Exchange 2003 – Offline Address Book – Best Practices

Written by Marc Grote - mailto:grotem@it-training-grote.de

Abstract

In this article I will give you some tips how to implement Offline Address Books in Exchange Server 2003. This article deals also with some basics about Offline Address Books and the implementation of Offline Address Books in Outlook 2003.

Let's begin and start with some basics about Offline Address Books

An Offline Address Book is a container that stores a collection of Offline Address Lists. Administrators can configure Offline Address Books (Figure 1)
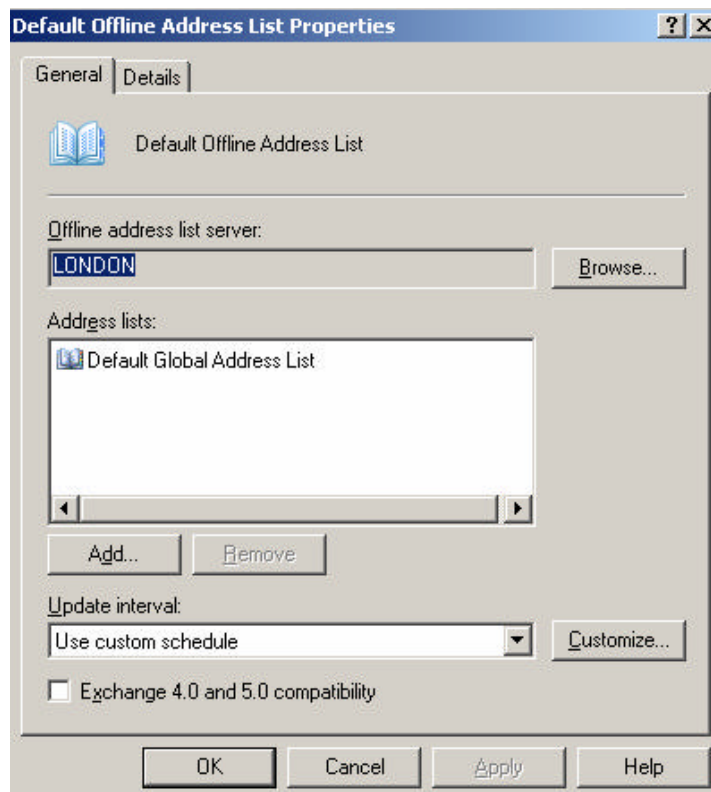

Figure 1: Default Offline Address List

and Outlook users can choose which offline address lists they want to download (Figure 4). Users who work offline connect to Exchange Server computers and download Offline Address Lists to obtain information about other users in their organization.

When an Administrator creates an Offline Address Book, the address list will be converted to a separate set of files and stored in an Exchange Public Folder. Offline Address Books typically contain at least one address list that represents the global address list (GAL). Users who are working offline with their Outlook clients can use this global address while they are on the road.

All Offline Address Lists are contained under CN=Offline Address Lists, CN=Address Lists Container,CN = <Org Name> in Active Directory.

OAB versions

Exchange Server 2003 has several different OAB formats:

OAB version 2

The OAB Version 2 folder contains Offline Address Books with ANSI characters and is used by Outlook 97 through 2003. Each object in the system folder represents a created Offline Address Book (depending on the interval of OAB generating). Outlook clients have only to download the delta changes since the last full download. Changes between the last full download are saved in a file called Changes.oab.

OAB version 3

Exchange Server 2003 introduces a new Offline Address Book format called Offline Address Book v3a. Offline Address Book v3a is stored in a system folder named OAB Version 3a. OAB Version 3a adds support for Unicode format. These Offline Address Books are used by Outlook 2003. When Outlook 2003 logs on to the Exchange Server it checks the existence of the OAB Version 3a folder and uses the Unicode files if they are available.

OAB version 4

OAB v4 was designed to help remove some download issues with the OAB. Some of the new OAB v4 features are:
- Generates local specific indexes based on the OAB.
- Uses LZX compression
- Uses a new Binpatch logic for applying multiple days worth the diff files
- Has sort orders for ambiguous name resolution (ANR) and browse files

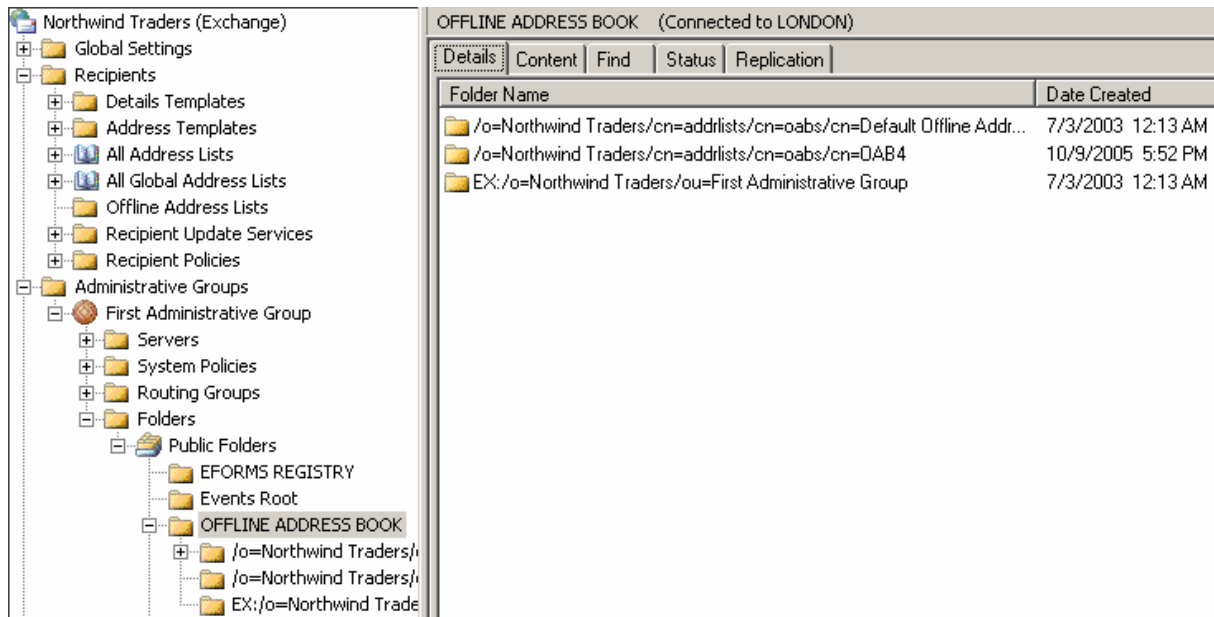**Please note:** OAB 4.0 is only available if you use Outlook 2003 Service Pack 2.

Figure 2: Location of Offline Address Book folders

OABInteg

OABInteg is a command line utility which can help you in troubleshooting OAB generation problems, and problems with Outlook clients that have problems with downloading an Offline Address Book from an Exchange Public Folder store. OABInteg simulates two processes related to Offline Address Books:

- How Microsoft Outlook 2003 connects to a public folder store to download the Offline Address Book.
- How the OABGEN process on the Exchange server connects to the public information store to recreate the Offline Address Book.

Figure 3: OABInteg syntax

Henrik Walther has written a great article about this helpful utility at www.msexchange.org. You will find this article here.

Outlook 2003 and OAB

Outlook 2003 uses the Offline Address Book to provide offline access to the global address list or other address lists. Exchange generates an Offline Address Book every night and places them into a special public folder (a system folder). (Figure 2). Offline Address Book files are compressed before they are added to the Offline Address Book system folders. Outlook checks the system periodically for new Offline Address Books and download the required files.

Outlook 2003 with Cached Mode and the Offline Address Book

Outlook 2003 with Cached Mode enabled uses the Offline Address Book by default for all operations. This is useful in situations where the client is offline but can result in some confusion if the user uses Outlook 2003 in LAN environments and the Offline Address Book is not up to date. You can modify this behaviour by modifying the Registry on the Outlook Computer(s): HKEY_CURRENT_USER\Software\Policies\Microsoft\Office\11.0\Outlook\Cached Mode – New REG_DWORD – DownloadOAB. This setting can have the following values:

0 – The offline address book does not download automatically.
1 – The offline address book uses the Download Full Items download mode. This is the default setting.
2 – Download the offline address book in any download mode, but download a differential update in the Header only download mode.
3 – Always download the offline address book and a differential update in one of the following download modes: Download Headers and then Full Items, Download Full Items, and Download Headers.
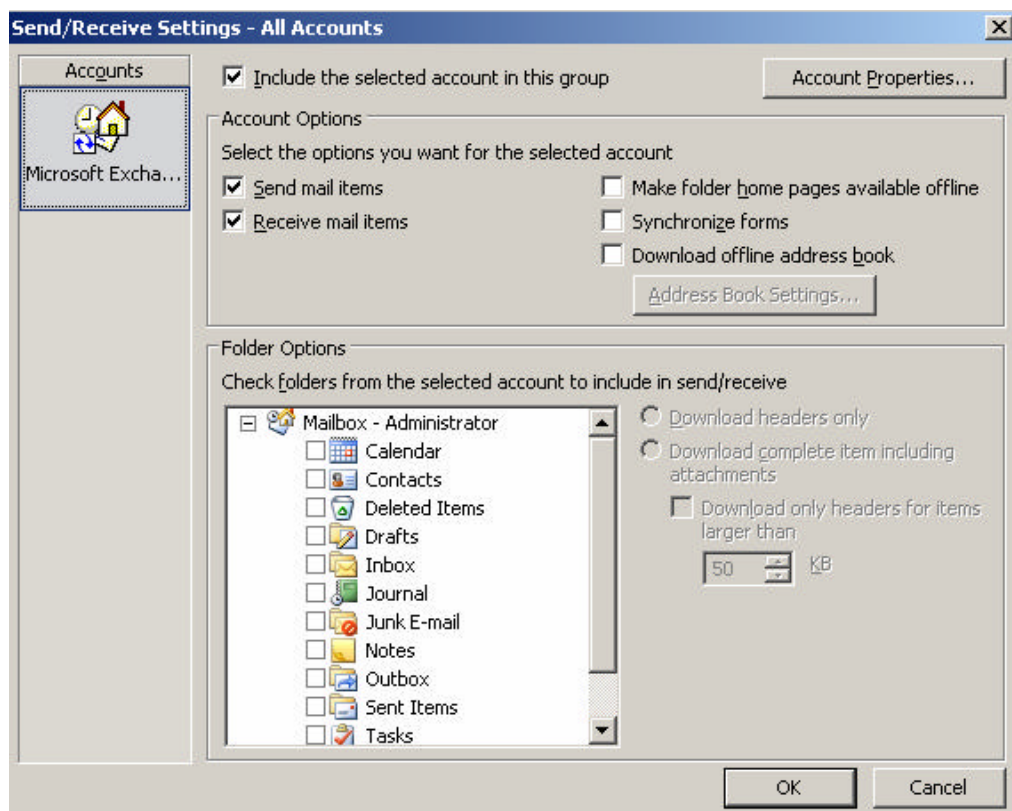

Figure 3: Download Offline Address Book feature in Outlook 2003

Planning the Deployment of Offline Address Books

If you are using Offline Address Books you must be careful planning a possible impact in your Exchange Organization. Some of these factors include:

- The size of each Offline Address Book in your Exchange organization
- The number and frequency of parent distinguished named changes
- The number of Offline Address Book downloads
- Simple Mail Transfer Protocol address mismatches
- The overall number of changes made to Active directory.
- Other conditions that require a full offline address book download.

Planning Offline Address Book Size

The size of the Offline Address Book depends on several factors. One of the primary factor is the number of users in the Offline Address Book. The size of Offline Address Books can vary from a few megabytes to hundreds of megabytes. The following factors can affect the size of the Offline Address Book:

The usage of certificates in your company

Every PKI certificate range from 1 KB to 3 KB. If you have many users participating in your PKI, you must add the required space for certificates to the Offline Address Book.

The number of mail recipients in the Active Directory Service

If you use many external contacts, please keep in mind that these objects also count for the Offline Address Book size.

Number of Distribution Groups in Active Directory

The size of the Offline Address Book also depends on the number of e-mail activated objects in Active Directory and the number of Distribution Groups.

Size calculation example:

The full Offline Address Book size is approximately 0.5 MB per 400 users. If there are user certificates in the offline address book, this will add approximately from 1 to 3 KB per certificate. The size of the offline address book and the available network bandwidth directly relate to the time it will take for all Outlook clients to download the offline address book.

If some Outlook clients are attempting downloading the full Offline Address Book at the same time, this process can take much time for all downloads to complete. For example, if an organization has a 20 MB offline address book, with 100 Outlook 2003 clients, this equates to 2000 MB of data to download. Using the full bandwidth of a 256 Kbps link, it would take about 18 hours to transfer the 2000 MB download.

Minimizing Offline Address Book Download Effect on Network

If you have limited bandwidth or some regional offices with slow WAN link, there are some tips you can deploy if you are using Exchange Server 2003 SP1 or higher:

Limit large sets of full offline address book downloads

Your first mission is to limit large sets of full Offline Address Book downloads where ever you can. You should review the conditions which require a full Offline Address Book download (large changes to Active Directory, Mailbox moves and many more). If many Outlook clients are downloading the full Offline Address Book daily, this may cause high bandwidth utilization. If clients always load only the delta changes after the full OAB download, bandwidth utilization should be no problem. In addition, because the Offline Address Book is downloaded individually by each Outlook client, the impact on the bandwidth used will increase based on the number of Outlook clients downloading the Offline Address Book. One example: The organization's full Offline Address Book size is 20 MB, and 40 Outlook clients at a remote site try to download the full Offline Address Book, 800 MB of data will be downloaded across the WAN to the remote site.

Filter certificates to limit the size of the Offline Address Book

With Exchange Server 2003, the Offline Address Book service (OABGEN) has the ability to filter unwanted attributes from displaying in the Address Book. One of the most interesting features to filter unneeded attributes is to filter certificates, because every certificate needs about 1-3 KB storage in the Offline Address Book. Certificate filtering is enabled by default in Exchange Server 2003 SP1, and no other actions are required to use this feature. It is possible to control certificate filtering by modifying the registry.

How to configure certificate filtering for Offline Address Books:

Open Regedit on the Exchange Server Computer:
Navigate to:
HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\MSExchangeSA\Parameters – New – REG_DWORD - OAL Invalid Cert Behavior – Possible values are:
0 – Filter out expired and invalid certificates (default)
1 – Filter out only expired certificates
2 – Do not filter the UserCertificate attribute

Please note: You must start the Exchange System Attendant after enabling the Registry Key.

Consider using the No Details offline Address Book for remote Outlook clients

The "No Details" Offline Address Book is an option for Outlook clients that don't need all information in the Address Book. The "No Details" Offline Address Book version is small and contains only the display name, the primary SMTP address, office location, mail nickname and surname.

<u>Consider a remote Offline Address Book-only server for remote Outlook clients</u>

An Exchange public folder server can be installed at a remote site to host an Offline Address Book. All remote clients at this remote site download the Offline Address Book from the local Exchange public folder server. This option is only useful in environments with a number of Exchange users that makes the investment of Exchange Servers in remote sites economically.

<u>Implement offline address book throttling</u>

One other solution is to use the throttling feature to prevent overloading an Exchange Server or the network. The throttling mechanism was first introduced in Exchange Server 2003 SP1. This feature allows administrators to limit the network bandwidth used by offline address book downloads by setting a bandwidth threshold. You must patch the Registry to enable OAB Throttling. Read [here](#) how to do that.

Conclusion

After reading this article I hope you have a better understanding about Offline Address Books, the impact for your Exchange Organizations and your Outlook clients. With some planning in mind you should successfully implementing Offline Address Books in your Exchange Organization.

Related Links

Offline Address Book Integrity (OABInteg) Utility Explained
http://www.msexchange.org/articles/Offline-Address-Book-Integrity-OABInteg-Utility-Explained.html
Download Link for OABInteg
http://gotdotnet.com/Community/UserSamples/Download.aspx?SampleGuid=A2338E73-F521-4071-9B1D-AAF49C346ACD
Offline Address Book Best Practices Guide
http://www.microsoft.com/technet/prodtechnol/exchange/2003/library/offlineab.mspx
Troubleshoot offline address book download issues
http://support.microsoft.com/default.aspx?scid=kb;en-us;811870
Administering the Offline Address Book in Outlook 2003
http://support.microsoft.com/default.aspx?scid=kb;en-us;841273
How to troubleshoot Offline Address Book issues in Microsoft Exchange Server
http://support.microsoft.com/kb/905482
OAB version 4 in Exchange 2003 service pack 2 (SP2)
http://blogs.msdn.com/dgoldman/archive/2005/08/01/446071.aspx