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White Paper

Archiving Options for the HP E5000 Messaging System for Microsoft Exchange

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The growth in messaging presents both business and technical challenges to enterprises of all sizes. Messaging platforms, such as Microsoft Exchange, have become essential business applications as important as financial, order fulfillment, and management reporting applications to the day-to-day functioning of a business. We only need to imagine our Microsoft Exchange servers being unavailable for a day to understand how dependent many of us are on messaging services. As with any complex information systems, messaging services require a broad set of support functions that can challenge the most experienced systems administrators.

From configuring and tuning servers to deploying archiving services, the task of maintaining messaging infrastructure is a demanding, time-consuming process. Requirements will vary from one enterprise to another. The number of mailboxes, the volume of messages transmitted, the configuration of storage, and other considerations affect how we tune Microsoft Exchange servers. Until now, there were significant hurdles to optimally tuning a messaging server, resulting in days of training, documentation review, forum searching, and of course a good bit of trial and error. Today, there is an alternative. HP, in partnership with Microsoft, offers a solution to those challenges with the HP E5000, a converged solution optimized for Microsoft Exchange 2010 running on HP industry-standard servers.

This whitepaper discusses common messaging challenges facing today's enterprises and describes how the HP E5000 provides a comprehensive and flexible platform for meeting the messaging needs of today's enterprise. The paper is organized into four main sections:

- Overview of messaging challenges
- Archiving: an essential messaging service
- Meeting archiving requirements while addressing messaging challenges
- Meeting a variety of business requirements with the HP E5000

We conclude with a summary of how the HP E5000 can reduce messaging complexity while maintaining flexibility with regard to archiving architectures and software platforms.

Overview of Messaging Challenges

Messaging services have proven to be enormously useful in business, and if there is one problem with success, it is that people will want more of it. In the case of messaging, we want to make use of more messaging services, for more business purposes, and from more devices. At the same time users expand their expectations, IT professionals struggle to design and implement messaging infrastructure that meets those expectations while hiding the underlying complexity of that infrastructure. As Figure 1 shows, even a minimal implementation of email and unified messaging can require a complex combination of services.
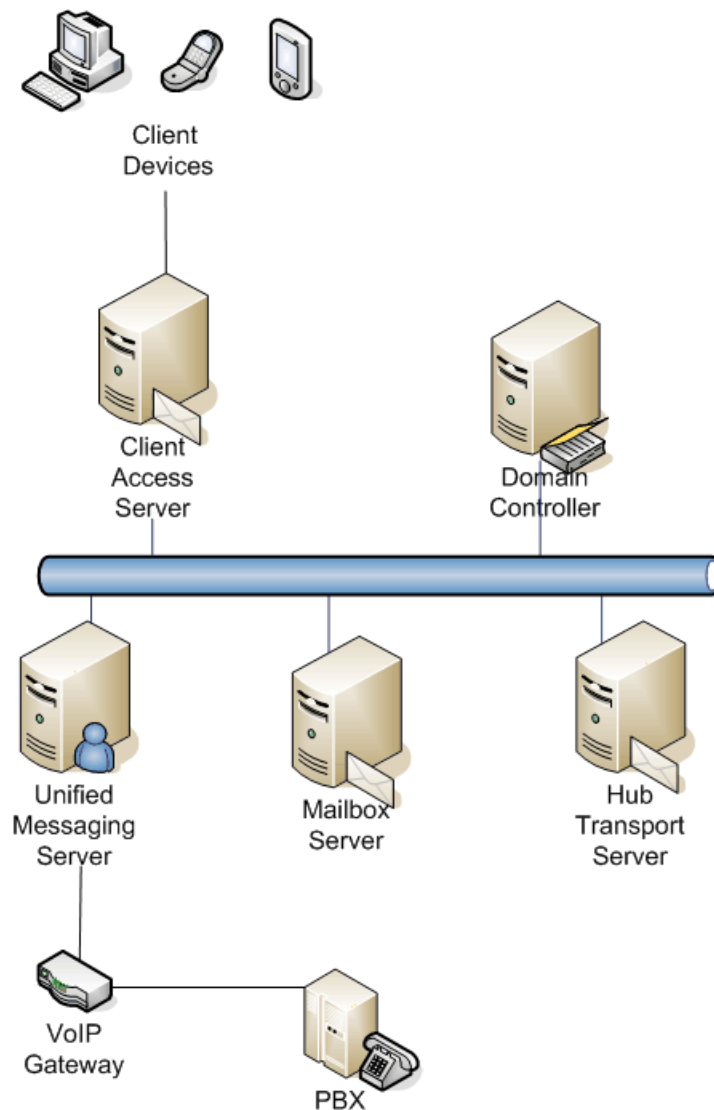
Figure 1: Even a basic Microsoft Exchange server deployment requires multiple services all configured to work together.

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This combination of requirements has led to at least four distinct challenges that Microsoft Exchange administrators will commonly have to face:

- Increasing volume of messages

- Increasing use of mobile and unified messaging

- Growing complexity of messaging infrastructure

These requirements can place complementary as well as contradicting demands on system design.

Increasing Volume of Messages

Many of us do not have to look further than our inboxes to know that the number of messages we receive is on the rise. The number of email messages as well as various forms of instant messages is growing according to recent studies. A recent report by the Radicati Group, Inc. notes several statistics on the growth in the number of email messages sent and received:

- A projected increase in worldwide email accounts from 2.9 billion in 2010 to 3.8 billion in 2014

- An estimate that the average corporate user sends 110 email messages a day

- An estimate that approximately 18% of emails are spam or other unwanted email

Instant message volumes are also growing. According to the service monitoring company Pingdom, in 2009:

- 47 billion instant messages were sent worldwide per day

- 53 instant messages per day per user

- 32% of instant messages were enterprise messages

As businesses redesign workflows to take advantage of messaging infrastructures, we can expect traffic to continue to increase. It is not just the volume of messages, though, that will continue to challenge Microsoft Exchange administrators. Mobile devices are growing in popularity; as a result, we increasingly have the ability to use messaging services from more locations. Email will never be limited to the office again.

Increasing Use of Mobile and Unified Messaging

Mobile devices are increasingly popular clients for messaging. Marketing research by dotMobi quantifies important patterns such as:

- There are 5.3 billion mobile phone subscribers worldwide

- Of the approximately 300 million mobile phones shipped in 2010, approximately 22% were smart phones

- By 2011, 85% of new handsets sold will have mobile Web access

- Two of the top six most popular activities on mobile devices are checking email and instant messaging

The market research firm Infonetics Research estimates that the unified communications market will exceed $1 billion by 2013, with Microsoft one of the top vendors in the market. ABI Research projects even more aggressive growth with an estimated market size of $4.2 billion by 2014.

It is safe to conjecture that these broad market trends will translate into greater demand for support for mobile and unified messaging services within individual businesses. That means greater volumes of traffic, more specialized software components to handle different kinds of devices and protocols, as well as more difficult deployment and maintenance operations—unless we rethink how we deploy messaging services.

Complexity of Messaging Infrastructure

The complexity of messaging infrastructure is related to the features the messaging service provides. The more scalable, reliable, and capable the system, the more complex is the underlying architecture.

Consider scalability and reliability. As the number of users, mailboxes, and messages grows, there is a need for more storage and computing resources to meet performance requirements. Similarly, when business requirements demand a messaging service that has very low downtime, we often turn to redundant components to ensure continuous services in case one of the components fails. Both scalability and reliability can be addressed by replicating infrastructure. As Figure 2 shows, redundant sets of servers can be used in multiple locations each providing services to one location. In the event of a significant failure in one site, it may be possible to provide messaging services for both sites from the remaining functioning system, thus providing for improved reliability and availability.

Another factor that contributes to the increasing complexity of messaging infrastructure is the need for email archiving. With archiving functionality, less frequently accessed messages can be moved to lower-cost storage while businesses retain the ability to search and retrieve these messages. As Figure 2 shows, one option for archiving is to use a public cloud service.
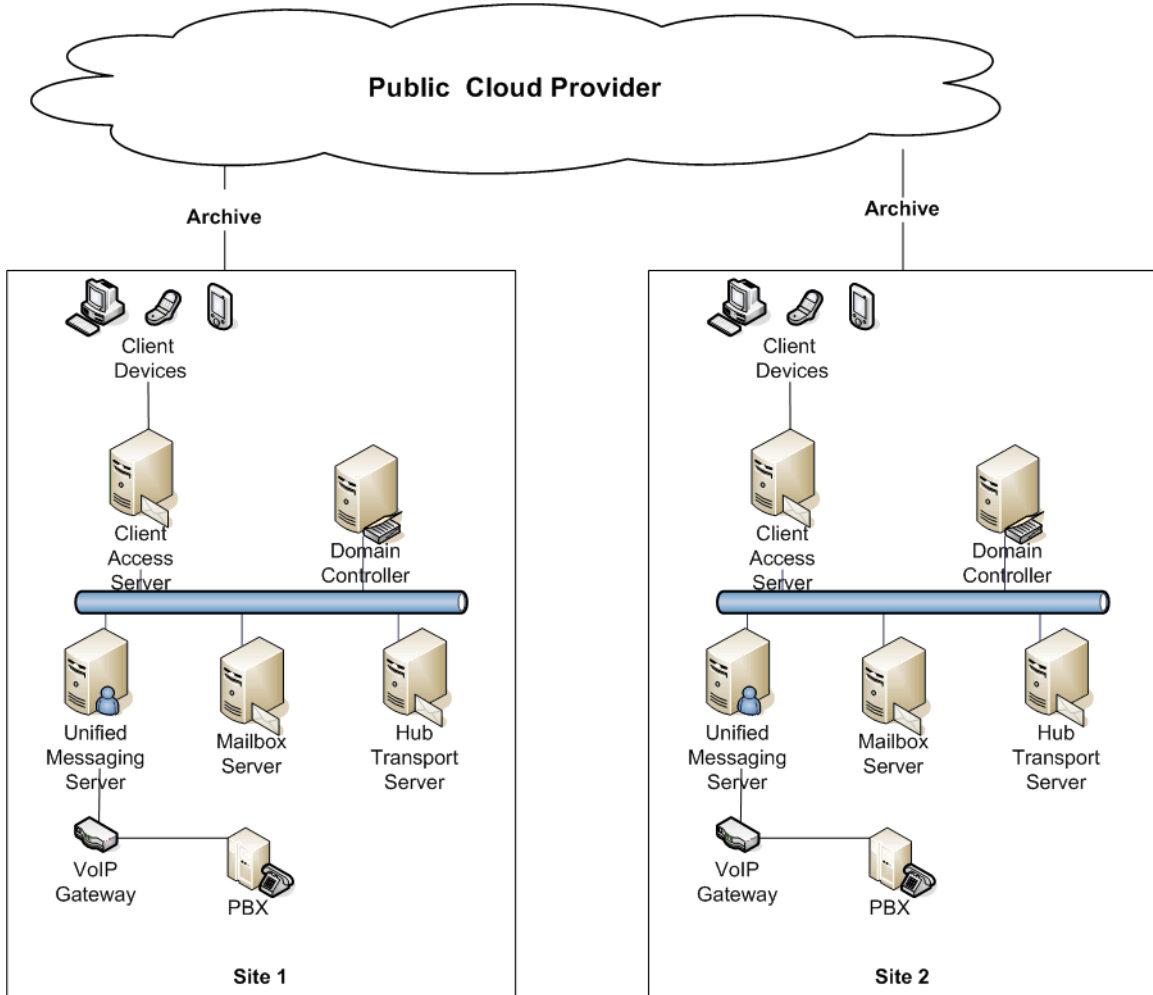
Figure 2: Messaging infrastructure becomes more complex when we address the need for scalability, reliability, and archiving services.

As a result of the need for scalability, reliability, and archiving services, the relatively simple architecture depicted in Figure 1 becomes the significantly more complex infrastructure of Figure 2.

The three challenges outlined earlier—the increasing volume of messages, the increasing use of mobile and unified messaging, and the growing complexity of messaging infrastructure—constitute a clear indicator of the most significant challenge facing Microsoft Exchange server administrators: email has become a mission-critical application in enterprises. Although there are many aspects of this mission-critical service that businesses must manage, we will consider one of the less-obvious requirements: archiving.

Archiving: An Essential Messaging Service

Archiving is the process of migrating content, such as email messages, from a primary system to another information management system designed for longer-term, cost-effective storage. There are both business and technical drivers for implementing email archiving, even in spite of additional complexity.

Business Drivers for Maintaining Messaging Integrity

Messaging is a mission-critical service in many businesses, so it is not surprising that maintaining the integrity and availability of messages themselves is a top priority. Three related business drivers in particular are

- Disaster recovery and business continuity

- Compliance with regulations

- Electronic discovery

Disaster Recovery and Business Continuity

Disaster planning is a common practice in IT: If a flood, earthquake, fire or other natural disaster destroyed the data center, how would we continue to provide IT services? The answer typically involves moving operations to another site that is prepared in advance to host services lost in the event of a disaster. Part of this planning process is identifying and procuring hardware, networking, power, and other essential services. Another important part is ensuring that copies of data in production systems are up to date and available to disaster recovery sites. By archiving messages offsite—for example, to a cloud provider or another of the business' data centers—we will be able to recover most if not all messages and continue to provide messaging services from the disaster recovery site.

Compliance with Regulations

Some industries are subject to strict regulations regarding the need to retain archives of messages. For example, some financial services are required to maintain copies of email messages and instant messages sent and received by certain professionals in the industry. Archiving can also help to establish compliance with regulations. For example, if a business is required to establish practices to protect the integrity of financial reporting, email messages may be used to demonstrate actions on the part of executives to implement and enforce such policies.

Electronic Discovery

When a court fined a business more than $8.5 million for failure to produce relevant electronic documents in a litigation case, quite a few IT professionals took notice. This case and others drove home the need to make messaging and other content searchable regardless of where the content may have originated or in what form it was originally stored. Enterprise archiving solutions can provide the kinds of storage, search, and retention services that are required to meet business requirements related to electronic discovery.

> **Resource**
>
> For details of this case, see
> http://www.ediscoverylaw.com/2008/01/articles/case-summaries/court-sanctions-qualcomm-8568633-orders-certain-inhouse-and-former-outside-counsel-to-participate-in-case-review-and-enforcement-of-discovery-obligations-program-and-refers-investigation-of-possible-ethical-violations-to-california-state-bar/.

In addition to these business requirements that are addressed by archiving, there are technical advantages.

Technical Benefits of Archiving

Message archiving contributes to improved scalability and lower storage costs. Archiving allows infrequently-accessed messages to be moved off primary storage to less-expensive secondary storage. The messages are still accessible if they are needed, but no longer warrant the higher-performance storage of messages that are likely to be accessed. Archiving can improve scalability by keeping only the most likely needed messages in primary storage and thus making more primary storage available for new messages.

Meeting Archiving Requirements While Addressing Messaging Challenges

Email archiving is an essential messaging service. Business requirements demand archiving, but there are technical advantages as well. There is little argument on these points. Difficulties with archiving often center on the design and implementation of archiving services and architectures—or at least they did.

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Introducing the HP E5000

The HP E5000 is a Microsoft Exchange appliance from HP that was developed in collaboration with Microsoft. The HP E5000 is preconfigured and tuned for different application loads. Customers can choose the HP E5000 that fits their needs without concern for how to optimize the configuration. Although the HP E5000 is preconfigured, it does not force every customer into the same solution architecture. This appliance offers flexible options, including support for both local and cloud archive, as well as integration with third-party enterprise archiving solutions. With the HP E5000, customers gain the benefits of a preconfigured appliance without having their archiving solution dictated to them.

Another benefit of the HP E5000 is that both the messaging software and the hardware are covered under a single support contract, further simplifying systems management.

HP E5000 Enables Comprehensive, Cost-Effective Message Archiving

An archiving solution is the product of both architecture design decisions and software selection. The HP E5000 provides options for both.

Archiving Architecture Options

The HP E5000 provides for both local and cloud archive options. Which one is right for you will depend on a number of considerations.

The HP E5000's local storage may all be used as primary storage for mailboxes or some may be allocated for local storage archiving. This setup can be an appropriate solution when

- All local storage is not required for mailboxes and other messaging storage

- Simplified management is a priority

- Archiving is more important for compliance and e-discovery than for disaster recovery

It should be noted that local archiving can still mitigate the risk of data loss situations; for example, if messages are intentionally deleted. The risk of catastrophic failures, such as loss of power on site, is not mitigated when local storage is used for archiving.

Another archiving option supported in the HP E5000 is the use of public or private cloud storage providers. Clouds provide offsite storage, typically using a "pay as you go model" in which the cost is directly related to the amount of storage used and the time period for which it is used. An obvious benefit of cloud storage is that there is no need for significant capital expenditure to acquire archiving storage on site. Also, cloud storage is flexible. Customers can add storage when needed and release it when it is no longer necessary.

A further advantage is the disaster recovery benefit. Public cloud providers build redundancy and failover services into their architecture. Unlike local archiving, a catastrophic failure at a business' data center will not prevent recovery from archives and deployment of messaging services from another site.

Cloud storage for archiving is appropriate when

- Catastrophic disaster recovery is a key consideration
- The size of archives will change substantially, either growing with new messages or decreasing due to retention policies
- Local storage in the HP E5000 is needed for mailboxes
- Capital is not available for additional archive storage

Along with these architectural options, customers have flexibility with regard to the software they choose for archiving.

Software Options

The HP E5000 is designed to work with enterprise archiving solutions. HP understands that many businesses have made significant investments in archiving software, and the HP E5000 is designed to leverage that investment. Enterprise archiving solutions, such as Symantec's Enterprise Vault, offer advanced archiving features that help to reduce the total cost of ownership while meeting business requirements. For example, enterprise archiving solutions allow businesses to take advantage of lower cost secondary storage. These applications can further optimize storage use through de-duplication of redundant data. Furthermore, search and retrieval functions support e-discovery.

The HP E5000 messaging appliance reduces management overhead by providing a single solution to a complex array of messaging requirements. While reducing the management burden associated with optimizing servers and Microsoft Exchange server components, the HP E5000 provides customers with the flexibility to deploy the appliance with a variety of archiving options. Eliminating management overhead does not mean locking in customers to a "one size fits all" archiving solution.

Meeting a Variety of Business Requirements with the HP E5000

An advantage of HP's balanced approach to combining the benefits of an appliance with the flexibility of a custom solution is that a wide variety of business requirements can be met with the same product. From small and midsize businesses to large enterprises, the HP E5000 can be deployed in a way that addresses each business requirement. Let's consider two scenarios with different solutions.

Local Archiving Scenario

A business based in the US has decided to expand its presence in the European market and will establish a remote office in Europe. The office will have minimal IT support staff but have a substantial sales and management workforce. The HP E5000 is selected to support messaging services at this site. After estimating the number of mailboxes that will be needed in the first 2 years of deployment, systems administrators decide there is ample local storage to use a local archiving option. This choice allows for simplified management while adequately addressing the need to comply with regulations and preserve the ability to recover messages in the most likely scenarios.

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Cloud Archiving Scenario

A midsize financial services firm has found that the demand for several of their services varies with conditions in a number of different industry sectors, such as housing, energy, and manufacturing. When any of these sectors is experiencing growth, the firm's business, and its volume of messages, grows too. The firm has implemented comprehensive document retention policies and purges documents and messages from its archives according to these policies. As a result of these factors, it is difficult for IT managers to predict the storage that will be required 24 to 36 months in the future. Rather than risk over- or under-purchasing storage, IT managers have decided to deploy an HP E5000 with cloud-based archiving system. This avoids tying up capital in hardware that may not be needed while ensuring that adequate storage will be available when it is needed.

Summary

The need for messaging services will continue to grow. Businesses face an array of challenges with regards to messaging:

- Increasing volume of messages

- Increasing use of mobile and unified messaging

- Growing complexity of messaging infrastructure

While addressing these challenges, businesses must also find a way to meet key business requirements with regard to message archiving, and in particular with respect to

- Disaster recovery and business continuity

- Compliance with regulations

- Electronic discovery

The HP E5000 Microsoft Exchange appliance developed by HP in partnership with Microsoft reduces the complexity of messaging management while meeting these archiving requirements. Preconfigured HP E5000s reduce the management overhead associated with installing, configuring, and tuning the many different components of a Microsoft Exchange 2010 infrastructure. Preconfigured does not mean a single solution, though. The HP E5000 is designed to operate with different storage options and with a variety of enterprise archiving solutions. With the HP E5000, businesses have the flexibility they want with the messaging solution they need.