Microsoft Exchange 2003 – Query-based Distribution Groups

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Abstract

A query-based distribution group is a new additional type of distribution group in Exchange 2003. A query-based distribution group provides the same functionality as a standard distribution group; however, instead of specifying static user memberships, a query-based distribution group allows you to use an LDAP query to dynamically build membership in the distribution group (for example All employees with a special group membership). Using query-based distribution groups we can reduce the administration costs dramatically. However a Query-based Distribution Group needs more Server resources like CPU power and RAM.

This article is based on Windows 2003 Enterprise Edition (Build 3790) and Microsoft Exchange Server 2003 (Build 6944.4).

Reference: Windows 2003 / Exchange 2003 Product documentation

Introduction

How Does a Query-Based Distribution Group Work?

1. An e-Mail is submitted to the submission queue of the Exchange store driver or through SMTP
2. The message categorizer determines that the recipient is a Query-based Distribution Group
3. The categorizer sends an LDAP request to an global catalog server
4. The contacted global catalog server executes the query and returns the addresses that matches the query
5. After receiving the complete set of addresses matching the query, the categorizer generates a recipient list containing all the users.
6. After the categorizer sends the complete, list of recipients to routing, the normal message delivery process continues, and the e-mail message is delivered to the users mailboxes.

Creating Query-Based Distribution Groups

Query-based distribution works best in a pure Exchange 2003 deployment or in an Exchange 2000 native Mode environment and Exchange 2003 deployment in which all Exchange 2000 servers are running SP3 with Windows Server 2003 global catalog servers. If the global catalog servers are running Windows 2000 Server, we can modify a registry key on our Exchange 2000 SP3 servers to achieve greater reliability (HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Servcies\SMTPSVC\Parameters – REG_DWORD – DynamicDLPageSize – Value data = 31 (Decimal)). If you are running versions of Exchange earlier than Exchange 2000 SP3 in your organization, Query-based Distribution Groups will not work.

Create a new Query-based Distribution Group in ADUC

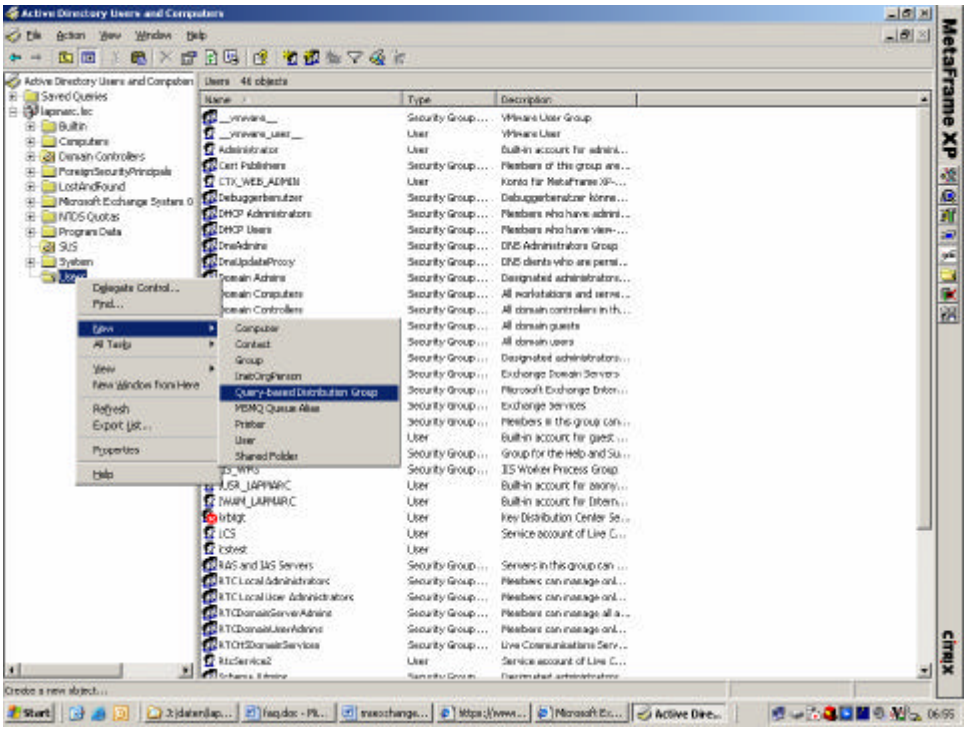


Figure 1: Create a new Query-based Distribution Group

Type a name of the new Distribution Group

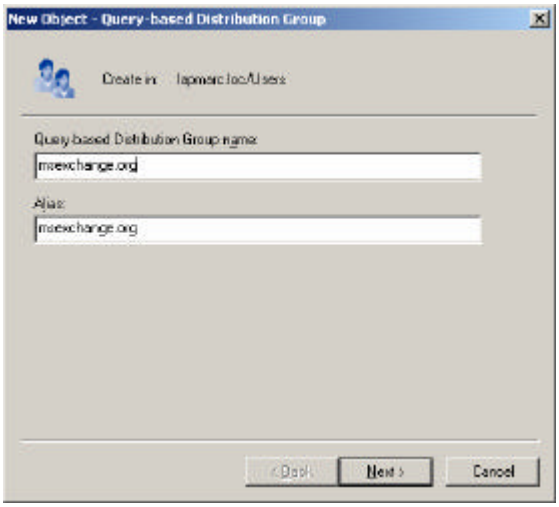
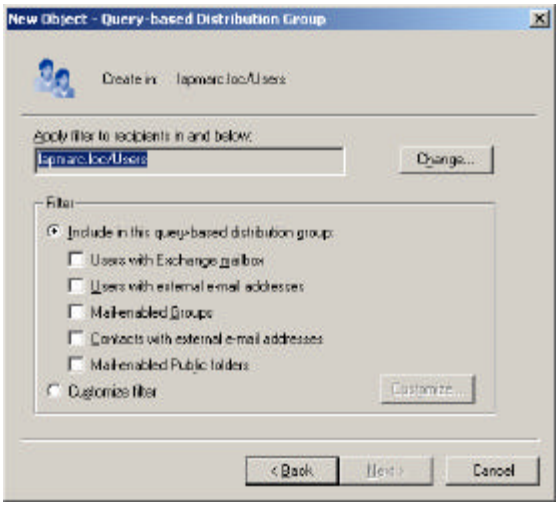


Figure 2: Naming the Query-based Distribution Group

Apply a filter for the content of the new Distribution Group. You can choose between a standard filter as shown in the following picture and a customized filter like in Figure 4.



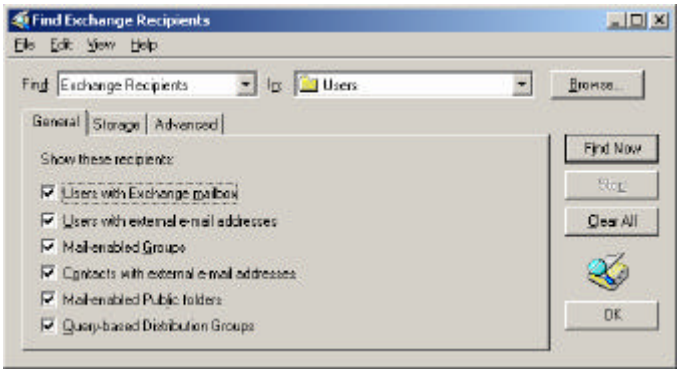


Figure 4: Customize the filter

Figure 3: Apply a filter to specify the content of the new group

You have successfully created the new Query-based Distribution Group

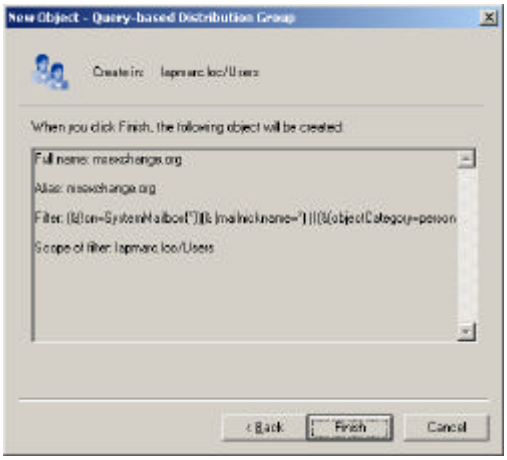


Figure 5: Click Finish to create the Distribution Group

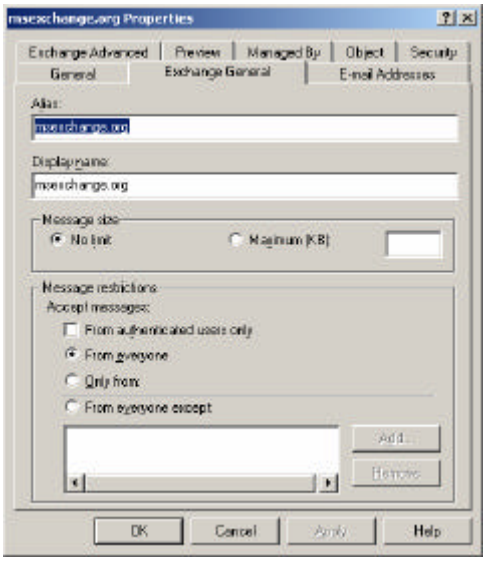


Figure 6: Properties of the Exchange 2003 Distribution Group

Guidelines for Creating Query-Based Distribution Groups

Use the following guidelines when creating query-based distribution groups:

- You can only use query-based distribution groups in a pure Exchange 2003 environment or in a native mode environment with Exchange 2000 and Service Pack 3 and Exchange 2003.
- In multiple-domain environments you should use only universal groups as members of the query-based distribution group because only the membership of universal groups is replicated to global catalog servers.
- Index the attributes in the query because this will improve the performance of the query and reduce the time to expand the distribution group.

Combining Multiple Query-Based Distribution Groups

You can create query-based distribution groups based on the AND operator. This means you can combine two or more queries. The first query includes users who are on mailbox store X and the second query includes users who are on mailbox store Y. Then we would create a standard distribution group which includes the two query-based distribution groups.

Recommendations for Query-Based Distribution Groups

Hardware

As a baseline the categorizer require up to 2 KB of memory for each recipient. For example a query-based distribution group of 500 users requires up to 10 MB RAM. Plan enough processor resources for query-based distribution groups in large environments with many users and query-based distribution groups

Global catalog availability

Query-based distribution groups needs to contact global catalog servers. If all GCs are unavailable, the messages are placed in retry mode in the categorizer. This means that the complete expansion will restart after one hour.

Conclusion

Query-Based Distribution Groups offers a new type of Distribution Group with a flexible method to dynamically define the membership of this group type.

Related Links

Microsoft Whitepaper – “What’s new in Exchange 2003”
www.microsoft.com/exchange