

Exchanging Exchange

A Compelling Alternative to Microsoft Exchange 5.5
March 2004



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The Microsoft Exchange 5.5 Migration Dilemma

It isn't easy being a CIO these days. The number of mission-critical applications and services demanded by employees continues to grow. Business requires that these applications and services be scalable, available, secure, and flexible. Deploying, maintaining, and administering these applications, and making sure they are properly integrated with both internal and external applications, is a demanding task. Compounding the situation is the fact that, in this difficult economic environment, IT budgets are being slashed and IT organizations are being asked to do more with less. IT departments are meeting this challenge by:

- Closely scrutinizing new purchases to make sure that the return on investment (ROI) is both compelling and immediate
- Consolidating IT assets and automating tasks
- Maximizing utilization
- Lowering labor and administrative costs

If you are a CIO at an enterprise running Microsoft Exchange 5.5 on Windows NT 4.0, you are in an especially uncomfortable and challenging position. You are being challenged not only because you are being asked to minimize IT spending and do more with less, but you are also faced with the expiration of mainstream Exchange 5.5 support (as of December 31, 2003). You need to make a critical decision about your new communication platform.

You could migrate your enterprise from Exchange 5.5 to Exchange 2003, but this is an extremely complicated and costly endeavor. It is complicated because newer versions of Exchange run only on Windows Server 2000 or 2003, and require the use of Microsoft's proprietary Active Directory. So if you upgrade Exchange, the operating system and directory schema need to be upgraded as well. In-place upgrades are not possible, so the newer versions of Exchange must be set up on separate servers and connected to the 5.5 environment to relocate mailboxes and databases to the new boxes.

The migration is costly, partly due to Microsoft's high software costs. Ferris Research¹ estimates Exchange 5.5 to Exchange 2003 migration costs around \$400 a user, and these could run as high as \$700 a user. This cost includes the direct software costs of \$67 for each Exchange Client Access License, \$40 for each new Windows Client Access License, and up to \$4000 for each Microsoft Exchange and Microsoft Windows server. In addition, your enterprise will likely have to face Microsoft's new, expensive Software Assurance pricing plan, requiring companies to make a significant upfront payment for upgrades or else lose out on discounts. Analysts estimate that this new Software Assurance pricing plan has caused customers a great deal of pain, raising prices anywhere from 33 percent to 107 percent².

Perhaps most importantly, even if you decide to migrate from Exchange 5.5 to a newer version of Exchange, your enterprise may still be faced with many of the weaknesses and limitations inherent in the Exchange platform. Exploring alternative solutions is a must, particularly in a difficult economic environment.

1. *Major Hidden Costs When Running Exchange Server*, Ferris Research, May 29, 2002.

2. *Microsoft program meets some resistance*, C|Net, News.com, Joe Wilcox, May 10, 2002.

A Compelling Alternative

Most CIOs and IT administrators are eager to find an alternate solution that offers a lower total cost of ownership (TCO) and is more scalable, easier to administer, more secure, and based on open standards. An ITIC/Sunbelt Software survey³ showed that 40 percent of respondents were planning on moving away from Microsoft, largely due to its high costs. Other analysts confirm that their customers are looking for alternatives. A Burton Group study⁴ said, “Exchange’s migration difficulties, security vulnerabilities, and license-cost disadvantages have spurred many enterprises to look at alternatives.” They add that many companies are looking at standards-based products that have a lower TCO.

Any alternate solution to Exchange should also minimize disruption to the end user. While replacing Exchange on the server side is an option CTOs are strongly considering, replacing Microsoft Outlook as the desktop client is not appealing for many companies. End users have been trained to use Outlook and are comfortable with its interface and functionality. Trying to retrain hundreds or thousands of end users to employ a new client interface would result in significant training costs and lost employee productivity. Furthermore, the effort involved in deploying a new client to each desktop would require a significant amount of IT resources. Ideally, any compelling alternative to Exchange should work with the existing Outlook desktop client.

The Solution — Sun Java™ System Communications Software

The Sun solution is to exchange Microsoft Exchange on the server side for Sun Java™ System Communications (formerly Sun ONE Communications) software which includes:

- Java System Messaging Server
- Java System Calendar Server
- Java System Instant Messaging
- Java System Connector for Microsoft Outlook
- Java System Calendar Synchronization

3. *Microsoft Licensing Survey Results*, ITIC/Sunbelt Software, March 2002.

4. *Microsoft Exchange Directions: Migration Issues Loom Large*, Burton Group, February 20, 2003.

Together, the Java System Messaging Server, Java System Calendar Server, and Java System Instant Messaging products provide robust, scalable, secure, and integrated e-mail, calendaring, and instant messaging functionality. Furthermore, the Java System Connector for Microsoft Outlook seamlessly connects this Sun server software to Microsoft Outlook desktop clients, so employees can continue to use Outlook on their desktops. The end result is dramatic server consolidation, significantly reduced TCO, and a future-proofed investment in standards-based communication infrastructure. At the same time, Java System Communications software delivers the necessary scalability, performance, and reliability, as well as the rich feature set and client support, required to maintain the services and experiences that end users require.

Evidence for Choosing Java System Communications Software Over Microsoft Exchange

True Scalability

Server scalability is critical to any enterprise looking to lower the costs of their communication platform. Scalability enables companies to reduce the number of servers needed, resulting in substantial savings on hardware, software, and administrative costs. Fewer servers also means better manageability and an improved ability to plan for storage, networking, backup, and other key requirements.

Java System Communications software is highly scalable. A March 2003 report from The Radicati Group⁵ reported that the average Sun enterprise deployment had more than 5000 users on each server; in contrast, Exchange deployments averaged just 477 users per server. Java System Communications software scales well due to its robust messaging component technology. The message store is optimized for messaging, and thus, scales exceptionally well. The message transfer agent (MTA) is arguably the most robust, feature-rich MTA on the market, with almost 20 years in Internet mail deployments. Its multithreaded design is optimized to enable maximum message throughput, making it ideal for mass mailing, rich-content delivery, and unified communication services. The component technology and architecture of Java System Communications software enables the quality of service expected by both IT administrators and end users.

Microsoft Exchange does not scale nearly as well as Sun software, largely because Exchange is built on database technology — the Jet e-mail messaging store — that was designed to scale to the workgroup level, not the enterprise level. This database typically experiences performance degradation at approximately 500 users, creating a key scalability bottleneck for Exchange. This limited scalability prevents Exchange from providing a compelling TCO story. Managing dozens or hundreds of Exchange servers is cumbersome and leads to high software, hardware, and administrative costs.

5. *Messaging Total Cost of Ownership 2003 in Enterprise and Service Provider Environments*, The Radicati Group, March 2003.

According to The Radicati Group's March 2003 TCO study⁶, for an enterprise deployment of 32,000 users, Exchange 5.5 required 68 servers, versus just six for Java System Communications software. Additionally, the same study showed that an Exchange 5.5 IT administrator typically could administer just 1,296 users, versus 3,162 for a Java System Communications software administrator.

Server Centralization

Another way IT administrators realize meaningful cost savings is by centralizing their IT assets. Physically consolidating IT assets makes it easier to administer and maintain them, requiring fewer IT administrators and lowering labor costs. Centralization also leads to better utilization of hardware assets; administrators can more effectively measure utilization levels across all their servers and ensure that they are being utilized efficiently. The issue of utilization is not a trivial one. According to a recent *InfoWorld*⁷ article discussing utilization rates within typical IT departments, “‘Good’ utilization seems to be 40 percent, and ‘bad’ seems to be 20 percent.”

As previously discussed, Java System Communications software is highly scalable, so only a handful of Sun servers are required for even the largest enterprise deployments. Perhaps more importantly, these servers can also be centralized into one or two data centers, driving down labor costs while increasing server utilization. Java System Communications software can be deployed in a centralized manner because the bandwidth-efficient communications protocols — including IMAP, WCAP, and SMTP — that are used between the Sun server software and the desktop client allow the server to physically reside far from the client. The combination of scalability and centralization are the drivers behind the compelling TCO of Java System Communications software.

Microsoft Exchange cannot be centralized nearly as well as Java System Communications software. This is largely related to the MAPI messaging architecture between Exchange and Outlook, and its reliance on the Remote Procedure Call (RPC) networking protocol for client-server connections. Created many years ago, this MAPI on RPC protocol is very bandwidth-intensive. As a result, Exchange servers have to be located physically near the end users accessing these servers, which means that virtually every office has its own Exchange server, and the enterprise ends up with a highly distributed communications platform consisting of scattered islands of messaging data. This distribution creates manageability problems and significantly drives up the labor costs of Exchange because each location requires an e-mail administrator. Also, at some locations with a small number of users, the Exchange server may be significantly under utilized. When this occurs at multiple locations, the overall Exchange platform may end up being significantly under utilized; server hardware and software assets do not generate a compelling ROI.

6. *Messaging Total Cost of Ownership 2003 in Enterprise and Service Provider Environments*, The Radicati Group, March 2003.

7. *Underutilized storage presents IT dilemma*, InfoWorld, Daniel Neel, April 20, 2001.

Robust Security

Keeping communication data secure is of great importance in this age of connected business. Business communication often contains sensitive information. Customers, partners, and employees alike expect that their communication is secure, and any compromise of sensitive communications could have serious repercussions. Furthermore, security has a direct impact on IT costs. Nonsecure messaging systems are often the targets of malicious e-mail-borne viruses. When servers are compromised by a virus, the time and effort involved in cleaning the server, implementing a security patch, and restoring data has substantial costs. Disinfecting the server consumes IT resources, and downtime is costly in terms of lost worker productivity.

Java System Communications software provides robust security measures to protect the integrity of your data and the privacy of customers, partners, and employees. Java System Communications software supports Secure Sockets Layer (SSL) and Transport Layer Security (TLS) encryption to protect information assets. In addition, a messaging proxy can provide an additional layer of security at the firewall to further protect information assets. Extensive antispam and virus protection features also help protect information assets and prevent lost productivity due to spam distraction or virus disruption. The Java System Messaging Server supports the Mail Abuse Protection System (MAPS) Real-time Black Hole List to prevent e-mail from known spammers, address verification to help ensure that messages are sent from valid domains, and relay blocking to prevent use of the server as a spam relay. Support for server-side rules enables system administrators as well as end users to configure filters on the server (before a message arrives on the desktop) to remove suspected spam, viruses, or other inappropriate content. The Java System Messaging Server has been preintegrated with Brightmail antispam technology and SpamAssassin, an open source antispam software. A conversion channel also facilitates integration with other third-party, content-filtering software for richer spam and virus protection. In addition, a throttling mechanism helps prevent denial-of-service attacks. When Java System Communications software is installed on top of Sun hardware running the Solaris™ Operating System (OS), security is even further improved; the Solaris OS offers integrated enterprise firewall and state-of-the-industry security provisions. Lastly, the centralized nature of Java System Communications software lends itself to security. It is simply easier to implement security measures when data is stored in one or two locations, as opposed to being scattered about in multiple locations.

In contrast to Sun, Microsoft products, including Exchange, have consistently been plagued with notable security weaknesses. The distributed nature of the Exchange solution means that multiple copies of files are stored in numerous servers, making it difficult to implement robust security measures. In the event of a virus attack, IT administrators literally have to shut down, clean up, and often, install security patches on each Exchange server, one at a time. This process is slow, labor-intensive, and costly, especially when dealing with dozens or hundreds of servers. The bottom-line impact is higher IT labor costs and decreased worker productivity due to system downtime. High-profile virus attacks such as Melissa, Code Red, and Nimda, targeted at Exchange, Outlook, and the Internet Information Services (IIS) Web server, have demonstrated the Microsoft messaging platform's susceptibility to virus attacks.

High Availability

With so much business communication occurring today via e-mail, and the majority of workplace calendars residing online, unscheduled downtime of a corporation's communication platform translates to unconnected, unproductive employees. Among other things, affected employees cannot e-mail important documents to their coworkers or external partners, and cannot easily track upcoming meetings, therefore potentially missing appointments. The dollar cost of this lost labor productivity can be staggering when the outage lasts for more than a few minutes and affects hundreds or thousands of users.

Java System Communications software is highly reliable. Initially built for the service provider market, the software was designed from day one to meet the strict uptime requirements demanded by service providers and their millions of users. With more than 220 million mail boxes and 100 million calendars sold to service providers, enterprises, and other organizations, the Sun Communication platform has been “battle-tested” in the real-world, and has stood up to the test. Java System Communications software integrates with high-availability clustering products, such as Sun Cluster software and VERITAS Cluster Server, to deliver virtually continual availability and rapid recovery — even if hardware failure does occur. In addition, server management functions such as expansion of message store capability, back up and recovery of user folders, and configuration management can be accomplished online without the need to bring the server down. Availability is enhanced even further when the platform is installed on the Solaris OS, known for its industry-leading reliability and stability.

Microsoft Exchange cannot claim a similar story of reliability. Its complexity and typically distributed deployment often lead to system outages. Running multiple servers means an increased likelihood of downtime due to hardware problems, and it is not uncommon for an Exchange box to require rebooting multiple times in any given week. According to a March 2003 Radicati study⁸, Exchange 5.5 users experienced unscheduled downtime more than twice as frequently as Sun users. The resulting dollar impact is an estimated annual downtime cost per user of \$132 for Exchange. Sun had a downtime cost of just \$53 per user.

Open and Flexible Architecture

The IT environment is characterized by choice and change. The typical enterprise uses a range of hardware and software from a variety of vendors. Many of these technologies need to be integrated with one another in a manner that is reliable, scalable, and not overly cumbersome for IT administrators. Furthermore, as future technologies and additional business requirements emerge, existing IT assets should be able to integrate with them. Therefore, new IT assets should ideally be based on open standards and protocols that make them easy to integrate with both existing IT assets as well as technologies that might be brought into the enterprise at some point in the future. The uncomfortable alternative is for an enterprise to buy technologies based on closed, proprietary architectures that do not integrate well with the technologies of other vendors. These closed technologies may have to be thrown out at some point in the too-near future because they cannot easily integrate with new, mission-critical applications and technologies.

8. *Messaging Total Cost of Ownership 2003 in Enterprise and Service Providers*, The Radicati Group, March 2003.

Java System Communications software is flexible, open, and future-proof. It is based on open standards such as the Internet Message Access Protocol 4 (IMAP4), Post Office Protocol 3 (POP3), Simple Mail Transport Protocol (SMTP), Simple Network Management Protocol (SNMP), Short Message Service (SMS), and Lightweight Directory Access Protocol (LDAP). It also runs on a variety of operating systems, including the Solaris Operating System (SPARC® and x86 Platform Editions) and Microsoft Windows, with Linux support planned for early 2004. In addition, it has well-documented APIs for extension and customization of messaging, calendaring, and instant messaging services. These published APIs and open standards make Java System Communication software highly integratable with other enterprise applications, and facilitates migrations and upgrades of Java System Communications products. In fact, the migration and upgrade costs of Java System Communications software is less than 20 percent of that for Microsoft or IBM Lotus, according to a recent comparative study⁹.

Microsoft Exchange, like most other Microsoft products, is highly dependent on proprietary technology. Exchange leverages Microsoft's proprietary MAPI protocol and Active Directory, and only runs on Microsoft Windows. By committing to Exchange, an enterprise is also committing itself to a Microsoft Windows-based operating system and developmental platform that may be difficult to integrate with non-Microsoft applications. Many corporate customers have grown weary of being locked into Microsoft's proprietary product strategy and the way it places them at the mercy of Microsoft's upgrade schedule. This schedule often involves a complicated and costly architectural overhaul every few years. Many Microsoft customers are seeking alternatives.

Lower TCO

High scalability, centralization, security and availability, combined with low software, hardware and administrative costs, result in a compelling TCO for Java System Communications software versus Microsoft Exchange. According to the Radicati Group's March 2003 comparative report on TCO⁹ in real-world enterprise deployments, Java System Communications products delivered a three-year, average-loaded TCO of \$214 per user, versus \$439 per user for Microsoft Exchange and \$407 for IBM Lotus. In today's environment where IT budgets are lean, TCO savings of this magnitude can have a meaningful and positive impact on the bottom line and will please both management and shareholders. And of course, these TCO savings will benefit the IT department as well; saved IT dollars can be allocated towards other IT initiatives.

9. *Messaging Total Cost of Ownership 2003 in Enterprise and Service Providers*, The Radicati Group, March 2003.

Selected highlights of the recent Radicati Group TCO study include:

	Sun	Microsoft
Operational Statistics		
Average number of users per server	5278	477
Average number of end users supported by each IT administrator	3167	1296
Average hours of unscheduled downtime per month	0.5	1.24
Per-User Costs		
Software	\$20	\$75
Infrastructure and hardware	\$301	\$559
Administration	\$18	\$43
Migration and upgrade	\$2	\$11
Downtime	\$53	\$132
Training	\$1	\$3
Three-Year, Average-Loaded TCO	\$214	\$439

Instant Messaging

In recent years, instant messaging (IM) has become a significant force in the enterprise. Analysts estimate that the number of employees using IM services for business will grow to almost 100 million by 2007. IM enables real-time interactions, and, where appropriate, can be quicker than e-mail. Typical enterprise-level IM systems have become multipurpose collaboration tools complete with chat rooms, conferencing, screen sharing, white boards, and file transfer capabilities. Working professionals have grown to embrace IM as a real-time business productivity tool, using it to communicate and collaborate with their coworkers and outside partners. IM is rapidly becoming a required component of any enterprise communication platform.

Java System Communications software includes IM capabilities that enable secure, real-time communication and collaboration across the extended enterprise, combining presence awareness with IM capabilities such as chat, group conferencing, alerts, news, polls, and file transfers to create a rich collaborative environment. As opposed to the free consumer IM services such as America Online (AOL) or Yahoo, the Java System Instant Messaging offering provides multiple authentication mechanisms, secure SSL connections, and document conversion APIs for third-party virus and spam protection partners. Employees can use the Java System Instant Messaging product to better communicate with others, and increase productivity in the process.

Microsoft Exchange does not provide built-in IM functionality in either Exchange 5.5 or Exchange 2003. If you want to purchase Microsoft's latest enterprise-level IM offering, you have to buy entirely separate collaboration server software. This requirement translates into higher software and hardware costs as well as another level of complexity for IT administrators to manage.

Multiple Client Support

The Java System Communications software products support multiple desktop, Web-based, and mobile clients. The Java System Connector for Microsoft Outlook connects Outlook desktop clients to the Java System Communications server software. This connector allows end users to retain the familiar user interface and functionality they expect from Outlook, all the while unaware that it is being powered by a Sun product. The functionality supported by the Java System Connector for Microsoft Outlook enables access to e-mail and calendar, support for Outlook corporate and workgroup mode, the ability to send and receive meeting requests and responses via e-mail and view free and busy times of calendar appointment invitees, calendar sharing and delegation, offline access, and support for Outlook objects such as tasks, contacts, and attachments. The Java System Connector for Microsoft Outlook can be deployed over the network to each desktop by a centralized IT administrator. As a result, there is no need for an administrator to physically touch the desktop to install the connector, minimizing the impact on IT resources.

Additionally, the Java System Communications server software includes Web-based clients out of the box, and supports numerous other thick clients. Lastly, integration with the Java System Portal Server, via prebuilt, standards-based portlets, adds user context to communication and collaboration services as well as secure, on-demand remote access through virtual private networks (VPNs), and mobile access via multiple devices.

Proven Track Record

Java System Communications software is reliable, secure, and scalable, and has the backing of hundreds of real-world, large-scale deployments as proof. Enterprise, education, government, and service provider customers are satisfied users of Java System Communications software. According to IDC¹⁰, Sun was the #1 provider of standalone e-mail in the enterprise in 2002, and Gartner¹¹ called Java System Communications software a “leader in breadth of vision and ability to execute.” With its high performance and scalability, modular architecture, support for open standards and published APIs, Java System Communications software provides a robust and flexible platform to meet the diverse communications needs of all types of organizations.

If you make the decision to migrate from Microsoft Exchange to Java System Communications software, you will want to have the expertise on hand to make sure the implementation and data migration process goes smoothly. Sun can enable this by offering a complete suite of professional services, migration tools, software, and hardware required to do a thorough, quick, and cost-effective migration. Sun's professional services organization and our external migration partners have the expertise to do the full migration, including assessment, data migration, testing, training, and support. This process includes a comprehensive analysis of your existing Exchange infrastructure, a thorough study of the ideal migration strategy, and knowledge transfer back to your enterprise's internal IT resources. Additionally, Sun's world-class customer support organization can provide the technical support that might be needed in the future.

In sum, Java System Communications software represents a compelling alternative to upgrading to Microsoft Exchange 2003 because:

- Server reduction and consolidation lead to significantly lower TCO.
- Scalability, security, reliability, and performance meet mission-critical needs and provide high availability.
- No desktop disruption. The Java System Connector for Microsoft Outlook preserves the desktop investment and mitigates end-user resistance while providing features and functionality end users require.
- And Sun provides an end-to-end solution to help make the migration happen easily with the Sun Infrastructure Solution for Enterprise Messaging Consolidation.

10. *Worldwide Messaging Applications Forecast and Analysis, 2002-2006: Getting the Message Out*, IDC, August, 2002.

11. *Magic Quadrant for Messaging Servers*, Gartner, Inc., October 7, 2002.

Solve the Microsoft Exchange 5.5 migration dilemma by moving to Java System Communications software. The cost savings will please management and shareholders, employees will enjoy higher uptime and a familiar user experience, and your IT staff will appreciate the administrative simplicity offered by the centralized, scalable, and secure Java System Communications software.

For more information on migrating from Microsoft Exchange to Java System Communications software with the Sun Infrastructure Solution for Enterprise Messaging Consolidation, please visit sun.com/solutions/infrastructure/enterprisemessagingconsolidation.

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