Implementing Exchange Server 2007 for coexistence with Exchange Server 2003

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Abstract

In this article I will show you how Exchange Server 2007 can coexist with Exchange Server 2003 and what the main differences between these two versions are.

Differences between Exchange Server 2003 and Exchange Server 2007

Let us start to explain the key differences between Exchange Server 2003 and Exchange Server 2007 especially for coexistence:

- Administrative Groups
- Routing Groups
- Server Roles

It is possible to install Exchange Server 2007 into an existing Exchange Server 2003 organization that is operating in Exchange native mode. The existing Exchange organization can contain Exchange 2003 servers, and Exchange 2000 servers.

There are many differences between Exchange Server 2007 and Exchange Server 2003. To explain these differences and how the different features can coexist is the main focus of this article.

Understanding Coexistence between Exchange Server 2003 and Exchange Server 2007

Depending on the size of the Exchange Organization in which you are working a migration to Exchange Server 2007 from Exchange Server 2003 can consume a lot of time so both versions have to coexist for this time. Second it is not possible to directly migrate Exchange Server 2003 to Exchange Server 2007. You have to install additional Exchange Server 2007 into the existing Exchange Server 2003 organization.

Successful coexistence of Exchange 2007 with Exchange Server 2003

Exchange 2003 Server depends on the correct configuration of routing group connectors between Exchange 2007 Hub Transport servers and Exchange Server 2003 Bridgehead servers. When you install Exchange 2007 in a Windows Server 2003 forest with an existing Exchange 2003 organization, you select to join Exchange 2007 to that Exchange 2003 organization.
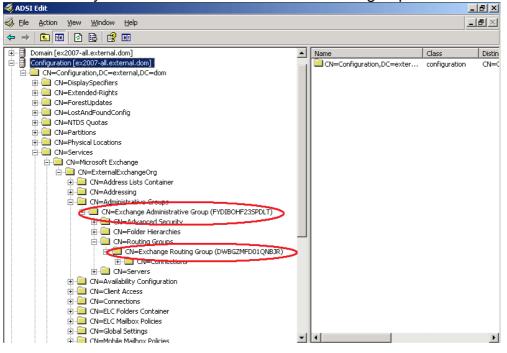
During Exchange Server 2007 installation, you must specify an Exchange 2003 Bridgehead server in the routing group to which you want to create the initial Routing Group connector.

Because Exchange Server 2003 and Exchange Server 2007 use different Server to Server communication, you must configure routing group connectors to enable message transfer between these two Exchange versions. Exchange Server 2003 uses SMTP as the primary communication protocol between Exchange 2003 servers. Exchange Server 2007 uses RPC for Server to Server communication (like Exchange Server 5.5) and depends on the Hub Transport server role to perform SMTP to send and receive messages. It is no more possible to use an Exchange Server 2007 organization without a Hub Transport Server because this Exchange Server role is responsible for message conversion and many more.

Administrative Group

Exchange Server 2003 use administrative groups to organize Exchange with the purpose to delegate permission to manage parts of the Exchange organization. Exchange 2007 does not use administrative groups as a logical management unit for administrative delegation (there is only one administrative group that all Exchange Server 2007 are members of, and the administrative group exists only for compatibility reasons for Exchange Server 2003).

To allow coexistence between Exchange Server 2003 and Exchange 2007, all Exchange 2007 servers are automatically installed in a single administrative group when Exchange 2007 is installed.

The Exchange Server 2007 administrative group is recognized in the Exchange System Manager of Exchange Server 2003 as Exchange administrative group (FYDIBOHF23SPDLT). The Microsoft Exchange Team has a wonderful idea when they created this name. The name sounds not logical? It is logical and decoded the administrative Group has the name EXCHANGE12ROCKS. The Exchange team used the well known Caesar chiffre. Now you have to research how the name FYDIBOHF23SPDLT corresponds to EXCHANGE12ROCKS!

Administrative groups are not displayed in the Exchange 2007 Exchange Management Console but you can see the default administrative group with ADSIEDIT.

Figure 1: Exchange 2007 Administrative Group and Routing Group

Utilities to manage Exchange Server 2003 servers

You can use the Exchange tasks in Active Directory Users and Computers to manage Exchange Server mailboxes in Exchange Server 2003. In Exchange 2007, you must manage Exchange 2007 servers and mailboxes by using the Exchange Management Console or the Exchange Management Shell. The related management tasks to configure Exchange 2003 recipients have been moved to the EMS or EMC.
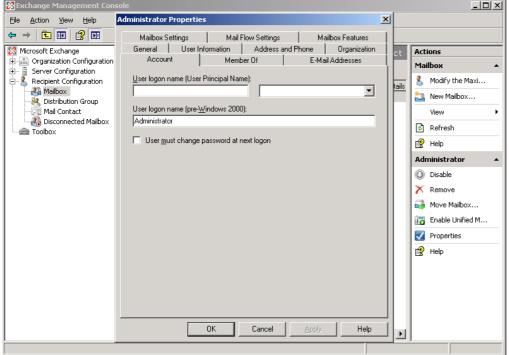
Figure 2: Exchange 2007 User and recipient management with EMC

Routing Groups

Exchange Server 2003 uses routing groups and routing group connectors to route messages between Exchange Servers in different routing groups. A routing group is defined as a boundary of physical sites and to establish a SMTP connection between these sites. Typically a routing group is used to group Exchange Servers which are connected through a high speed network link. Exchange Servers in the same routing group can communicate directly with each other without the use of routing group connectors and possible limitations on connector site. Typically, there is a 1:1 relationship with Exchange routing groups and Active Directory sites. Exchange 2003 and Windows Administrators always had to configure and maintain two site concepts – Exchange Routing Groups and Active Directory sites.

Exchange Server 2007 uses the existing Active Directory site topology to define the Routing topology. Exchange 2007 Servers that exists in the same Active Directory site can communicate with each other without the use of connectors. E-Mail that must be delivered to Exchange Servers in other Active Directory sites will be transmitted to Hub Transport Servers. The Hub Transport Server is then responsible for transmitting the message to the destination Hub Transport server in the other Active Directory site.

Exchange Server 2007 automatically creates these connectors between the Active Directory sites but it it is possible to manually configure the routing topology. You can't see these connector in the Exchange Management Console.

In the case of coexistence between Exchange Server 2003 and Exchange Server 2007, all Exchange Server 2007 will be installed in a single Routing Group that is used for coexistence with Exchange Server 2003.

The default Exchange 2007 routing group is displayed in Exchange 2003 System Manager as Exchange Routing Group (DWBGZMFD01QNBJR) within the Exchange Administrative Group (FYDIBOHF23SPDLT) – think again that the Caesar chiffre is used here to build the name of the Routing Group.

When the first Exchange 2007 Hub Transport server is installed into an existing Exchange 2003 organization, you must select an Exchange 2003 bridgehead server to which the routing group connector should establish a connection.

The Hub Transport Server from Exchange Server 2007 and the remote Bridgeheadserver from Exchange Server 2003 are automatically configured with a routing group connector that connects both routing groups. The Exchange Server 2003 Bridgehead Server is automatically added as a member of the Legacy Interop Universal Security Group. This group has the permission to send and receive e-mail through Exchange Server 2007.

You must use the Exchange Management Shell (EMS) with the New-RoutingGroupConnector cmdlet to create additional Routing Group connectors on the Exchange Server 2007 Hub Transport Servers. Please note that Exchange Server 2007 and Exchange Server 2003 cannot exist in the same routing group.

Important:

If you install Exchange 2007 to build a new Exchange organization and not to install into an existing Exchange 2003 Organization you cannot install Exchange 2003 in the Exchange 2007 organization.

Link State Routing

Exchange 2003 servers use Link State Routing to exchange routing table entries for the path that messages will take through the exchange organization. A routing group master collects information about the status of other Exchange Servers and creates a small table in memory, the Link State Table (LST). The LST is then distributed to other Exchange Servers and will be updated at fixed intervals. Based on the Information about the status of other Exchange servers a lost connection to another Exchange Server will be saved in the LST and Exchange tries to route the message over another Exchange server to the destination.

Link state routing is not used by Exchange 2007 Hub Transport servers and Exchange 2007 can't propagate link state updates. When a Hub Transport server sends an e-mail to another Active Directory site where a Hub Transport server cannot be contacted, the Hub Transport server does not recalculate the route. Hub Transport servers always try to communicate directly with other Hub Transport servers.

If there is more than one Hub Transport Server in a site, messaging traffic is automatically load balancedand the sending Hub Transport Server tries to reach each other Hub Transpiort Server in the destination site before the connection fails.
When the connection to the destination site is unavailable, Exchange Server 2007 uses the associated site link costs to an Active Directory site to deternmine the closest site to send the mail to. This behavior is known as queue at point of failure.

If multiple routing paths exist between the default Exchange 2007 Routing Group and any Exchange Server 2003 routing group, Link State updates must be suppressed to ensure that no message loops occurs when a route is recalculated. Microsoft recommands suppressing Link State updates if multiple connection exists between Exchange Server 2007 and 2003. It is possible to disable Link State updates through through a registry patch. Configuration changes such adding a connector in the Exchange organization is still propagated by using the Link State information.

Send Connectors and Receive Connectors

Exchange Server 2003 uses Virtual SMTP Servers to send and receive messages. A SMTP connector is logically bound to an SMTP Virtual Server.
Exchange Server 2007 doesn't use SMTP Virtual Servers. Instead Exchange Server 2007 uses the new Hub Transport Server role.

The Exchange 2007 Hub Transport servers provide SMTP transport for the organization. Hub Transport servers use an automatically created connector to route messages between Active Directory sites. You cannot see these connectors in the Exchange Management Console. The connector is called an intra-organization Send connector.

The Exchange Server 2007 setup creates an SMTP receive connector to receive SMTP message from any sender on Port 25. The Exchange Server 2007 setup process also creates a second connector to receive SMTP traffic from non MAPI clients. This connector is listening on Port 587.

If you want to enable your Exchange organization to send e-mail through the Internet you must create a SMTP Send connector to route e-mail to the Internet. If your organization is larger you should implement an Edge Transport Server in your Exchange Organization in the perimeter network. An Exchange Edge Transport Server is a secured and hardened in functionality reduced version of Exchange Server 2007. The SMTP Send connector on the Hub Transport Server should point to the Edge Transport Server.

Message Tracking

Message Tracking is the process of archiving the way that messages has taken when they reached or left the Exchange organization. With the help of message tracking you will easily find through which ways the message has gone.

The message tracking feature in Exchange 2007 is different from the message tracking feature in Exchange Server 2003. The events that are logged by Exchange 2007 message tracking do not correspond directly to the message tracking events that are logged by Exchange Server 2003.

Messages that are sent and received by Exchange 2007 can only be tracked by Exchange 2007 servers. You cannot use the message tracking feature of Exchange Server 2003, because Exchange Server 2007 doesn't support WMI for this function.

If your Exchange organization is in mixed mode with Exchange Server 2003 and 2007 you have to use the message tracking feature of Exchange Server 2007 to track messages in Exchange Server 2007 and if this messages is transmitted to Exchange Server 2003 you have to use the message tracking feature in Exchange Server 2003.

Mailbox Server Coexistence

The Mailbox server role can coexist with Exchange Server 2003 and Exchange Server 2007. Exchange 2007 uses the Hub Transport server to send and receive mail. A Hub Transport server must be installed in every Active Directory site that contains an Exchange 2007 Mailbox server. It is possible to move mailboxes between Exchange Server 2003 and Exchange Server 2007.

Client Access Server Coexistence

The Client Access server (CAS) role in Exchange Server 2007 has the same (and more) functionality as a front-end server in Exchange 2003. You must deploy the Client Access Server role if you have e-mail clients that access Exchange by using Microsoft Outlook Web Access (OWA), POP3, IMAP4, or mobile devices with Exchange Active Sync (EAS). The Client Access Server role from Exchange Server 2007 can coexist with Exchange Server 2003 but the right combination of Exchange Server 2003 / 2007 and Exchange 2003 Front End Server and Exchange Server 2007 Client Access Server role is important which version of Outlook Web Access clients will see. If the user's mailbox is located on an Exchange Server 2003 Backend server and the Client Access Server is running Exchange 2007, the user will have access to the Exchange Server 2003 version of Outlook Web Access. Only if you use the Exchange Server 2007 version on both Backend Server (Mailbox Server role) and Client Access Server role, users will participate from the new Outlook Web Access version of Exchange Server 2007.

Different URLs to use OWA (Outlook Web Access)

The Outlook Web Access URL that users have to use also depends on the location of the user's mailbox. If the mailbox is located on an Exchange 2003 back-end server you must use the URL http://<servername>/Exchange.
If the mailbox is located on an Exchange 2007 Mailbox server, you can use http://<servername>/owa or http://<servername>/Exchange.
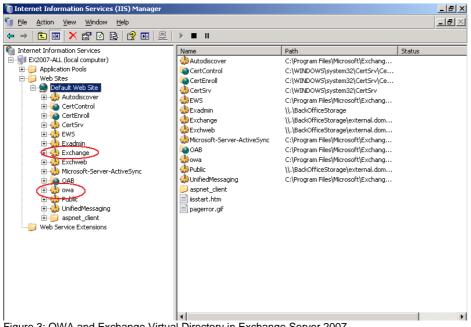
Figure 3: OWA and Exchange Virtual Directory in Exchange Server 2007

Edge Transport Server Coexistence

The Exchange Server 2007 Edge Transport Server role is new in Exchange Server 2007 but this role is not exclusive to Exchange Server 2007. You can use a server with the Edge Transport server role as a smarthost in an Exchange Server 2003 environment with some limitations. One of the most important limitations is that you cannot use the Exchange Server 2007 Edge Subscription to synchronize recipient lists, or safelist senders from Outlook.

Conclusion

There are many more differences between Exchange Server 2003 and Exchange Server 2007 and Exchange Server 2007 has many more new and improved features compared to Exchange Server 2003 but I hope that I successfully explained the key differences between Exchange Server 2003 and Exchange Server 2007 and how to establish a coexistence between Exchange Server 2003 and Exchange Server 2007.

Related Links

Exchange Server 2007 features
http://www.microsoft.com/exchange/evaluation/features/default.mspx
Exchange Server version Comparison
http://www.microsoft.com/exchange/evaluation/features/ex_compare.mspx
Reasons to upgrade to Exchange Server 2007-01-27
http://www.microsoft.com/exchange/evaluation/upgrade/default.mspx
Transferring Settings from Exchange Server 2003 to Exchange 2007
http://technet.microsoft.com/en-us/library/088b4c6d-6dc2-42e3-a0b1-52b0b815cdca.aspx
Exchange Server 2007 and 2000/2003 systems management co-existence
http://msexchangeteam.com/archive/2006/10/09/429135.aspx