

Mailbox and Mail Items Recovery

Introduction

Recovering a mail item or a full mailbox if it gets accidentally deleted or corrupted could become a challenging and painful task, if proven and tested procedures for handling this situation are not in place. And if the CEO or a President of the company who lost email or a mailbox, it could really put a responsible person under high pressure. There are several methods available to handle email/mailbox recovery. In this article we will discuss five different ways of accomplishing the task of recovering a mail item or a full mailbox. Three of these require Storage Group/Mailbox Store level backups and one method requires Brick level backups available prior to performing the recovery.

Using Exchange Server's mail box/items retention policy, indirectly restoring emails using Exchange 2000 Recovery Servers, using Exchange Server 2003's Recovery Storage Group, recovering directly from Storage Group/mailbox store backups or recovering from a Brick level Backup are various options which we will discuss in this paper.

Deleted Mailbox and Mail Items Retention Policy in Exchange Server

In Microsoft's Exchange Server, Deleted mailbox and Mail Items retention policy can be set as a number of days on a Mailbox Store level through Exchange System Manager. Depending on the retention policy set, mailbox and any mail item can be recovered as long as it is recovered during the specified retention policy. Of course, an extra space would be required on the Exchange Server to accommodate those deleted items and the amount of space required would depend on the volume of mail items deleted and the retention period. Even though this mechanism exists, it might not meet the requirements for many as this option does not allow retrieving items past the retention period.

Exchange Recovery Servers

Exchange recovery server is a spare server which has Windows and an Exchange Server preinstalled and is maintained either in the same location as the production Exchange Server or in an offsite location for disaster recovery purposes. The version of the Exchange Server on the spare server doesn't have to be the same as the production server. To perform individual mailbox and mail recovery, Exchange Information Store's backup of the production is recovered to the recovery server. Then, either the full mailbox or individual items can be extracted using Outlook or programs like ExMerge.

The Exchange Organization name, administrative group name, storage group name, database name and LegacyExchangeDN values for the recovery server must be the same as the production server. Because of these requirements and the limitation of only one organization per AD forest, Exchange on the recovery server should be installed on a separate forest. The naming convention of the recovery server's forest does not have to match as the production server's forest.

After installing a separate forest, Exchange can be installed on the recovery server. If names of all the objects of the recovery server specified above are set the same as the production server, then the LegacyExchangeDN values will be the same. This is a mandatory requirement from a database and AD point of view. However, if the names were not set the same then LDAP editing utility such as LDP, ADSI Edit or LDIFDE will be required to view and manually edit the attributes of the database and the administrative groups.

Once the Information Store is recovered to the recovery server, mailbox objects need to be linked to mailboxes. Mailbox in the database must be explicitly connected to an Active Directory object. The procedure would be to first create a user object that is not mailbox-enabled, using AD Users and Computers MMC snap-in, and then run mailbox cleanup agent from the Exchange System Manager on a restored mailbox store database. By running a cleanup, red "X" will appear on mailboxes, indicating that they are orphaned (not connected to any

Active Directory's user object). Right click on the mailbox object, click reconnect and then select the Active Directory's user object which will be linked to this mailbox. Microsoft's utility MBConn would be useful in situations where a large number of mailboxes would need to be reconnected.

At this point Outlook, ExMerge or any other tool or third party software such as Sonasoftware SonaSafe for Exchange Server can be used to extract mail items from the mailbox.

Exchange Server 2003's Recovery Storage Group

Exchange Server 2003 has introduced a feature called Recovery Storage Group. It is a fifth Storage Group which is used to recover databases from any Exchange 2000 SP3 and later versions of Exchange Servers. The Administrative Group of the Recovery Storage Group and the database to be recovered should be the same.

Recovery Storage Group is simply the feature which facilitates the recovery of a mailbox store on the same Exchange Server. However, it is not a recovery tool and recovery of mailbox store is required from Storage Group/Mailbox Store Backups. Sonasoftware SonaSafe for Exchange provides an option to recover mailbox store to a Recovery Storage Group.

After the mailbox store is recovered to the Recovery Storage Group, ExMerge, Exchange System Manager or Sonasoftware SonaSafe for Exchange Server can be used to retrieve mail items from the Recovery Storage Group and then restored back to the production Exchange Server.

There are some limitations of Recovery Storage Group though: there can be only one Recovery Storage Group per server and there is some performance effect on the Exchange Server. Also, only mailbox stores can be recovered and the public folder store cannot be recovered.

Recovering directly from Storage Group/Mailbox Store Backups

There are some vendors who provide a feature, i.e., recovering of a mailbox or a mail item directly from the Storage Group/Mailbox Store backups. This method either involves Reverse Engineering of ESE's (Exchange Storage Engine) DLLs or Mailbox Store files (.edb and .stm). Microsoft until now has not provided any documentation on the internals of Exchange Mailbox Store or ESE DLLs to the vendors which mean that this method requires trial and error to explore either of the above. Though this method works but **cannot** guarantee recovery of emails 100% of the time due to couple of reasons. First, lack of full knowledge of DLLs or Mailbox Store Internal Structure and secondly Microsoft can change DLLs or Mailbox Store Structure between versions or even Service Packs.

Sonasoftware SonaSafe for Exchange Server

Sonasoftware SonaSafe for Exchange Server provides efficient Brick Level Backup and recovery of a mail item or even a mailbox. It introduces a concept of Mailbox Backup Plan which allows either a FULL backup of entire user mailboxes or a selected set of mailboxes on an Exchange Server, or with high perform INCREMENTAL DYNAMIC backups of mail items from the mailboxes. Backups are stored in the form of Microsoft Personal Store (.PST) files which has a huge benefit over other backup programs because PST files can readily be open or imported in Microsoft Outlook.

A Full Backup will cause a back up of ALL mail items contained in the mailbox at the time the backup is taken. The backup is split into multiple PST files if the mailbox is greater than 2GB. This is a great feature as it overcomes the inherited limitations of the creation of PST files for over 2GB. A Dynamic Backup causes data to be backed up periodically. Each backup contains the data in the mailbox which has changed since the time of the last successful backup which was taken.

The Dynamic Backup initially performs a *Full Backup* since there is no prior history of backups taken. Once the *Full Backup* completes, all backups from that

point will represent change sets. The creation of a *Dynamic Backup* Task actually causes the creation of two types of Backups after the initial, *Full Backup – Incremental and Consolidated or Differential* backups.

Incremental Dynamic Backup represents changes to the mailbox since the time that the last backup was completed. Consolidated Dynamic Backups contain a more complete backup for a longer period of time, generated from the original mailbox. As a result, *consolidated* backups represent a "snapshot" of the mailbox content at the time they are taken, but they may contain LESS DATA than the *Incremental Dynamic Backups*, since they will not contain copies of email messages which have been deleted by the user during the period over which the *Consolidated Dynamic Backup* was taken.

Sonasoftware's efficient backup mechanism eliminates the need for a Recovery Server by capturing changes in the mailbox periodically, and provides a simple one-click recovery screen. The Mail/Folder Recovery screen allows the user to create a Task to recover data from existing backup sets to an individual user mailbox, at a granular level of individual folders or messages.

The user selects Exchange Server and the list box containing the mailbox to which message(s) will be recovered is presented to the user. By selecting the mailbox, the user is presented with the list of backups. The list of backups which is displayed is the entire set of backups for the mailbox, and can include Full, Consolidated and Incremental backups. The user selects the backup from which to restore. Selecting a backup will result in the Folder List pane in the lower half of the screen being populated with *the list of folders which existed in the mailbox at the time the selected backup was taken*. At this point, the user can select from one of two Restore Options:

Restore the whole Backup Set option- Selecting this option will cause the restore task to restore ALL emails and folders contained in the backup set to the target mailbox.

Restore Selected Folders option- Selecting this option allows the user to select specific FOLDERS and/ or emails contained within the selected backup to be restored to the target mailbox. Folders will be displayed in the Folder List with a check-box; selecting the check-box for a folder will cause the ENTIRE content of that folder at the time of the backup to be restored to the mailbox, including any sub-folders. Selecting an empty folder or a folder containing empty sub-folders will cause the empty folder(s) to be created in the mailbox if they do not exist at the time of the restore; if the folder exists, the restore operation will NOT affect any existing content of the folder. Clicking on a folder's name in the Folder List tree-view will cause the messages contained within the folder to be displayed, and each message will be preceded by a check-box; clicking the check-box for a message will select it to be restored.

Conclusion

Various options, including Exchange Mailbox/Mail Items Retention Policy, Exchange Recovery Server, Exchange 2003's Recovery Storage Group, Directly Restoring from Storage Group/Mailbox Store Backups and Sonasoft SonaSafe for Exchange Server are available to recover mailbox and mail items. Exchange Mailbox/Mail Items Retention Policy can be used to recover but it is not a replacement of a backup solution. Hence it can only be useful if the item which needs to be recovered got deleted during the retention period.

Exchange Recovery Server involves additional hardware cost, time, resources and complex tasks to build such an environment. Exchange 2003's Recovery Storage Group provides a relatively simple procedure for recovery as compared with Exchange Recovery Server but still involves restoring from a Storage Group/Mailbox Store backups which would require space and time to restore. Restoring directly from Storage Group/Mailbox Store backup, as discussed could be unreliable as it involves Reverse Engineering of DLLs or Mailbox Store.

Sonasoftware SonaSafe for Exchange Server provides an automated scheduling of the full and the incremental mailbox backups and provides the capability of

restoring a mailbox or mail/folder items from any backup sets, with just a click of a mouse. Therefore, Sonasoft SonaSafe for Exchange Server not only efficiently performs the recovery but also enables to archive messages in the form of PST backup files.

The procedure chosen should be proven, tested and provide recovery quickly. Also, it should work all the time.

About Sonasoft®

Sonasoft Corp. automates the disk-to-disk backup and recovery process for Microsoft Exchange, SQL and Windows Servers with its groundbreaking SonaSafe® Point-Click Recovery® solutions. SonaSafe is the only product that provides an integrated backup/recovery and replication solution for Exchange and SQL servers. Designed to simplify and eliminate human error in the backup and recovery process, SonaSafe solutions also centralize the management of multiple servers and provide a cost-effective turnkey disaster recovery strategy for companies of all sizes. *For more information, please visit www.sonasoft.com.*

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