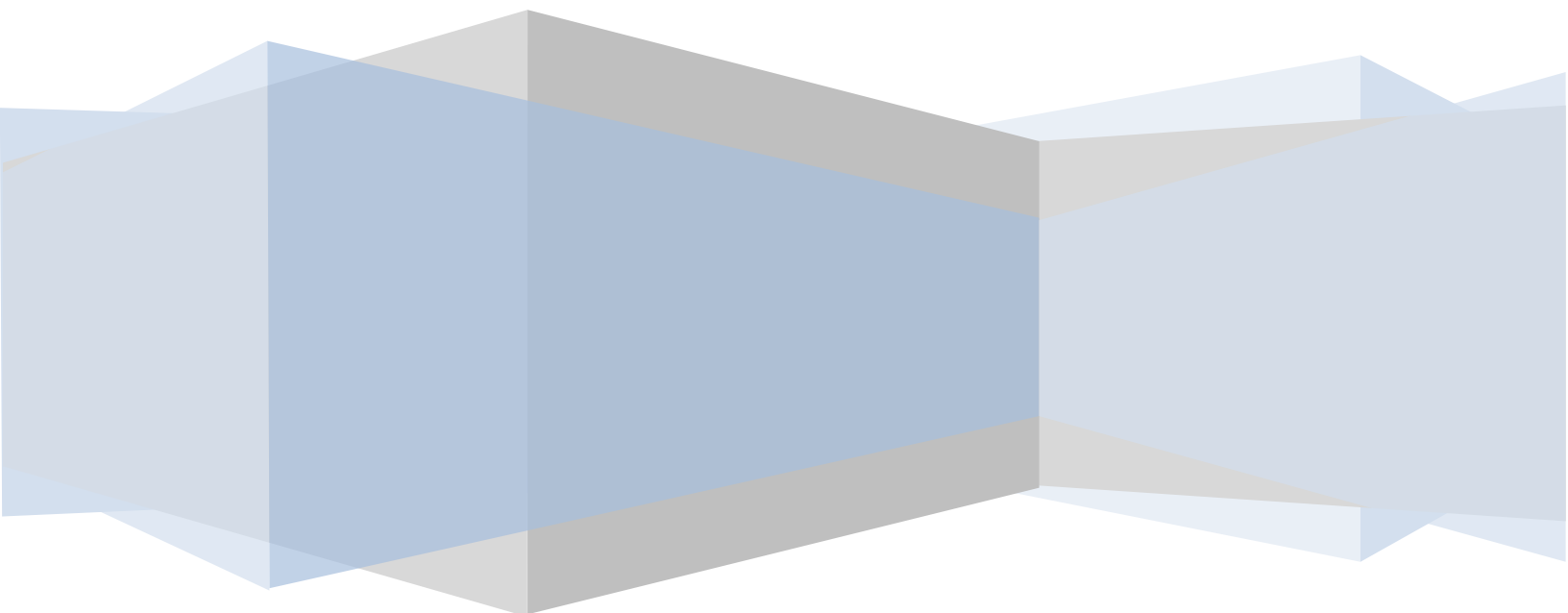


Lepide Software Pvt. Ltd.

White Paper

Purpose of this White Paper is to present a business case for use of Lepide Exchange Manager as a complete Exchange Backup and Recovery solution in conjunction with Windows backup. It also explains how this software can produce significant benefits by eliminating need of additional Tools required to perform other Exchange Server tasks.

Use Windows utilities to automate Exchange backup and use Lepide Exchange Manager to perform message level recovery. Eliminate need of Brick-level backup and Recovery server.



1. Why perform Exchange Server Backup?

Over the past few years, electronic mail or email has become a primary channel of business communication. It provides business organizations with a fast, capable and convenient medium of conveying important business information ranging from purchase orders, quotations, and sales transactions to future business plans and what not. In the process, the medium has become as important as, if not more than, the information itself.

And for companies that have their email environment based on Microsoft Exchange, the Exchange Database (EDB) becomes an information store holding high-volume of critical historical and current business information.

These Exchange databases are, unfortunately, susceptible to corruption because of a number of reasons such as Disk Failure, Physical or Logical database corruption, Data centre failure or even accidental deletion of the mailboxes. Every year numerous incidences of Exchange disasters are reported even in most secured Exchange environments. To eliminate the possibility of occurrence of such incidents, organizations have come up with effective preventive measures in place.

Data replication, to a large extent, overcomes the vulnerabilities of the Exchange disasters. Hence, organizations have adopted the policy of maintaining redundant data in the form of automated backups. For those, who are yet to implement preventive measures like deploying automatic backup software, it becomes important to perform regular Exchange database backups manually.

2. Exchange Backup Options

After being fully aware of the threats to the Exchange server database and how taking regular backups is a viable solution to deal with this threat, let's try to understand what all backup options are available for this purpose.

2.1 Windows backup options:

Windows Server Backup allows you to perform backup and restore of the Exchange data using the Volume Shadow Copy Service (**VSS**) at Volume level. This is available with Exchange 2007 and Exchange 2010.

Windows NTBACKUP to Backup and Restore Exchange 2003 and previous versions. You can choose the entire storage group for backup, or a single database or multiple databases from a single Storage Group can also be backed up.

2.2 Third-party backup software.

In this case administrators have to install the Exchange Agent or Exchange-aware backup software to perform backup.

There are a lot of compatibility issues involved in performing Backups using any of these options. What works well with one version of Exchange might fail to produce desired result in another version. It is advisable to be fully sure of the Exchange server version and then conduct a thorough enquiry into what all options are available for it.

Furthermore, it's very difficult to generalize which one is the best option to perform a backup. Depending on the Exchange version and type of backup (Online or Offline), what works well for one Exchange environment might not be the best option for someone who is using another version of Exchange and performs another type of backup.

Windows backup is commonly used option by many of the Exchange administrators. Without going into the details of operational advantages offered by it, an upfront benefit is that it does not require any additional investment as you do in case of third-party software. However, there are some disadvantages of using this utility that forces many to look for third-party tools.

3. Third Party Tools – preferred choice over Windows backup

Windows NTBackup for Exchange versions till 2003 and Windows Server Backup options for version 2007 and beyond have some inherent drawbacks that forces administrators for costly third party choices. It's not just the inability of the Windows backup tools in meeting all the intricacies of backup requirement that forces Exchange administrators to look for alternative choices, but the complexity involved in taking backups and even more so in restoring those backups that forces one to look for third-party tools as alternatives.

3.1 Windows utility: Easy backup complex restoration

Windows Server Backup allows you to perform backup using the Volume Shadow Copy Service (**VSS**) at Volume level. Thus, you will be dealing with an image of the entire Volume irrespective of whether you need to restore a single mailbox or a single storage group. It offers option to recover Volume, Folders and Files. NTBackup does offer facility of database level backup from a single storage group but mailbox or message level restoration is still unachievable.

EXMERGE utility can be used to perform brick-level backup of mailboxes, but in case of brick-level backups data for each mailbox needs to be extracted and stored separately even if that means storing the same copy of the messages multiple times (for each mailbox). This removes the concept of **Single Instance Architecture** from Exchange database creating storage inefficiencies.

Hence, time and storage size for such backups is a big hindrance in relying on this method. Moreover, brick-level backups are not a replacement for monolithic/full backup and so cannot be used in case of disaster recovery. At most, brick-level backups can be used in conjunction with full backups to cover all scope of exchange recovery, for example, accidental deletion of a single mailbox.

3.2 Advantages offered by Third-party Tool

To circumvent these issues related to backup and recovery, Exchange administrators, in many of the big organizations, rely on **third-party tools** to perform backup and recovery. These tools offer the following advantages over Windows backup and recovery:

1. Advance backup scheduling capabilities.
2. Advance tape-drive management capabilities for backups.
3. Brick-level backup on the back of better storage options.
4. Simple interface to handle complex tasks that allows delegation of administrative tasks to non-administrative users.

However, these expensive third-party tools are not affordable to all specially for small and medium size business organizations.

4. Performing Windows backup

For small and mid-sized business organization, there is another alternative that is a kind of mid-way between cost-effective but inefficient native Windows backup and restore options on one hand and expensive but efficient full-fledged third-party backup and recovery solution on the other.

If we consider just the backup part for now, leaving the restoration part to be discussed separately at a later stage, then Windows native backup utilities are not that a bad option.

4.1 Windows NTBackup

Windows NTBackup available with Windows NT is not an enterprise level backup solution and is quite basic from various perspectives. Nonetheless, it can be utilized, and, as a matter of fact, is utilized by many administrators to perform backup of Exchange server.

To be considered as a serious back up option, a backup utility must have scheduling capabilities. NTBackup does not have any built-in scheduling capabilities, but that does not stop the ball from rolling, as there is a service named **NT Task Scheduler service** that can be used with NTBackup to schedule backup tasks and thus making it a serious backup option for administrators.

NTBackup comes with a couple of command line switches **ds** and **is** that are used to instruct NTBackup to backup the Directory and Information Store respectively. Administrators can make batch file and use it to take online backup of Exchange server using these command line switches. Batch file can also be created using Notepad which will contain a single line command to take Exchange Backup, an example for such command has been given hereunder:

ntbackup backup ds SRVR-2 is SRVR-2 /t normal

For automating the backup part, ensure that **Task Scheduler Service** is set to run automatically and then use **AT** command. This command can be used to run the concerned batch file at any time and day of administrator's choice. **NTBackup** and **AT** can be used in conjunction to offer a wide array of choices for creating backups.

4.2 Windows Server Backup

Windows Server Backup comes with built-in scheduling capabilities. Administrators can schedule backups using **Backup Schedule** option under **Actions** pane. However, this option allows you to perform backup on a daily basis or more than once a day. If there is a requirement to take less frequent backups, **Task Scheduler** can be used to create manual jobs on the server where backup is scheduled to run.

Once the provision is in place to create regular backups of the exchange server, the next step would be to create provisions for backup recovery in case the requirement ever arose. But the backups created using these Windows utilities are either volume level or database level. Brick-level backups using EXMERGE are hardly an option given their inability to restore Exchange database in case of disasters, not to mention inefficiency in storage and time in maintaining such backups.

4.3 Problems of Restoring Backup using Windows native tools

Once a comprehensive backup plan is in place, all which is required now is a restore option. But, as we mentioned earlier Windows backup options are Volume level or database level. Hence, it is not possible to perform selective restoration using NTBackup or Windows Server Backup.

In case of NTBackup, after starting the NTBackup, there is an option **Restore and Manage Media**, here you select the Backup that you want to restore and also provide the Server name where you want to restore the backup. And thus, backup is restored at the desired location. In other words, the **EDB** file has been extracted from NTBackup (**BKF**) file that can be worked on.

Hence, a viable option emerges to perform Windows backup and restore it using simple third-party tool

5. Restoring from Windows backup using Lepide Exchange Manager

Under **Restore and Manage Media** option that is available after running the NTBackup, there is **Mount Database After Restore** option to automatically start the database after restoration. To start the database automatically after the restoration, this checkbox can be marked.

But, for a selective restoration from this Exchange database (EDB) that has been retrieved from a Windows full backup file (BKF), this checkbox should be left unmarked while running the restoration process.

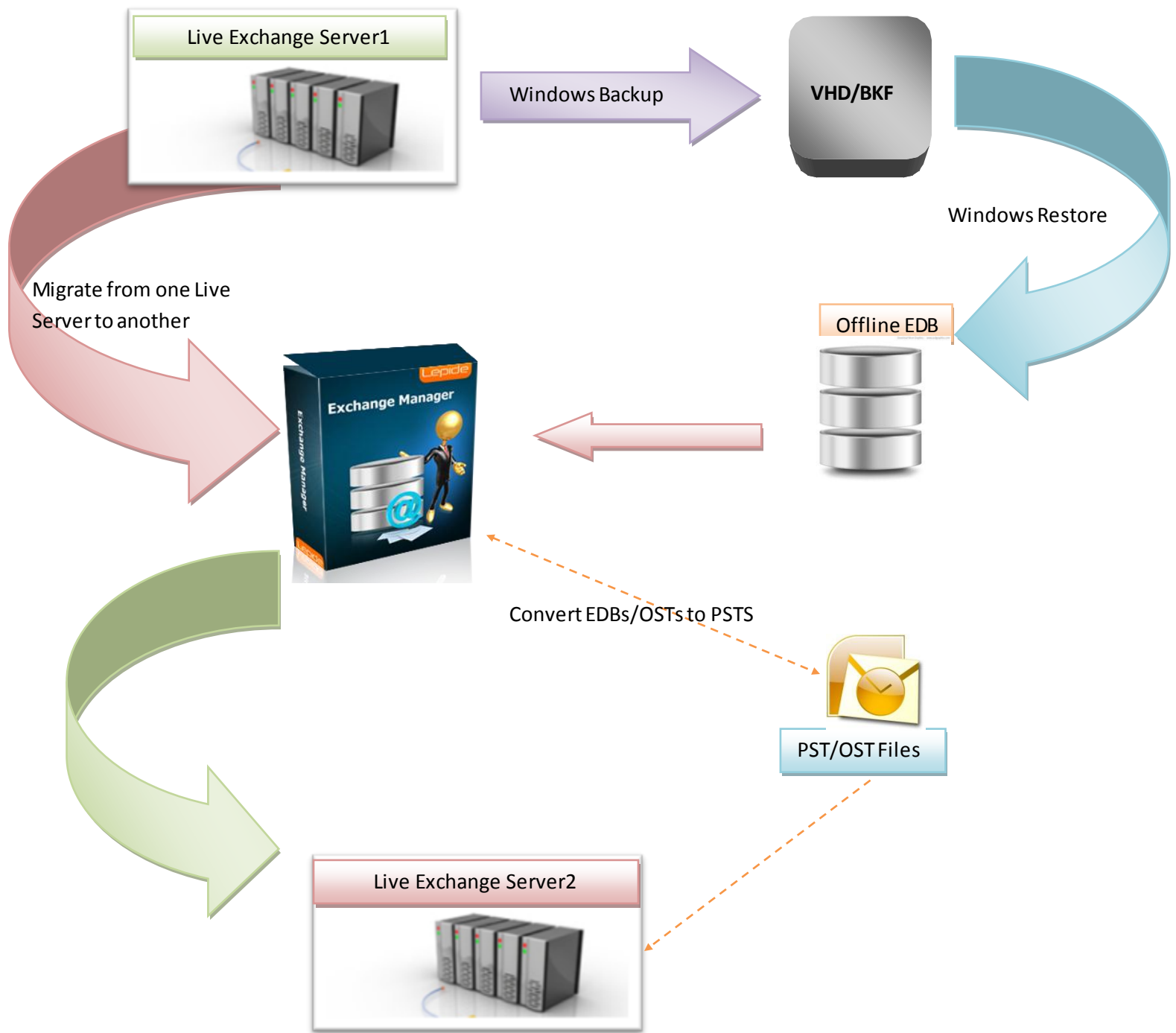
5.1 Using Lepide Exchange Manager

Once the Exchange Database (EDB) has been retrieved from the Windows backup file (BKF) using Windows native recovery utilities, a number of operations can be performed on this file using Lepide Exchange Manager.

The following steps need to be followed to use Lepide Exchange Manager with Windows backup:

1. Keep the **Mount Database After Restore** option unchecked while performing restore with NTBackup.
2. Extract the backup **EDB** file to an alternate location (non-Exchange environment).
3. Launch Lepide Exchange Manager and add this file **as source** using **Add Source** option.
4. Rename the **corrupt EDB** file of your Live Exchange and then try to mount the EDB; it will create a **new EDB** with original name. It will have all the mailboxes as in the original EDB, but the mailboxes will be empty.
5. Add the Exchange server to the **destination** section of the application using **Add Live Exchange Server** option. It will be pointing to the newly created EDB.

Once the Source and Destination are in place, a number of operations can be performed using Lepide Exchange Manager.



5.2 Restore backup using Lepide Exchange Manager

Lepide Exchange Manager allows restoring only required items and helps to restore mailboxes and other email data without recovery server or brick-level backups.

Restore deleted mailboxes without having Recovery Server

1. You can restore selected mailboxes from the backup directly to production server. Copy the deleted mailboxes from source (backup) and paste them to destination (production server).
2. There is no need to follow the lengthy process of setting up a recovery server to restore single mailboxes.

Search and Restore deleted emails without brick-level backups

1. Use E-Discovery feature of the Lepide Exchange Manager to search for a specific message in the backup EDB.
2. Restore found emails to production server.

5.3 Convert backup EDB to PST

In case there is a requirement you restore selected mailbox(s) to a PST instead of a Live Exchange server, then this software can perform it pretty well. Such demand for restoring mailboxes from EDB to PST can arise from a number of scenarios. A couple of them have been mentioned here:

1. In case of temporary relocation, one may want to take their past email communication along in PST format which can be accessed directly using Outlook client.
2. There could be a legal demand to search a few emails of an employee from backup and present it in PST format for litigation.

Apart from EDB files, Lepide Exchange Manager can also be used to search and restore mailboxes and messages from OST and PST files to Live Exchange Server.



5.4 Export messages from backup EDB to MSG/EML

The advance Import/Export feature of the tool allows administrator to export mailboxes and messages from backup EDB to MSG and EML format.

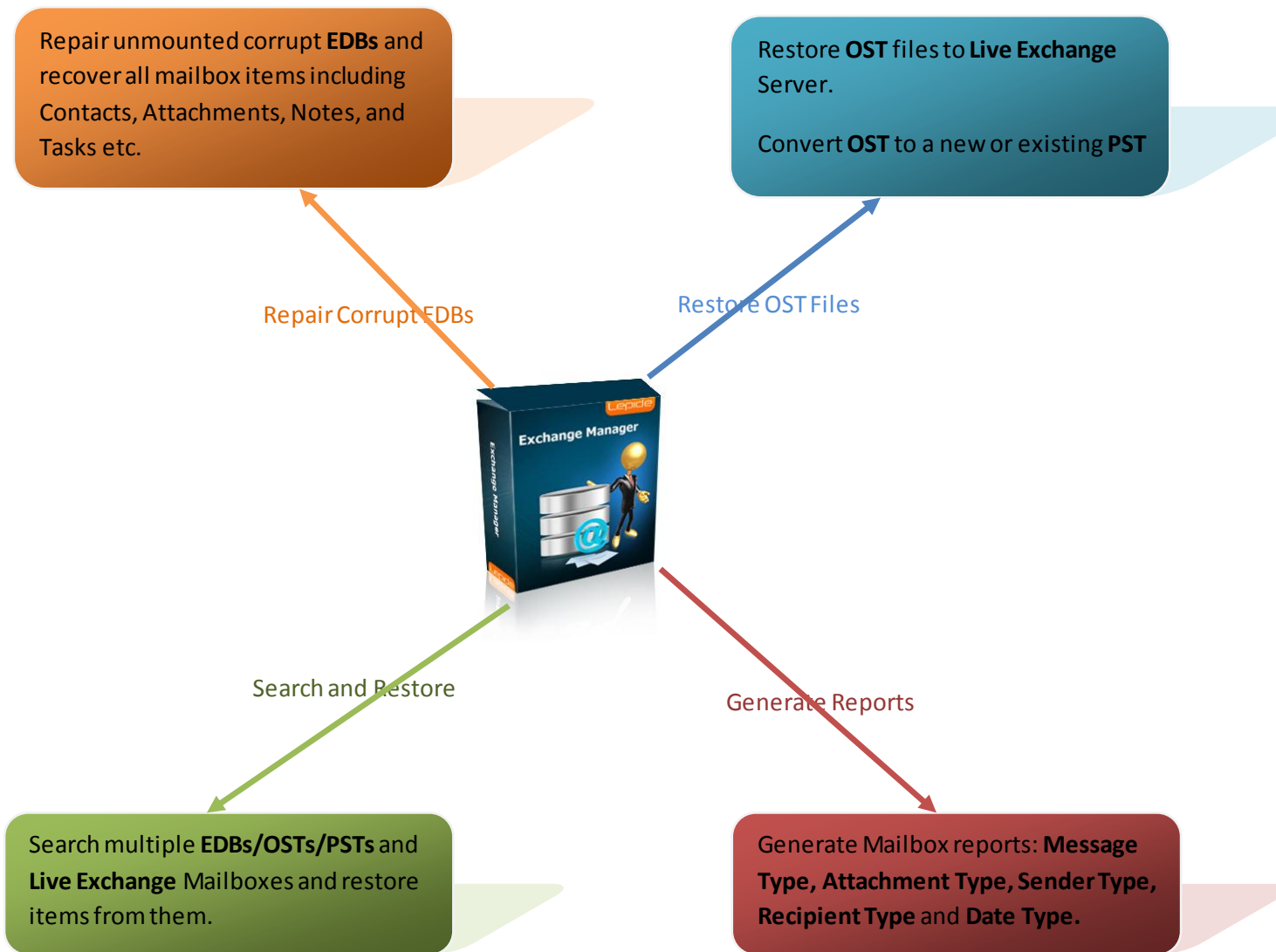


5.5 Migrate mailboxes from backup EDB to a Live Exchange

Once the backup EDB has been extracted from Windows backup file, Lepide Exchange Manager can be used to migrate mailboxes from it a Live Exchange Server.

6. Other functionalities offered by Lepide Exchange Manager

There are a host of other scenarios where Lepide Exchange Manager can be used in Exchange environment.



7. Windows backup – Lepide Exchange Manager restoration: Benefits

By taking a mix approach towards Exchange backup and restoration, a number of quantifiable benefits can be produced. This white paper has amply explained the advantages and disadvantages of different backup and restoration option available for Exchange server. However, it has been explained to sufficient level how taking Windows backup and restoring it using Lepide Exchange Manager can offer a number of exclusive features. Given below are the major benefits arising out of this mixed approach.

7.1 Save investment in expensive third-party backup and restore solution

There are a number of third-party backup and restore solution that have been designed for this express purpose and can match the features explained in our mixed approach. But, the total cost of ownership of such solutions can be pretty high. Particularly, small and medium size organizations might find it difficult to implement third-part solutions. Thus, a significant amount of saving can be done by avoiding investment in such solutions.

7.2 Perform other tasks such as Exchange Migration

Lepide Exchange Manager is not just a backup restoration tool ; it also allows you to perform a number of other Exchange related tasks as has been explained earlier. One of the most important of them is Exchange migration. Organizations make significant investments in setting up dedicated hardware and resources for performing migrations. This software has built-in migration capabilities that allow one to perform small migrations, thus saving investments in dedicated migration tools.

7.3 Eliminate need of maintaining multiple Tools

Lepide Exchange Manager being a complete exchange disaster recovery and backup restore solution also offers facility to search, export and recover entire mailboxes or selected email items from corrupt information stores, live exchange servers, exchange backups and OST files. It can be used to transfer information in and out of Exchange environment, convert EDB and OST to PST, generate reports and perform a number of other tasks. Having this all-in-one software eliminates the need of maintaining multiple tools to achieve these objectives.

7.4 Simplifies Exchange related activities

The Tool offers a simple interface to perform complex and time-consuming administrative activities. Thus, many of these tasks can be delegated to non-administrative users as it does not require any special skill to operate the Tool. This software adds convenience in performing Exchange related activities saving considerable investment in time and effort.

8. Conclusion

Windows backup utilities might not be the best option to rely on when it come to Exchange backup and restoration solutions. However, using these backup utilities in conjunction with Lepide Exchange Manager not only acts as a complete Exchange server backup and restore solution but also produces additional benefits that have been elucidated in this Whitepaper. Lepide Exchange Manager can perform message level restoration from volume level or database level backups created using Windows backup utilities. Thus, Lepide Exchange Manager can be leveraged to perform a set of actions on Windows backup quickly and efficiently saving huge investments in dedicated tool that would have been made otherwise.