

# *Mastering Mergers and Acquisitions:*

Controlling Impacts on Active Directory  
and Exchange Infrastructures

*Use the right combination of tools and processes  
to protect your core network services  
during these situations*



## Abstract

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In today's fast-paced marketplace, organizations are often faced with mergers or acquisitions to remain competitive. Government organizations and agencies often need to merge whenever a political change comes into effect and restructures governmental services. Businesses often need to grow and change through acquisitions. Both situations demand a restructuring of underlying infrastructures such as Active Directory and Exchange email systems.

The question is: How should such a restructuring occur? There are three possible approaches:

1. First, you can choose to do nothing. (Well, not really nothing, but rather keep the existing infrastructures in place as is and synchronize directory and email contents.)
2. Second, you can choose to move all data from one or more structures into another existing structure from one of the merging parties.
3. Third, you can move to a completely new structure — one that is developed to meet the needs of the new organization being developed.

In each case, you need to think out the procedure and develop a surefire strategy. Read this white paper to find out how others have approached this particular type of situation.

## About the Authors

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## Infrastructure Migrations

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Organizations are often faced with the need to perform system migrations — moving from one version or deployment of an IT infrastructure to another. Case in point, when Microsoft releases a new version of a server operating system (OS), such as it recently did with Windows Server 2012, more than 80 percent of their customer base performs a system migration rather than an upgrade to the new OS.

These migrations affect several different service types (file and print, database systems, operational systems, infrastructures) but no migration is as complex or as critical as the migration of Active Directory Domain Services (AD DS) or Microsoft Exchange. That's because these two systems offer core services — services organizations cannot do without at any time. As an identity management system, AD DS offers core security and authentication services as well as device management. Exchange, on the other hand, offers core email and unified communication services. In each case, the infrastructure is complex, the components are distributed and downtime is not an option.

Yes, many organizations are faced with this type of migration when a new OS is released, but at least these organizations have a choice in the matter. They can choose when, or if, they will move to the new OS.

Since Microsoft releases a new OS every four years and updates the current system after its first two years of release, this gives organizations a lot of leeway as to when they will make their move. However, when organizations that rely on these core services are faced with mergers and/or acquisitions, as often happens in today's marketplace, they have no choice — they must make a move of some sort.

If you are in a merger or acquisition situation, you have three choices:

1. First, you can choose to do nothing. (Well, not really nothing; rather, you can choose to keep the existing infrastructures in place and synchronize both directory and email contents between the organizations.)
2. Second, you can choose to move all data from one or more structures into an existing structure belonging to one of the merging parties. Here you have to decide which structure will be the target.
3. Third, you can move to a completely new structure, one developed to meet the needs of the new organization being developed.

In each case, you need to think through the procedure and develop a surefire strategy.

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## Mergers and Acquisitions: Why and When

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A significant part of infrastructure migrations stem from business initiatives. These initiatives can occur in the private marketplace where business drivers force organizations to adapt to changing market conditions. Or they can occur in governmental agencies where political drivers change organizational structures. When organizations change and meld together, they often find their existing directories may not meet the requirements of the new entity.

Several types of initiatives can cause an infrastructure migration:

- **Mergers:** Organizations blend together to either become more competitive or offer more streamlined services to consumers. Mergers can impact two or more organizations. In this case, a new organization is often formed to replace the merged entities.
- **Acquisitions:** Business drivers can lead corporations to acquire others to create a stronger, better-aligned organization that supports long-term business growth. In this case, one organization may absorb others.
- **Divestitures:** Business drivers can prompt organizations to divest themselves of a segment of their structure. Several factors can lead to this situation, but in each case, existing objects in the IT infrastructure must be removed from existing systems and repurposed into a new structure.
- **Corporate Restructures:** Business drivers can force corporations to perform restructurings in an effort to remain competitive and attract new customers. In this case, massive restructuring may be called for within the IT infrastructure. Massive object movements can often lead to completely new structures.
- **Organizational Splits:** Political or other drivers can force organizations to sever specific departments in order to streamline their operations. These cases resemble divestitures in that existing objects must be removed from the IT infrastructure and restructured into new systems.
- **Domain/Forest Restructures:** Complex technologies such as AD DS or Exchange are sometimes deployed in fast-track patterns that do not result in optimal configurations. This is often caused by a lack of centralized planning and coordination during the deployment process. In these situations, administrators choose a domain or forest restructure to streamline structural configurations, simplify operations and improve service levels. This “second surgery” approach will frequently require a complete overhaul of the infrastructure for better efficiency and manageability.

Business and organizational drivers are not the only sources of mergers and acquisitions. Organizations faced with compliance to specific legal requirements may find that their current infrastructures do not facilitate meeting such demands. They may find a massive restructure of their legacy directory is needed to meet new legal requirements.

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## Working with Possible Solutions

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All of these situations have an impact on AD DS and Exchange operational systems. Moving objects within a directory is not as simple as it looks.

Directories structured with AD DS often contain Group Policy Objects (GPO) that can adversely affect an object when it is moved from one location to another. Extensive analysis and comprehensive laboratory testing are often required before such a move.

Exchange objects also can be adversely affected when moved from one location to another. Email containers may include different policies that can affect how users view and work with their inbox information. Once again, extensive analysis or, better yet, extensive comprehension of the existing system is required before such moves can be approved or performed.

Organizations facing these situations must choose how they intend to proceed. Three options are available.

### 1. Using a “Change Nothing” Strategy

Organizations, like people, often do not react well when faced with massive change. This can lead to a “change nothing” situation, where the organizations faced with the change will choose to maintain their current infrastructures as they are, and link them together through synchronization tools to provide integrated services to users of the new structure. Before choosing this strategy, your merged organization must meet certain conditions:

1. Your underlying directory service, or the Exchange organization, does not need to be renamed.
2. If a name change is required, it can be maintained through a public Web presence only.
3. Each merged or acquired member organization is satisfied with the current structure of their infrastructure services.
4. Each organization has opted to maintain separate IT teams.

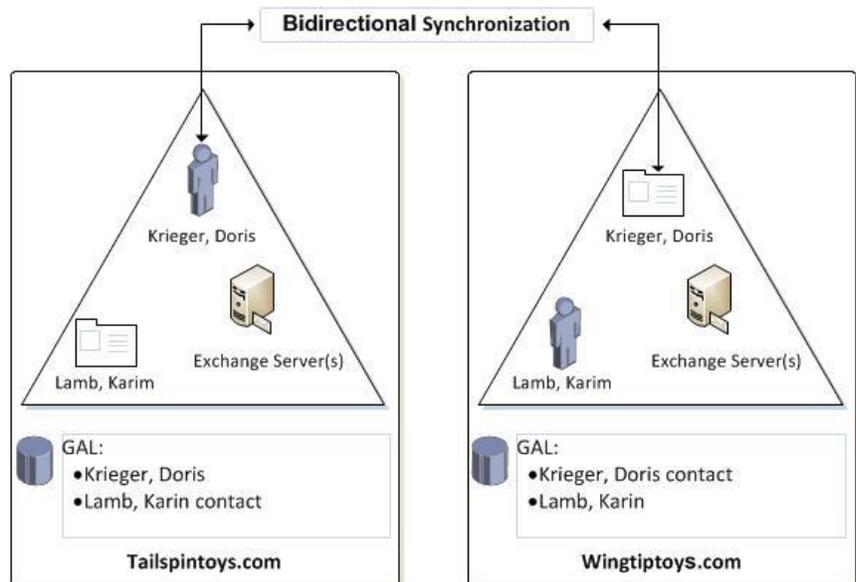
Several technological factors can assist in this type of situation:

- Your merged organizations can rely on the User Principal Name (UPN) feature in AD DS to create a new name suffix for each user within their existing directories. This will allow users to have a new email address without requiring your IT teams to make massive modifications to each directory.
- Your merged organization can create a new external Web presence based on a new name, which will be different than your internal AD DS directory names. But since the new name can be linked to the UPN, user email addresses can still present the unified name to customers.
- While each merged organization can maintain the existing infrastructure, a directory synchronization tool must be deployed to allow users of each infrastructure to locate their new associates. This creates a **complex Exchange organization** — a deployment topology for Exchange, designed for organizations that host multiple AD DS forests. This requires synchronizing multiple Exchange Global Address Lists (GAL). One way to do this is to rely on

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Microsoft Forefront Identity Manager (FIM). The complex Exchange organization can be run in one of two ways:

1. If you have multiple forests and complete control of each, you can use an **Exchange resource forest topology**. This enables you to maintain strict boundaries between each forest. The Exchange resource forest uses a one-way trust towards the account forest, or the forest that contains the user accounts for each business unit. The resource forest contains duplicates of each user account within the account forests, but these duplicates are disabled. They are, however, linked to the user's mailbox. Mailbox creation is performed only in the Exchange resource forest. So, account creators in each of the account forests will not have the right to create these mailboxes unless it is specifically delegated to them. Additional account information, such as phone numbers or office locations, must be added separately to the accounts in the Exchange resource forest. This means, however, that all existing Exchange mailboxes must be moved to the new Exchange resource forest.
2. In situations where you choose to work alongside existing AD DS forests that may already contain their own Exchange organizations, and you do not want to merge them into a resource forest, you must use a **multiple Exchange forest topology**. Because this topology includes multiple Exchange repositories, you must also synchronize information between the forests. This requires synchronizing directory objects as well as replicating free/busy data (see Figure 1).



**Figure 1. Using complex Exchange organizations**

- While your new organization chooses to maintain separate IT teams, you must somehow coordinate the efforts of each team. If you choose to run a resource forest topology, you'll find that you probably need to add staff to each IT team. Or even better, create a new resource forest team that will manage data manually within the new forest. If you choose to simply synchronize data

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between the two forests, you'll likely need a new team to run and manage the synchronization tool that makes data available in each forest.

In the end, choosing to "change nothing" carries very high administrative overhead. In one case, you'll be faced with extra manpower costs because you will need to keep the data in each forest in sync manually. In the other, you'll be faced with introducing and operating a complex topology and a new team to run it.

## **2. Merging into an Existing Infrastructure**

The second approach usually occurs when one of the organizations in the merger is larger or more dominant than the other, or when the merger stems from an acquisition. In this case, the dominant organization will want the others to merge within its existing IT infrastructure. Unlike the "change nothing" approach, this approach will involve a migration. Two key areas of migration you will need to focus on for the updated infrastructure are AD DS and Microsoft Exchange. Moving objects from one forest to another isn't a simple task. Some potential challenges include:

1. You need to begin with a pre-migration assessment. This means analyzing the existing directories and email structures and determining how to perform the migration. You'll need to identify where you want to migrate the objects. There are several strategies for this:
  - a. Clean up objects in their originating forest before moving them. This is often hard to do properly, because you must have a thorough inventory of the objects before beginning the cleanup.
  - b. Move the objects into a special container in the merging forest and clean them up there, before moving them to the appropriate location. Again, a thorough inventory is required before doing this.
  - c. Group objects according to the new departmental structure and move them as groups into the merging forest.

In each case, you'll find it is difficult, but not impossible, to obtain valid up-to-date information on the objects in each forest. Thorough backups will be required for the originating forests and mailbox repositories in case something is missed during the move.

2. You must maintain co-existence between the various forests during the entire move. In fact, you should establish co-existence immediately once the merger or the acquisition goes through, and then keep it running until the fusion of the directories is complete. You will need a special tool to perform this synchronization.
3. You'll need to ensure that the various IT teams establish a common set of standards and that those standards are implemented in the merging forest.
4. You'll need to report to the authorities at regular intervals how the migration is proceeding and where you are in the process. This is why you should put in a reporting structure as soon as the project begins.
5. You may need to call in expert resources to support this process, since you may not have in-house expertise for such a migration.

These are only some of the concerns you'll face during the migration process. One thing you will need to ensure is to limit the impact on end users to a bare minimum, or eliminate it altogether, since the reason for the merger is to improve business

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opportunities or provide better service. Disrupting users with a migration will have a negative impact on these objectives.

In addition, when you move to an existing infrastructure, you'll probably find that although it is relatively easy to clean up obsolete objects and data from originating forests and email repositories, it is nearly impossible to do so within the merging forest. That's because objects in the existing forest are difficult to move. GPO structures will have an impact on each moved object, and this may limit your ability to clean this part of your structure.

At worst, you could end up with a bigger mess than when you started.

### 3. Merging into a New Infrastructure

The best strategy is to move into a brand new infrastructure. This means creating a new directory service and Exchange organization and moving existing data and objects into this infrastructure. This way you can ensure that any new standards and operational strategies that need to be enforced in the new organization will be enforced from day one. You don't need to adapt existing directory structures or make legacy systems work in new ways. Instead, you can create new systems from the ground up.

Begin by applying best practices for the generation of the new directory service. These involve seven key aspects of directory creation:

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#### AD DS Design Best Practices

For a comprehensive set of best practices for AD DS design, look up [The Complete Reference to Windows Server 2008](#) by Ruest and Ruest.

1. **Forest/Domain Strategy:** The forest strategy determines the overall boundary of your directory service. This strategy depends on your organization size and thus, the number of objects your directory will contain. If your organization is small (under 1,000 objects) create a single domain forest to simplify ongoing management and administration. If your organization is large, or you require a more complex infrastructure because it spans several international territories, create a forest root domain with single or multiple global child production domains. Also include the trusts your forest will implement in this part of your design.
2. **Naming Strategy:** Active Directory Domain Services is very closely tied to the Domain Name System (DNS), since its entire naming structure relies on a DNS hierarchy. Two strategies exist for this:
  - **Split-brain DNS:** In a split-brain strategy, your internal directory name is the same as your external DNS presence. This requires manual DNS maintenance to segregate the domain names. It also creates a potential security hole, since hackers and attackers can use the same root name both internally and externally.
  - **Whole-brain DNS:** In a whole-brain strategy, your internal name differs from your external name. For example, an organization whose Internet name is *TandT.MS* will use *TandT.WS* as an internal directory name. Using a different name creates a natural segregation between internal and external networks. Then, rely on the User Principal Name (UPN) to ensure all email and user accounts use the external name.
3. **OU Structure:** Organizational Units (OU) create the internal structure of your directory. There are four reasons to create an OU:
  - **Administration:** OUs provide units of administration for the objects they contain. This is performed through Group Policy.

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- **Collection:** OUs provide containers to collect objects of a similar type or in a given location.
  - **Delegation:** OUs provide a delegation point for the administration of specific objects.
  - **Obfuscation:** OUs can be used to hide objects within the directory from searches by normal users. For example, objects of a technical or sensitive nature should be hidden from view at all times.

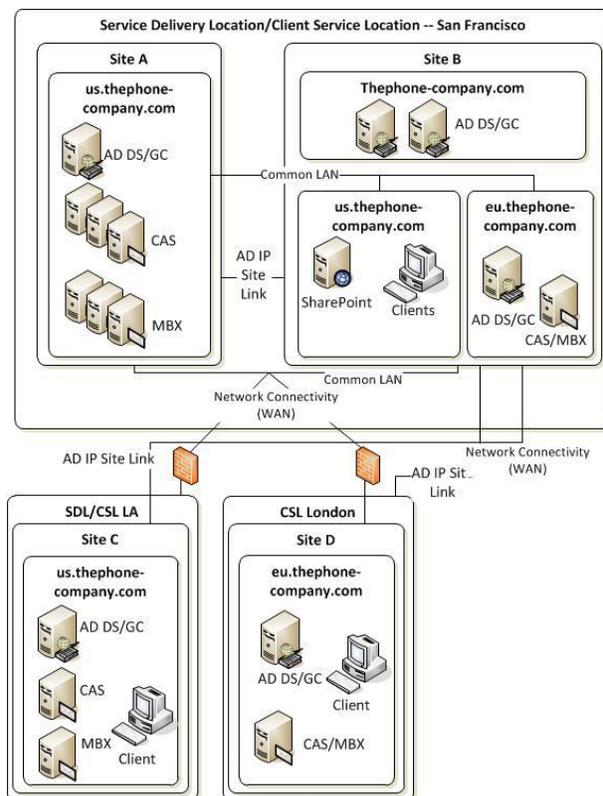
If an OU is created but it does not meet one of these four purposes, then it is not required.

4. **AD DS and Other Directories:** You may require interaction with other directories, such as with the directories of partner or client organizations. One strategy is to use trusts between each organization's directory service. However, you should avoid long-term forest trusts if possible, because they require you to open unconventional TCP/IP ports in your firewalls. Use technologies such as **Active Directory Federation Services (ADFS)** instead. They provide support for partner and client interactions through standard ports.
5. **Service Positioning:** This aspect of your directory design will focus on the positioning of key directory servers. These include:
  - **Flexible Single Masters of Operations (FSMO):** FSMOs are key server roles that support the operation of the directory. Proper positioning is crucial to the long-term operation of the directory.
  - **Global Catalog Servers:** These servers provide support for directory searches and should be widely dispersed within the directory.
  - **Domain Controllers (DC):** DCs are the main server role in an AD DS infrastructure and should be positioned to provide login support for all users and other directory objects.
  - **DNS Servers:** DNS is the main naming system that supports directory operations. The DNS server role should be married to the DC, since DNS data is stored within the directory. All DCs should be DNS servers.
  - **Read-only Domain Controllers (RODC):** RODCs provide protected login support for remote offices. Position them accordingly.
6. **Site Topology:** Directory server operations are based on replication. AD DS relies on a multi-master replication strategy, which means that all standard DCs can initiate a replication. Your site topology should reflect this fact and ensure that replication priorities are located in your administrative offices first and foremost.
7. **Schema Management:** AD DS is a network operating system, since it can be used for both secure access to networked resources and remote object management (through Group Policy). Therefore, it is essential that every deployment of this directory service include a database schema administration policy. The NOS directory should only be modified by essential services such as Microsoft Exchange Server, because while modifications can be deactivated, they cannot be reversed or deleted. Careful consideration

should be given to any product that requires an NOS schema modification, especially since you can provide directory extensions that do not affect your NOS structure through services such as **Active Directory Lightweight Directory Services**.

Then, apply best practices for the creation of your Exchange Organization. Focus on five key areas:

- 1. Organization Structure:** Keep your Exchange infrastructure as simple as possible. Create a topology that is hosted within a single AD DS forest, even if the forest includes more than five AD sites. Also, ensure that the Service Delivery Location (SDL) and the Client Service Location (CSL) are hosted in each site of any importance based on number of users in the site. Make sure that the external messaging presence and the client namespace are common among all locations, even if you have several sub-domains in the AD DS forest. This means that messages transfer to and from the Internet in a single location and are then routed to multiple points throughout the internal network infrastructure. For example, The Phone Company has sites in different parts of the U.S. and in Europe. Each area has its own domain to allow for different security strategies. While each domain has its own name, all domains use a common root: thephone-company.com (see Figure 2).



**Figure 2. Creating a single Exchange structure**

- 2. Plan for Growth:** Make sure your new Exchange Organization is ready for growth. To do so, ensure each server hosting Exchange services is properly scaled and has room for growth. Pay particular attention to storage requirements and create a storage fabric that can evolve with time and use.

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An email infrastructure that does not provide its users with enough storage space, or the capacity to send and receive large attachments, will quickly become obsolete.

3. **Prepare for Change:** Since you are undergoing a migration because of a change to your organizational structure, you should ensure that if this happens again, the structure you are creating will be able to absorb others. To do so, make sure you implement change tracking and comprehensive reporting in the new structure. This will ensure that you have a very good understanding of your structure when change occurs, and that you will be ready to adapt as needed.
4. **Integrate Compliance:** Many organizations undergo change to meet compliance requirements. However, if you plan for compliance as you build your Exchange organization, you will be ready to meet any compliance request. Identify which legal requirements apply to your new organization and rely on tools such as email archiving, multi-mailbox searches, legal hold policies, journaling and Data Loss Prevention templates to ensure your infrastructure can meet compliance requests.
5. **Create a Clean Organization:** By ensuring you have comprehensive inventories of the legacy systems you will migrate from, you can guarantee that your new infrastructure will not contain obsolete objects. Identify unused mailboxes, as well as content to be archived, unused accounts and unused services before moving them.

The result of this undertaking should be a world-class directory and email structure that can grow to support your organization in any situation.

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## Performing the Migration

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Once you are ready to perform the migration, keep the following considerations in mind:

- **Directory and Email System Co-existence:** The migration process will take time. The duration will depend on the total number of users to migrate, as well as the amount of data to transfer. Make sure your strategy includes a tool that will support this co-existence.
- **Migrate User Passwords:** Since all users will be moving to a new system, ensure that they will not be given new passwords. To do so, you'll need to use a tool that will move their existing passwords with their accounts. Nevertheless, because different organizations are merging together, some users may still be forced to update passwords to meet new infrastructure standards.
- **Synchronize Key Data:** Key data such as public-folder content and calendars must also be synchronized between the two systems. Your migration strategy will have to address this need; for example, if one user is on the new system and wants to share information with another that is not migrated yet, they will need some way to get together.
- **Synchronize Availability:** Availability data or free/busy information must also be synchronized if users are to have a productive experience during the migration. There is nothing more frustrating than trying to organize a meeting without knowing if participants or resources are available at that time.
- **Synchronize Mailbox Data:** When users have excessive amounts of mailbox data, it is important to ensure all data is synchronized so they have uninterrupted access during migration.
- **Control Legacy Access:** During data migration, users will need to access data in both the legacy and new infrastructure. To do so, you need to enable the Security ID (SID) history.
- **Perform SID Translations:** Once data migration is complete for a user, you can switch to the new environment and remove legacy SIDs. To do so, you will need to perform SID translations on legacy data.
- **Update User Profiles:** Once a user is completely migrated, you will need to update AD DS and Outlook profiles to ensure all of their systems work properly.
- **Perform a Final Cleanup:** When the migration is complete, you will also need to remove any agents you deployed and perform a final cleanup of your legacy systems. At this point, you will be able to decommission the older systems.

In addition to these considerations, you should ensure that you're able to generate a variety of reports during the migration. Key stakeholders in the new organization will want up-to-date reports on the progress of the migration. You'll also need to have reliable information on the source systems to make sure you do not migrate garbage or obsolete data/objects into your new network. Proper reporting will help ease the migration burden on both you and your users.

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## Relying on the Right Tools

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You can use free tools in support of the migration, but be wary of using the wrong tool. Keep the following criteria in mind when selecting the tools you want for the migration. Identify the features you need along with the core features already discussed. For example, your directory migration tool should offer:

- Support for the migration of users during business hours.
- Automatic updates for the permissions and resources of each security principal. This should include updates in AD DS, Exchange Server, Internet Information Server, file and print servers, SQL Server and much more. This removes the need to perform these updates manually or through homemade scripts.
- Support for controlled synchronization, allowing you to identify those DCs that should be used for this purpose.
- Delegation for multiple types of migration activities, allowing you to designate support staff for various tasks without having to grant them ultimate privileges in your legacy or your new networks.
- Support for the mirroring of a test environment to allow you to fully prepare for the migration process without impacting production networks.

Third-party manufacturers, such as Dell™, offer comprehensive tools that fully support the migration of directory objects from one network environment to another. **Dell™ Migration Manager for Active Directory** offers full workflow integration, walking you through a step-by-step migration process. It also supports complete coexistence between the source and the target directories. Find out more by downloading a free version of Migration Manager for Active Directory at <http://www.quest.com/migration-manager-for-active-directory/>.

As for the migration of your Exchange data, look to a tool that offers the following set of features:

- Support for the migration of multiple versions of Exchange
- Support for the synchronization of both Active Directory and Exchange data
- Support for the migration of general mailbox data, as well as public folders, calendar information and mobile device configurations
- Support for coexistence during the migration
- Support for the update of Outlook user profiles
- Centralized management capabilities
- Inventory and migration status reporting
- Secure migration control throughout the migration process

**Dell™ Migration Manager for Exchange** includes all of these features and more. Find out more at [www.quest.com/migration-manager-for-exchange](http://www.quest.com/migration-manager-for-exchange). Using the right tools, focusing on the right issues and using the very best migration process can help simplify any merger or acquisition. This may not make the migration stress-free, but it will put you in the driver's seat and ensure the process is as seamless as can be.

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## Final Thoughts

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To reiterate, there are three possible approaches to a directory service and email restructure during a merger or acquisition. Of the three, the one that makes the most sense is the creation of a brand new infrastructure followed by the migration of content from legacy networks. This allows you to meet multiple objectives with the migration while minimizing production disruptions.

Performing a successful migration requires the proper set of tools. Dell™ has been in the migration business for more than 10 years, developing tools that can truly help your migration run as smoothly as possible. Find out more at [www.quest.com/migration-and-consolidation](http://www.quest.com/migration-and-consolidation).