



Microsoft Exchange 2010 and Advanced Email Archiving

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Executive Overview

This report was commissioned by C2C to review Microsoft Exchange 2010 (including SP1) in the areas of: Storage utilization and management; Mailbox Replication; Email Archiving and Retention; and set this into context with regard to advanced third party archiving solutions. It does not cover other aspects of Ex2010 such as Unified Communications and administrative interface updates. The report finds that while Microsoft has tackled many different issues with Ex2010 and overall done a good job with them, upon closer inspection some of these features are limited in their functionality and the changes made have implications to other parts of the system. This report attempts to cover the interdependencies of the major architectural changes and put them into context for the reader.

The article encompasses:

The increase in storage requirements through the demands of the new architecture and some of Microsoft's reliability and connectivity recommendations, many of which are good for smaller businesses, but would be problematic to implement for larger customers. These changes are radical and are unlikely to be implemented until thoroughly understood and built into the long-term strategy of a customer's infrastructure, which may easily take 2-3 years to bring about.

Single Instance Storage (SIS): Microsoft finally abandons SIS with Ex2010. This may have gains in performance, but there is a considerable penalty on the applications storage requirements (especially for legacy data). The resultant storage increase (on average 1.7 times for breaking SIS) can easily be recovered by use of an archiving system. Further, with the storage strategy of requiring at least three copies of data for resilience, plus recovering PSTs into the primary mailbox which will cause considerable storage bloat, much can be alleviated with an advanced archiving solution.

Mailbox Replication and Compliance features: In brief, Microsoft has implemented some of the functions provided by third party products, but they lack granularity for the larger customer or for those who need to adhere to tighter compliance, discovery and retention rules as mandated by many industry-specific or legislative regulations.

In summary, Exchange 2010 is a major step forward and is applauded by all of us. Any company evaluating Exchange 2010 needs to review all of the new capabilities in the context of their current system and their unique requirements before rushing into changes that may bring unforeseen consequences to their system's resource utilization or their business operations.

Introduction

Historically, Exchange was very inefficient when mailbox and data store capacities exceeded the capabilities of the underlying Exchange server and storage architecture. Previous versions of Exchange employed a monolithic server design that required expensive, fault-tolerant, SAN-based storage to provide acceptable levels of system reliability and availability. In addition, backup and recovery of large Exchange data stores, especially in support of message level recoveries, made large message stores problematic and expensive for IT to manage. To control this growth and reduce the performance impact from increasingly larger end user mailboxes, Exchange administrators often placed limits on the mailbox size which forced users to either delete messages or move them into offline PST files to prevent their mailbox being locked for new messaging activity.

As messaging systems became a critical business application containing customer data, essential business communications and intellectual property – the challenges of providing a continuously available Exchange system became a top priority. Protecting Exchange data from all forms of data loss while ensuring the system was capable of meeting increased regulatory compliance and legal discovery demands was placing a heavy burden on Exchange administrators. In response to these concerns, Exchange 2010 includes major changes in the Information Store; a new database replication function for improved high availability; a number of management and administration updates; as well as new features that provide integrated message archiving and compliance functions.

From 30,000 feet, Exchange 2010 appears to have substantial improvements in at least one key area. A major redesign of the storage architecture, which began with Exchange 2007, has been completed and is reported to deliver improved performance and support for larger mailboxes. The new design also gives administrators the opportunity to utilize direct or network attached, lower cost storage devices in JBOD configurations, which could save thousands when buying storage to support the increased data store requirements resulting from larger mailbox capacities and the improved system availability and reliability features delivered in Exchange 2010.

While these changes are worth considering when planning your Exchange upgrade there are always trade-offs to consider before replacing your existing storage architecture and third party data protection products to go with a Microsoft only solution. In addition to the storage redesign, we will take a closer look at the mailbox archiving and compliance related features announced in this release. Once again from 30,000 feet Microsoft appears to have addressed these critical needs, however capacity management is not addressed at all and for anyone concerned about meeting increased compliance and eDiscovery requirements you will find Exchange 2010 falls well short of most users expectations.

This paper will only examine those major features addressing a company's ability to meet three key business requirements. The goal is to determine how the latest version of Exchange addresses these needs while investigating any potential synergy from using C2C's ArchiveOne solution to extend and enhance Exchanges new capabilities. The focus will be on the following distinct sets of needs:

1. System availability, performance and data reliability;
2. Database capacity management; and lastly
3. Corporate governance, regulatory compliance, and providing legal disclosure during litigation.

Availability, Reliability and Performance

Exchange 2010 Server and Storage Improvements:

Microsoft has made an impact in this area by streamlining the administration of multi-role servers first introduced in Exchange 2007 and by completely redesigning the storage architecture in this release. Since the new storage design allows live copies of databases to be switched between multiple servers to provide improved availability, a new component in Exchange 2010 called the RPC Client Access Layer, upgrades the Client Access Server (CAS) role so that all client connections flow through a predictable point in the network. Regardless of your backend configuration, the CAS will always provide a connection to the client's current mailbox database even after a failover to a new mailbox server. This change enables greater flexibility in the design of the backend database server configuration.

Exchange 2010 includes many changes to its core architecture. New features such as multiple mailbox database copies and database availability groups work with other features including shadow copy redundancy and the transport dumpster to provide an integrated platform for high availability at the mailbox and server level, as well as disaster recovery from catastrophic loss at the site level. Dependent on a customer's needs and resources, it is possible to construct a self-contained, highly available environment without Windows Clustering or third party replication solutions. Of course, all this comes at cost. WAN-based deployments, multiple servers and a large dedicated pool of storage will be required to meet most database availability and site resiliency goals.

To help mitigate these costs and improve overall performance, Exchange 2010 has made changes to the database schema, optimized I/O routines, and increased the database page size to 32K increasing performance by caching the larger page size in memory. The new schema is said to reduce database I/O per second (IOPS) while improving logical contiguity and locality of reference, which alleviates the performance issues related to index maintenance in earlier releases. In addition, the Extensible Storage Engine (ESE) has been improved to support larger, more sequential I/O's for better performance; optimization for commodity storage; and to provide a continuous online defragmentation process.

These changes will enable administrators to support larger mailbox sizes, reportedly up to 10 GBs and 100K entries, using lower cost SAS devices without suffering performance issues. While supporting larger online mailboxes has its benefits, the increase in storage requirements does raise some concerns. All this information still needs to be protected and traditional backup processes remain an error-prone, time-consuming task. Using Exchange's database availability groups (DAGs), multiple database copies, including lagged copies to protect against logical corruption, will provide mailbox redundancy, message level recovery and increased levels of system availability. However, you must be prepared to consume a large amount of storage resources.

Several questions emerge: Are administrators ready to abandon their existing backup solution and fully rely on Exchange's built-in data protection services? What will be the long-term costs of supporting redundant copies of larger mailbox databases, and how will they manage the inevitable growth in the Exchange data store? Data protection will need to be decided on a case-by-case basis. Companies have invested thousands of dollars designing and testing their backup and recovery strategies over the years. It's far more likely and safer to evaluate Exchange's new features and look for ways to leverage the mailbox replication technology to improve their

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existing strategy rather than replace it altogether. In many countries, compliance is also a factor as new laws require that copies of critical data are stored on removable WORM devices such as optical or tape media, a capability not provided for in the Exchange 2010 data protection features.

The subjects of managing data store growth and performance are related to the type of storage being deployed. Microsoft stated the performance optimizations were tailored for SATA or SAS class devices in a direct attached storage (DAS) configuration. While adequate for some business usage, DAS has not been widely used with Exchange and it is doubtful most companies will abandon SAN-based designs when migrating to Exchange 2010. DAS is simple to deploy, has a lower initial cost compared to a SAN and is relatively easy to manage in environments with a few servers. However, management complexity escalates quickly with the addition of more servers, since storage for each is administered separately.

SAN's utilize storage more efficiently than DAS where a high percentage of free space must be maintained to support future growth. SANs provide tools to manage large volumes of storage and administrators can dynamically allocate from a central pool to any mailbox server as required. Email usage trends, Exchange's data redundancy requirements and increasing mailbox capacities point to continued data store growth and the limited scalability of DAS will present a challenge. From both a cost efficiency and management perspective, SAN storage models are better suited to Exchange 2010's high scalability requirements.

The performance enhancements and new data protection options are welcome improvements that provide administrators the ability to completely rethink their Exchange architecture and data recovery strategies. Support for larger mailboxes will allow administrators to reduce the need for quotas and PST file usage, which brings critical company assets back under IT control and reduces help desk calls from users looking for lost messages. Providing multiple levels of redundancy and automated failover will increase productivity and protect against most forms of data loss.

While each organization will have to decide the best options for meeting their data protection and recovery needs as they design their Exchange 2010 rollout strategy, the question of managing data growth remains a major issue. Microsoft's answer is the new Personal Archive feature, which allows older messages to be moved into a separate archive mailbox, replacing PSTs and helping to control the size of the primary mailbox. The next section will explain this and other features designed to control storage growth and compare them against the features and benefits provided by third party archiving tools such as C2C's ArchiveOne® Policy Manager.

Capacity Management

The key capacity management feature in 2010 is the addition of a "personal archive" mailbox. Note that this feature does not reduce the Exchange data store size. It was primarily intended to take advantage of the larger mailbox support to eliminate PST usage, which is a key management issue and positioned as a major benefit of third party archiving solutions. Content stored in PST files are outside IT's control and presented significant backup, compliance, and eDiscovery issues. Eliminating PST usage by relaxing mailbox quotas and allowing more content to be stored in Exchange is viewed as a real benefit to everyone. However, the only option provided is to move PST content back into the Exchange data store. The real issue for administrators becomes the ability to find PSTs, understand the amount of data involved and

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model the impact of PST ingestion on Exchange processing and the total size of data store required.

Exchange provides no tools for locating PSTs that are likely scattered across file servers and end user machines, and more importantly, there are no automated methods for centrally controlling the PST ingestion process. Expecting users to voluntarily import their own PSTs present several problems:

1. Will they actually take the time to perform the task given their already busy schedules?
2. How do you know if you provided enough Exchange storage capacity to hold all the data?
3. What will be the impact on Exchange performance as users move PST content back into their mailboxes especially if done during peak usage periods?

ArchiveOne Policy Manager provides an automated, centrally controlled solution that locates PSTs wherever they reside, even when they're not connected to Outlook, and provides the statistical information needed to make informed migration decisions. Once the size and scope of PST usage is understood, administrators are in full control of the migration process and can optionally move content back into Exchange and/or into ArchiveOne's secure, indexed, external data repository. C2C also provides a standalone PST Manager utility to help administrators understand the scope of their PST problem before they decide upon the best resolution path.

Regardless of the PST migration decisions made, it is clear that implementing increased mailbox sizes and Exchange 2010's new data protection features will significantly increase the size of Exchange's data store. Using the new archive feature to move older items to the personal archive mailbox will reduce Exchange and Outlook overhead when users open large folders, such as their inbox, but it will not help control initial capacity and limit long-term storage growth. With both primary and archive content residing in an Exchange database, the archive mailboxes remain subject to the same management and data protection considerations as the primary mailbox.

There are also limitations in Exchange 2010's archive support. For example, archiving criteria is limited to the messages age. There is no support for other useful selection criteria, such as message and attachment size or mailbox quota thresholds, all popular options with administrators. With ArchiveOne you can specify flexible, granular archive policies using any combination of over 70 criteria to precisely target when to archive email based on its business value to the company or impact to the Exchange environment. In addition, the archiving feature in Exchange 2010 is not free. Both the Standard Client License and an Enterprise Client Access License are required for each user, which adds license fees of \$35US per seat.

Historically, email archiving was used to control database growth while allowing older, infrequently accessed messages to be retained and readily available for their specified lifecycle. Exchange's archiving function can aid retention if the default setting of 'unlimited' is used for the archive mailbox quota and the new retention feature is used to control data expiration. However in practice, most companies will want quota limits to ensure the data store does not grow to unmanageable proportions. With a third party archive solution, administrators can provide virtually unlimited mailbox capacity and enforce email retention requirements while controlling the initial size and future growth of the Exchange data store.

To better understand the storage savings from using external email archiving, we used the Microsoft E2010 Storage Calculator to model several scenarios in a mock 1,000-user environment. We defined three tiers of users, specified 1TB 7,200 RPM SATA disks throughout

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and kept all of the supplied defaults for various overheads such as log storage, CPU type, speed and memory configurations. While the calculator provides a number of data variables, we are only interested in how different usage goals effect storage requirements. Each model used the following base characteristics for the three tiers of users:

Tier	# of Seats	# of Msgs per Day	Avg. Msg Size KBs	Deleted Item Ret in Days	Primary MBX Limit MBs	Archive MBX Limit MBs	MBX Growth Factor
Knowledge Worker	200	150	250	14	2048	8192	5%
Executive Staff	50	150	150	14	2048	8192	0%
Everyone Else	750	50	75	7	2048	4096	5%

In each model additional storage space was included to provide space for calendar versioning and individual item recovery support for the time period shown in the deleted item retention column above. All but the first model specified two lagged database copies with a twenty-four hour delay to protect against database corruption and reduce reliance on traditional backup methods. In all cases, every attempt was made to use the minimum number of mailbox copies while still meeting each design objective. JBOD was favored, but RAID was allowed when required to eliminate single points of failure as recommended by the calculator.

E2010 Storage Requirements by Usage Model

Configuration Objective	# DAGs	Database Copies / DAG	RAID Storage TBs	JBOD Storage TBs	Total Storage TBs	Notes
Primary MBX Store Only	0	1	18	0	18	Provides no redundancy or failover except for RAID
Mailbox Resiliency	1	3	0	91	91	Provides mailbox database recovery- 3 copies needed to eliminate RAID requirement
MBX Resiliency W/ArchiveOne	1	3	0	28	28	Provides mailbox database recovery using ArchiveOne for the archive database
MBX + Site Resiliency	2	4	88	80	168	Mailbox recovery and disaster recovery from datacenter loss
MBX + Site Resiliency W/ArchiveOne	2	4	40	48	88	Mailbox recovery and disaster recovery using ArchiveOne for the archive database

In the first model we designed a simple, single database copy environment that will only hold the primary mailboxes 2GBs of data. This model did require RAID 1/0 to provide some level of protection against hardware failure. As indicated in the above table, you can see how adding space for archive mailboxes and increasing the level of data protection using Exchange's replication and database availability groups dramatically increases the amount of storage required in each model. Since each DAG supports up to 16 copies of a database, you can envision how more elaborate, virtually bullet proof designs can be created if you can afford the server and storage resources required to support higher availability objectives than the ones we specified.

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While each organization will need to decide how much redundancy and data protection they require and whether to rely solely on Exchange's new data protection capabilities, Exchange 2010 provides increased design flexibility and does enable administrators to rethink how they want to deploy Exchange. However, the point of this exercise was to determine if using ArchiveOne for message archiving added value to your design options and reduced storage costs while providing a more complete email archiving solution.

The first model (grey row), does not provide for email archiving or data protection at all and is used to show a baseline for storing 2GBs of data in each user's primary mailbox. The other models include archive support and provide for mailbox resiliency by storing multiple copies of each mailbox database, and in the third case, we added disaster recovery support to protect against catastrophic data center loss. Note: the site resiliency model requires two geographically dispersed data centers. Each model has two rows of data. The first row shows the storage capacity needed when using the Exchange Archive mailbox to store older messages, and the second row indicates the capacity needed in Exchange to achieve the stated data protection objectives without the email archives being stored in Exchange.

By comparing the total storage required in the last column of each row in the mailbox resiliency model (blue highlighted rows) and the site resiliency model (red data rows) in the table, you will see that committing your archived email message store to ArchiveOne reduces Exchange database storage requirements between 48% and 66%. Of course, some of the 63 to 80TBs of capacity saved in each model will be redirected to the ArchiveOne data repository, but efficiencies in the ArchiveOne architecture will help maximize the use of the this repository space and provide operational benefits as well.

The ArchiveOne data repository uses storage more effectively for several reasons. First, the advanced single instancing function, called SIS Plus, stores only one copy of all duplicated messages, and more importantly, their attachments in the archive. Duplicated attachments are recognized and stored only once even if the message header attributes or text in the body is different in each email message. Since message attachments can account for up to 80% of the archive message store, significant storage savings will result. Also the storage performance optimization in Exchange 2010 has forced Microsoft to drop its single instancing feature and rely only on message text compression as the way to optimize the size of its data stores.

It's impossible to predict the real world savings from single instancing for each customer due to a number of variables. However, C2C's customers experience and reports from users on Exchange blogs indicate storage capacity is reduced in the range of 40 to 77%, and that is before they had calculated the impact of moving all the data stored in users' PST files back into the Exchange database. Microsoft also provides the following examples where either hardware or software-based SIS would yield considerable storage savings:

1. Environments that only send Rich-Text format messages.
2. Businesses where large attachments are sent to many users.
3. Business archives that are used to maintain immutable copies of email, which is useful when you need to retain data for compliance purposes.

If we use the midpoint of the reported SIS data reduction range, you can expect a 58% savings in your Exchange storage requirements by using ArchiveOne with SIS Plus. You might argue that with Exchange 2010, storage can now utilize a less expensive class of devices, but there are other factors to consider as well. Unless you have multiple data centers and plan to implement a

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high availability, site-resilient data protection model, you will still need to backup your Exchange databases. Using VSS for database backups, now mandatory in Exchange 2010, presents no system availability issues. However, message level backups will continue to be a major headache for administrators.

Message level backups must use MAPI to process the message store, which consumes a lot of Exchange resources and typically take a long time to complete. ArchiveOne's external data repository keeps the Exchange data store under control to minimize impact on backup windows and ensures your next Exchange upgrade is easier to plan for and faster to complete. ArchiveOne is also fully integrated with popular third party backup solutions. You can use these products to easily backup the ArchiveOne database files or to move aged archive data to offline media, saving even more primary disk space. ArchiveOne will automatically request a restore operation if the offline data is needed in the future.

ArchiveOne's archive repositories are individual logical storage databases that can be allocated on any type or class of storage and do not require a relational database (such as SQL Server), therefore further reducing total cost of ownership and operational complexity. The repository architecture provides a flexible and portable set of storage containers, easily configured to meet dynamic organizational needs. In addition, a two-phase commit process is used to ensure data integrity during write operations to ensure your archives are securely stored before each transaction is marked complete.

Using ArchiveOne not only saves storage space, the solution has been designed to fully integrate with Exchange to provide a transparent end user experience using Outlook, OWA or many mobile devices without additional training required. The archived messages remain fully searchable and instantly accessible at any time. Support for mobile users is another advantage of using ArchiveOne over the new Exchange personal archive folder. In Exchange, the archive mailboxes content is not stored on the end user's machine, which means a network connection is required to access archived messages. ArchiveOne maintains a local cache to provide access to archived content even when traveling; the cache is automatically synchronized the next time the user connects to the network.

It remains to be seen what the real-world effects of Exchange's architectural changes will mean, but it is likely that users will always want to optimize primary storage resources and eliminate redundant data, as studies have shown significant storage saving results. Even if users move to lower cost devices for Exchange's primary data store, they will not want to let their databases grow too large. Gartner studies have shown that the cost of administration, power and cooling will eventually negate any initial storage acquisition savings.

Corporate Governance and Regulatory Compliance

Today, corporations all over the world are facing industry-specific and government-imposed regulations on the preservation of, and the ability to, produce corporate records when requested. Failure to comply with these regulations and laws can result in substantial financial penalties and increased liability during investigative reviews and civil litigations. Email is the most often requested set of corporate records, and for public companies or those in especially sensitive industries such as financial services and health care, the ability to produce subject matter content in a timely fashion has become a business critical function.

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In addition to regulatory compliance, many human resource departments are using compliance archiving solutions to help enforce corporate governance policies. These policies specify how the company email system is intended to be used for business purposes only and describe a set of usage rules that help ensure fair business practices are maintained. With compliance archives in place, HR personnel can spot check email to ensure confidential information is not being leaked outside the company or reduce potential liability from internal harassment lawsuits stemming from inappropriate email correspondence.

Exchange is an excellent messaging system, but when it comes to compliance and legal discovery usages, Exchange 2010 does not offer a viable feature set and is not positioned as a compliance solution by Microsoft. There are several new features to aid in legal discovery, but they have weaknesses; and when it comes to full compliance support, there are major limitations that only a third party solution like ArchiveOne can fully address.

In the area of legal discovery, there are three main objectives that firms address with archiving:

1. Enforcing consistent retention policies for email;
2. Providing a central place to impose a legal hold on data relevant to a case and;
3. Searching through email and collecting relevant items to deliver to opposing counsel as part of an eDiscovery activity.

Exchange 2010 has added three new features to assist in legal discovery efforts:

2010 Retention Tags:

Exchange 2010 allows IT to setup rules that will tag messages with a classification attribute that determines how long a message is to be kept before the system deletes it. The classification tags can be automatically applied at the mailbox and/or folder level by IT. In addition, if IT supplies them, personal tags can be used by end users to override the defaults set by IT. This is manually accomplished by selecting one of the personal tags and assigning them to individual messages or folders. Once a message reaches its retention date, it is deleted by the system and placed in a hidden dumpster where it is held for an additional grace period before it is purged completely. While in the dumpster, an administrator can recover the message if needed.

2010 Legal Hold:

Exchange allows authorized personnel to apply a legal hold to a user's entire mailbox. Once a hold is placed, all messages in the user's mailbox are locked to prevent further activity on existing messages. If a user tries to delete any email (and clears their deleted items folder), the items will still be moved to the dumpster. However, when under a legal hold, the dumpster for that mailbox will not be deleted until the hold is released, allowing these messages to be found during discovery searches and produced as evidence if required.

2010 Multi-Mailbox Search:

An administrator (or other authorized users) can use OWA to execute a multi-mailbox search, an improvement over prior releases where each mailbox had to be searched individually. This is a batch process containing a search expression and a target mailbox for the results. To use the new multi-mailbox search, companies must enable full-text indexing on the Exchange Server, which has been known to create significant loads and is turned off by default. These searches can take several hours to complete, and the results can only be copied to a mailbox, not to PST files or other portable file formats. Separate utilities are required to export the search results

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from Exchange to media that can be read by outside agencies. Using Exchange as temporary eDiscovery results storage means that additional capacity is required to collect and hold these items for review.

While this release has added a number of features to aid in compliance-related activities, it falls well short in many critical areas. The new search interface does not support federated searches across content types and result sets can only be directed to a single mailbox. With ArchiveOne Compliance Manager, all email and their attachments are captured and fully content-indexed in real time as the data is stored in the secure, immutable compliance archive database. In addition, all indexing overhead and search activity is performed by the ArchiveOne Server without impacting Exchange performance.

With Exchange, legal holds can only be placed at the mailbox level, which locks all messages from deletion until the hold is released. In highly litigious industries officers and executive personnel may find their email is perpetually held and never being expired as there may be several outstanding cases in litigation at all times. With ArchiveOne, holds can be placed on only the sets of messages owned by one or more users based on the contents being relative to the case. This level of granularity ensures all subject matter content related to a specific case is held while allowing other messages in their mailboxes to be deleted from the system when their mandated expiration date is reached. Allowing email to be deleted on schedule not only saves storage space, it reduces potential future liability as those messages will no longer be discoverable.

In addition to placing holds on email, companies are required to show that systems are in place to ensure all incoming and outgoing message activity is available for discovery activities. Using Exchange journal mailboxes to store compliance copies of email long term is not feasible even with the larger mailbox capacities supported in Exchange 2010. Without a true compliance archive function that captures messages as they are sent or received by the Exchange Server, email can be changed or deleted prior to the mailbox being placed on hold leaving the accuracy and completeness of your discovery response open to debate by the courts, increasing your company's potential liability.

Effective compliance readiness is critical for businesses worldwide, even with the newly-added features. Exchange 2010 fails to meet today's business compliance requirements. Mailbox level holds are too restrictive and do not preserve chain of custody prior to a hold. There is no way to easily export content to portable file formats and add the expected Bates Stamp to each item during delivery to the courts. With ArchiveOne Compliance Manager you get the following advantages:

1. All email content is captured and preserved until its expiration date is reached;
2. The compliance archives are secure and utilize SIS to reduce the storage footprint;
3. Authorized users can perform message sampling to enforce corporate email usage policies and reduce exposure from intellectual property leaks;
4. eDiscovery process controls improve productivity by allowing reviewers to share, comment on and classify messages during the discovery process; and
5. All critical discovery activity is logged to ensure a complete audit trail is available for review by auditors and the courts.

Conclusion

Exchange 2010 is an exciting new release that helps ensure Exchange will remain the leading business email and collaborative messaging platform in use today. We have only reviewed a few of the new features provided in this release and believe the new storage architecture and data protection functions will allow administrators to rethink how they deploy and provision Exchange in the future. The ability to provide increased levels of database availability and complete application recovery without the need for third party solutions is certainly worth considering.

However, the use of Exchange's built-in capabilities must be measured against your existing solutions especially when considering the additional storage capacity that will be required. This is especially true when reviewing your archiving and compliance needs. As detailed in this report, a third party solution like C2C's ArchiveOne can be leveraged to enhance and extend the limited archive capabilities provided by Exchange. In addition, with ArchiveOne you can lower your total cost of ownership by reducing the Exchange storage footprint, more effectively eliminating the usage of PST files and providing a complete solution for even the most stringent regulatory and legal compliance requirements.

For more information, contact C2C Systems

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