

Optimizing Active Directory Site for Exchange Environment

Heavy messaging load within an organization requires high performing and highly available Active Directory servers to help satisfy the service level agreements (SLAs) for mailbox servers, public folder servers, Simple Mail Transport Protocol (SMTP) and routing group bridgehead servers, and Exchange front-end servers. NTSL IT outlines steps for creating a dedicated Active Directory site for large enterprise data centers where Exchange data is located.

Exchange 2003 (E2003)

The reconfiguration of your AD sites involve the use of the powerful feature of IP network called **CLASSLESS INTERDOMAIN ROUTING**.

AD subnets are associated with sites in classless interdomain routing format. This will allow you to associate groups of computers and other network devices to a particular site, in addition to it being used also to determine where users authenticate. This configuration also fits in nicely with the DR plan involving NeverFail disaster recovery and high availability solutions.

Exchange 2007(E2007)

E2007 no longer relies on routing groups for mail flow. All mail flow is routed using the AD site topology. In addition, Exchange uses AD sites to determine which DC/GCs to use. Therefore, this must be designed correctly – IP ranges setup correctly.

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Exchange 2007 now utilise AD Sites and Site links for routing mail. Exchange 2007 server determines the best route to deliver mail within an exchange organisation by the cost of an IP site link. Also, Exchange 2003 Administrative Groups and Routing Groups are no longer available - Outlook 2007 will now use the availability service feature in Exchange 2007. Exchange 2007 deployment essentially calls for a well structured design of Site Replication Topology.

Alternatively, you may consider a **Resource Forest Model** as a transition strategy. Resource Forest topology will completely separate AD and Exchange administrative functions. This is now possible as Exchange 2007 has introduced role-based administrative model which is much more granular - Exchange Organization Administrators (organization wide), Exchange Recipient Administrators(organization wide), Exchange Server Administrators (server by server type role), and Exchange View-Only Administrators (organization wide).

Mailboxes are now configured from the Exchange Management Console or the new Exchange Management Shell, but not from the Active Directory Users and Computers (ADUC) snap-in. In fact, the mailbox attributes are not even visible in the ADUC snap-in. However, Exchange admins can create new AD users in the context of creating mailboxes from the Exchange Management Console or the Exchange Management Shell. **This will cause some redesigning of administration delegation.**

Important Changes affecting E2007 message routing

In Active Directory with inefficient site link cost structure, Exchange admins can set a site link attribute, called **msExchCost**, with a different site link cost -- other than what Active Directory uses for replication decisions. Thus, Exchange admins can build their own site link cost topology. Note that this Exchange version of site link cost is set on each individual site link. Therefore, you could have a mixture -- with some site links having only the AD cost set and some having both set. **However, this could be very confusing when you try to troubleshoot messaging problems.**

Microsoft Outlook relies heavily on the AutoDiscover service running on the Client Access Server, which uses Web services and a new DNS "A" record to allow the Outlook client to locate the proper mailbox server and other resources. This reinforces the old AD design principle that all operations ultimately depend on DNS. Thus, DNS misconfigurations not only affect AD operations, but will also potentially cause messaging failures.

Public folder routing

CAS server request routing from Mailbox server (one CAS must be located in site of MB server).

Due to the larger reliance on RAM with the 64bit technology, storage is used less so IOPS are lower. This can either mean more users per server or larger mailboxes.

Also potentially, to enable the mailbox role to be clustered CAS servers will need to be placed on separate boxes.

E2007 Install order

Deploy and configure Client Access servers:

The first Exchange 2007 server role that should be introduced into the organization is the Client Access server. You must deploy the Client Access server role in each Active Directory site that contains or will contain a Mailbox server. This does not mean that every site must contain a Client Access server before you can deploy Mailbox servers. Rather, it means that as each site is deployed, the first role to be deployed is the Client Access server.

Deploy and configure Edge Transport servers:

The Edge Transport server is deployed outside the Exchange organization in a perimeter network. You can deploy this server role during any phase of the upgrade process. The Edge Transport server does not depend on any particular messaging or directory configuration. You can add an Edge Transport server to an existing Exchange organization without upgrading any Exchange servers. You do not have to make any organizational changes to use an Edge Transport server.

Deploy and configure Hub Transport servers:

Because the routing topology in Exchange 2007 is very different from the routing topology used in Exchange Server 2003 and Exchange 2000 Server, we recommend that you transition all servers in a routing group to Exchange 2007 at the same time, in the following order:

Deploy and configure Hub Transport servers. The Mailbox server and Unified Messaging server require a Hub Transport server. You must install and configure a Hub Transport server before mail flow can be established. A Hub Transport server can coexist with Exchange Server 2003 and Exchange 2000 Server servers that have been designated as bridgehead servers for their routing group. However, you must configure connectors to enable mail flow between the Exchange Server 2003 and Exchange 2000 Server routing groups and Exchange 2007 Hub Transport servers.

Deploy mailbox:

When Mailbox servers have been deployed, you can move mailboxes from Exchange Server 2003 and Exchange 2000 Server to Exchange 2007. To move mailboxes to Exchange 2007, you can use either the **Move-Mailbox** cmdlet or the Move Mailbox Wizard.

- Move resources from Exchange Server 2003 and Exchange 2000 Server servers to Exchange 2007 servers.
- Resources include public folders and system folders.
- Uninstall Exchange Server 2003 and Exchange 2000 Server.
- The uninstall process decommissions the servers and removes them from the Exchange organization.
- Remove connectors between routing groups, and then remove the routing groups.

Deploy and configure Unified Messaging servers:

The Unified Messaging server is new in Exchange 2007. The Unified Messaging server does not interoperate with earlier versions of Exchange Server. You cannot install and configure a Unified Messaging server until after you have deployed and configured a Hub Transport server and Mailbox server. This is required because messages generated by a Unified Messaging server can only be submitted to a Hub Transport server, and because only recipients who have mailboxes on Exchange 2007 servers can use unified messaging. After you install a Unified Messaging server, there are other deployment tasks that you must complete to successfully deploy unified messaging in your organization.

Perform post-installation tasks:

After deployment of server roles is complete, there are several post-installation tasks that you should perform, including verifying that your installations were successful, and finalizing your deployment.

About NTSL Consulting Service

We provide Microsoft & NeverFail Enterprise Solutions - Global AD and Exchange email design; NeverFail disaster and high availability design for exchange, SharePoint, SQL, Blackberry, File servers; Ad and Exchange troubleshooting and health check.

