



Exchange Your Exchange: Migrating from Microsoft Exchange 5.5 to Lotus Domino 6

This redpaper explains the strategic and market factors that promote the benefits of Domino™ over Exchange. For business or IT managers, it provides essential information about the “what” and “why” of migration.

This paper was taken from the first chapter of the IBM® Redbook, *Migrating from Microsoft® Exchange 5.5. to Lotus® Domino 6*, SG24-6955-00. The redbook also explains the “how-to” of migration for those readers interested in learning about the technical aspects of migration.

Introduction

Since you are reading these words, it's likely that you are among the many customers who are re-evaluating their use of Microsoft Exchange. In these pages we document your options for “trading up” from Exchange to IBM Lotus Domino, as hundreds of organizations have already done.

Many benefits can be expected to result from this infrastructure upgrade: lower total cost of ownership; better security against viruses and worms; less downtime; more options in the type and pace of upgrades of ancillary software such as data stores and directories—to name just a few. But like any infrastructure modification, it's an activity that warrants careful attention from management and information technology (IT) staff alike.

As the title suggests, we focus specifically on migrations from Exchange 5.5 to Domino 6, since that is the path that most customers will take. However, if you have Exchange 2000, or other products such as Novell GroupWise or Netscape Mail, many of the same concepts will apply.

One important note: while many observers recognize Domino as a premier enterprise system because of its widespread use in the world's largest multinational corporations, in fact it is equally appropriate to small and mid market organizations. Thousands of smaller organizations already run their critical messaging and collaboration systems on Domino. The primary audience is an organization of between 500 and 5,000 users, but even organizations of 50 users or fewer will find the content to be complete. Larger organizations will also find great utility in the document, but since those customers will likely have expert personnel available—internally or via contracted services—there is less concentration on such scenarios.

Why migrate?

A migration project can be one of the most significant decisions your organization makes over the next several years. It will directly affect many other decisions and opportunities available to you. Most notably, your options to exploit emerging enterprise architecture models—for example, Java™ 2 Enterprise Edition (J2EE), Microsoft .NET, and Web services—will be fundamentally defined by the choice you make in your messaging and collaboration platform.

Note that we do not assert, as do some vendors, that the migration activity is without effort, expense, or even risk. In fact, we emphasize throughout this document that, as with any “touch” of core IT infrastructure, detailed analysis, thorough planning, and clear and constant communication are the keys to success. However, a forthright and honest business-oriented discussion

illustrates that the benefits are greater, and the risks far lower, in migrating to Domino rather than remaining on Exchange or continuing on the path that Microsoft has laid out for the future of Exchange.

What does migrating from Exchange to Domino involve?

As an Exchange user, you are familiar with the basic components of client-server messaging and scheduling. Domino offers all of the same capabilities, and many more, although those are outside the scope of this document. We'll touch on the application and solution capabilities of Domino in the “why” section of this chapter, with pointers to more information, but for the purposes of this discussion we'll stick to the equivalent messaging and scheduling capabilities of Domino and Exchange.

The migration process

Both Domino and Exchange fall in the International Data Corporation (IDC) market classification of “integrated collaborative environment,” or ICE. An ICE system is comprised of messaging and scheduling server software and a matching client component. Microsoft offers Exchange as the server and Outlook as the client, and IBM Lotus offers Domino as the server and Notes® as the client. Through evolution, both Exchange and Domino also support alternate client and server interfaces, such as Web (HTTP) for e-mail and scheduling, POP3 and IMAP for e-mail, and iCAL for scheduling. These are discussed later in this section. Domino also supports Outlook as a client, although Exchange does not support Notes as a client except through POP3 or IMAP.

The migration process itself involves some basic architectural and process choices. The two primary options are: “flash” cut-over versus coexistence; and data migration versus “clean start” migration, where previous data is archived and new e-mail and scheduling starts over at the point of migration. For most moderately-sized organizations using basic Exchange e-mail and scheduling, it is reasonable to expect a seamless user experience; in these cases users will simply arrive at work one morning and begin using the new system with all existing data and schedules intact. For larger organizations, or those with more sophisticated Exchange implementations, or organizations migrating as a result of a merger or acquisition, there will likely be a period of coexistence between the systems, where different users are on different systems. This is not as unwieldy as it sounds: the strategies and tactics covered in this document show how to achieve this with nearly 100% fidelity across the systems. However, this integration itself imposes setup and ongoing administration costs, so open-ended coexistence may not be a viable strategy for many organizations.

There are several options within the categories of migration and coexistence. Domino Upgrade Services (DUS) are free tools included with Domino to migrate

Exchange mailboxes to Domino. Moderately complex implementations can be easily handled by DUS, either as an internal project or using contracted services. Larger or more complex migrations would probably benefit from using one of the excellent third party tools on the market such as Common Migration Tool (CMT) from Binary Tree. There are also options for coexistence, ranging from simple SMTP-to-SMTP connections, to free “connectors” from Microsoft, to third party tools such as TFS Gateway from TenFour.

Domino runs on virtually every major hardware and operating system platform, including Windows®, Linux, and Sun Solaris on Intel® processors; IBM pSeries™, iSeries™ and zSeries® on PowerPC® and RISC processors; and Sun Solaris and HP-UX on RISC processors. This is in stark contrast to Exchange, which requires specific versions of Microsoft Windows as its operating platform. Domino operation is very nearly identical on every platform, and in fact all platforms can be mixed and matched, and even clustered, without problems.

For customers migrating from Exchange, one of three strategies usually apply. Some customers choose to put Domino on their existing Windows servers, which is an attractive option because Domino typically requires less new hardware investment than Microsoft recommends for an equivalent Exchange 2000 upgrade. Similarly, some customers choose to convert those Windows/Exchange machines to Linux/Domino machines, gaining the openness and cost savings of Linux at the same time as the Domino migration. Lastly, many customers use the migration process as an opportunity for server consolidation, moving to one of the high-scalability platforms as a way to reduce the numbers of servers required to support the messaging function, and the administrative and licensing overhead associated with “wheat fields” of Windows servers.

An awareness of the multitude of migration options frequently leads to the question of in-house versus contracted migration services. In fact, this is one of the fundamental questions you will need to address. It is certainly possible to migrate successfully using in-house staff and free or purchased migration tools, and many customers have done so. On the other hand, contracted services add a level of insurance and peace of mind that many customers are willing to pay for. Hundreds of IBM Lotus business partners are members of the “Move2Lotus” initiative, which requires demonstrated experience and expertise in just this type of migration project. As the saying goes, “There's no substitute for experience.” Since the overall goal is always for a smooth and successful transition, many customers conclude that it's a wise investment to hire skilled technology partners, even if it's necessary to dedicate part of the future cost savings to the task.

The migration components

Table 1 illustrates the equivalent products in your Exchange to Domino migration. We go into detail about the IBM/Lotus pieces following the table, but the overview will help you to create a “mental map” of how they compare.

Table 1 IBM and Microsoft messaging product offerings

IBM Lotus product/offering	Microsoft product/offering	Description
Domino Messaging Server	Exchange Standard Edition	Basic messaging and calendar server software
Domino Enterprise Server	Exchange Enterprise Edition	Advanced messaging and calendar server software
Notes client	Outlook client	Integrated collaborative environment client software
Domino Web Access	Outlook Web Access	Rich Web access to messaging and calendar
Domino Access for Microsoft Outlook	Outlook 2002 Connector for Lotus Domino	Connector to support Outlook against Domino
POP3/IMAP4	POP3/IMAP4	Internet standard access to e-mail
WebMail		Basic Web access to messaging and calendar

- ▶ **Domino Messaging Server:** This software supports messaging, calendar, discussions, and teamrooms. It is technically the same software as Enterprise Server, but restricted by license terms to essentially the same functionality as Exchange server, meaning no access to custom collaborative applications created using Domino Designer®. Messaging server supports partitioning, to run multiple instances of Domino on one machine, but not clustering, which provides failover and load balancing. The equivalent to this would be an Exchange Standard Edition product, which technically differs from the Enterprise Edition in that it has a 16 GB limitation on the information store on the server. In contrast, the Domino Messaging Server is not limited in any technical way.
- ▶ **Domino Enterprise Server:** This software supports messaging, calendar, discussions, and teamrooms, as well as packaged solutions or custom applications based on the Domino application platform. Enterprise Server supports both partitioning and clustering. This is by far the most popular version of Domino because of its scalability and flexibility.

- ▶ **Notes:** The client software in the Domino family includes the same “runtime engine” as Domino. What this means is that messaging (and other applications) run the same on the client as on the server. Therefore, Notes is 100% functional even when disconnected from the server, a factor which is the basis for its legendary mobility. It even supports disconnected access to corporate directories and other users' calendars, when configured appropriately by the user or administrator. Notes 6 features a classic e-mail interface which is intuitive for Outlook users and anyone who has used Netscape Mail, Outlook Express, Eudora, and so forth.
- ▶ **Domino Web Access:** Formerly called iNotes™ Web Access (iWA), this is a rich dynamic HTML (DHTML) interface to the full range of Domino messaging and calendar features. It runs on all “5+” level browsers and includes an option for offline usage via Domino Offline Services (DOLS), which is available to all Domino applications including messaging and calendar.
- ▶ **Domino Access for Microsoft Outlook:** This open standards-based connector software sits between Domino and Outlook, allowing users an option to continue in their familiar interface during a migration or coexistence project. While its function is very good and scheduled for continued enhancement, it is not recommended for permanent usage. IBM Lotus worked with Microsoft to create a Microsoft version of a connector. Based on proprietary MAPI and Notes technology, it is highly functional and endorsed by IBM Lotus. Its drawbacks are the requirement for Outlook 2002 and above, and Windows XP (the Lotus connector also supports Outlook 2000 and above, and Windows 98/200/XP), and the requirement that a full Notes client be installed on the user workstation. IBM Lotus will be providing a targeted install that eliminates the Notes requirement, sometime in 2003.
- ▶ **POP3/IMAP4:** The Internet standards for e-mail are supported by both Domino and Exchange.
- ▶ **WebMail:** Basic Web access to e-mail and calendar are provided by the new WebMail offering. While less feature-rich than Domino Web Access, WebMail runs on a wide variety of browsers and hardware and is ideal for lower-usage scenarios.

Acquiring Domino

Domino is sold in the classic client-server model, as well as a Complete Enterprise Option (CEO) offering that charges on a per-user basis.

In the client-server model, a customer acquires licenses equivalent to the number of CPUs on its Domino servers, and a Client Access License (CAL) for each user. Once a user has a CAL, he or she can connect to any Domino Server without any additional requirements. The exception is that some CALs come in two varieties: Messaging and Collaboration. Messaging CALs, like Domino Messaging Server, only entitle the user to messaging, calendar, discussions, and

teamrooms. Collaboration CALs, like Domino Enterprise Server, also include access to packaged and custom applications based on Domino. Collaboration CALs are by far the most popular option.

There are a few different ways to acquire CALs:

- ▶ Basically, a Lotus CAL is required to access Domino for messaging, even with third party client software. The Notes client software contains an “embedded” CAL, so further CAL purchases would not be required.
- ▶ Other client types based on open standards-based (that is, HTTP, POP3/IMAP4) or third party software (for example, Outlook) require a separate CAL.
- ▶ It is important to note that Outlook is included with Office, and/or with an Exchange CAL. If neither of these license types is valid, the software would have to be purchased separately.

Why migrate to Domino from Exchange?

Your reasons for moving from Exchange to Domino may be proactive, reactive, or both. Perhaps you are proactively seeking to upgrade your messaging and collaboration infrastructure to a more open and scalable messaging platform, one that delivers a lower cost of ownership and increased reliability. You may be seeking to “uncouple” your messaging decision from your operating system and directory decisions to retain flexibility. You may be reactively looking for options to avoid the effects of restrictive and expensive licensing policies, the December 31, 2003 end of mainstream support for Exchange 5.5, the steady stream of Exchange-targeted viruses and worms, or future “rip and replace” Exchange upgrades. Or you may simply be seeking the best product, and best value, for your organization.

Whatever your reasons for exploring alternatives, IBM Lotus Domino 6 will likely be at the top of your list. Domino is the market leader in enterprise messaging and collaboration, with thousands of customer of all sizes and types running their businesses on Domino infrastructure. The Domino 6 version is a significant improvement on earlier Domino releases; its proven multi-platform architecture has been refined in the theme of total cost of ownership (TCO), delivering the full functionality of enterprise messaging at a cost comparable to basic e-mail.

But why migrate at all? In today's economic environment it is difficult to justify any IT project that doesn't deliver measurable, positive return on investment (ROI). One option would be to simply remain with Exchange 5.5 and defer any move until it is necessary. While possible, for many organizations that is not a viable option. Most organizations will elect to undertake a migration in 2003 anyway, due to two factors discussed in the following sections.

Microsoft is phasing out Exchange 5.5

First, the approaching end of mainstream service for Exchange 5.5 and Microsoft Windows NT® (upon which most Exchange 5.5 implementations are built) poses a challenge for organizations that have a policy of using only supported software. Many publicly-traded companies will not employ unsupported software because bug fixes are not available, and the use of software with known flaws can raise issues of liability. Note that, as of this writing, the end of mainstream support for Exchange 5.5 and Windows NT is scheduled for December 31, 2003. Windows NT mainstream support has been extended by a year already in response to customer demands, and it's certainly possible that Exchange will be extended as well, although that would extend past the end of mainstream service for Windows NT. Also note that Microsoft makes paid support contracts available past the end of mainstream support, so that's an option for customers that cannot, or elect not to, migrate.

It's clear, however, that Exchange customers will continue to be subject to pressure to “upgrade” to Exchange 2000, or to Exchange 2003, which is scheduled for release sometime in 2003. Analysts estimate that only a minor percentage—less than 20% by most reports (InternetNews.com, “Lotus Domino - Should You Upgrade or Migrate, Now or Later?”, October 25, 2002)—had moved to Exchange 2000 by the end of 2002, nearly three years after release of the product. Most observers view the complexity of the upgrade, which is really a major migration, as the reason for the slow uptake of Exchange 2000. For example, a full implementation of Windows 2000 and its Active Directory user management system is required before Exchange 2000 can be run in “native mode;” until that is achieved the entire system is essentially still an Exchange 5.5 implementation. This activity has been reported to cost as much as \$700 US per user, with an average of \$400 US per user in typical organizations (Ferris Research White Paper, April 2002).

Domino offers major TCO and functional benefits

The second factor that will cause most organizations to migrate in 2003 is the improvements available—both in functionality and in cost—from the latest technology as demonstrated by Lotus Domino. Domino 6 was released in September 2002, and was the first leading messaging system to embrace the TCO theme. This has proved to be a timely and powerful strategy. A Radicati study, “Messaging Total Cost of Ownership 2003” shows that Lotus Domino 6 has 47% lower TCO than Exchange 2000; administration costs alone are more than three times higher for Exchange.

As noted previously, few IT projects will be funded unless they can provide measurable and positive return on investment. While Domino has been widely hailed for its TCO focus, Exchange 2000 offers few improvements over Exchange 5.5; in fact, mostly it just addresses shortcomings in the previous version. This is

also a factor in the slow uptake of Exchange 2000. Exchange 2003 is positioned as the “TCO” release for Exchange, with improvements in scalability, administration, and data management; it is designed to offer relief from the high ownership costs of Exchange 5.5 and Exchange 2000. However, it will still require an all-Windows 2000 or 2003 infrastructure.

Why has TCO become so important to messaging customers? Throughout the period from 1995 to 2001, many organizations were motivated by competitive pressures to adopt Internet technologies including e-mail. The driving force was to get as many users as possible up and running with e-mail, and to keep downtime to a minimum. The ability to do these things well propelled Domino to the front of the market, a position it retains despite furious assaults from Microsoft and others. Over time, e-mail (and, later, enterprise scheduling) came to be regarded as essential utilities. Like other utilities such as light, heat and transportation, it became clear that e-mail is an expense that needs to be managed and controlled.

Hundreds of individual improvements in Domino are focused on TCO. For example, new compression algorithms for file attachments reduce the cost of disk storage up to 40%, and network compression technology reduces bandwidth requirements up to 50%. Communication between clients and servers is up to 60% faster, saving in network costs and helping users be more productive. Highly optimized code in Domino 6 delivers faster response time and lower CPU utilization, and increases scalability up to 400% for some messaging protocols. Building on existing strengths in multi-platform support, Domino 6 server consolidation can cut the number of machines drastically; for example IBM reduced its European, Middle East and Africa (EMEA) Domino infrastructure from 28 servers to two servers, and cut its data center requirements in half.

Numerous improvements in Domino 6 dramatically lower the requirements for administrative support. Profile-based administration allows for highly flexible and maintainable user management.

Messaging futures are key

Future upgrades are another problem facing Exchange customers. The same Radicati study cited earlier shows that Exchange customers can also expect more than three times the expense for “migration and upgrade costs.” Microsoft has announced that future Exchange versions will be based on its SQL Server relational database, replacing the non-relational data stores in versions up to and including Exchange 2003. Positioned as a natural evolution for messaging storage, in fact this is needed by Exchange to address one of its most troublesome design elements: shared data storage. Because all users on a given Exchange 5.5 server actually share a single database, corruption of a single message or user mailbox can bring everyone down, necessitating complex and lengthy restoration from backup systems.

In contrast, Domino is based on proven non-relational database technology that has been refined and optimized through six full releases, with the last two benefitting from the expertise of the IBM DB2® relational database team and IBM Almaden research labs. In fact, IBM Lotus has announced that DB2 will be supported as an optional data source in the next major release of Domino 7, scheduled for release in 2004. However, both data stores will be supported, even for the same user, and will continue to be based on the same robust “one user, one mail file” model as all previous versions of Domino. (Domino has offered a “single mail store” option for several years, but very few customers elect to implement it, preferring the administrative simplicity and inherent redundancy of the standard model.)

Messaging architecture impacts all IT plans

Business and technology managers are wise to pay special attention to the impact that the messaging system plays in overall IT architecture. Once regarded as a “point” solution to a specific communication need, messaging has become a core element of a collaboration platform that includes portals, instant messaging, online meetings, team workspaces, and electronic learning. Moving forward, elements of all types of collaboration, from inbox and group scheduling, to awareness and chats, to Web conferencing and workplaces, will be delivered as modular components that can be integrated anywhere and everywhere in an IT infrastructure. In fact, IBM already delivers market-leading offerings in all of these collaboration categories. The concept of using these capabilities pervasively, defined as “contextual collaboration” by leading analysts including Gartner and IDC, represents a fundamental evolution of collaboration from application “silos” separate from other important technology systems, to a set of core capabilities that can be exploited anywhere they add value to an application or process.

The purpose of this document is not to delve into the underpinnings of the IBM Lotus strategy for Workplace and contextual collaboration; there is already a great deal of information available in other places, including the Lotus Website at: <http://www.lotus.com>

However, it's important to understand how both Domino and Exchange will play in this emerging model, particularly in regard to the implied or assumed dependencies that will be required to gain the promised benefits.

Exchange, like all Microsoft products, is evolving to participate in an overarching strategy dubbed "Microsoft.NET." Like nearly all Microsoft offerings, it works only on the Microsoft Windows operating system. One element of .NET is that, since it assumes that only Windows and Microsoft products will be used, it allows Microsoft to treat all its products as a holistic system and apportion functionality in different places. One good example is Active Directory, which is part of Windows and acts as the central user repository and management system for all .net applications including Exchange. Another is the SQL database, especially in its forthcoming “Yukon” iteration due sometime after 2005, which is slated to

become the underlying data store for .net elements including the Windows file system and Exchange.

In fact, many features and functions that had previously been part of Exchange or other applications are being broken out as separate offerings, and/or built into the Windows platform. For example, Exchange 5.5 and 2000 were initially positioned as application platforms in the Domino model, but that capability was later deprecated in favor of other parts of the Microsoft portfolio including SQL Server and Internet Information Server (IIS), using Visual Basic and Visual Basic .net development tools. (Most observers agree that Exchange application development never approached the equivalent Domino capabilities, and in fact an IBM Lotus-sponsored study [SyteL, A Comparison of Exchange and Domino Application Development, January 2001] showed Domino to be 44% less expensive and 42% faster than Exchange 2000 for a similar application, with the Domino version being of superior quality.) Similarly, instant messaging was initially a component of Exchange, but Microsoft has announced that future versions will be part of Windows.

What does this all mean to business and IT managers? In pieces it's really just a set of tactics that address shortcomings, or exploit opportunities, in the Microsoft product line. That's both the prerogative and expectation of any software vendor. In sum, however, it's an inexorable march toward a single proprietary platform, and each implementation of a component serves to make it harder to make a non-Microsoft choice somewhere else. For organizations that have consciously made a .net decision, of course, that is not an issue. If you believe in the .net architecture and its benefits, particularly in the area of integration, there's nothing wrong.

But in fact most organizations run mixed environments, with hardware and software platforms from a number of vendors. There are many reasons for this, including the widespread popularity of the Java platform, greater scalability and reliability of UNIX®-based operating systems, and the explosion in open-source software such as Linux. IBM has earned a leadership position in many of these areas, and IBM Lotus is an important participant in such initiatives. The philosophy underlying the IBM strategy—in fact the strategy embraced by every leading vendor except Microsoft—is to adhere to open standards and protocols that permit integration and interoperability among disparate products from a universe of vendors, with the result being increased choice and the benefits of true competition for every customer dollar.

IBM Lotus has embraced open standards support in Domino since its inception. The Domino 6 release contains deep support for the Java 2 platform, Enterprise Edition (J2EE) model, including rich Java interfaces and support for many leading directory and database systems, including those from Microsoft. This preserves customer choices because it integrates with everything in the IT

environment, while exploiting benefits specific to each. For example, while Exchange requires Active Directory, Domino supports it with its ADSync tool for bidirectional user and group management. But Domino also includes its own enterprise-grade directory, and supports open standards-based LDAP directories as well. All of this makes it easy to develop contextual collaboration in applications throughout the enterprise, interfacing with multi-vendor workplace and portal metaphors.

Going forward, IBM Lotus has announced a Workplace strategy that surfaces all of the collaborative elements in a single user interface—including all Lotus product offerings and those from other vendors—and will continue to enhance support for J2EE in future versions of Domino. Customers can own Domino with confidence that it will continue to deliver the capability to play well in open architectures, and even in less-open architectures such as .net. At the same time, IBM Lotus has announced new initiatives that build upon its expertise as collaboration leaders to create a set of pure J2EE components that offer individual collaboration elements—such as e-mail, inbox, awareness, instant messaging, and e-meetings—that can be “dropped in” whenever and wherever appropriate. While separate technology from Domino's integrated application approach, the new “next generation” offerings are designed to fully complement and integrate with Domino; in places supplementing Domino capabilities through Web services integration, and in other places providing capabilities for users who do not need the full range of Domino features.

The first example of a next generation offering is IBM Lotus Workplace Messaging (LWM), released in May 2003. Built upon IBM WebSphere® J2EE technology and IBM DB2 database technology, it is able to provide low-cost e-mail capability to under-served user populations in Domino accounts. Studies show that large user populations such as factory workers and retail staff can benefit from electronic communications, but do not need the full features of enterprise e-mail. LWM delivers a way to serve those users within the same domain and administrative interface, but without the overhead required by a knowledge worker.

In summary, the less visible benefits of Domino may be as important as the visible ones, and should be factored into the Domino versus Exchange decision. For maximum flexibility, and the ability to preserve choices in emerging architecture models, Domino is not only better but safer for your organization.

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