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A Choice Decision

Upgrading from NetWare? The feature-rich Open Enterprise Server 2 far surpasses Windows Server.

by Ken Baker

As Novell customers consider moving their NetWare environments to Linux on Novell Open Enterprise Server, some feel they should consider all of their migration options as a matter of due diligence. Typically, these other migration options revolve around either Windows Server 2008 or Windows Server 2003. To assist customers in evaluating their options, Novell is releasing a study that identifies key factors involved in upgrading to Novell Open Enterprise Server 2 on Linux or migrating to a Windows Server environment.

This article previews some of the key decision factors covered in the study, such as the effort required to migrate to Windows Server versus upgrading to Linux on Novell Open Enterprise Server 2. These factors include planning and deployment, training needs, operational efficiency gains or losses, comparative cost savings and expenses, and potential risks. While actual results will vary from customer to customer, the data presented in the study—and this article—is derived from actual customer experience, research conducted by Novell Consulting and discussions held with resellers who deploy both Novell and Microsoft server platforms.

General Windows Server 2008 Considerations

Much has been said in the press about the recent release of Windows Server 2008, but the truth is that not much is known about the new Microsoft offering. Will it increase the security, stability and performance Microsoft customers hope for? Will it be a step forward from Windows Server 2003 or simply maintain the status quo? Perhaps it will be similar to the Windows Vista release, which was met with mixed reviews and viewed by some as a clear step backwards. Will it even come close to meeting the high satisfaction levels and expectations Novell customers enjoy, let alone the cost savings and operational efficiencies sparked by a move from NetWare to Novell Open Enterprise Server 2 on Linux?

It's simply too early to make many factual conclusions about Windows Server 2008; however, Windows Server 2008 does include kernel changes that will require in-depth application testing before deployment. This may also create lags in certification by software vendors.

The bottom line is that migrating from NetWare to Windows Server 2008 will not create feature parity with an upgrade to Novell Open Enterprise Server 2, and may also open the door to significant potential risks.

These issues are confirmed by analysts who believe most companies will take eighteen months or more to conduct pilot tests, verify application compatibility, build new image libraries and train their staff. These predeployment exercises will keep most organizations from deploying the new Microsoft server offering until at least 2009. And, in many cases, the complete migration process will likely take years after that, especially for larger businesses that have hundreds of geographically distributed servers that would be affected by such a migration.

Additionally, when organizations compare Novell Open Enterprise Server 2 with what is known about Windows Server 2008, they find that Novell Open Enterprise Server 2 is more mature and has an unmatched feature set including (but not limited to) storage virtualization (Dynamic Storage Technology), server virtualization and user self-service.

The bottom line is that migrating from NetWare to Windows Server 2008 will not create feature parity with an upgrade to Novell Open Enterprise Server 2, and may also open the door to significant potential risks. Organizations considering a migration to Windows Server (or administrators under pressure to do so) should be aware of the cost, time and effort involved in such a migration. Though many unknowns still exist regarding the product, migration challenges and results will likely parallel the information provided for Windows Server 2003 migrations below.

Windows Server 2003 Migration Increases Costs and Risks

Significant cost and effort is required to migrate from NetWare to Windows Server 2003 versus upgrading to Novell Open Enterprise Server 2 on Linux. Much of the cost is related to substantial increases in hardware investments required for the Windows Server platform. Additional costs will be required for training administrators and help desk personnel. And, in contrast to the many automated processes available for upgrading from NetWare to Novell Open Enterprise Server on Linux, the actual effort involved in moving to Windows Server is largely manual. Since migration tools are critical to facilitating quick deployment and rapid return on an upgrade investment, Novell is continually enhancing its migration tools to make them even more robust and user friendly.

Increased Server Hardware Investment

In our research, we talked to solution providers experienced with both Novell Open Enterprise Server and Windows Server 2003 deployments. According to them, the ability of Novell Open Enterprise Server on Linux to support 1,000 or more file and print users provides customers a significant savings in server hardware. Windows Server 2003 not only requires more physical servers for file and print, but the investment increases even more when you consider the hardware requirements for hosting other Microsoft networking services.

When the hardware acquisition and maintenance costs are taken into consideration, many organizations can expect to realize hundreds of thousands of dollars in savings by upgrading to a Novell Open Enterprise Server environment running Linux rather than migrating to Windows Server 2003.

Because of resource conflicts, many of the services in a Windows Server 2003 environment must run in isolation from each other. To support file and print, directory, e-mail, desktop and server management, and edge services in a Windows Server environment with clustering, the following would be a best-case scenario of the minimum and recommended server requirements:

- Active Directory and DNS with redundancy—Minimum 1 server; recommended 2 servers
- File and print, and DHCP—Minimum 1 server; recommended 2 servers
- Exchange (back-end)—Minimum 1 server; recommended 2 servers
- Exchange (front-end)—Recommended 1 server
- Systems Management Server—Recommended 1 server

The comparable networking services in a Novell Open Enterprise Server environment not only have the ability to run on a single machine, but running all the needed networking services on a single machine is a typical usage scenario. Adding clustering into the equation raises the hardware count to only two machines, versus the recommended eight servers required for Windows Server 2003.

When the hardware acquisition and maintenance costs are taken into consideration, many organizations can expect to realize hundreds of thousands of dollars in savings by upgrading to a Novell Open Enterprise Server environment running Linux rather than migrating to Windows Server 2003. The hardware investment gap widens even more when you factor in server virtualization.

SAN Duplication and Storage Space Doubling

If there is a SAN in the NetWare environment, plan on even more hardware expenses to migrate to Windows Server 2003. To migrate a SAN to Windows, you might think you can simply create a smaller array on the SAN,

migrate a portion to the Windows side and then decommission it on the NetWare side, repeating the process until it's completely moved. Unfortunately, in most cases that's not possible.

When migrating a SAN to Windows Server 2003, you must migrate one complete logical unit number (LUN) at a time. Because most organizations set up their SANs as a single LUN, the entire SAN must be migrated all at once. This means before migration, a fully functional source and target SAN must exist. And this likely requires the purchase and installation of a completely new SAN as the target for an organization's SAN migration.

Based on cost figures from the Storage Performance Council, an average SAN acquisition cost is US$125 per gigabyte. For a 10-terabyte SAN, that equates to a minimum one-time acquisition cost of US$1,250,000. These acquisition costs do not include the additional expense associated with deployment and space requirements.

In addition to the acquisition costs associated with just migrating a SAN to Windows Server 2003, you should expect additional costs to meet the basic storage requirements for Windows Server 2003. Based on discussions with customers and solution providers, moving data from NSS volumes to NTFS volumes on Windows Server can result in a doubling of storage requirements.

Manual versus Automated Migration

In addition to the increased hardware investments required for a migration to Windows Server, you'll also spend a lot more time and effort than you would upgrading NetWare to Novell Open Enterprise Server 2. Migrating to Novell Open Enterprise Server 2 is a straightforward and highly automated process, which is basically transparent to the end user. But the majority of the processes for migrating to Windows Server 2003 are manual—and in some cases require end-user interactions before they can be finalized.

For example, moving Novell eDirectory accounts to Linux on Novell Open Enterprise Server 2 requires some minimal prep work, for example, performing health checks and bringing trees up-to-date, followed by an automated synchronization process. But to move those user accounts to Active Directory requires significant up-front planning and design of the Active Directory domain structure. The actual process for moving accounts from eDirectory to Active Directory is primarily a manual and considerably time-consuming operation. Each desktop must be manually joined to Active Directory domains. Plus, users will have to manually reset their own passwords.

Moving directory services isn't the only example of extreme disparity in the effort required to migrate to the two different targets. Moving a NetWare NSS storage volume on a SAN to Linux is a simple matter of dismounting it on NetWare and then mounting it on Linux. But as previously mentioned, migrating a SAN to Windows Server 2003 requires you to invest significant time and effort.

Some manual migration efforts for Windows Server 2003 will include the need to touch every workstation in your organization, removing the Novell client and recreating printer profiles. These tasks will also require an update to all desktop and laptop images.

The bottom line is that the majority of the services that must be migrated from NetWare to Windows Server 2003 will require considerable manual effort. But migrating those services to Novell Open Enterprise Server 2 on Linux requires relatively minimal effort, because most operations are automated. Additionally, a Windows Server 2003 migration not only requires a substantial investment in time and resources,

but its highly manual nature also introduces significant risks into the process. Manual processes are inherently subject to an increase in human errors, while automation tends to minimize errors and their associated impacts. (See Figures 1 and 2.)

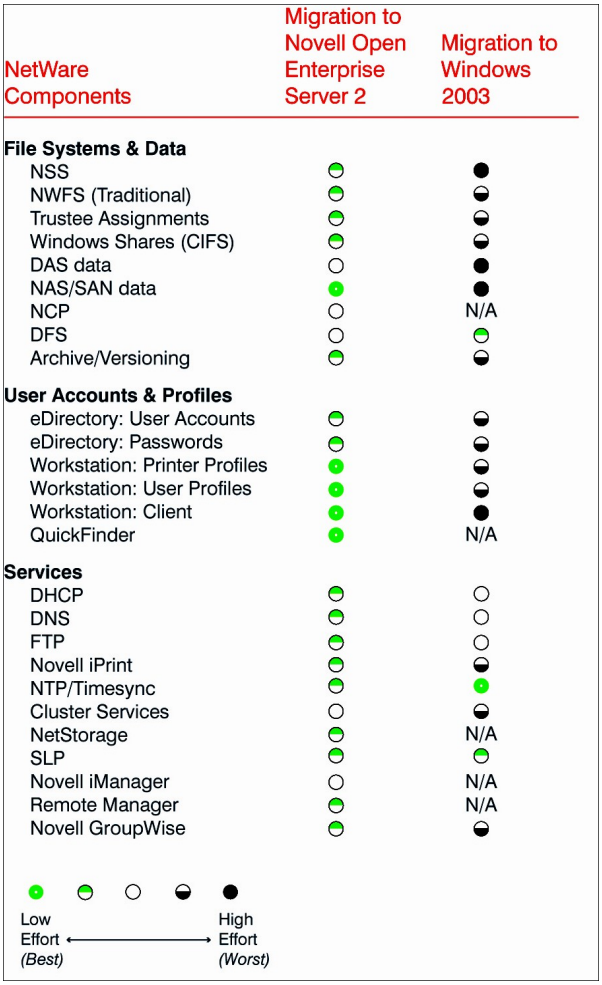

Figure 1: Effort required to upgrade NetWare components to Novell Open Enterprise Server 2 versus migrate them to Windows Server 2003.

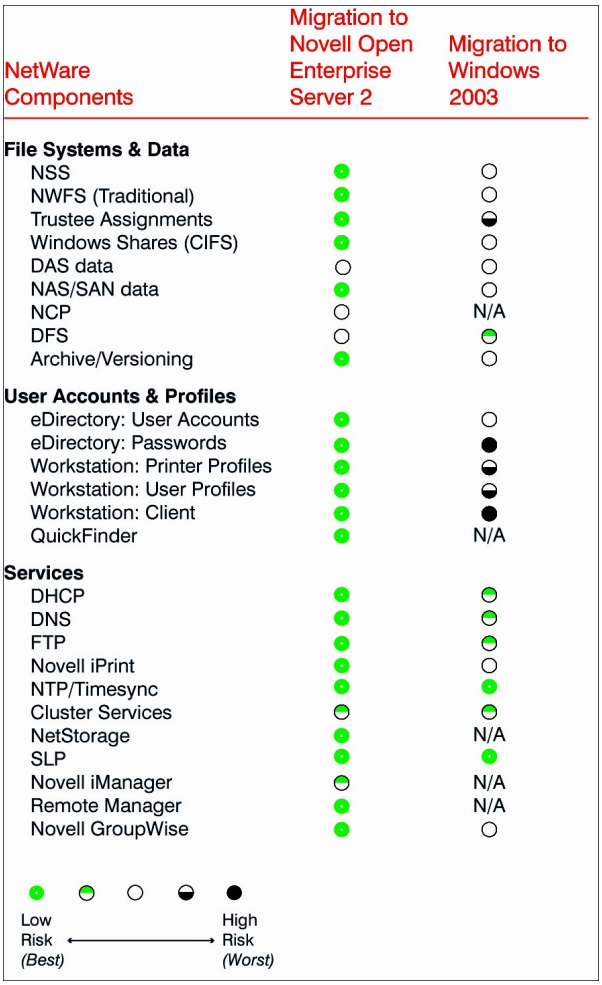

Figure 2: Risk involved in upgrading NetWare components to Novell Open Enterprise Server 2 versus migrating them to Windows Server 2003.

Additional Training Investment

Whether migrating to Windows Server 2003 or Novell Open Enterprise Server 2, network administrators will require some level of additional training. The degree of required training will vary from organization to organization and depend on each administrator's previous experience with Windows Server and Linux.

In the area of helpdesk technician or agent training, organizations moving from NetWare to Novell Open Enterprise Server 2 on Linux should require no additional training since they'll use the same Novell iManager interface to support users. Organizations migrating to Windows Server 2003 might require training in this area. If the experience of their help desk agents is focused on NetWare environments, they will need to be retrained to support Windows Server 2003.

End users won't require training in a Novell Open Enterprise Server 2 environment because their desktop look and feel, how they authenticate to the system and how they access files and applications will all be the same. But end users moving to Windows Server 2003 will need instructions and support to learn how to authenticate to the network and access their files and applications using Windows Server.

Depending on your environment, the need for training on Windows Server 2003 can be significant. While there are some training requirements for administrators on Novell Open Enterprise Server 2, overall training needs are expected to be lower than what would be needed for Windows Server 2003. Additionally, Novell offers a number of training courses to help administrators bridge their skills as they move from NetWare environments to Linux environments. For more information, go to *novell.com/training/courseware/catalog.jsp?pl=7660 for more information.*

Higher Planning and Deployment Effort

Due to complexity and associated risk factors, it will require considerably more time and effort to plan and deploy a migration to Windows Server 2003 than an upgrade to Novell Open Enterprise Server 2. Customers and partners say the time required to plan a migration from NetWare to Windows Server will be at least twice as long as planning an upgrade to Open Enterprise Server; and the deployment of Windows Server will take up to eight times as long as deployment of Open Enterprise Server. Further increasing the planning and deployment costs will be the likely need to augment your IT staff with administrators experienced in Windows Server environments and migrations.

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Novell Open Enterprise Server 2 Delivers

When considering whether to upgrade from NetWare to Novell Open Enterprise Server 2 or migrate to a Windows Server environment, you need to consider more than just migration costs and efforts. You need to examine what you actually gain or lose in terms of migration choice. A move from NetWare to Windows Server falls short of feature parity with losses in operational efficiencies and increases in administrative overhead. But upgrading to Novell Open Enterprise Server 2 on Linux provides significant operational and financial gains, especially in the areas of storage virtualization (Dynamic Storage Technology), server virtualization and user self-service.

As do a number of other past *Novell Connection* articles, the forthcoming study details the benefits provided by these Novell Open Enterprise Server 2 services, as well as the steps Novell is taking to facilitate your transition to Linux on Novell Open Enterprise Server 2. The bottom line is that migrating to Windows Server opens you up to significant increases in both immediate and ongoing IT costs, considerable degradation in operational efficiencies, loss of user productivity and exposure to a wide array of risks. Yet moving up to Novell Open Enterprise Server 2 delivers greater savings, higher efficiency, more productivity and minimized risk. So what's the obvious choice? N

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