MIMOSA SYSTEMS

INFORMATION IMMEDIACY, DISCOVERY, & CONTINUITY

Mimosa NearPoint™
for Microsoft® Exchange Server

Architecture White Paper

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Microsoft® GOLD CERTIFIED Partner

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Introduction

Managing Microsoft® Exchange Server is a constant challenge. The explosive growth of e-mail places an enormous strain on every aspect of a messaging environment and budget. The traditional data management tools for Exchange have fallen short due to increasing Message Stores in the areas of data protection, recovery, storage management, archival and search. This paper introduces the new Mimosa NearPoint *for Microsoft Exchange Server* data management solution. Mimosa NearPoint is the *next generation* data management solution for Exchange that integrates data protection, storage management and archival into a single solution. Mimosa has developed new innovative technology that protects Exchange with near continuous data protection and delivers fast, flexible recovery. Users and auditors have self-service access to all Exchange data for full-text search and retrieval. Mimosa NearPoint also performs e-mail archival and data lifecycle management. By leveraging low-cost disk storage, Mimosa is able to deliver multiple data management benefits for Exchange, all in a single-integrated solution; replacing what would traditionally take multiple products.

Challenges of Exchange Data Management

The explosive growth in e-mail, in terms of capacity and numbers of users, has made messaging one of the most challenging applications to manage in an IT environment. E-mail is viewed as more important than the telephone in most organizations and users require e-mail service 24 hours per day. IT is challenged to better manage e-mail for daily service, retention, disposition and privacy. New legal and compliance requirements for discovery of e-mail add additional challenges. The existing tools to manage Exchange are largely based on tape and were not designed to meet today's email systems.

A ubiquitous and critical data management task is data protection. Typically, a daily full backup to tape is performed or the alternative of a weekly full backup and a daily incremental. Both methods are reliable and perform well except when the size of the Exchange database grows and exceeds the backup window. As the Exchange database grows, (in many cases as much as 25% per year) backups take longer and more importantly recovery time also increases. If the Exchange server fails in the middle of the week, it can take hours to restore from multiple backup tapes.

To better manage e-mail server storage growth, quotas are commonly used to limit the amount of storage capacity for each user. Typical quotas range from 100 – 250MB per user. This severely limits users who commonly retain email for months and years. The common workaround for this problem is Personal Store (PST) files. Using PST files, users can store as much e-mail as they wish locally on their desktop PC or on a network share. This solution is not without some serious problems. First of all, PST files grow very quickly in size, and become less reliable and unstable. Secondly, PST files stored on desktops are unprotected and are at risk of being lost or destroyed. Finally having e-mail distributed across the organization in PST files makes it very difficult to search company e-mail for legal discovery.

Mailbox recovery is yet another issue. One of the most common requests IT receives is to restore a mailbox (or message) that was deleted in error. Tape backup products supports mailbox backup with the Microsoft Message API (MAPI), referred to as a "brick-level" backup, but these are slow and place a significant performance burden on the Exchange CPU. One alternative is to use a dedicated recovery server for mailbox recovery, but this method requires additional hardware and software and is complex to setup. In Exchange 2000/2003, Microsoft introduced the Deleted Mailbox Recovery feature and the Recovery Storage Group. Each of these methods works well but they consume space on the Exchange Server and require expertise to perform.

Searching Exchange Servers to comply with a legal or regulatory request is another very difficult challenge. The only way to comply is to search all active Exchange servers, search all desktop personal stores (PST files) and search all backup tapes. The total search process can take days and weeks to perform and cost hundreds of thousands of dollars. New compliance requirements require archival of all e-mail for certain users such as executives and broker/dealers and require proper retention and disposition. Retention management is almost impossible when e-mail is spread across the organization. It is very difficult to manage e-mail to meet company policy requirements using standard tape backup products that were not designed to manage e-mail for retention and disposition and have limited search capability.

The following table (figure 1) lists the traditional data management products for Exchange and identifies the types of Exchange recovery they support. No single product listed in this table manages Exchange recovery completely by itself, let alone archival and mailbox extension.

Product	Full Recovery	Mailbox Recovery	Message Recovery	Search Discovery	Retention Disposition	Mailbox Extensior
Full Tape Backup	**Yes**	**No**	**No**	**No**	**No**	**No**
Brick-level Tape Backup	**No**	**Yes**	**Yes**	**No**	**No**	**No**
Continuous Replication	**Yes**	**No**	**No**	**No**	**No**	**No**
Copy-on-Write Snapshot	**Yes**	**No**	**No**	**No**	**No**	**No**
E-mail archive	**No**	**No**	**Yes**	**Yes**	**Yes**	**Yes**

Figure 1: Comparison of Exchange Data Management Products

Mimosa NearPoint™ for Microsoft Exchange Server

Mimosa NearPoint *for Microsoft Exchange Server* is a disk-based data management solution for Microsoft Exchange that combines immediate recovery, mailbox extension and archival in a single solution. NearPoint delivers in a single integrated solution features that are typically found in multiple products.

Some of the NearPoint benefits include:

- Vastly improved recovery time: minutes, not hours or days
- Elimination of backup window via exclusive One Pass Protection™
- Increased end-user productivity with intuitive, self-service search and retrieval
- Optimization of storage by migration of attachments; eliminating need for PSTs
- Instant access to archived data for internal or external audit
- Enforcement of email retention and disposition policies for regulatory or compliance purposes
- Re-creation of information states at points in time, for legal investigation

The Mimosa NearPoint software solution is based on standard Microsoft technologies, and runs on a standard Intel server. It is an application-intelligent solution providing deep integration with Exchange and Outlook. NearPoint is disk-based and leverages cost-effective storage, such as SATA RAID and NAS appliances, to provide near real-time data protection and access to archived data from multiple Exchange Servers. Deployment is effortless as there is zero foot print on the Exchange Servers or desktops. Administrators perform immediate restores and configure policies using the standard Microsoft Management Console. Mimosa provides users and auditors instant search and access to email that has been protected, archived, and extended via a standard Microsoft Outlook or Outlook Web Access user interface.

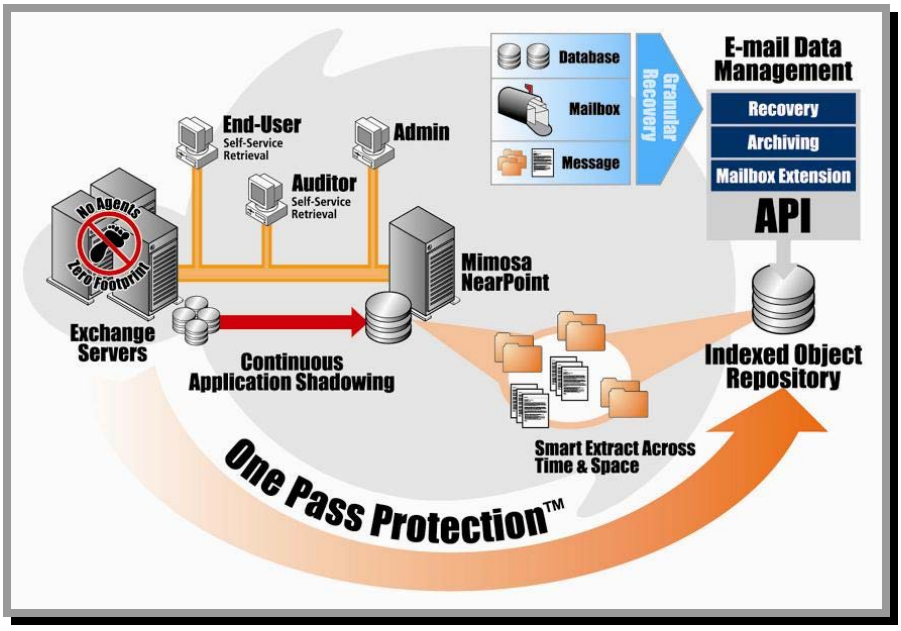

Figure 2: Mimosa NearPoint for Microsoft Exchange

Application Shadowing

The Mimosa NearPoint architecture is designed to protect multiple Exchange Servers using a single NearPoint server. Mimosa developed Application Shadowing, a process that copies Exchange databases and transaction logs to the NearPoint server. Application Shadowing is a disk-based technique that uses the standard Exchange Extensible Storage Engine (ESE) Backup API or the Volume Shadow Copy Service (VSS) API and leverages low-cost disk, to deliver near continuous data protection for Exchange. Mimosa recognizes that by using low-cost disk, it is affordable to keep a complete, nearly up-to-date copy of the production Exchange database on nearline disk. Having a complete copy of the production Exchange database on nearline disk yields many functional and performance advantages for backup and recovery and avoids the hassle of dealing with tape libraries. By using disk as the backup target, Application Shadowing can perform backups more frequently and can restore a full Exchange database in minutes. Here is how it works.

Full Shadow Copy

Application Shadowing begins with a full shadow copy of the Exchange database(s) using the Exchange ESE Backup API. Mimosa chose ESE because the copy process can be performed online, authenticating that all database records are consistent. Full shadow copy can be run once or be repeated (e.g. weekly) depending on the environment. A full shadow copy can be performed manually, to make a full copy after a merger of two Exchange Servers. Each time a full shadow copy runs, it replaces the Exchange database on the NearPoint server with the new copy. NearPoint maintains a current copy of each database from each Storage Group and/or Exchange Server, ready at any time for fast disk-based recovery. A simple "point-and-click" is all it takes to initiate a complete Exchange database restore from the NearPoint server and the restore process is performed in minutes versus the hours or days it takes to restore from tape.

Log Shipping

Following the full shadow copy, incremental shadows are performed using a process called log shipping. Log shipping keeps the full database copies on the NearPoint server up-to-date and relies on the Exchange Transaction Log Files to obtain the latest database records. There are two types of log shipping – Periodic Log Shipping and Dynamic Log Shipping. Periodic Log Shipping uses the ESE Incremental Backup API and copies Exchange transaction log files to the NearPoint server at a frequency specified by the Administrator (e.g. hourly). The Exchange Incremental Backup API checks all the database records in each log file for consistency, which is critical to make sure there is no data corruption. Each time that Periodic Log Shipping runs, it immediately applies all the transaction logs to the Exchange database copy maintained on the NearPoint server. In this manner, the full copy of the Exchange database on NearPoint always remains current, as of the last scheduled log shipping. This is a major improvement over traditional incremental tape backups that do not apply the incremental log files to the full database copy and only run once a day.

Dynamic Log Shipping is a further optimization of Periodic Log Shipping and monitors the Exchange Server file system continuously for new transaction log files. As new transaction log files are created, they are copied immediately to the NearPoint server. If the Exchange database should fail, Administrators are assured of having the most current copy of the Exchange database up to the last log file shipped. Dynamic Log Shipping, when combined with Periodic Log Shipping and full shadow copy, provides near real time protection for the Exchange Server.

One Pass Protection™

Application Shadowing is fundamentally different than other traditional tape based products because it is the only NearPoint backup process that "touches" the Exchange Server. Mimosa calls this One Pass Protection. Traditional tape backup products touch the Exchange Server two times; once using ESE Backup for full database and a second time using MAPI for mailbox level backups. Mimosa developed NearPoint to support mailbox and message level backup without using MAPI and without requiring a second backup pass of Exchange. Mimosa NearPoint requires only a single pass of the Exchange database with a full shadow copy. We will discuss in the next section how Mimosa NearPoint extracts mailbox and message level records from the full Exchange database copy on NearPoint to perform mailbox and message level backup.

Indexed Object Repository

Mimosa NearPoint maintains a current copy of the full Exchange database ready at any time for full database restores. In this section, we will introduce a second repository of data that is stored in a relational database called the Indexed Object Repository. The relational database used is Microsoft SQL (or optionally MSDE). The Indexed Object Repository contains all e-mail messages, attachments and other e-mail items such as contacts, calendars, tasks and journals. The Indexed Object Repository enables individual mailboxes recovery and allows individual users (and auditors) to search and retrieve items using standard Outlook and Outlook Web Access (OWA) interfaces. Indexed Object Repository provides a common repository for data management applications such as recovery, archiving, advanced search, monitoring and supervision and disaster recovery.

Smart Message Extraction™

The Indexed Object Repository is created via a process that runs on Mimosa NearPoint called Smart Message Extraction. Smart Message Extraction runs nearly continuously and parses the full copy of the Exchange database into its individual components. The Smart Extraction process replaces the brick-level backup methods that other backup products require for mailbox and message level backup. Unlike these MAPI-based processes; it runs entirely on the NearPoint server and does not impact the performance of the Exchange Server. Each time new transaction log files are received and applied via periodic log shipping; Smart Extraction extracts the new e-mail items to store in the Indexed

Object Repository. This process keeps the Indexed Object Repository current with the full Exchange database copy.

Indexing and Classification

All of the e-mail items that are processed by Smart Message Extraction are indexed and classified according to their time and location. By indexing the e-mail items, full text searches can be performed more quickly across the entire message header, body and attachment. This improves the standard search capability of Exchange that only searches the message header and body and does not search the contents of any attachments. Each e-mail item is logged according to the time it was created and the mailbox and folder of origin. This information enables "point-in-time" recovery of individual mailboxes and messages and allows viewing of an individual's mailbox at an earlier point-in-time to support forensics. All this rich Metadata information is stored in Microsoft SQL and is accessible from the standard Outlook and OWA interfaces.

Single Instancing and Compression

Smart Message Extraction uses the MD5 hashing algorithm to calculate a digital signature for each e-mail item in the Indexed Object Repository. The digital signature is used immediately to determine if the same e-mail message or attachment has already been stored in the Indexed Object Repository. This process is commonly referred to as single instancing and reduces the amount of space required by the Indexed Object Repository by eliminating duplicate records. The single instancing on NearPoint is global across all Exchange Servers and databases and optimizes the single instancing that Exchange performs within an individual Exchange database. The digital signature is part of the Metadata information stored in the relational database and is also used to verify the integrity of records. Smart Message Extraction also compresses all e-mail items in the Indexed Object repository to further increase storage efficiency.

A Note about Application Intelligence

Application Shadowing and Smart Message Extraction are **application intelligent** processes that are a fundamental improvement over traditional tape backup products. Because they operate with a very detailed understanding of the Exchange database structure, Mimosa NearPoint is able to address a wide range of Exchange failures and errors, not just database crash recovery. The Exchange ESE Backup API, that Application Shadowing uses, provides a level of application intelligence because it checks all Exchange database records for consistency. Each time Application Shadowing and log shipping runs, the log files are certified to be free of corruption. This prevents any data corruption from ever reaching the full Exchange database copy on NearPoint. Other backup methods relying on block-level or file level data shipping methods cannot detect corruption in the data they are copying. They will transfer any corruption in the Exchange database to the backup database and render it useless.

NearPoint Exchange Recovery

The truly remarkable feature of Mimosa NearPoint is recovery. Ease of operation, speed and self-service are just a few of the performance highlights of NearPoint recovery. The NearPoint GUI is very intuitive and simple to use. All it takes is a few simple clicks to restore an entire Exchange database. Because NearPoint is restoring from disk, all recoveries are performed at disk-copy speeds; whether it be a full database restore, mailbox restore or individual message restore. They all perform in seconds and minutes, as compared to the hours and days it can take to restore from tape using traditional tape backup products and native Exchange recovery tools. Users and auditors have self-service access for full-text search and retrieval; not requiring administrator assistance and avoiding possible privacy concerns.

Ease of Initiating Backup and Recovery

Using NearPoint a complete Exchange database restore can be executed with three simple clicks. Compare that to the arduous process of restoring Exchange using Recovery Storage Groups or separate Exchange Servers and understand what a breakthrough NearPoint delivers for Exchange database recovery. To recover a deleted Mailbox, existing options were the Deleted Mailbox Recovery feature in Exchange 2000 or the Mailbox Recovery Center in Exchange 2003, but neither approach compares to NearPoint recovery methods. Using NearPoint (See Figure 3), three clicks is all it takes to restore a mailbox or re-direct a mailbox to a new Exchange Server.

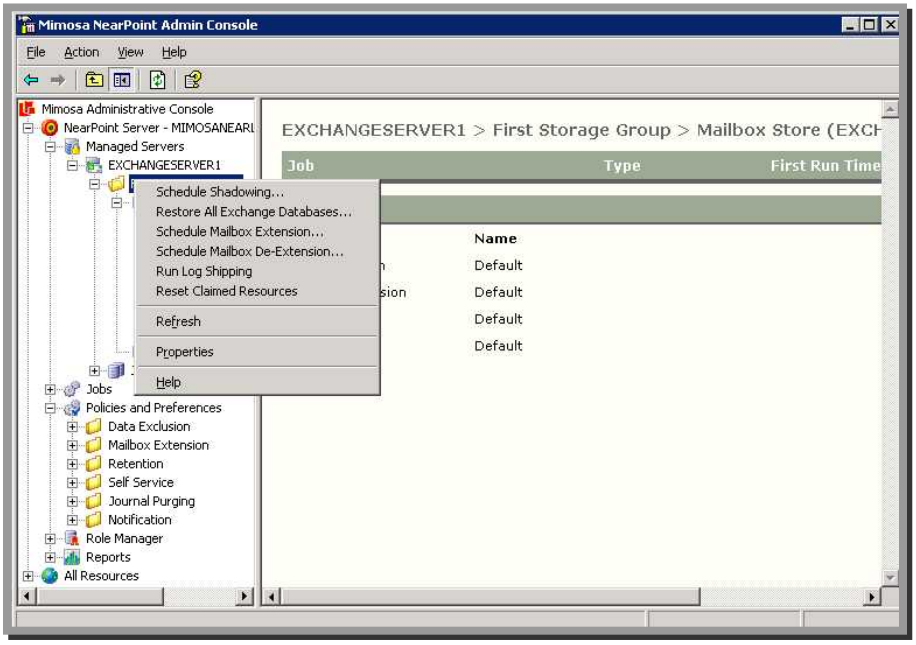

Figure 3: NearPoint Admin Console Showing Menu to Restore Exchange

Fast Recovery

NearPoint greatly reduces the time it takes to restore Exchange. The fundamental difference between NearPoint and traditional tape backup products is that NearPoint continuously updates the copy of the full Exchange database on NearPoint with new transaction logs. The time consuming process of restoring multiple incremental backup tapes is eliminated. The total time that it takes to prepare a Recovery Storage Group (Exchange 2003), restore from tape and use ExMerge can be hours compared to the minutes it takes to initiate a full Exchange recovery using NearPoint. Disk-based replication techniques also offer fast recovery but they are vulnerable to virus and data corruption problems as they operate at the block or file level and are not application-aware. NearPoint operates at the transaction log file level and only applies logs that have been verified by ESE to be consistent. This virtually guarantees that the full Exchange database on NearPoint is always free from corruption and available for a full Exchange database recovery at any time.

Fine-Grained Recovery Point Objective

NearPoint also improves the granularity of the time point to which an Exchange Server can be recovered, which is technically defined as the Recovery Point Objective (RPO). Using Log Shipping, NearPoint maintains a near real-time copy of the Exchange Server. For example, if log files were shipped at 60 minute intervals, then Exchange could be restored to the last 60 minute time period. A 60 minute RPO is much better than the 23 hour RPO with daily tape backups. If you Using Dynamic Log Shipping, RPO is reduced to the time the last log file shipped. Other data protection methods that rely on file system snapshots can reduce Exchange RPO but they are only useful for recovery from data corruption errors. Block-level replication methods offer the least RPO (e.g. < 1 minute) but are only useful for crash recovery. NearPoint is the only solution that offers flexible recovery of the Exchange Server, storage group, database or mailbox with near real-time data protection.

Self-Service Retrieval

A common complaint of Exchange Administrators is recovering individual messages. This is a frequent end-user request. Typically, administrators set the Deleted Item Folder period on Exchange Server to 30 days and refuse to restore messages older than 30 days. The theory is that this provides enough time for users to say “Oops, I did not mean to delete that message”. The reason for this practice is that it can take days of an administrator’s hard work to restore a tape backup to a Recovery Server to get hold of a deleted message. This process also requires that the Administrator must access an individual’s e-mail and can raise privacy issues.

The Mimosa Self-Service Retrieve capability offers end-users easy access to all messages stored in the Indexed Object Repository and enables users to restore individual messages. No longer do users have to contact the Help Desk to recover a lost message. Administrators can enable the Mimosa Self-Service Retrieve, which is accessed using the standard Microsoft Outlook and OWA

interfaces (figure 4). End-users click on the "NearPoint Retrieve" folder to have access to all of their protected data. In the screen shot below, the recovery "browse" feature is displayed. Here users can browse their mailbox, perhaps looking for a message they deleted by mistake. The browse window displays the complete archived mailbox including folders, calendar, contacts, journal, notes, and tasks. This complete mailbox view is valuable for re-constructing message history. Users can open folders and view e-mail and restore e-mail using this simple interface.

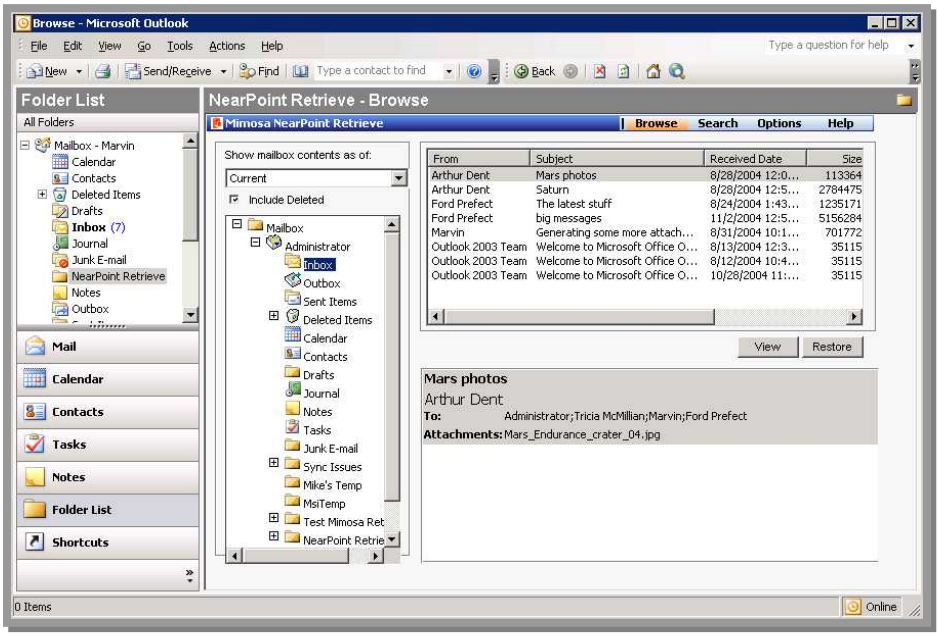

Figure 4: NearPoint Retrieve Folder Browse Interface

The Mimosa Self-Service Retrieval capability includes a powerful full-text search tool (figure 5). Users can search for accidentally deleted messages and attachments in specific folders, using keywords or by targeting particular time periods. Even if a message was deleted months or years ago, if it is in NearPoint, the message can be located and restored easily. The full-text search feature is especially useful for users who maintain year's worth of e-mail and would benefit from retrieving old messages more easily. The NearPoint Retrieve folder is intuitive to use and puts an end to the very difficult process of individual message recovery from backup tape.

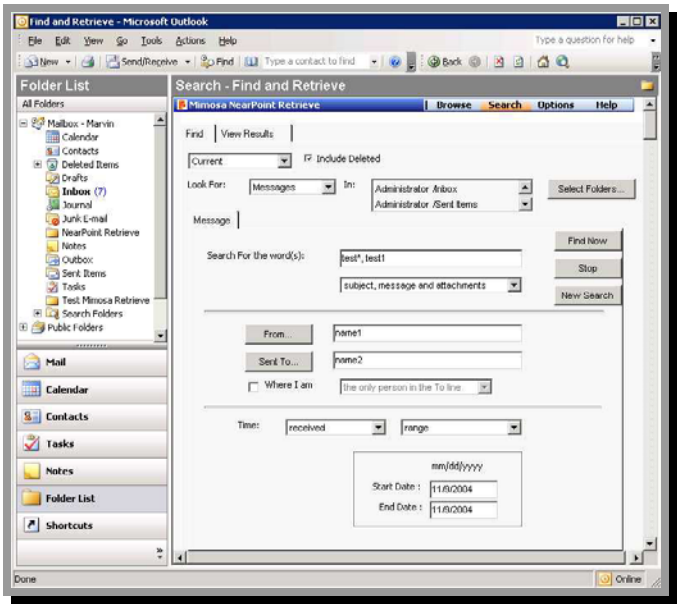

Figure 5: NearPoint Retrieve Folder Search Interface

The NearPoint Retrieve folder has a unique feature for showing mailbox content at any point in time (figure 6). Using the drop down menu, users can select one of the pre-selected points in time or they can specify an exact time for which they wish to browse. This feature is useful for finding a message that was deleted in error. It is also useful when auditors wish to analyze a particular issue and need to view the mailbox at a particular time. This feature is available in both the Browse and Search interfaces.

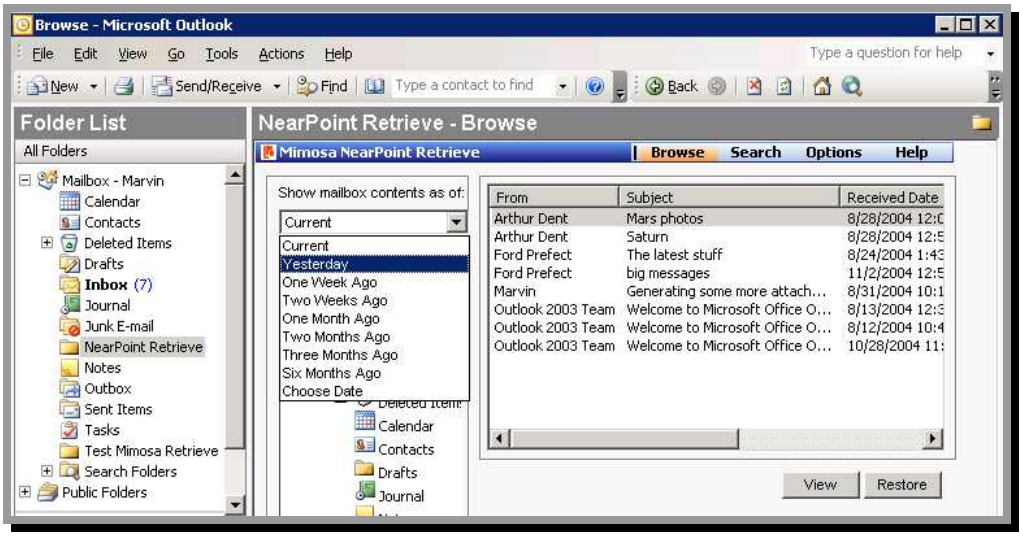

Figure 6: NearPoint "Show Mailbox Contents as of:" Feature

NearPoint Mailbox Extension

One of the most difficult challenges of managing Exchange is balancing the need of users who wish to keep all of their e-mail and the increased storage capacity that lengthens backup and recovery time. A common practice is to use mailbox quotas to limit the mailbox to 100 MB, for example. When users reach their mailbox quota limit, they must delete unnecessary messages or e-mail service will halt. End-users would rather keep their e-mail, so they typically save old e-mail to a local Personal Store (PST) file. Users who store months and years worth of e-mail will require multiple PST files to hold all the old messages.

PST files are not a perfect solution for Exchange e-mail storage and the most common problem is when they grow too large. PST files have a 2 GB file size limit[1] and when PST files become large (>1 GB) they begin to suffer from slow performance and possible data corruption. When large PST file refuse to open, end-users must call the Help Desk and wait while special tools are used to correct the problem. This process is time consuming and is unproductive. PST files are also a problem when a company wide e-mail legal discovery search is performed. It is both expensive and time consuming to search local PST files on every company PC. Finally, PST files stored on desktops are rarely, if ever, backed up, putting corporate data at risk.

The root source of the Exchange storage problem is attachments. Exchange has become a de-facto business collaboration tool and end-users routinely share office files (e.g. Word, Excel and PowerPoint files) using Exchange. E-mails are typically only 3-6 KB for message text, but attachments can easily exceed 1 MB in size. It is the attachments that are filling up Exchange, not the messages. If the attachments can be removed from Exchange, then the size of the Exchange Server store is dramatically reduced, and users may store more messages.

Infinite Mailbox

A major benefit of the NearPoint server is that it can remove attachments from the Exchange Server(s) and replace them with a small "short-cut" or "stub" file. This process is called Mailbox Extension and it can reduce the total Exchange storage capacity by as much as 80%[2]. End-users can continue to access their messages and attachments by a simple "double-click" via Outlook or OWA. Operations such as Forward, Delete, Reply, and Move perform as they would with local message copies. Mailbox Extension policy is managed for each mailbox and includes simple policies for age and size or high/low watermark (figure 7).

Mailbox Extension effectively eliminates the need for mailbox quotas and PST files. By reducing the amount of Exchange storage, more storage capacity is available to increase (or eliminate) mailbox quotas, reducing the need for PST local storage. Exchange backups run faster, use less tape media and Exchange

[1] The PST file size limit is 2GB for Outlook Version 2002 and earlier. In Outlook 2003 the format of the PST was changed and the limit was increased to over 20GB's.

[2]Based on actual customer installations. This figure is dependent on the number of mailboxes affected and the policies set.

restores are completed in less time. The total storage costs for Exchange are reduced and more mailboxes can be managed by fewer servers. Companies benefit from reduced total Exchange storage cost and end-users enjoy what is commonly called an "Infinite Mailbox".

A Note about Mobile Users

Mobile users require PST files for offline e-mail access when not connected to the NearPoint server. NearPoint has a copy of all e-mail in the Indexed Object Repository; users can manually copy messages to PST files for offline access. These files still remain on the NearPoint server and are protected and accessible for search.

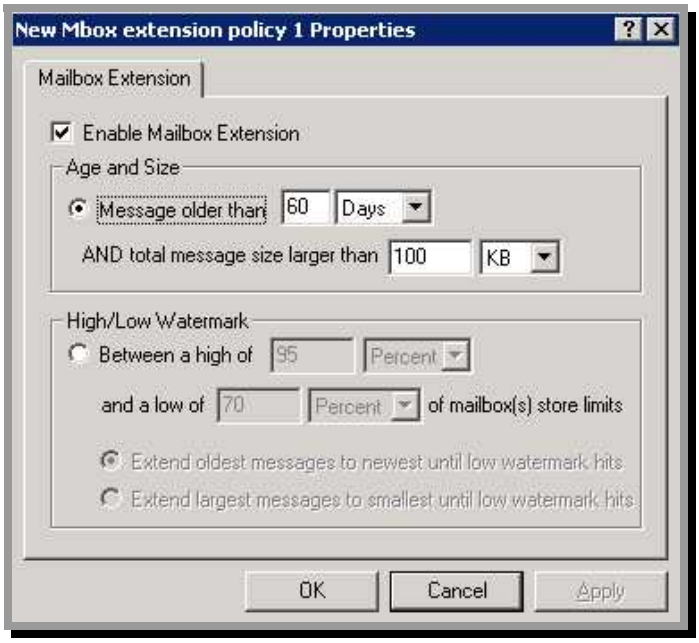

Figure 7: Mailbox Extension Policy Management GUI

NearPoint E-mail Archival

E-mail archival is vital for the management and preservation of e-mail for several reasons, including: users who demand recovery for old messages; business law that requires preservation of the business records that e-mail contains; organizations that benefit by accessing intellectual property; and legal experts and compliance regulators who require access to e-mail for search and retrieval. Tape backups are commonly relied upon for e-mail archival but this can be a risky choice. When an Administrator is asked to search and retrieve old messages, he or she may be forced to re-load hundreds of old backup tapes. This exercise can consume a huge amount of time and money. Anyone who has had to endure this experience knows that tape backups are not useful for e-mail archival for compliance.

Many commercially available stand-alone applications are available for e-mail archival. These stand-alone e-mail archive applications create a complete duplicate indexed copy of all the Exchange data. This indexed copy of Exchange is built by reading the production Exchange database with MAPI. Similar to the "brick-level" tape backup problem, MAPI introduces a very large burden on the Exchange Server CPU. Typically, e-mail archival is scheduled at "non-peak" hours to reduce the performance impact on Exchange. Other drawbacks of these stand-alone e-mail archive applications are that they do not scale well and they are not integrated with data protection.

Mimosa NearPoint is fundamentally different than traditional e-mail archival and backup applications because it performs both data protection and e-mail archival services with a single data repository. Mimosa recognizes that a single common repository of Exchange data (the Indexed Object Repository) can service both data protection and e-mail archive. It is costly and inefficient to maintain one copy of Exchange on backup tape for recovery and a second copy of Exchange on disk for e-mail archive. Mimosa NearPoint is a single integrated solution for data protection and e-mail archive that delivers self-service access for fast full-text search and retrieval. It eliminates the most common problems of stand-alone e-mail archive solutions by avoiding the use of MAPI, being highly scalable and being tightly integrated with data protection.

Primary Functions

The primary function that Mimosa NearPoint performs for e-mail archival is that it stores all the Exchange data in a central Indexed Object Repository. As discussed previously, the Indexed Object Repository stores and manages all the Exchange data and makes it available for search and retrieval. The integrity of the data is protected by allowing only authorized access and by using digital signatures. Regulators and auditors can be certain that the data stored in the Indexed Object Repository cannot be accessed improperly and that it remains unaltered for its entire life cycle. Because the Indexed Object Repository is fully indexed, searches can be performed quickly across all message locations and across all points-in-time.

Self-Service Archival Access

With the Mimosa NearPoint Indexed Object Repository at their finger tips, users have access to a complete historical view of their mailbox. Using the intuitive search and browse screens that they access via Microsoft Outlook or OWA, users can browse their entire mailbox at any given point-in-time or search for a particular message or attachment. Traditional Microsoft Outlook can only browse the current time and cannot search attachments. Imagine the power that NearPoint brings by enabling a view of an entire mailbox that may be two weeks or two months old. All folders, contacts, appointments, tasks, messages are displayed exactly as they appeared previously.

Auditor Role

Using NearPoint, auditors can be granted access to multiple mailboxes for self-service search and retrieval. This saves time and avoids any privacy issues that

are implicit when searching other people's e-mail. The auditor views these mailboxes using the standard Outlook and OWA interfaces. They can have different views of the contents of a mailbox - point-in-time, mailbox content between specified times, and all content of a mailbox retained in the NearPoint server. Powerful search functions allow auditors to look for emails as well as other items including calendar events, contacts, and keywords within subject line, message body, and/or attachments. Searching the "From" and "To" fields as well as defining a time period for a search allows for further granularity of detail, increasing the efficiency of the discovery process and allowing the ability to recreate a point-in-time view of communications between individuals.

Retention Management and Disposition

Mimosa NearPoint provides an automated process that enforces retention of email by keeping track of the time a message was created or deleted and applying policies set by the Administrator. At the expiration of the retention period, email is permanently expunged from the NearPoint server. (figure 8) In case of an investigation, a "suspend of disposition" can be placed on one or multiple mailboxes, preventing items from being purged until the hold is removed. A common practice is to have NearPoint remove e-mail from the Indexed Object Repository that has been deleted on the Exchange Server, after a time period set by corporate policy. This period of time varies by organization and you should consult with your organization's compliance or legal officer when using this feature.

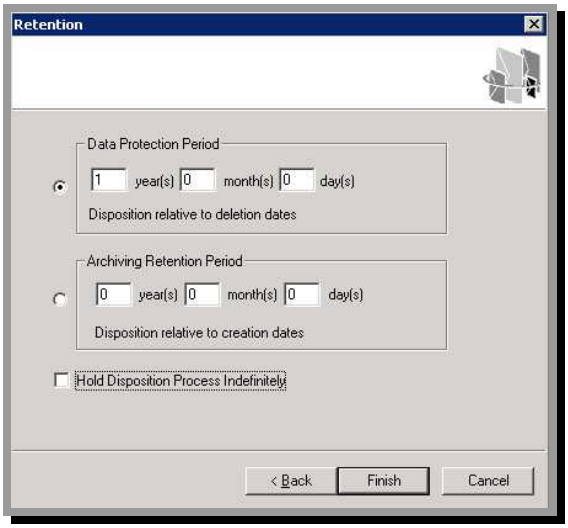

Figure 8: Data Retention Management

Journaling

NearPoint Journal Archiving supports the Microsoft Exchange Journal feature to provide a more stringent level of archiving normally reserved for strict compliance environments. The Exchange journal process captures all inbound and outbound emails, calendar items, etc. from members of a designated group and stores them in a journal mailbox located on Exchange. NearPoint reads the Exchange journal mailbox, copies the data into the NearPoint data repository, and truncates the journal mailbox contents automatically. Without NearPoint the

journal mailbox is effectively "unusable" as the mailboxes grow out of control. Using NearPoint, journaling can capture 100% of all messages without placing the storage burden on Exchange.

A Note about Compliance

The most stringent rules for e-mail archival are the SEC rules that apply to broker/dealer members. SEC Rule 17a-4 specifies the exact means that e-mail must be protected including immutable storage, indexing, audit and supervision. E-mail archival solutions that meet all the SEC Rule 17a-4 requirements typically cost hundreds of thousands of dollars and take weeks or months of consulting services to implement. NearPoint is built to address compliance needs such as Sarbanes-Oxley, HIPAA and FDA CFR Part 11 that also require e-mail preservation but do not have the stringent SEC requirements. NearPoint provides the indexed common repository, search and retrieval, secure access, digital signatures, and retention management features that provide a general purpose e-mail archival application. For organizations not governed by the SEC, NearPoint offers a powerful, yet cost-effective e-mail archival solution that is easier to deploy and costs thousands less than traditional e-mail archival solutions.

Optimized Exchange Storage

One of the major benefits of the Mimosa NearPoint solution is that it helps optimize the Exchange Server storage. The most obvious way to optimize Exchange storage is to use the Mailbox Extension feature we discussed earlier. This feature alone can reduce Exchange storage as much as 80%. But there are additional features of NearPoint that can help you optimize your Exchange Server storage. For example, the Indexed Object Repository enables recovery of mailboxes and messages, so you can reduce the size of the Deleted Mailbox and Deleted Item folders on Exchange. And if you are using the Exchange Journaling, you can use NearPoint to read and delete the journal folder contents and minimize its size. Your Exchange Server runs faster and is easier to manage when it is not burdened with large attachments and old deleted mailboxes and messages. NearPoint is designed to efficiently manage these cumbersome (and deleted) records and allows you to better manage total Exchange performance.

Tape Backup Co-existence

The Mimosa solution is designed to co-exist with legacy tape backup products and we recommend that you continue to use your tape backup products for offsite disaster recovery. Depending on the type of tape backup you are using, you need to make sure the log files on Exchange are handled properly. If you are doing full and incremental backups then the transaction log files are being automatically deleted after each backup so that they do not fill up the Exchange Server. In this situation, NearPoint is configured to not truncate the log files. If you use the copy and differential tape backup methods then NearPoint can be

configured to truncate the log files. This way, both the tape backup software and Mimosa NearPoint will be in sync with the data on the Exchange Server.

It is recommended that the NearPoint server itself be protected with a traditional tape backup for increased protection and offsite archival. A weekly full backup and daily incremental is sufficient to protect NearPoint. An online backup agent for MS SQL is recommended to backup NearPoint while it is running.

Conclusion

Mimosa Systems has created a new approach to Exchange data management to keep pace with the increasing demands for continuous and convenient access to on-line and archived e-mail data.

- Legacy backup and recovery methods are complex and require hours to complete, forcing enterprises to compromise between data protection and fine grained recovery.
- Burgeoning Exchange Servers require users to archive messages or use clumsy partitioned files, thereby reducing productivity and impacting the enterprise's ability to search and discover information.
- All recovery has to be performed by the overstretched administrative staff, contributing to increased expenses as well as end user dissatisfaction and loss of productivity.
- Traditional e-mail archival solutions are increasingly complex and costly to maintain and regulatory compliance needs is exacerbating the problem.

Mimosa NearPoint *for Microsoft Exchange Server* is a disk-based data management solution that solves the data management challenges to deliver fine-grained data protection and e-mail archival for Microsoft Exchange, in a single integrated solution.

- Restores an entire Exchange Server, storage group, database or mailbox at disk speed. Allows users self-service message level recovery.
- Optimizes Exchange storage and allows end users to conveniently access large amount of email storage reducing the need for quotas and PST files and making it easy to enforce email retention policies.
- Provides continuous, immediate on-line access to archived email for individual use as well as enterprise discovery needs.

For more information about Mimosa Systems and its new NearPoint solution, contact your Mimosa Sales Representative at 1-(408) 970-9070 or visit our web site at www.mimosasystems.com.