STEP BY STEP:
SIMPLIFYING MIGRATIONS FROM NOVELL TO MICROSOFT

By Ray Weinstein

Planning and performing a migration to a new IT platform can be difficult and time-consuming for enterprise administrators. The tools and best practices offered by Dell Infrastructure Consulting, including powerful migration applications from Quest Software, provide comprehensive solutions to help organizations migrate smoothly from a Novell® platform to a Microsoft® platform.

C hoosing an appropriate IT platform can depend on many factors. As organizations grow and their needs change, the most suitable platform for their environment may change as well. Based on detailed assessments and testing, these organizations may ultimately decide that a different platform would best serve their needs—leaving IT administrators to work out the best way to carry out the difficult and time-consuming task of actually performing the migration.

As part of the Dell Infrastructure Consulting Microsoft Practice, Dell has worked extensively with Microsoft and Quest Software to help simplify migrations to Microsoft technologies, including environments comprising Active Directory® Domain Services, Windows® and Windows Server® operating systems (including Windows Server 2008), and Exchange messaging platforms (including Exchange Server 2007 with Service Pack 1). Organizations may decide to standardize on a Microsoft platform running on industry-standard Dell™ hardware for many reasons: for example, they may want to implement a more intuitive, familiar, and easy-to-use infrastructure than they have now; consolidate redundant platforms to help reduce support costs; or standardize OS and application platforms throughout the enterprise. For organizations currently using a Novell platform that want to migrate to a Microsoft platform, the tools and best practices offered by Dell Infrastructure Consulting

can help them plan and carry out an efficient, cost-effective migration.

DEVELOPING A COMPREHENSIVE MIGRATION PROCESS

When migrating from Novell to Microsoft, developing a comprehensive migration process—one that allows the migration of each Novell component to its Microsoft counterpart while minimizing impact on day-to-day operations—is critical to success. Key components of a Novell platform typically include the eDirectory™ or Novell Directory Services® (NDS®) directory service, NetWare® OS, ZENworks® systems management suite, and GroupWise® messaging platform, as well as end-user desktop environments and other supporting or dependent technologies, such as Domain Name System (DNS) software. The key corresponding components of a Microsoft platform typically include Active Directory Domain Services, Windows client and Windows Server–based operating systems, System Center Configuration Manager management software (formerly Systems Management Server), and Exchange messaging platforms. The tools and coexistence capabilities available in each platform and in tools from Quest Software help avoid the need to migrate every component simultaneously; depending on the size or complexity of the specific environment, administrators may opt to migrate everything together or to spread

Related Categories:

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Microsoft Active Directory

Microsoft Exchange

Microsoft Windows

Novell

Novell eDirectory

Novell NetWare

Operating system (OS)

Quest Software

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the process out by migrating one component at a time.

The following is a typical high-level process that a midsize organization might use to perform a migration:

1. Begin educating support professionals to help ensure that they are well prepared to make prudent decisions.
2. Develop a design for the Microsoft platform that fits the organization's requirements and support capabilities.
3. Develop and implement a test plan for critical Novell software.
4. Install and configure Active Directory and its dependent technologies.
5. Install and configure Quest NDS Migrator, migrate users and groups from eDirectory or NDS to Active Directory, and configure the account management strategy for the Active Directory service.
6. Install and configure Windows Server–based file and print services.
7. Install and configure Exchange and its dependent technologies.
8. Install and configure Quest GroupWise Migrator for Exchange, then configure the environments for coexistent e-mail flow, address lists, and calendars throughout the migration.
9. Install and configure a desktop management solution such as Active Directory Group Policy, System Center Configuration Manager, or Altiris® software, then migrate any ZENworks images and application packages to the Microsoft Windows Installer (MSI) format.
10. Install and configure tools for backup, monitoring, and management.
11. Begin training end users early to expose them to the new platform and help avoid last-minute adoption problems and increased support calls.
12. Update client desktops and laptops to become Active Directory members. First, install the Microsoft client software, create the user account, and update the user profiles to match the new domain-based user accounts. Next, configure the system for coexistence to allow access to data in both environments throughout

the migration; common tools include the Novell Client software (preferred by Dell Infrastructure Consulting), the Novell Native File Access Pack (NFAP), and Microsoft Gateway Services for NetWare (GSNW). Finally, install and configure the Microsoft Office Outlook® client on the system for e-mail and calendar functions.
13. Migrate home directory and group directory data to the new file servers, then update shortcuts, mappings, and object linking and embedding (OLE) objects on each affected client system after each file data migration.
14. Migrate GroupWise mailboxes and archives to Exchange.
15. Remove the Novell Client software.

Administrators could perform these steps sequentially or in parallel, assuming all dependencies have been met.

USING QUEST TOOLS TO SIMPLIFY MIGRATION

The Dell Infrastructure Consulting team relies on several tools and best practices when migrating IT environments from Novell to Microsoft, including Quest Reporter, Quest NDS Migrator, and Quest GroupWise Migrator for Exchange.

Quest Reporter
Quest Reporter enables administrators to collect and store data about environments based on Novell eDirectory or NDS and NetWare or on Microsoft Active Directory and Windows, as well as to receive activity reports and resolve problems (see Figure 1). These functions are essential for change auditing, security assessments, and pre- and post-migration analyses.

Quest Reporter can be a valuable tool throughout the migration process, enabling administrators to perform key tasks such as assessing the environment to identify and clean up unwanted accounts and data; exporting object lists to Quest NDS Migrator for use during later migrations; checking for other important elements such as duplicate user accounts and groups, invalid common name (CN) attributes, and other intelligence and compliance items; and using baseline information during and after a migration for project management, operations, and auditing.

Quest NDS Migrator
Quest NDS Migrator is a robust tool that helps accelerate and simplify migrations from Novell eDirectory or NDS and Novell Bindery environments to Microsoft Active Directory. Its central console enables access to available options both before and after the migration, provides scheduling features, and shows an environment's Novell eDirectory or NDS tree and its Active Directory tree to facilitate planning (see Figure 2). Dell Infrastructure Consulting uses this tool to migrate objects ranging
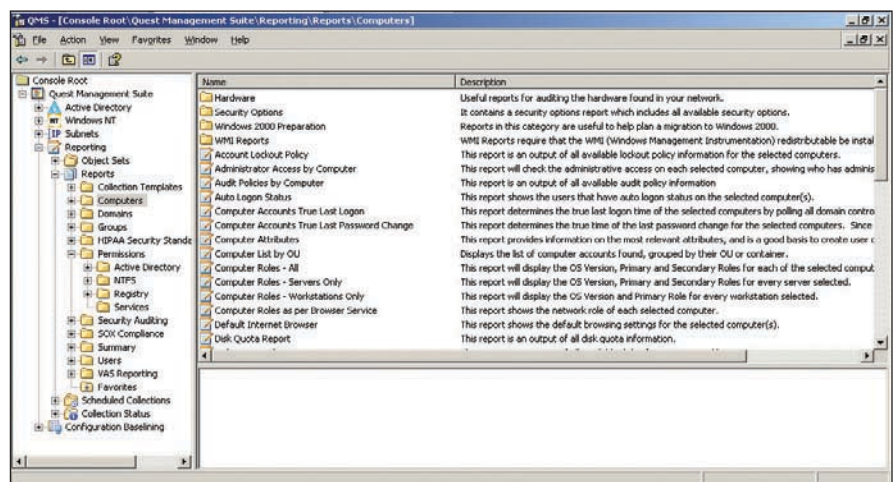

Figure 1. *Quest Reporter can collect, store, and report on configuration items for Novell and Microsoft platforms*

from user accounts, groups, and organizational units (OUs) to file data, directory synchronization, and even desktop resources such as user profiles, computer accounts, and shortcuts.

Quest NDS Migrator is typically used in the validation and implementation phases of a migration, and can help perform several key tasks. After configuring the tool for elevated permissions (or rights) in both directories, administrators can model the Active Directory migration as defined in the design phase of a migration and set up a password updating strategy. Using the Novell Client for co-authentication is the preferred approach for password updating, and Quest NDS Migrator also provides a self-service password management function. Administrators can then perform validated migration actions—called projects—and use rollback features to undo errors. Typically, administrators should not delete accounts or data—they should only copy them. Best practices recommend migrating all users or groups simultaneously rather than in small batches to help minimize risk and impact on end users.

Administrators can then use Quest NDS Migrator to set up a coexistence strategy for client desktops and laptops as well. First, they install the Microsoft client software on these systems and add the accounts to Active Directory in the appropriate OU. Next, they set up access to both the Novell and Microsoft environments to provide secure data access for both migrated and un-migrated users using Novell Client, NFAP, or GSNW. Finally, they can migrate only the user profiles they want to retain to the new Active Directory user account. Administrators should keep in mind that this process can be time-consuming; cleaning up user profiles before the migration can help minimize the number of unwanted profiles and related data such as temporary Internet files.

After setting up the coexistence strategy, administrators can use Quest NDS Migrator to migrate file data according to a defined schedule. The typical approach is to migrate home directories, then group directories. Administrators can take advantage of the mirror function in Quest NDS Migrator to pre-stage data migrations before the cutover to help reduce file data migration time, which can help significantly reduce the project's complexity and duration. Finally, they can update each affected client desktop or laptop to refresh the OLE paths, mappings, and shortcuts, then provision the appropriate printers to each user.

After administrators have migrated all Novell NetWare data and applications to the Microsoft environment, they can use Quest NDS Migrator to remove the Novell Client software, then gradually decommission the Novell environment to help ensure that they have not overlooked any critical services. Some Novell-related services may remain in the IT environment indefinitely.

When migrating from Novell eDirectory or NDS to Microsoft Active Directory, adhering to common best practices such as the following can help prevent errors:

- **Avoid migrating too many client desktops and laptops simultaneously:** Primarily because of challenges associated with migrating user profiles, the practical limit on the number of client systems that organizations can migrate is typically around 20 per team per day, with up to three teams operating simultaneously. Organizations can determine the actual maximum number of migrations for a specific environment during the pilot phase.
- **Allow sufficient time to configure and provision printers:** Many organizations underestimate the amount of time necessary to configure and provision printers, which may require dedicated resources to complete. The challenge in this process relates to the logistics of configuring the printers for appropriate usage scenarios; organizations should identify these scenarios during the assessment phase and test them during the validation phase.
- **Locate, assess, and test Novell applications as soon as possible:** Locating, assessing, and testing Novell applications in a short period of time can be challenging. Organizations should perform this process as soon as possible to help avoid unplanned delays.
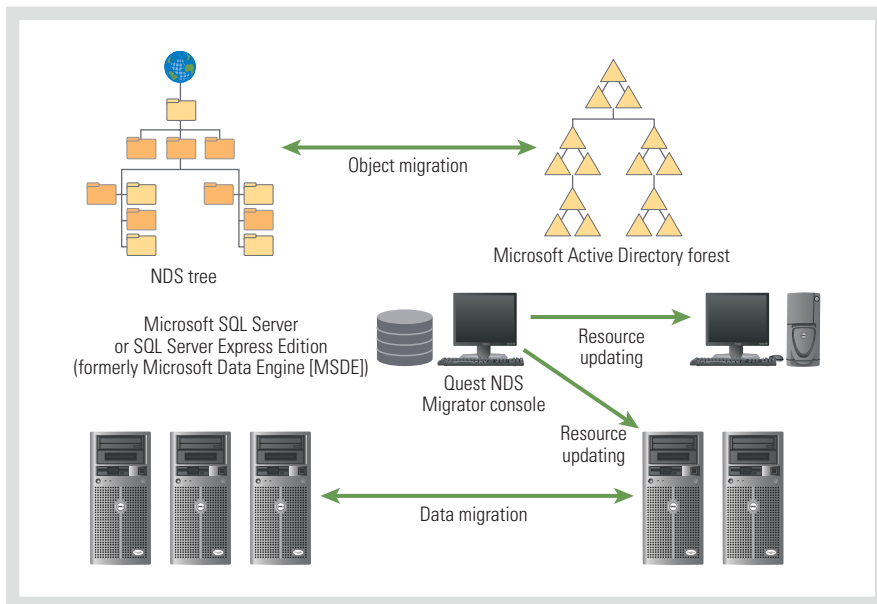
Quest GroupWise Migrator for Exchange

Quest GroupWise Migrator for Exchange helps provide direct, secure, and reliable

Figure 2. Quest NDS Migrator helps accelerate and simplify migrations from Novell to Microsoft

Object migration

NDS tree

Microsoft Active Directory forest

Microsoft SQL Server
or SQL Server Express Edition
(formerly Microsoft Data Engine [MSDE])

Quest NDS
Migrator console

Resource
updating

Resource
updating

Data migration

migrations from Novell GroupWise to Microsoft Exchange, including Exchange Server 2007. It can convert user e-mail, calendars, tasks, personal address books, and frequent contacts and store them in the new mailboxes on the Exchange server to help preserve critical information, and can migrate GroupWise archives to Outlook personal stores (.pst files).

Quest GroupWise Migrator for Exchange is typically used in the validation and implementation phases of a migration. After configuring the tool with the appropriate permissions (or rights) in both e-mail platforms, administrators can configure the environment for coexistence to help ensure e-mail and calendar access regardless of a given user's migration state or platform. The coexistence configuration would include access to the global address list (GAL) and Simple Mail Transfer Protocol (SMTP) services as well as access to calendars, contacts, resources, and tasks.

They can then use Quest GroupWise Migrator for Exchange to perform Outlook client deployment and configuration on client desktops and laptops, migrate mailboxes to Exchange Mailbox servers, migrate archives to Outlook personal stores, and remove GroupWise e-mail clients after they have successfully migrated the mailboxes. After the migration, administrators should gradually decommission the GroupWise environment to help ensure that they have not overlooked any critical services. They may need to leave some GroupWise servers in place to comply with retention requirements imposed by regulations or enterprise practices.

When migrating from Novell GroupWise to Microsoft Exchange, adhering to common best practices such as the following can help prevent errors:

- **Choose an appropriate coexistence strategy:** Different coexistence strategies have their own advantages and disadvantages. Two of the most common solutions are using iCalendar forwarding and using Exchange Server 2003 with the Exchange GroupWise and calendar connectors. iCalendar forwarding is typically easy to configure and manage and supports sending, receiving, and responding to calendar invitations and tasks from either platform, but provides no Free/Busy service for calendars; for organizations that do not need these services, this approach is typically preferred. Using Exchange Server 2003 with the GroupWise and calendar connectors does support the Free/Busy service, but can be difficult to configure and manage—primarily because of the challenge of implementing and administering the Novell GroupWise API Gateway, which is necessary for the connectors. Organizations migrating directly to Exchange Server 2007 face an additional challenge: because the connectors are not compliant with Exchange Server 2007, they must run on Exchange Server 2003 servers within the Exchange Server 2007 organization (or forest), and these servers must remain in production as long as the coexistence is needed. This mixed-mode option may be unacceptable for many organizations, even for a relatively short time. Organizations already using Exchange Server 2007 cannot use this option without a pristine installation.

- **Reduce the volume of e-mail:** Organizations should reduce the amount of e-mail before migration to help complete the project as quickly as possible. Administrators may also archive e-mail in advance to help reduce volume.

- **Migrate archives using high-speed file servers:** Migrating GroupWise personal archives can present one of the largest challenges of a migration: locating the user archives may be difficult, and the archives themselves may be large. Depending on computer and network resources, archive migrations may take up to three times longer to process than mailbox migrations. Administrators can typically reduce this migration time by processing the archives on a high-speed Windows-based file server instead of a remote desktop.

- **Notify stakeholders that custom interface settings from the GroupWise client will not be migrated:** Proxies, custom views, and other user interface settings are not typically migrated from the GroupWise client to the Outlook client. The project team should communicate this to technology stakeholders, including end users, early in the process and ensure it is covered in end-user training.

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Dell Infrastructure Consulting experts know how to effectively assess, design, and implement new technology, and have successfully addressed the challenges presented by complex infrastructures in environments at Dell and at enterprises worldwide. This experience enables the organization to implement services that help enterprises take advantage of industry standards to utilize emerging technologies, enhance performance and scalability, and help maximize the value of IT investments. By working extensively with Microsoft and Quest Software, Dell Infrastructure Consulting can provide comprehensive support before, during, and after migrations from a Novell platform to a Microsoft platform. The tools and best practices described in this article are designed to ensure an efficient, cost-effective migration that can ultimately provide organizations with an IT infrastructure that meets their specific needs. ⏻

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