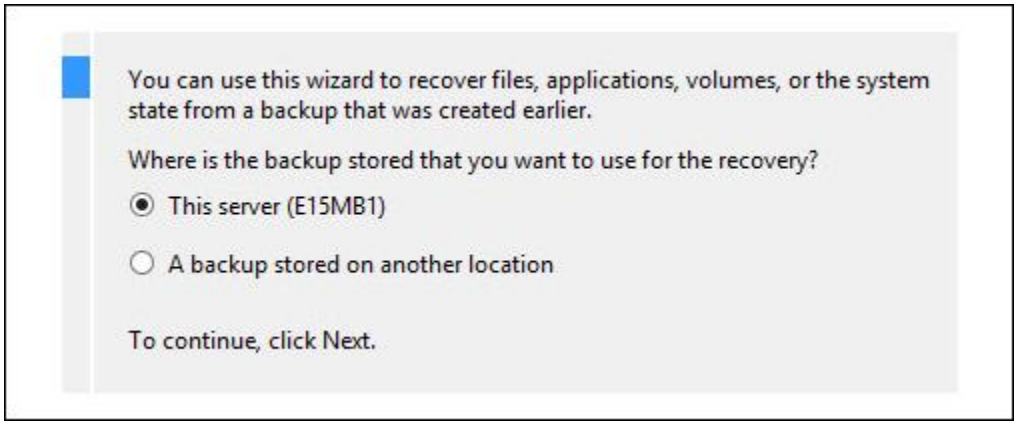
Step 1) Restore DB Using Windows Server Backup:

Use appropriate solution to restore backup of the mailbox from failed Server. Here, I am exemplifying restoration process using Windows Server Backup.

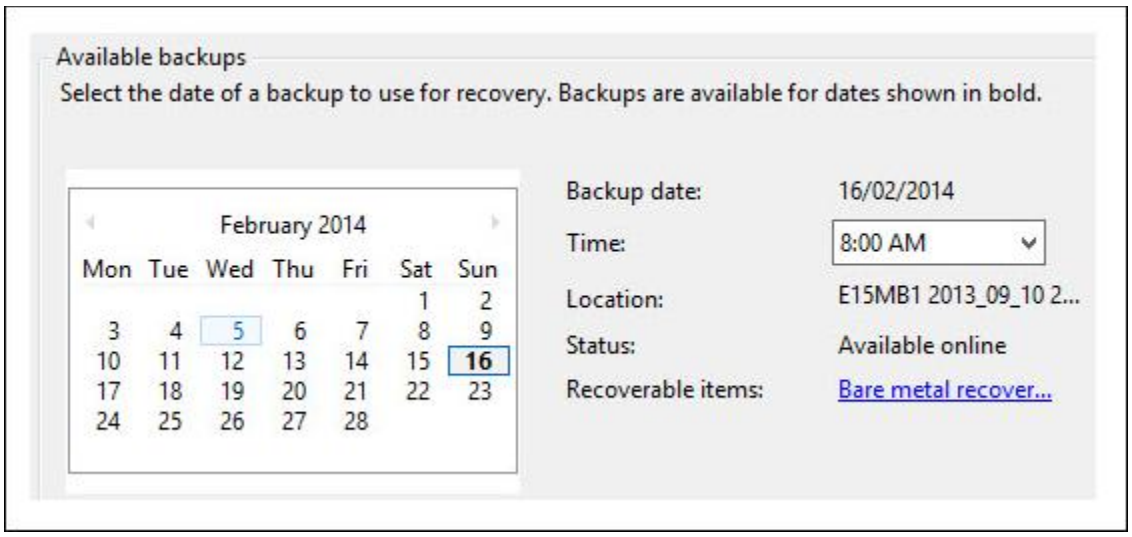
a) Open Windows Server Backup and click on *Recovery* option to initiate the restore process.



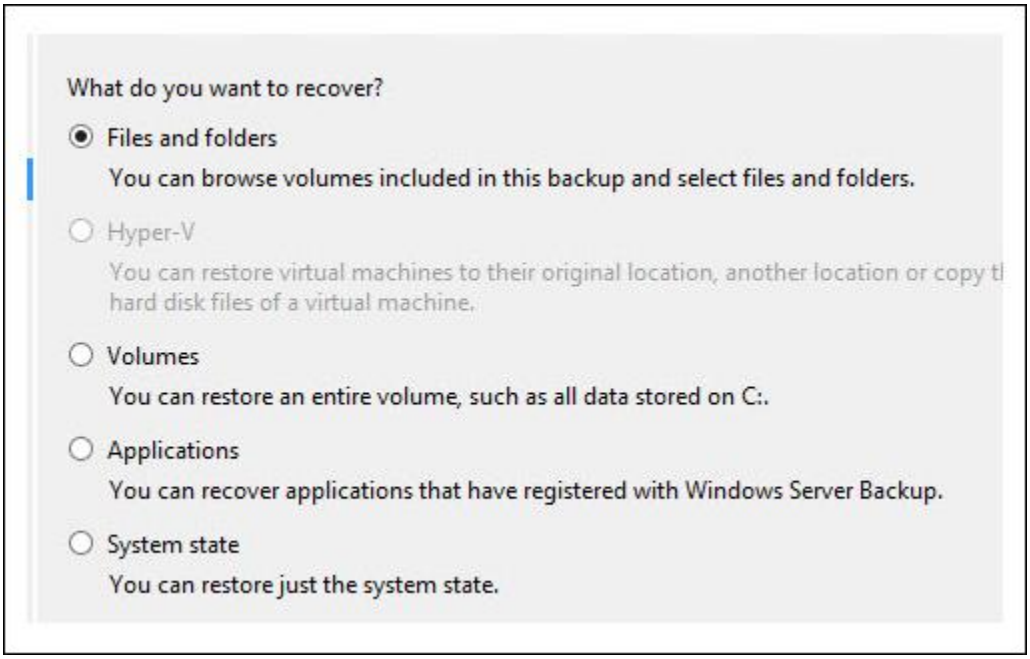
b) Now select the location where backup is stored. In this case, the backup is stored on same Server as the database.



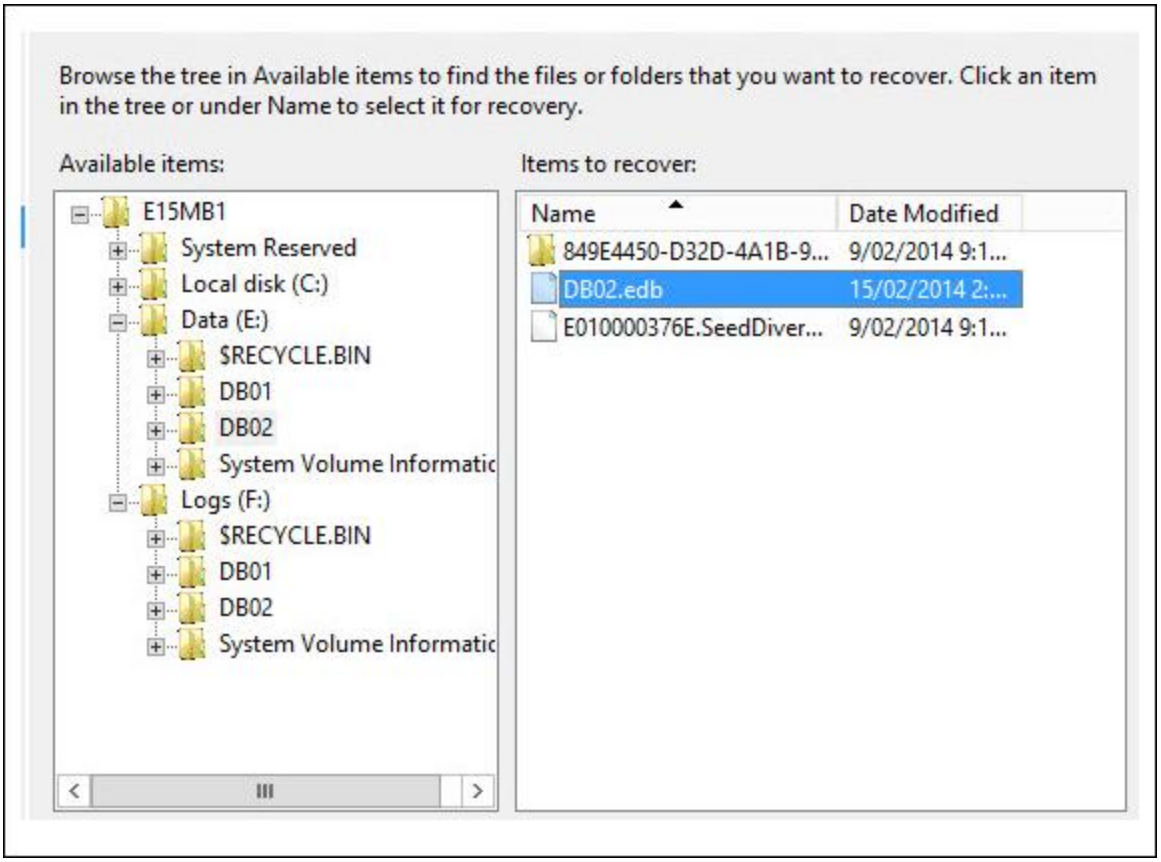
c) Choose the time and date of the backup that has to be restored.



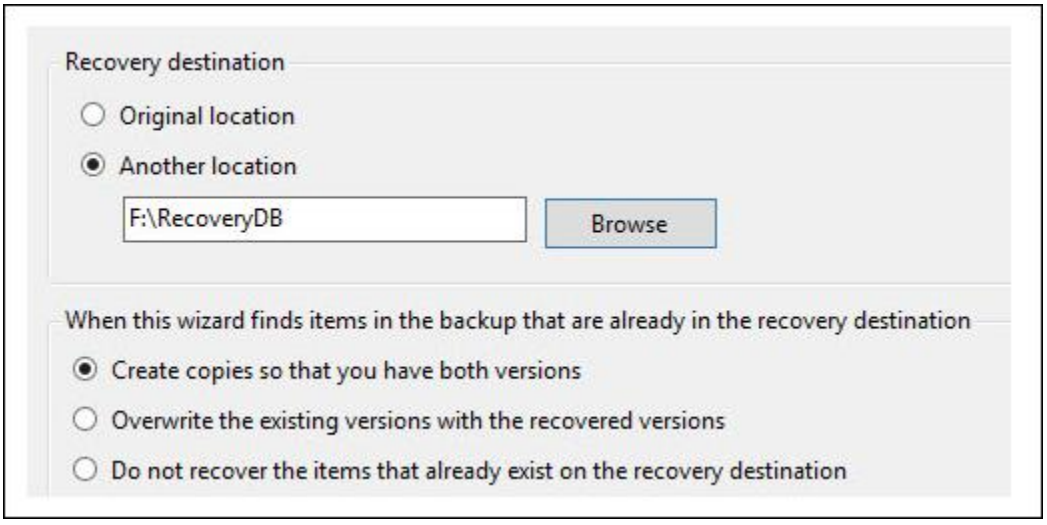
d) Select the option *Files and Folders* so that defined database and log files are restored.



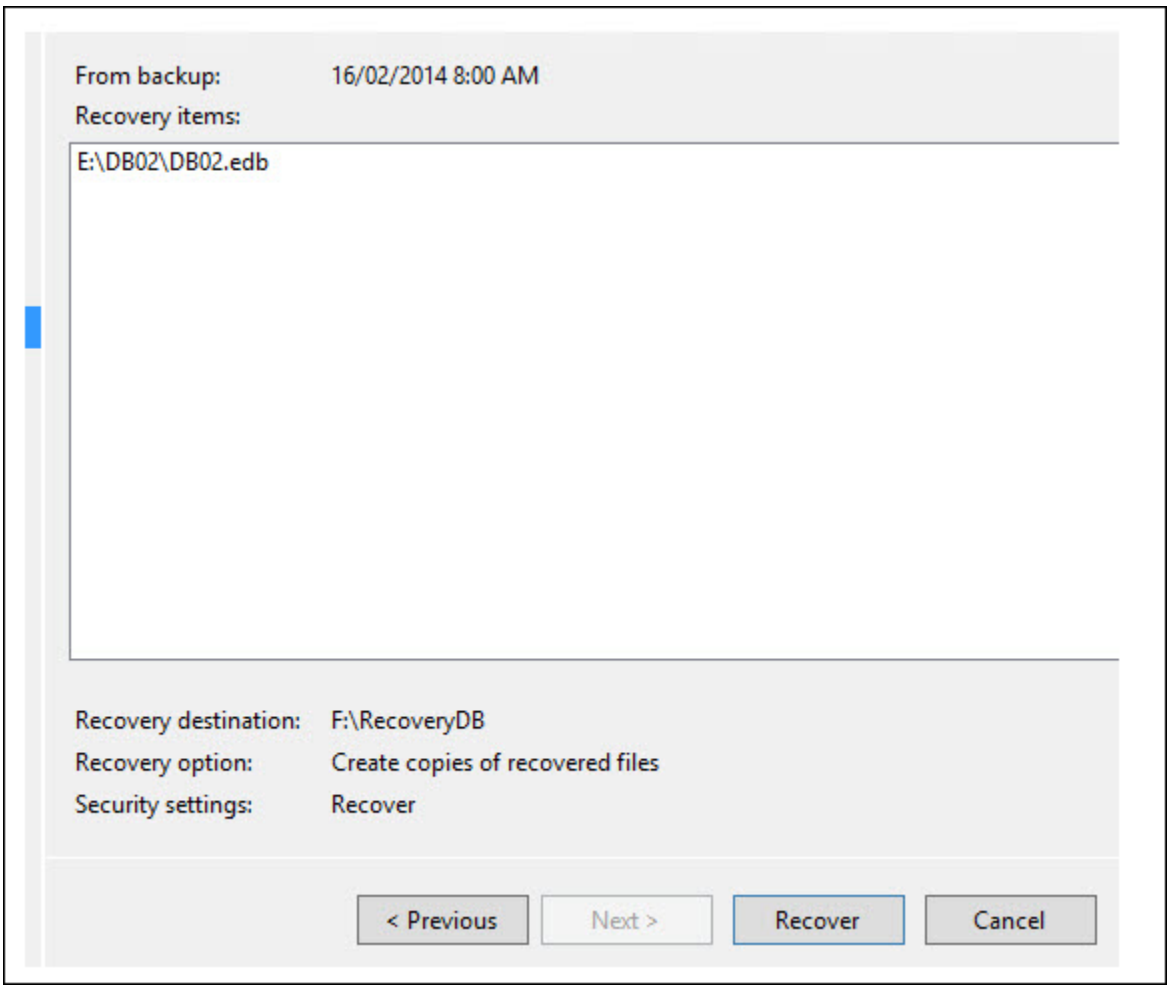
e) Now, choose the database and log files to be restored (In this example, database DB02 is being restored). Meanwhile, take care of the fact that if .log and .edb files are saved at locations where they cannot be selected simultaneously, restoration of both the files will be two separate processes.

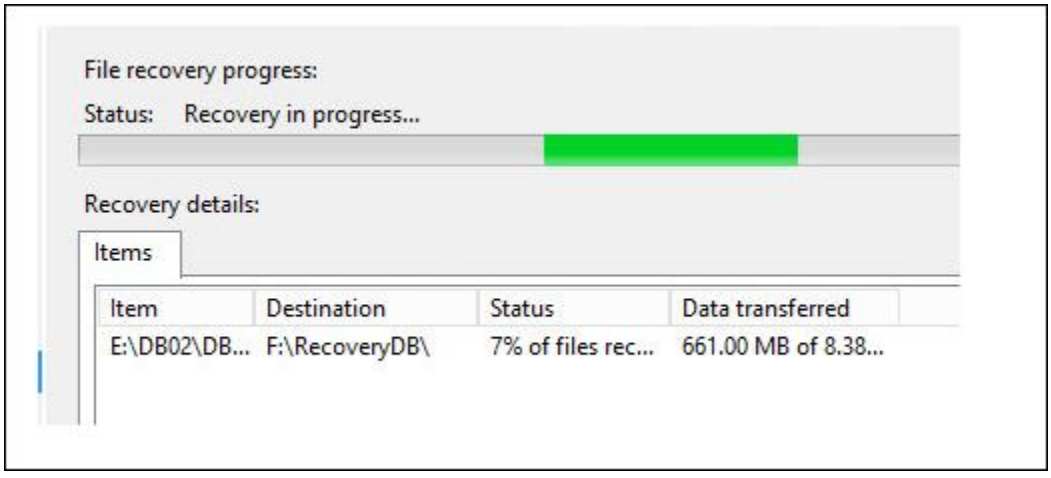


f) Choose the location where restored data has to be saved. Make it a point to save it at a location that has sufficient space to hold the data. Select the option *Another Location* instead of Original Location.



g) Confirm the provided credentials and click on *Recover* button to start the restore process.


From backup: 16/02/2014 8:00 AM
Recovery items:
E:\DB02\DB02.edb
Recovery destination: F:\RecoveryDB
Recovery option: Create copies of recovered files
Security settings: Recover
< Previous
Next >
Recover
Cancel


File recovery progress:
Status: Recovery in progress...
Recovery details:
Items
Item
Destination
Status
Data transferred
E:\DB02\DB...
F:\RecoveryDB\
7% of files rec...
661.00 MB of 8.38...

Step2) Bring Restored Data to Clean Shutdown State:

Now, the EDB and LOG files are being restored from the recent backup but Database Recovery has not been created yet. If an RDB is created now and the restored database is being tried to mount on it, the process will fail. This is because the DB is in *dirty shutdown state*.

Test the state of database using /mh switch of Eseutil utility (Since the database has been restored to an alternate location, it will be in dirty shutdown state). The syntax is: Eseutil /mh "Path of the database"

```
F:\RecoveryDB>eseutil /mh DB02.edb

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Initiating FILE DUMP mode...
         Database: DB02.edb


            State: Dirty Shutdown
```

Now perform soft recovery of database that will require ESEUTIL, log file prefix (from which the transaction logs has to be replayed) and the path of database.

```
F:\RecoveryDB>eseutil /r E01 /l F:\RecoveryLogs /d F:\RecoveryDB
```

- *r for "recovery" mode*
- *E01 for the log file name prefix*
- */l (lower-case L) to specify the path to the log file*
- */d to specify the path to the database file (but do not include the name of the file itself)*

```
F:\RecoveryDB>eseutil /r E01 /l F:\RecoveryLogs /d F:\RecoveryDB

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Initiating RECOVERY mode...
    Logfile base name: E01
            Log files: F:\RecoveryLogs
         System files:
   Database Directory: F:\RecoveryDB

Performing soft recovery...
                      Restore Status (% complete)

          0    10   20   30   40   50   60   70   80   90  100
          |----|----|----|----|----|----|----|----|----|----|
          ..................................................

Operation completed successfully in 2.359 seconds.
```

After this, again test the state of database using /mh switch.

```
F:\RecoveryDB>eseutil /mh DB02.edb

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Initiating FILE DUMP mode...
         Database: DB02.edb


            State: Clean Shutdown
```
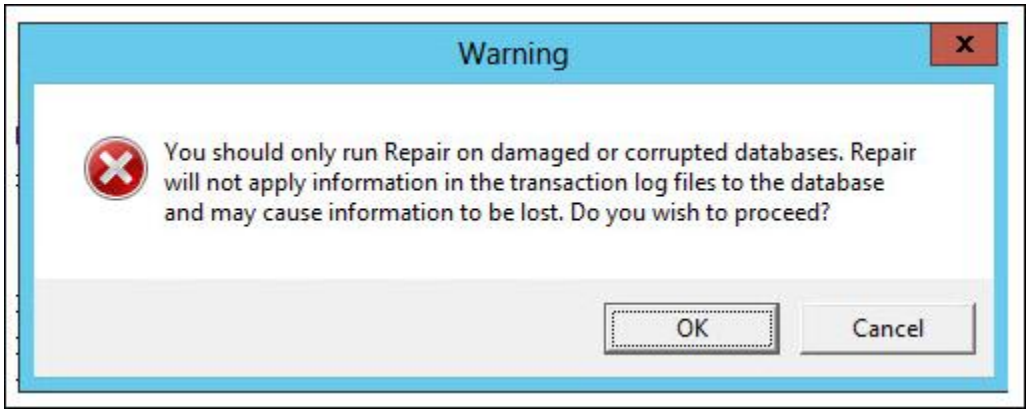

Note: If soft recovery does not work to bring DB into consistent state, then use hard recovery technique (although this has risk of data loss). The syntax is: ESEUTIL /P database_filename.edb

```
F:\RecoveryDB>eseutil /p DB02.edb
```



Step3) Create a Recovery Database:

For this, use *New-MailboxDatabase* command in EMC.

```
New-MailboxDatabase -Recovery -Name Recovery –Server <serverName> -EdbFilePath
<databasePath\databaseName.edb> -LogFolderPath <logPath>
```

```
[PS] C:\>New-MailboxDatabase -Server E15MB1 -Name RecoveryDB -Recovery -EdbFilePath
WARNING: Recovery database 'RecoveryDB' was created using existing file F:\Recovery
brought into a clean shutdown state before it can be mounted.

Name                           Server          Recovery        ReplicationType
----                           ------          --------        ---------------
RecoveryDB                     E15MB1          True            None
WARNING: Please restart the Microsoft Exchange Information Store service on server
databases.
```

Now mount RDB to Server:

```
[PS] C:\>Mount-Database RecoveryDB
```

Step4) Extract Data from RDB:

The data extracted from recovery database can be merged to required mailbox (Advantage of using RDB is data can be recovered from backup without any disturbance to original database and messaging service).

The mailboxes in RDB can be viewed using *Get-MailboxRestoreRequest* command in EMC.

```
Get-MailboxStatistics -Database 'DatabaseName - Recovery'
```

For restoring RDB, the GUID name of mailboxes on source Server should be known. For this, run the following command:

```
Get-MailboxStatistics -Database 'DatabaseName - Recovery' | Format-List DisplayName, MailboxGUID
```

To restore RDB mailboxes using GUID name of source mailboxes and alias name of mailboxes on target Server, run the command:

```
New-MailboxRestoreRequest -SourceDatabase 'DatabaseName - Recovery' -SourceStoreMailbox MailboxGUID -
TargetMailbox TargetMailboxAlias –AllowLegacyDNMismatch
```