



# GALSYNC® v4.3

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Manual

**NETSEC**

18. March 2013

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**Note:** Microsoft will stop supporting Exchange 2003 on the 8th April 2014. As much as we would like to keep compatibility up for all versions, we cannot support an environment, which is no longer supported by the manufacturer himself. Starting on the deprecation of Exchange 2003, GALsync 4 will be completely replaced by GALsync 5.

Within the given scenarios we will support both GALsync 5 and 4 until the 8th April 2014.

## The Advantages of GALsync

### Easy to use

GALsync can be installed and configured in less than 1 hour. Configuration is done by wizards who walk you through each step in order to create a usable policy.

### No security risks in your firewall

You do not need to open any firewall ports and you do not need to offer public web services. You also do not need to have any kind of trust between the different organizations.

### Values for your company

#### Share addresses with your partners

Some companies are historically or by design divided into multiple Active Directory structures. Users cannot find the mail addresses of colleagues in the other forests in their own Outlook's Global Address List. Use GALsync and all of the mail addresses will be present in Outlook's Global Address List.

#### Stop having hundreds of different address books

Users often use their own private address book (PAB) in Outlook. This isn't shared with any other person in the company.

The company's Global Address Book (GAL) contains all companies' addresses, but does not contain addresses of partner's Global Address Book.

If you have multiple Active Directory forests and users do not need to access any resources in the other forest, but need all of the mail addresses, there is no need for any user migration. Use GALsync and all of the mail addresses are present in Outlook.

### Values for your users

#### Outlook, OWA, Blackberry & mobile devices

GALsync creates contacts within your Active Directory Structure which enables Outlook, Outlook Web App (Outlook Anywhere), PDAs, and devices which support Active Sync can also use these addresses.

#### Consistency of information

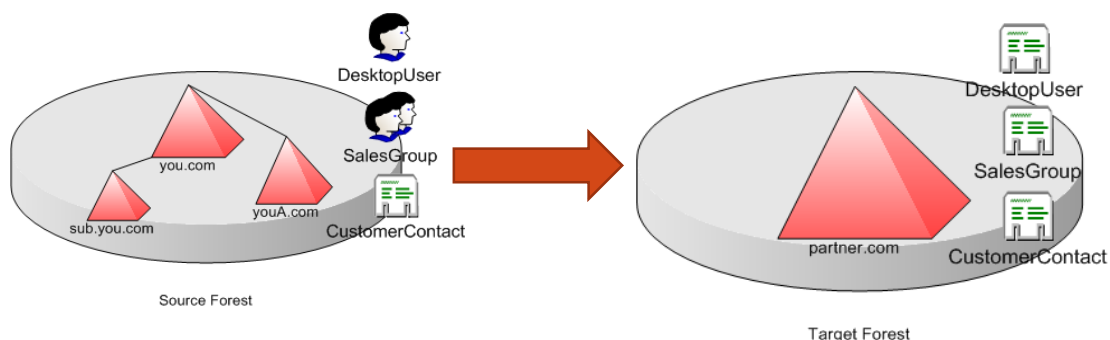
No user interaction is required when addresses in your partner site are modified, so your helpdesk will be happy.

## Architecture of GALsync

### GALsync basics

#### Synchronization

The selected directory objects in the source forest will be synchronized to the target forest. In target forest the objects will be created as contacts. The contacts mail addresses in the target refer to the users mail addresses in your source domain. Users in target forest will be able to select the contacts in the Global Address List and send mail to these recipients.



**Note:** If we use the terms source and target we are describing unidirectional synchronization. It is no problem to use all the described techniques to setup a bi- or multi-directional synchronization.

#### Export and import

GALsync has to be installed on a machine in the source forest as well as in the target forest.

Synchronization is done by exporting directory information (and optional Free Busy information) of source Active Directory into an XML-file. Then, GALsync will compress this file and transfer it to an FTP server, a network share or an email recipient. In the target organization GALsync receives the file from the network share, FTP server or from a mailbox. The file will be decompressed and all data will be imported into the Active Directory.

#### No Trust wanted or needed

GALsync offers multiple transfer modes, so you do not need any direct link between the Active Directories. If you choose to use SMTP for transfers you do not need to open any additional Firewall ports.

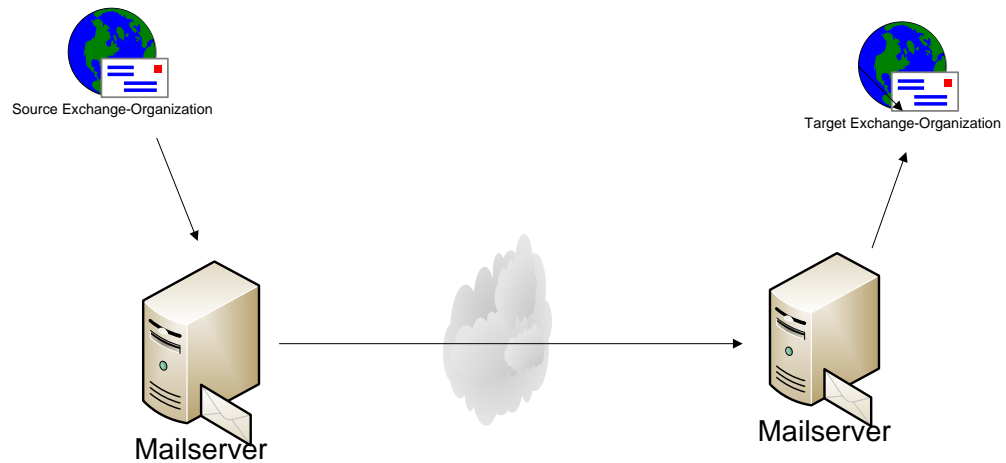


## Transfer protocols

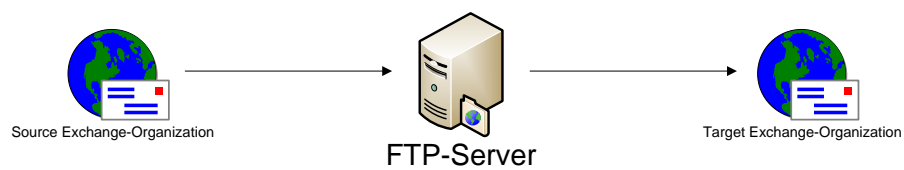
GALsync provides different methods to synchronize your directory data.

**Note:** We recommend SMTP as the transfer protocol.

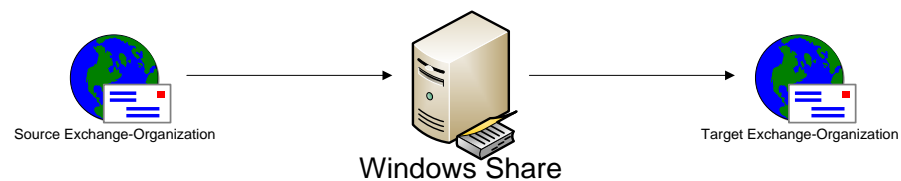
### SMTP



### FTP



### Share



## Objects to sync

### Mail-enabled or mailbox-enabled

GALsync exports only objects which have an email address (SMTP proxy address).

- If an object in the source is marked as "Hide from address book", this object will not be exported by default. This can be modified by an export-option.
- If an object in the source has the value "NoGALsync" in any of the extension attributes this object will not be exported.

### Groups and members

If you choose a mail-enabled group (local, global, universal of type security, distribution) or dynamic distribution group you can configure

- Only the group by itself. Because in the target all objects are created as mail-enabled contacts exporting a group object means also to create a contact in target with the name of the group and the SMTP-address of this group. Members of the group will not be exported.
- Only the members of the group. The group by itself will not be exported.
- Both, group and group members will be exported. In the Target a contact will be created for the group and contacts for the group members. If the group contains nested groups they will be handled as normal objects and their members will not be taken into account.

### Attributes

As far as possible all attributes that are related to contacts are exported. In the target the exported objects are created as contacts, ergo no further attributes can be used from the source. You may configure during exports which of these attributes should be visible to the target. Required are only a few attributes. By default most attributes are marked as exportable. In the target, you can modify most attributes before importing them by adding a suffix, prefix, or by replacing a found string by a given value.

In detail:

### These attributes are export mandatory:

GUID, DistinguishedName, Cn, ObjectClass, Proxy addresses, TargetAddress, Mail, MailNickname, Name, GivenName, Sn

### These attributes are export optional:

C, Co, Company, CountryCode, Department, Description, DisplayName, DisplayNamePrintable, EmployeeID, EmployeeNumber, EmployeeType, ExtensionAttribute1, ExtensionAttribute2, ExtensionAttribute3, ExtensionAttribute4, ExtensionAttribute5, ExtensionAttribute6, ExtensionAttribute7, ExtensionAttribute8, ExtensionAttribute9, ExtensionAttribute10, ExtensionAttribute11, ExtensionAttribute12, ExtensionAttribute13, ExtensionAttribute14, ExtensionAttribute15, FacsimileTelephoneNumber, HomePhone, Info, Initials, IpPhone, L, LegacyExchangeDN, Mobile, MsExchHideFromAddressLists, Pager, PersonalTitle, PhysicalDeliveryOfficeName, PostalCode, PostOfficeBox, St, StreetAddress, TelephoneNumber, Title, WWWHomePage

### These attributes have to be selected explicitly for export:

msRTCSIP-DeploymentLocator, msRTCSIP-FederationEnabled, msRTCSIP-InternetAccessEnabled, msRTCSIP-OptionFlags, msRTCSIP-PrimaryHomeServer, msRTCSIP-PrimaryUserAddress, msRTCSIP-UserEnabled, msRTCSIP-UserPolicies

### These attributes can be modified before import:

Company, Department, DisplayName, DisplayNamePrintable, ExtensionAttribute1, ExtensionAttribute2, ExtensionAttribute3, ExtensionAttribute4, ExtensionAttribute5, ExtensionAttribute6, ExtensionAttribute7, ExtensionAttribute8, ExtensionAttribute9, ExtensionAttribute10, ExtensionAttribute11, ExtensionAttribute12, ExtensionAttribute13, ExtensionAttribute14, ExtensionAttribute15, FacsimileTelephoneNumber, GivenName, HomePhone, Info, Initials, IpPhone, L, Mobile, Pager, PersonalTitle, PhysicalDeliveryOfficeName, PostalCode, Sn, St, StreetAddress, TelephoneNumber, Title, WWWHomePage

## What happens during an import & export

### Adding

If an object in the source is added and matches the export conditions it will be exported. If the object's SMTP-address is not present in the target forest, it will be created in the OU you configured for imports.

**Note:** You can mark objects for insert. In this case the object will be added, a notification will be written to a customizable attribute saying that this object has been inserted.

### Deleting

If an object in the source is deleted, it will not be present in the export file any more. So it will be removed in the target's Import OU during the next import.

**Note:** You can mark objects for deletion, however the object will not be deleted, but a note will be written to a custom attribute saying that you may now delete this object manually.

### Moving

If an object in the source is moved to another OU but still matches the export conditions it will be exported. If an object in the target is moved from the original Import OU to another OU and retains its SMTP-address, the object will not be imported a second time.

### Modifying

If you modify an object's attribute value in the source this value will be modified in target during the next import.

**Note:** You can mark objects for modification. In this case the object will be modified and a notification will be written to a custom attribute saying that this object has been modified. So you are able to display all modified objects with an appropriate tool (like Exchange Management Console) and create a report.

### Duplicates

If GALsync does not find an object in the Global Catalog having the same SMTP-address as the object to be imported, it will create a new contact in import-OU.

While creating the object GALsync checks if the CN of the object to be imported is already present in the import-OU. If yes the object will be created with a serial number in the CN. Additionally the mailNickname is checked. If there is another object having the same nickname the object to be imported will be created with a serial number in the mailNickname.

## GALsync components

### GUI

The Graphical User Interface is used to configure import and export policies. You can also test and execute policies manually.

The GUI is executed as process named *GALsync.exe* \*32.

### Service

GALsync Service is used to execute configured policies. This service checks once a minute if there are enabled policies to be executed. These policies will be added to the execution queue and run sequentially. If there is more than one policy in the queue the policies will be run in alphabetical order.

The service is executed as process named *GALsyncService.exe*.

Every policy is run in the context of the configured user account having permission to run as service.

**Note:** The service executes the policies using an external program called *GALsyncPolicyExecuter.exe* and waits until this program has finished. If you experience that a policy “hangs” you should restart the service. You will notice the “hang state” if there is only 1 thread proceeding, because GALsync is multithreaded.

## System Requirements & Installation

### System Requirements

The table containing the supported Operating Systems and all required software for GALsync is shown below.

Even though you can install GALsync on a DC/GC or Exchange servers we recommend you install it on a member server within the domain (i.e. Dedicated GALsync server, file server, or backup server). The GALsync server must have a high bandwidth connection to the DC/GC.

For testing purposes you can also install GALsync on a client computer running Windows Vista or Windows 7.

Components	Required
OS	Windows 2003 Server (all versions) Windows 2003 R2 Server Windows 2008 Server Windows 2008 R2 Server Windows Vista Windows 7
Software	.NET Framework 2.0 or greater  Mapi32 must be available, either <ul style="list-style-type: none"><li>• Microsoft Messaging API und Collaboration Data Objects 1.2.1</li></ul> You have the option to install MAPI/CDO 1.2.1 directly with GALsync or install it afterwards with the ExchangeMapiCdo.msi in the GALsync subfolder Standalone MAPI. <b>Note:</b> You should reboot your computer after installing MAPI/CDO 1.2.1  or <ul style="list-style-type: none"><li>• Outlook</li></ul> A 32-Bit version of Outlook is required, because we do not support 64-Bit Outlook <b>Note:</b> Outlook must be configured so that the Standard Profile opens the GALsyncService account mailbox.

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Within the given scenarios we will support both GALsync 5 and 4 until the 8th April 2014.

## Installation

### Prerequisites

- Create a service account with an Exchange Mailbox, which will run all Policies from now on.
- Ensure that the mailbox of service account is accessible (i.e. by Outlook Web Access).
- Ensure that the mailbox of service account can send to and receive mails from the other organization.
- Ensure that incoming mails from the other organization do not get caught by your spam filter or firewall.

### Required Permission

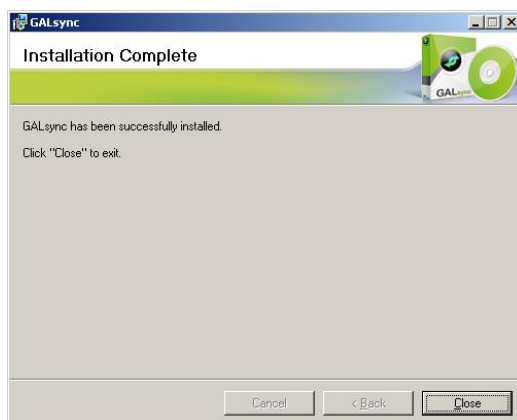
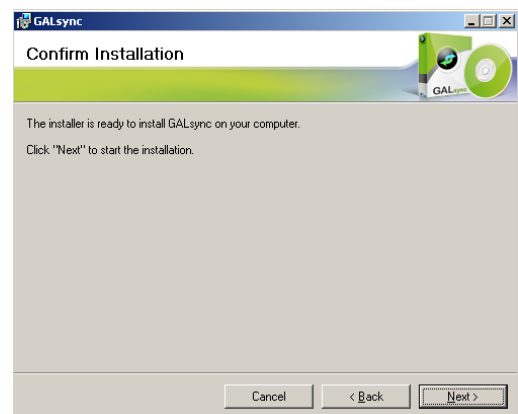
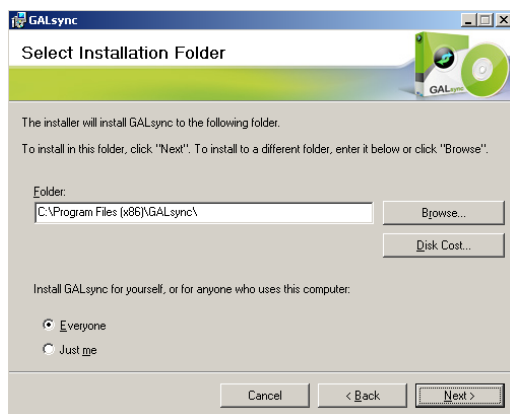
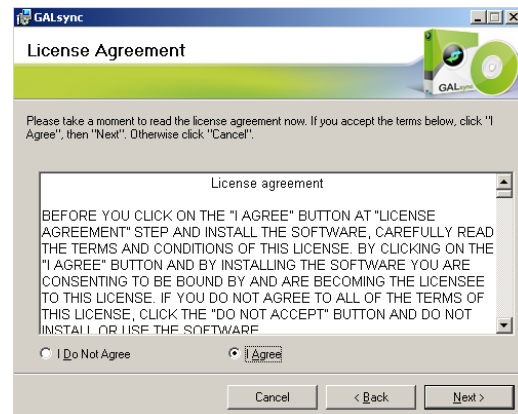
In order to install GALsync you need administrative permission. During setup you configure a service account to execute all policies in future.

- The service account must be from the Domain containing the GALsync Server.
- The service account cannot be hidden from Exchange address lists.
- Make sure that the service account is member of the local administrator group.
- Make sure that the service account has the local right to "run as a service ". This right is added to the service account during the installation, but your business policies could abstract the right "run as a service" from the service account.
- Make sure you can logon as the service account. It is possible that the user requires membership in the group Remote Desktop Users.
- Make sure that the service account has all permissions to insert and modify objects and their properties in your defined import-OUTs. The permission must be for "This object and all child objects".

**Note:** We strongly recommend logging on as the service account to run the GALsync GUI.

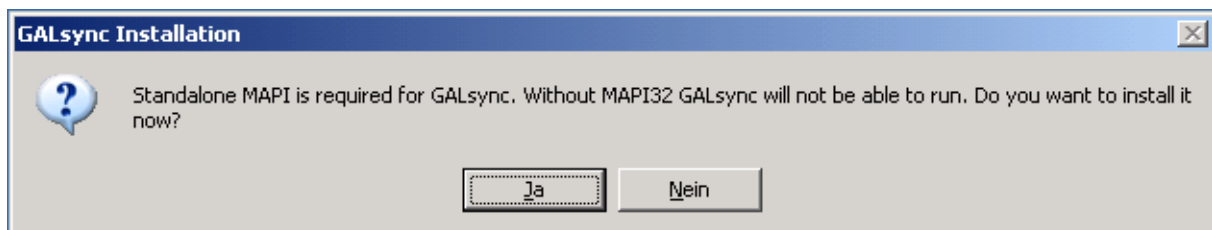
**Important:** If you configure the logon information for the service account in the GALsync GUI use always the format „**domain\username**“!

## Details



If your computer has no MAPI functionality, you will be asked to install the ExchangeMapiCdoMSI after starting the GALsync software the first time.

You find the installation files in folder "Standalone MAPI" of GALsync program folder.

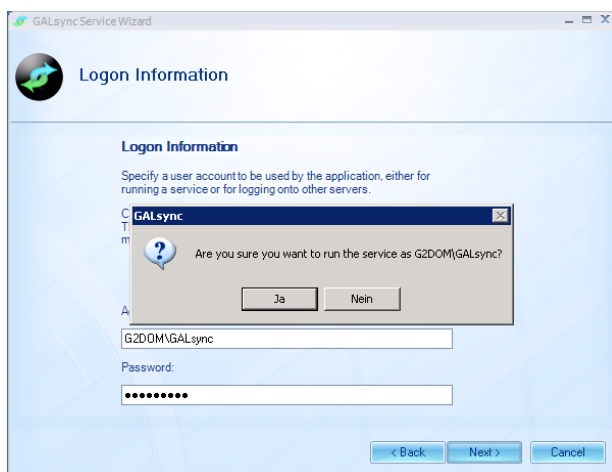
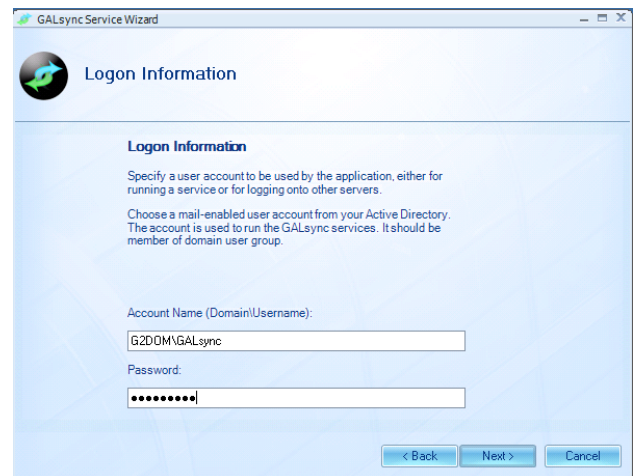


**Note:** After installing MAPI32/CDO1.2.1 you will need to reboot the computer.

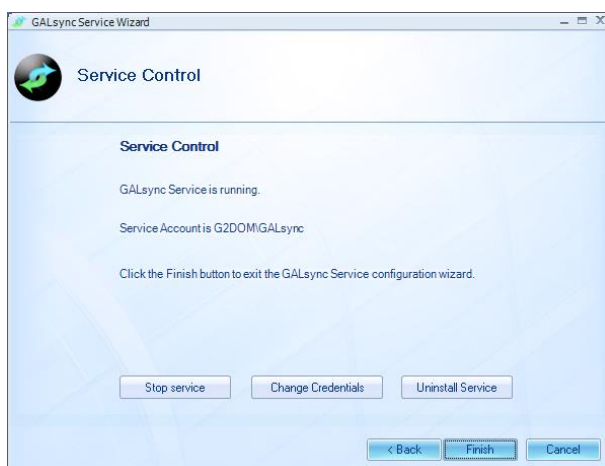


## GALsync Service Wizard

Opening the software, the GALsync Service Wizard starts always if the service is not installed.



**Note:** Please make sure to when inserting logon information to the GALsync account use this format **"domain\username"** for the user name!



### Start Service / Stop Service

Start or stop the GALsync Service.

### Change Credentials

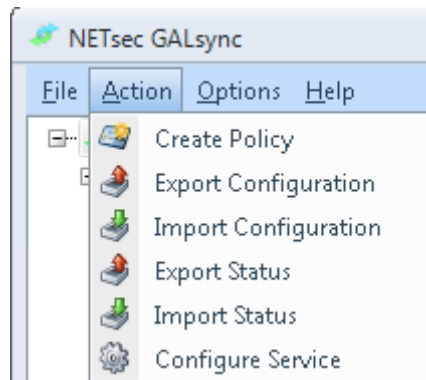
Change the user credentials of the service account.

### Uninstall Service

Uninstall GALsync Service.

## Uninstall GALsync

In the Menu *Action* -> *Configure Service* within GALsync you can remove the Schedule Service. Thereafter, you can uninstall GALsync via the Control Panel, without restarting the computer. Uninstalling does not remove configuration files, or the License.



## GALsync in large environments

In Multi-Domain environments we recommend you install GALsync in every domain where objects will be exported.

The Synchronization all mailboxes with Free/Busy Information with more than 5000 users can take a long time.

For more effective Free/Busy Synchronization in large amounts we recommend a separate policy for the mailboxes.

It is possible to run multiple instances of GALsync on different Computers and set it to export fewer users per computer to speed up this process.

## Licensing

### Trial license

It is possible to run GALsync without license. Please note that in this case only up to 100 objects can be exported or imported.

If you try to export with email transport more objects than licensed, the message will not be transferred and an error is written to the log file.

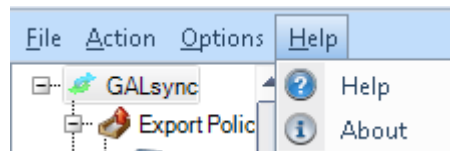
If your license is not valid or version-compatibility is not given the message will not be sent, because in the target the import could lead to unwanted results in Active Directory.

Data files with more than 100 objects cannot be imported.

If you run GALsync as trial this is displayed in information bar at the bottom of the program window.

### Add a license

Click "Help" and select "About".



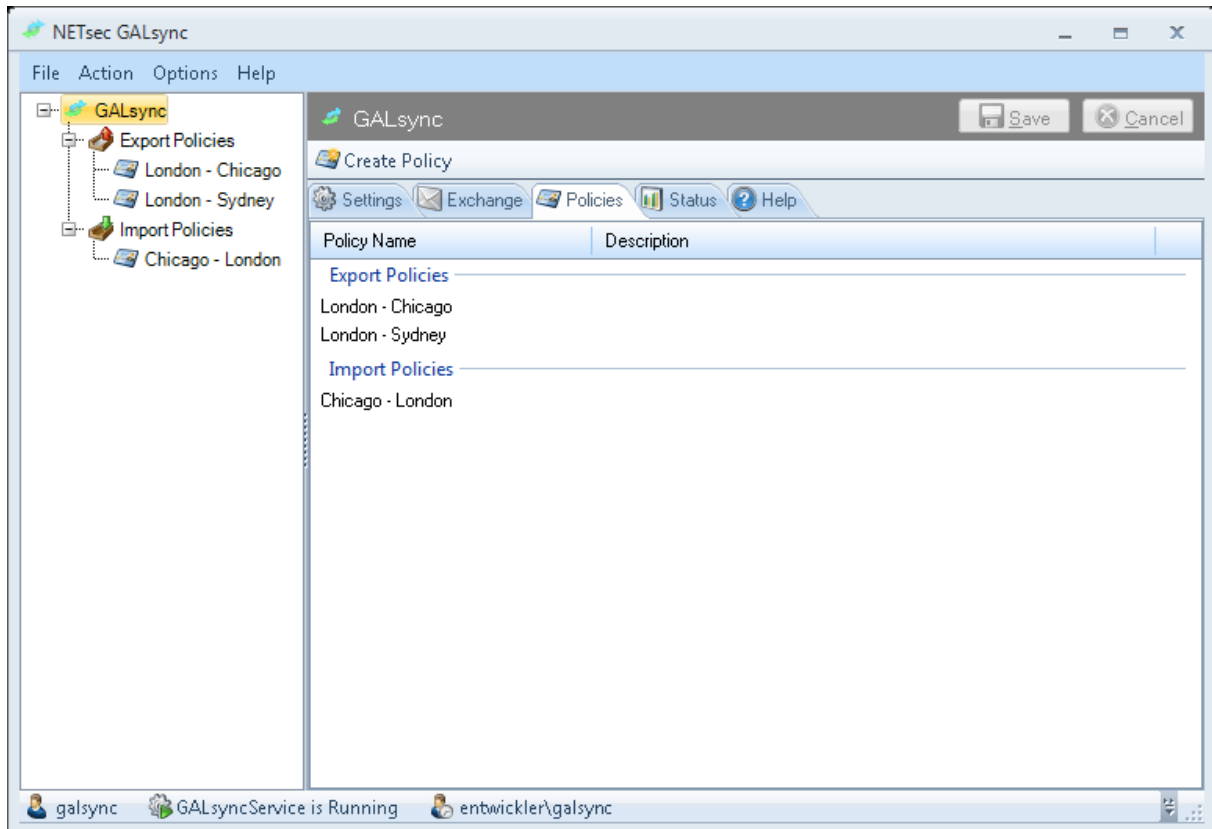
GALsync will provide you with basic information about your current license status.

To add a license you press the "Add License" button, and then select the license file you received.



## GALsync Console Overview

The console is split into three parts: Console Tree, Content Pane and Action Pane. At the top of the window you will find the menu bar and at the bottom the information bar. There are some more bars in the content pane depending on the selected node.



### Console Tree

GALsync Console's primary way of giving administrators access to all the configured policies is the console tree.

The tree view presentation gives you a quick overview on parent and child nodes' contents. You can easily navigate between the policies to check on and configure its settings and options.

### Content Pane

When you select a node in the Console Tree, its settings are displayed in the Content pane. The Content pane displays in tabs an overview of the selected node's export and import policies.

## Content Pane Tabs

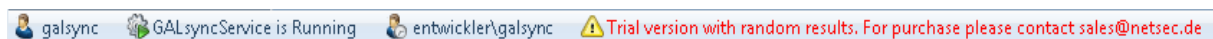


If the main GALsync node is selected within the Tree Hierarchy, there are 4 tabs shown: Policies, Settings, Status, and Help. After clicking one of the other nodes, there are other tabs shown.

## Information Bar

The bar at the bottom of the GALsync window shows information about the user account running the GALsync Graphical User Interface (GUI), and the status of GALsync Service. Additionally, it will indicate if you are using a trial version.

**Note:** GALsync trial version is limited to a maximum of 100 objects to sync.



If you do not see the “trial warning”, please open the window symbol as shown below.



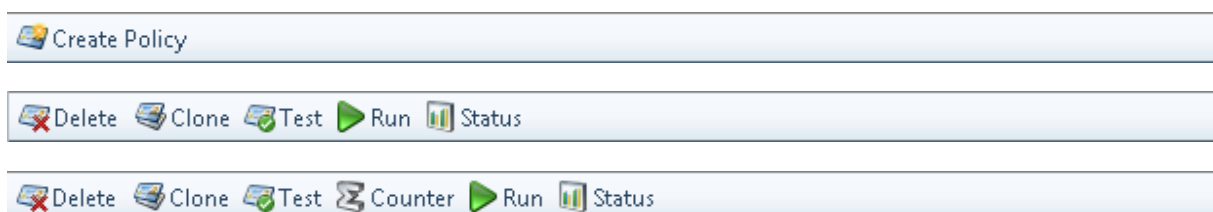
## Current State Bar

This bar shows the current selected node and if there are any configuration changes to be saved.



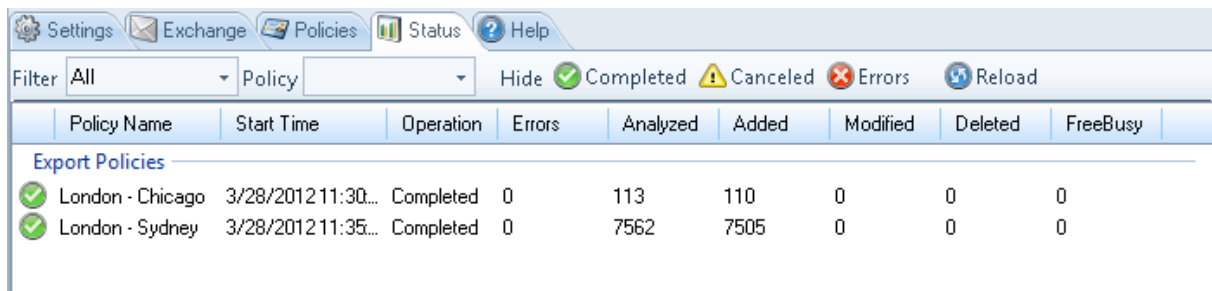
## Action Bar

The bar above the Content Pane tabs provides you with actions you can take according to the node you selected.



## Status

The status tab shows quick reports about the status of reports that were executed during the log retention timespan.



The screenshot shows the 'Status' tab in the GALsync application. At the top, there are tabs for 'Settings', 'Exchange', 'Policies', 'Status', and 'Help'. Below the tabs, there is a 'Filter' dropdown set to 'All' and a 'Policy' dropdown. To the right of these are buttons for 'Hide', 'Completed' (with a green checkmark), 'Canceled' (with a yellow warning triangle), 'Errors' (with a red X), and 'Reload'. Below this is a table with columns: 'Policy Name', 'Start Time', 'Operation', 'Errors', 'Analyzed', 'Added', 'Modified', 'Deleted', and 'FreeBusy'. There is a link 'Export Policies' above the table. The table contains two rows of data, both with green checkmarks in the 'Errors' column.

Policy Name	Start Time	Operation	Errors	Analyzed	Added	Modified	Deleted	FreeBusy
London - Chicago	3/28/2012 11:30...	Completed	0	113	110	0	0	0
London - Sydney	3/28/2012 11:35...	Completed	0	7562	7505	0	0	0

## Retain status information

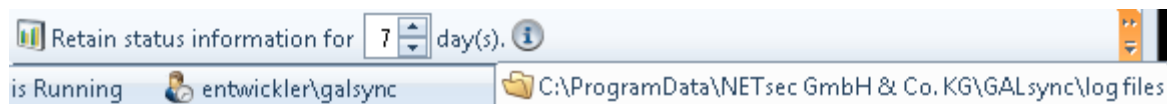
Here you can configure how long status information (log files) is stored on your machine. Logs older than the specified number of days will be deleted.

You will find a link to the folder where the log files are stored.

Please keep in mind that, explorer usually hides this folder by default.



If you do not see this link, please open the window symbol as shown below.



## Help

Help provides you with a hyperlink for downloading the latest manual.

### Help

For further assistance please refer to the newest version of GALsync manual available at <http://www.netsec.de/en/documents/galsync/>

### Support

For support in English or German please contact [support@netsec.de](mailto:support@netsec.de) or call +49 2421 998 78 20.

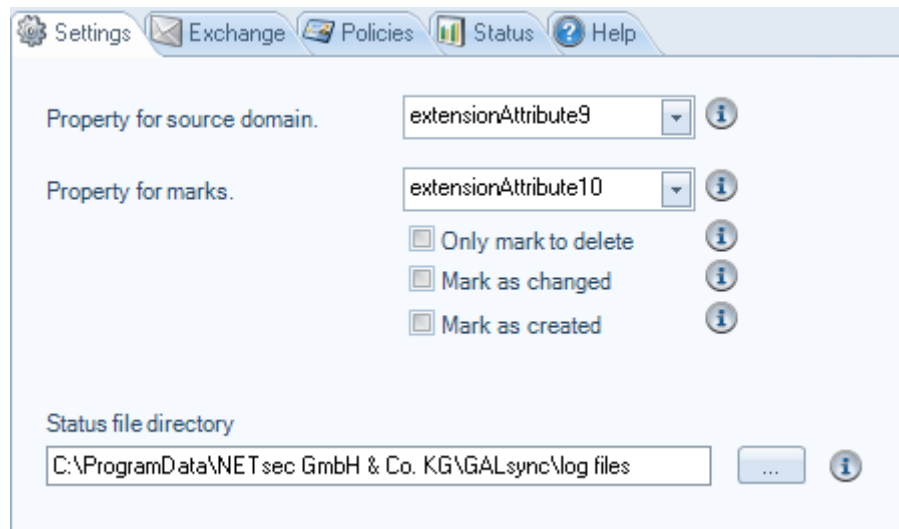
### Sales

For a new license or other questions regarding licenses please contact [sales@netsec.de](mailto:sales@netsec.de) or call +49 2421 998 78 20.

## Global Settings

### Settings

Here you can configure general settings used in all policies.



#### Property for source domain

This feature is used to distinguish between objects being imported from multiple source organizations. As value, the objects' distinguishedName (DN) will be present. Please choose an appropriate attribute where to store the DN.

#### Property for marks

This feature is used to store marks as history about actions taken or to be taken concerning imported objects. Please choose an appropriate attribute where to store the marks.

#### Marks

GALsync provides 3 different types of marking:

##### Mark objects for deletion

Select this option, if you do not want objects deleted automatically. Instead they will be marked for deletion.

**Note:** You will have objects in your AD, which are not related to objects in your partner's AD.



#### **Mark objects that have been modified.**

Select this option, if you want to mark modified objects for later viewing. You can list all modified objects by creating a new Saved Query with a custom search in MMC Active Directory Users and Computers.

#### **Mark newly created objects.**

Select this option, if you want to mark new inserted objects for later viewing.

Check this option if you want to list all inserted objects by creating a new Saved Query with a custom search in MMC Active Directory Users and Computers.

#### **“NoGALsync” (internal mark)**

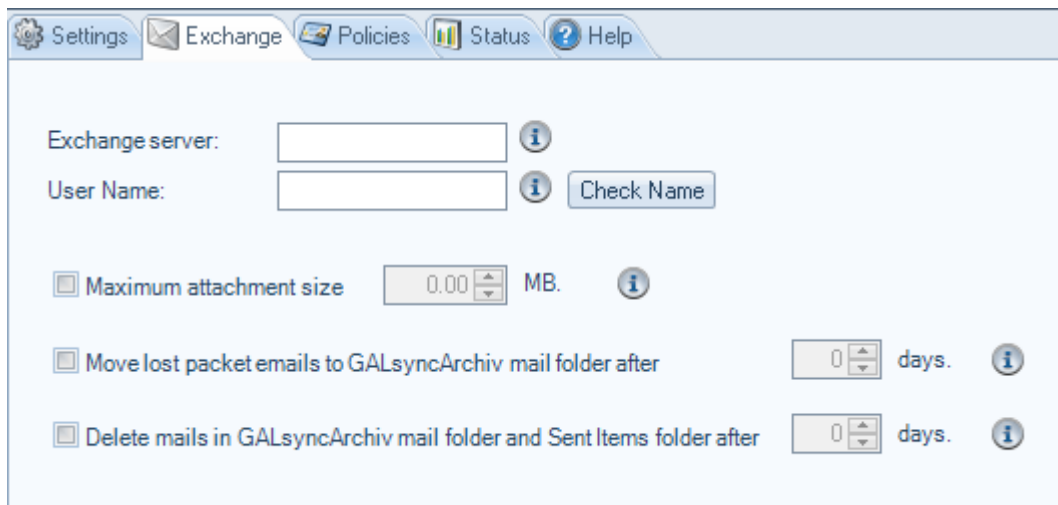
If you do not want a special object to be exported, you may insert the value “NoGALsync” in any of the custom attributes (extensionattribute1-15). This prevents GALsync from adding this object to the export list.

#### **Status file directory.**

GALsync stores the log files in the application data of the program for all users. If the log files are stored somewhere else the suitable directory path can be put down here.

## Exchange

Here you can configure general Exchange settings used in all policies.



The screenshot shows the 'Exchange' tab in the GALsync application. The interface includes a menu bar with 'Settings', 'Exchange', 'Policies', 'Status', and 'Help'. Below the menu, there are input fields for 'Exchange server:' and 'User Name:', each with an information icon. A 'Check Name' button is positioned next to the 'User Name' field. Further down, there are three settings with checkboxes and information icons: 'Maximum attachment size' set to '0.00 MB', 'Move lost packet emails to GALsyncArchiv mail folder after' set to '0 days', and 'Delete mails in GALsyncArchiv mail folder and Sent Items folder after' set to '0 days'.

### Exchange Server

Please check what kind of Exchange topology you have:

If the mailbox is placed on an Exchange 2003 or 2007 Server or and 2010 Server with Mailbox role as well as CAS role, then insert the name of the server. You may also first insert the username and use method Check Name.



If the mailbox is on an Exchange 2010 server with only mailbox role, insert the name of an appropriate CAS server. Do NOT use the method Check Name, because this method selects the server with the mailbox role.

If you use a CAS-Array, insert then FQDN of the array.

### User Name

The name of the mailbox, which will send the notification email. Usually this is the sender's user name.

### Check Name

Use the "check name" button to resolve the user name you typed in. If GALsync does not find a mailbox, an error  occurs. If GALsync finds the mailbox confirmation  will be indicated. If GALsync finds multiple mailboxes a question mark will appear, please use a user name which is unique.

### Maximum attachment size

This setting enables you to limit the attachment size of the data GALsync sends via email. Once the data file gets larger than set here, it will be splitted and send via multiple emails.

**Note:** This option is not activated by default.

### Move lost packet emails to GALsyncArchiv mail folder after x days.

If your partner is sending GALsync data in chunked emails, this setting enables moving lost chunk emails to the GALsyncArchive mailbox folder, so they get deleted according the setting „Delete mails in GALsyncArchiv...“.

**Note:** This option is not activated by default.

### Delete mails in “GALsyncArchiv” mail folder and Sent items folder after x days.

Emails used for GALsync on the import side are in the GALsync Archive folder, “GALsyncArchiv”, so that the mailbox does not grow in size constantly. You can configure when emails should be deleted out of the GALsync Archive folder.

On the Export Side all GALsync emails within the Sent Items folder are also deleted in the same interval.

**Note:** This option is not activated by default.

## Policies

In this tab all existing export and import policies are listed. Select a listed policy to see or modify configuration. After initial setup there is no policy created yet, so this list is empty.

The following actions are available when you select a Policy:



If you would like to create a new policy, then click "Create Policy". If you want to gather directory information select „Import Policy“. If you want to send your directory information to your partners select "Export Policy".



To delete the currently selected policy, select „Delete“.



This option allows you to use all of the settings of a configured policy in a new policy with a different name, this can be used to if you want to import two different datasets the same way, or similarly.



With the Test button you can test if the selected policy is correctly configured. After the test, you are sent a list of results generated from the test.



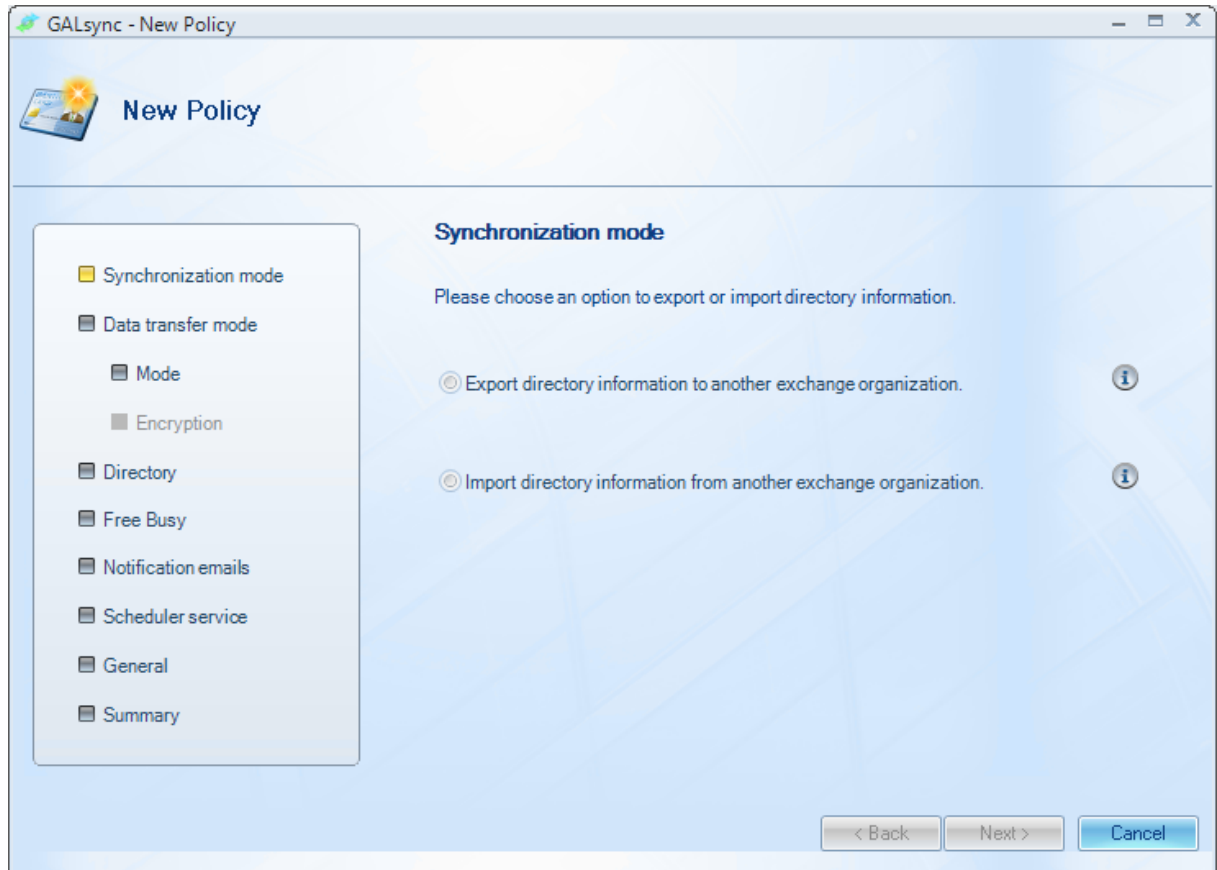
With an export policy you can count all of the objects which are valid for export and would be exported during a run. This can help you choose for how many sync objects you need to license.



This will manually run the currently selected policy. This process does not require the GALsync Service. The results will be displayed after the synchronization is completed.





## Wizards

The GALsync Console also provides Wizards for simplifying the tasks of creating export and import policies. The Wizards walk you through each step in order to create a usable policy that you can run manually or have run automatically by GALsync Schedule Service.



All steps and the recent validation status are shown in the left pane.

### Importance of color coding

-  Indicates a positive validation
-  Indicates that some conditions in this step have not been validated yet
-  Feature is not used
-  Indicates a configuration process

## How to create an export policy

### Synchronization Mode

You configure an export policy if you want to send directory information to another exchange organization.

Please select

“Export directory information to another exchange organization”.

You configure an import policy if you want to store directory information received by another exchange organization.

Please select

“Import directory information from another exchange organization”.



In order to create an export policy you need to configure the following settings:


- Data transfer mode
- Encryption
- Directory
- Free Busy
- Status notification emails
- General

## Data Transfer mode

In order to synchronize GALsync data you may choose from the following options to transfer the data file:

- Manual
- Via email
- Via network share
- Via FTP

In addition, you can encrypt the GALsync data file.



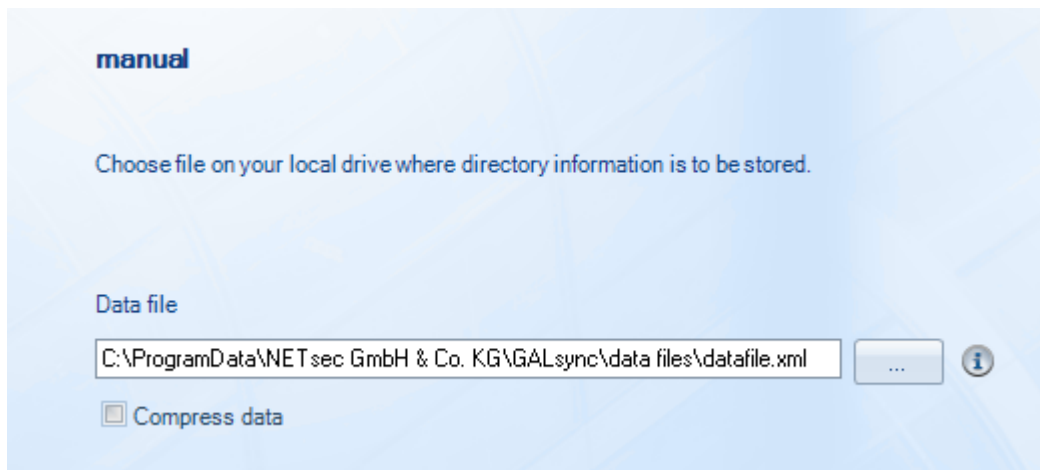
The screenshot shows a dialog box titled "Data transfer mode" with the instruction "Please choose a type of transfer." Below this, there are five radio button options, each with a description and an information icon (i) to its right:

- ☒ manual  
Export to a file.
- ☐ via email  
Send directory information by email.
- ☐ via network share  
Store directory information to a network share.
- ☐ via FTP  
Upload directory information to a FTP server.
- ☐ Encrypt directory information.

## Manual

GALsync extracts the selected objects from your active directory and stores this information into a local file. Please choose a drive, folder and file name.

The directory information is not handed over automatically to the other exchange organization.



**Path:** Choose a file on your local drive where directory information will be stored.

**Compress Data:** Compresses the data to a .zip file.

**Note:** The Option „Compress Data“ is available in version 4.2 and greater and is therefore not compatible with earlier versions of GALsync.



### Via email

GALsync automatically sends the directory information as an email-attachment to the destination exchange organization.

**Important:** Since version 4.2 the attachment is zipped and cannot be used in other versions.

The screenshot shows the 'via email' configuration interface. It features a title 'via email' and two radio buttons for 'Global setting' (selected) and 'Manual setting'. Below these are four input fields: 'Exchange server:', 'User Name:', 'Subject', and 'Send to'. Each field has an information icon (i) to its right. The 'Subject' field contains the text 'London'. The 'Send to' field contains the email address 'galsync@sydney.com'. A 'Check Name' button is located to the right of the 'User Name' field, and a 'Test' button is located below the 'Send to' field.

**Exchange Server:** Please check what kind of Exchange topology you have:

If the mailbox is placed on an Exchange 2003 or 2007 Server or and 2010 Server with Mailbox role as well as CAS role, then insert the name of the server. You may also first insert the username and use method Check Name.

If the mailbox is on an Exchange 2010 server with only mailbox role, insert the name of an appropriate CAS server. Do NOT use the method Check Name, because this method selects the server with the mailbox role.

If you use a CAS-Array, insert then FQDN of the array.

**User Name:** The name of the mailbox, which will send the notification email. Usually this is the sender's user name.

**Check Name:** Use the "check name" button to resolve the user name you typed in. If GALsync does not find a mailbox, an error ❌ occurs. If GALsync finds the mailbox confirmation ✅ will be indicated. If GALsync finds multiple mailboxes a question mark will appear, please use a user name which is unique.

**Subject:** The text specified here will appear in the subject field of the email containing the directory information GALsync sends to the other exchange organization.

**Note:** If the receiving organization gets directory information from multiple exchange organizations, you can use a certain phrase for subject, which identifies your own organization.

The GALsync instance at the receiving site will recognize the string by using the "starts with" operator.

**Send to:** Directory information is sent by email to the recipient. The recipient usually is a mailbox of the other exchange organization.

**Test:** This automatically sends a test email to the mailbox.

**Problem:** The test fails.

**Please check the following:**

GALsync must run in the credentials of the user assigned as the Service.

The GALsync Service account must be the OWNER of the mailbox used to send the mail.

If you installed Standalone MAPI/CDO1.2.1 you must reboot the computer before it will work.

If you use Outlook on the Server with GALsync it must be 32 Bit and the Standard Profile for the GALsync Service must be configured.

### Via network share

GALsync automatically stores the directory information on a network share that is accessible for both exchange organizations. For export you need write access to the share.

via network share

\\server\share\datafile.xml

Path

☐ Compress data

Access Information

Domain

User name

Password

Test

**Path:** The path specifies the qualified name of the share and file name where you want to store directory information.

**Compress data:** Compresses the data to a .zip File.

**Note:** The Option „Compress Data“ is available in version 4.2 and greater and is therefore not compatible with earlier versions of GALsync.

**Domain:** This is the domain the user belongs to who wants to access the specified network share. Usually this is the NETBIOS name of the domain.

**User Name:** This is the user who wants to access the specified network share.

**Password:** This is the password of the user.

**Test:** Pressing this button GALsync will validate the access to the share.

### Via FTP

GALsync automatically stores the directory information to a FTP server that is accessible for both exchange organizations. For export you need write access to the FTP server.

The screenshot shows the 'via FTP' configuration interface. It includes a 'URI' field with the example 'ftp://ftp.mycompany.com/exp.xml'. There is a 'Compress data' checkbox. The 'Access Information' section contains 'User name' and 'Password' fields. The 'Proxy Information' section contains 'Address / Port', 'Domain', 'User name', and 'Password' fields. A 'Test' button is located at the bottom left.

**URI:** The Uniform Resource Identifier (URI) specifies the qualified name of the FTP server and file name where you want to upload the directory information.

**Compress data:** Compresses the data to a .zip File.

**Note:** The Option „Compress Data“ is available in version 4.2 and greater and is therefore not compatible with earlier versions of GALsync.

**User Name:** This is the user who wants to access the specified FTP server.

**Password:** This is the password of the user.

**Address/Port:** If your environment uses a proxy server to gain access to the FTP server please type the name of the proxy server and the port which should be used.

**Domain:** This is the domain the user belongs to who wants to access the specified proxy. Usually this is the NETBIOS name of the domain.

**User Name:** This is the user who wants to access the specified proxy.

**Password:** This is the password of the user.

**Test:** Pressing this button GALsync will validate the access to the FTP server and proxy (if configured).

**Note:** The used Service Account has to be granted read- and write permissions in the ftp directory.

## Encryption

The Active Directory Information can be encrypted. This option, „Encrypt Directory Information“, can be activated while selecting the Data Transfer Mode.

**Data transfer mode**

Please choose a type of transfer.

- ☐ manual  
Export to a file.
- ☒ via email  
Send directory information by email.
- ☐ via network share  
Store directory information to a network share.
- ☐ via FTP  
Upload directory information to a FTP server.

☒ Encrypt directory information

After setting up the Data Transfer Mode you can setup the Encryption.

**Encryption**

Choose the security level. Encryption is used to secure the data file which contains all the directory objects to synchronize.

- ☒ **Symmetric Keys**  
Create a key and share this key with your partner.
- ☐ **Asymmetric Keys**  
Import: Create a public key and send this key to your partner.  
Export: Store the received file with the public key you received from your partner.

Open Key : Insert file you received from your partner.

Generate Key: A file is created which you may send to your partner.

### Symmetric Keys

If you choose symmetric keys a single key is used for both, encryption and decryption. This means sender and receiver use the same key.

#### Procedure

Once you create an export policy create a key-file and hand it over to your partner organization. Then your partner creates an import policy. Imported information will be accessible after using the key-file.

If you want to use this key in any other of your own policies simply refer to the created key-file.

### Asymmetric Keys (Public Key)

If you choose asymmetric keys the key for encrypting the message is different to the key for decryption. This means you use a public key to encrypt the message, whereas the private key is kept secretly and will be used to decrypt the message. If you want the other exchange organization to send encrypted directory information to you, you have to generate a pair of keys and hand over the public key to the other exchange organization first. They will use the key for encryption and send you the encrypted file. The private key is stored directly in the policy file.

**Note:** Using an asymmetric key the private key is built upon the machines GUID. As soon as you move GALsync to another machine you have to renew your existing key.

### Procedure

If you create an import policy create a key-file and hand it over to your partner organization. Your partner himself creates an export policy to be opened with the key-file.

Once you create an export policy, first you should receive a key-file generated by your partner's organization inside the appropriate import policy at their hand side.

### More information

For more information see

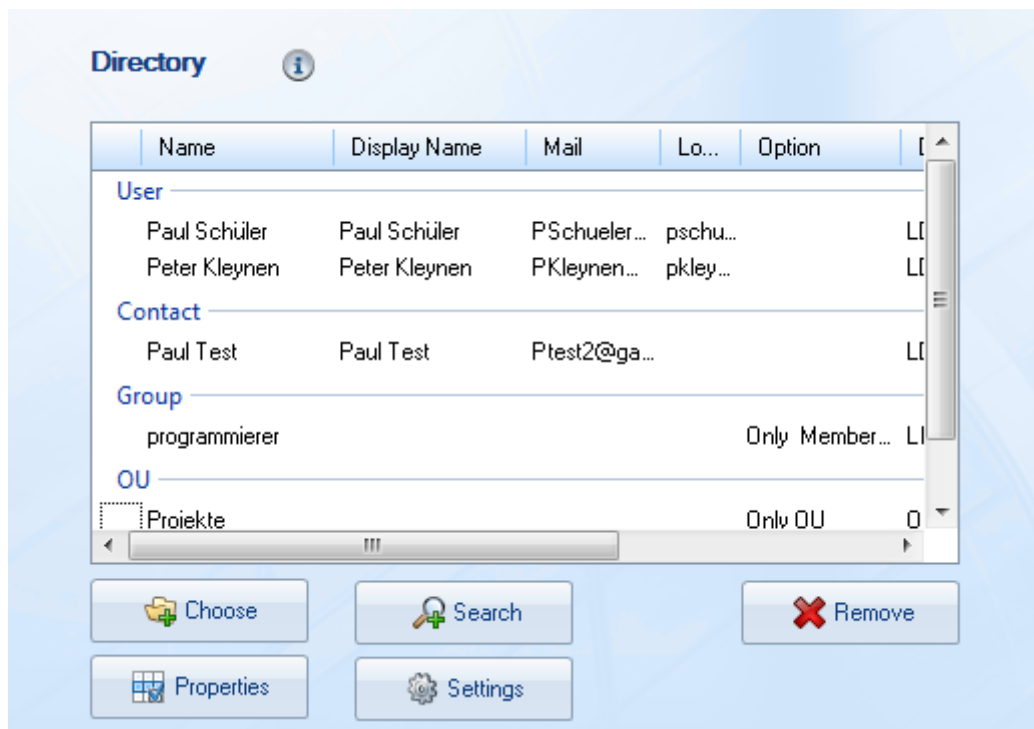
[http://en.wikipedia.org/wiki/Symmetric-key\\_algorithm](http://en.wikipedia.org/wiki/Symmetric-key_algorithm)

[http://en.wikipedia.org/wiki/Asymmetric\\_key\\_algorithm](http://en.wikipedia.org/wiki/Asymmetric_key_algorithm)



## Directory

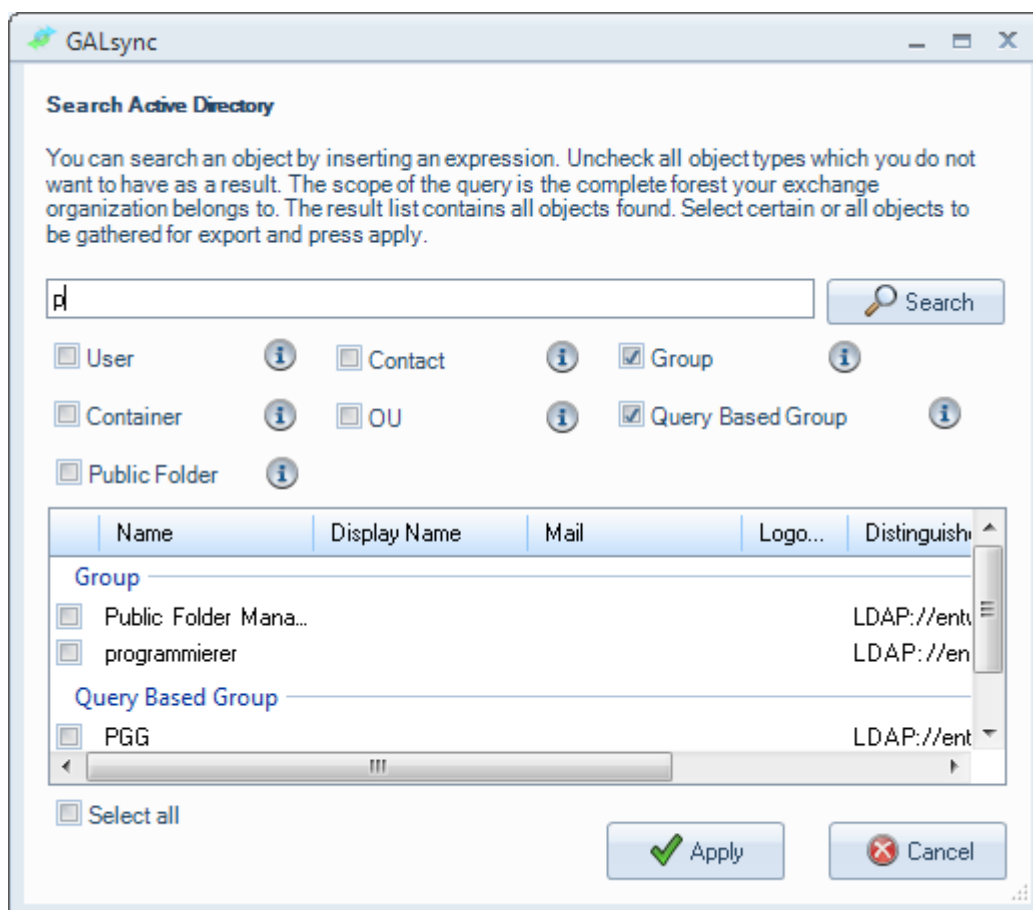
Select the active directory objects you want to export by searching single object types all over the domain or by choosing organizational units in the local domain. Additionally you may exclude certain object properties that are not transferred to the other exchange organization. You may also remove a selected entry from the list.



## Search

You can search an object by inserting an expression. Un-check all object types which you do not want to have as a result. The scope of the query is the forest. The result listed contains all objects found. Select certain or all objects to be gathered for export and press "apply".

With \* you can find all objects which you want to have as a result. For example, you check only Public Folder and you will have all Public Folders as a result.



## User

You can search for user objects and select dedicated users for export matching the inserted expression.

**Recommendation:** Select dedicated users, you are sure will never be deleted from Active Directory.

### Contact

You can search for contact objects and select dedicated contacts for export.

**Recommendation:** Select dedicated contacts, you are sure will never be deleted from Active Directory.

### Container

You can search for container objects for exporting all objects in this container matching the inserted expression.

### OU

You can search for Organizational Units for exporting all objects in this OU matching the inserted expression.

If you do not want to choose Organizational Units including all nested OUs (by taking the CHOOSE method described below), you can select individual Organizational Units only.

### Query Based Distribution Groups

Query-Based Distribution Groups (in Exchange 2007 called "Dynamic distribution groups") provide a type of Distribution Group with a flexible method to dynamically define the membership to this type of group. It is not a static membership like regular groups.

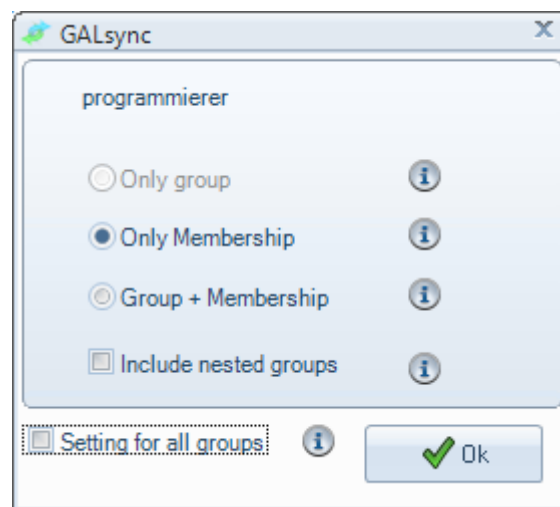
Search for Query Based Groups matching the inserted expression and select if you want to export all members of this group.

## Groups

Search for local, global and universal Groups of type security group or distribution group.

If you select a listed group which is mail-enabled you will be prompted for choice between a defined group (and it's SMTP-address) itself or only the members of this group (membership) or both (group + membership) to be exported.

If you check "Settings for all groups" the set configuration will be applied to all listed and selected groups.



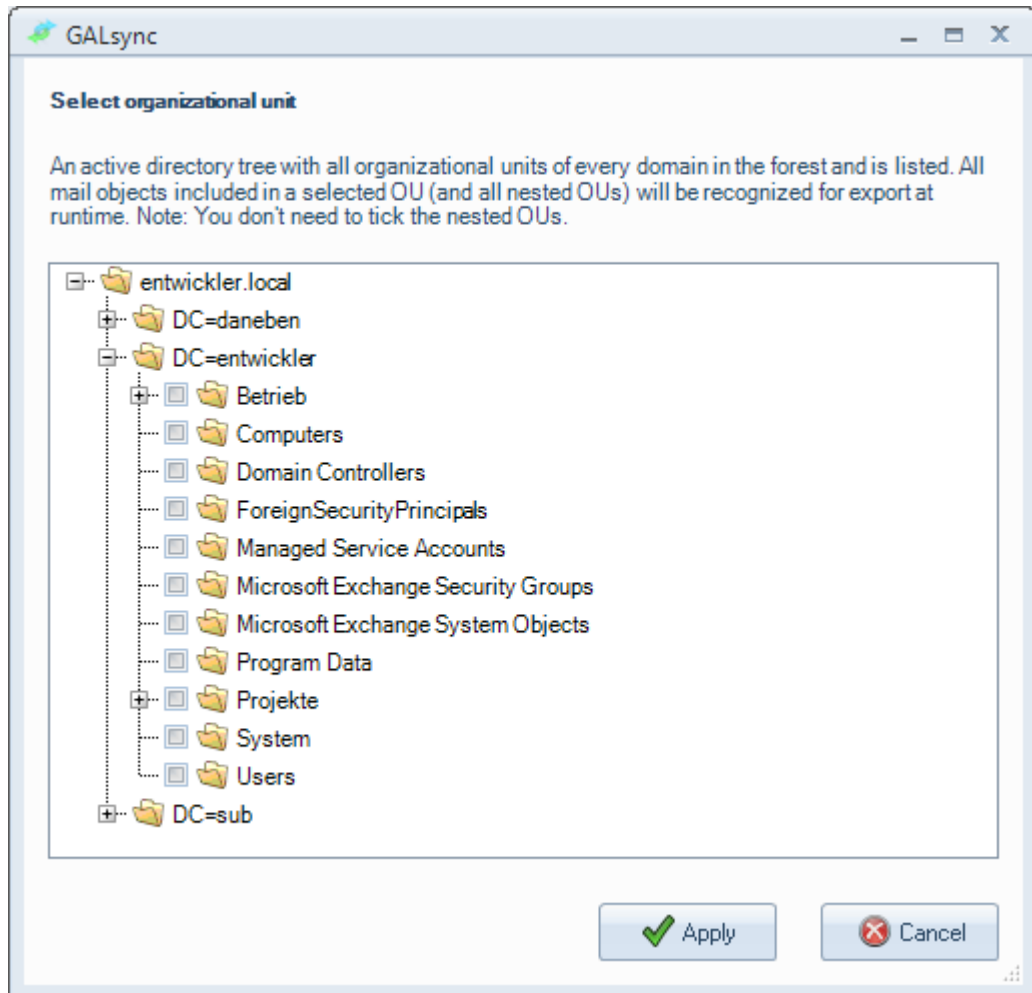
## Public Folder

You can search for Public Folders and choose any Public Folder you want to export. The Public Folder will be created as a contact in the target environment, if it is mail-enabled and not hidden from GAL.

## Choose

Here you may pick a dedicated Organizational Unit in the listed domains. An active directory tree with all domains and organizational units will be listed. All mail objects included in a selected OU (and all nested OUs) will be recognized for export at runtime.

**Note:** You do not need to check the nested OUs.



### Only this OU

Only mail-enabled objects in the OU will be exported. All sub-OU and their mail-enabled objects will be ignored.

### Only Sub-OU

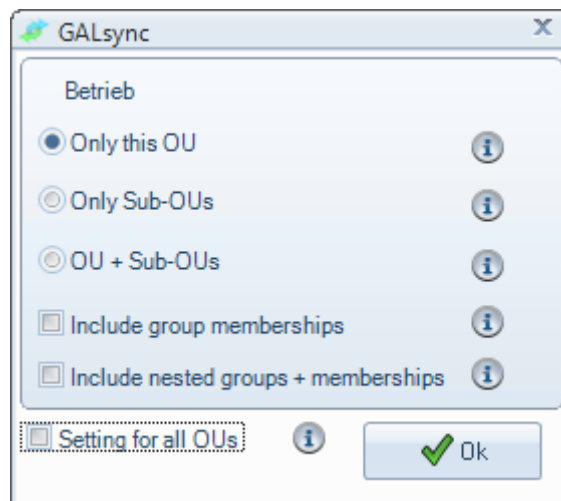
Only mail-enabled objects in the sub-OU of the OU will be exported. All mail-enabled objects of the OU will be ignored.

### OU + Sub-OU

All mail-enabled objects of the OU and all sub-OU will be exported.

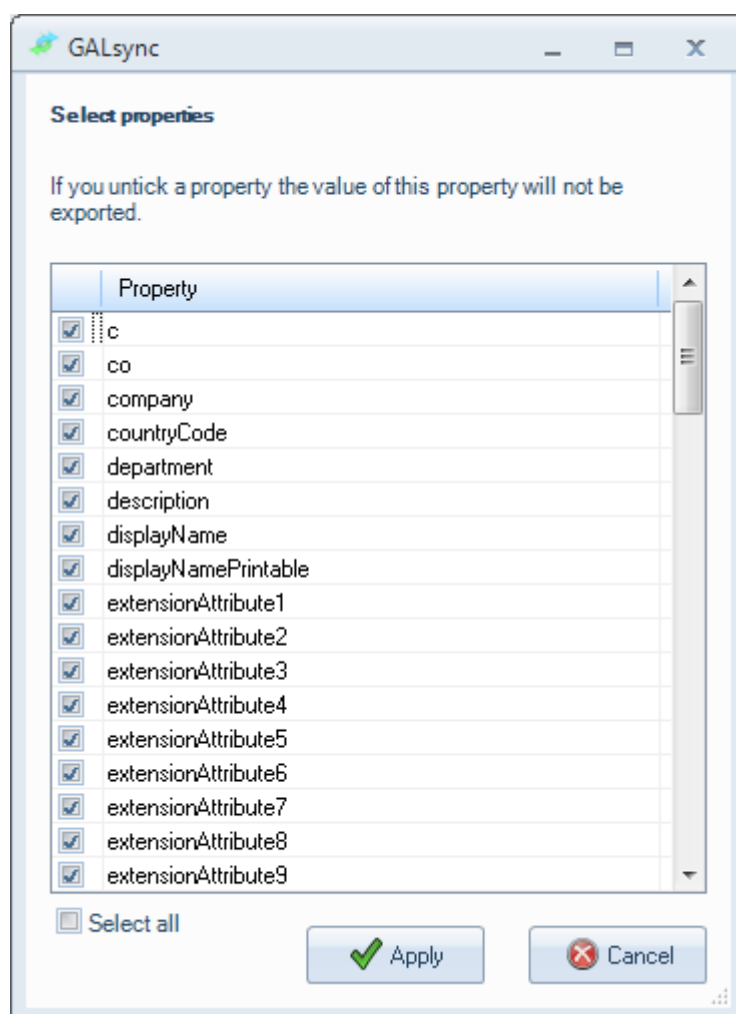
### Include group memberships

Additionally you may configure to export information about group memberships of mail objects.

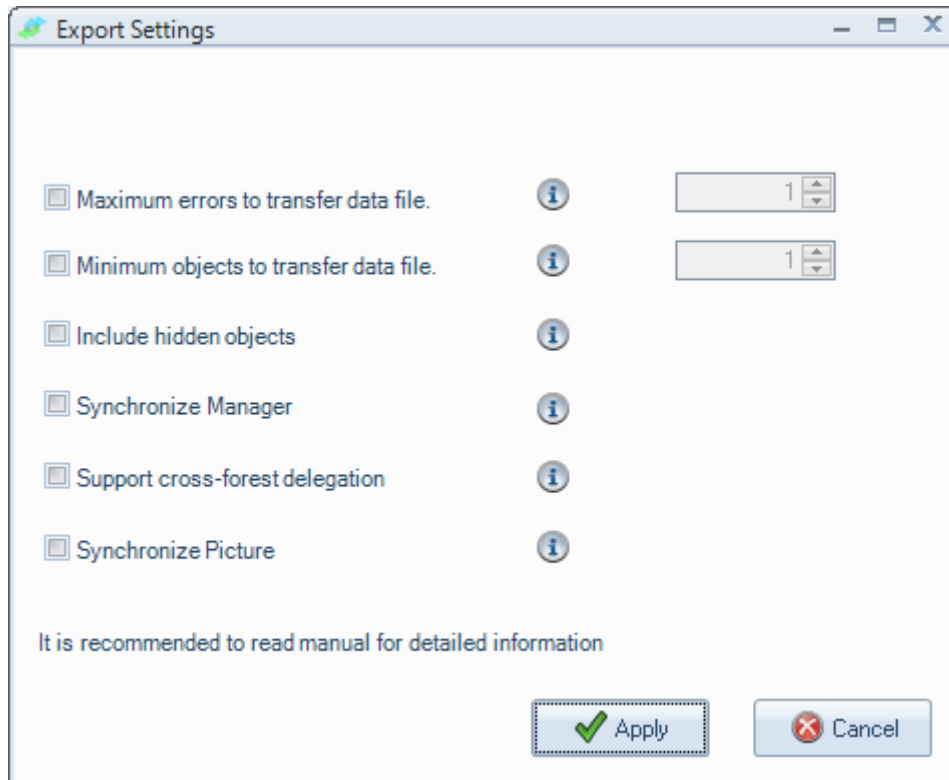


## Properties

Select which properties are to be exported.



## Settings



### Maximum errors to transfer data file

You can set a limit how many errors may occur when creating a data file before sending. If this limit of errors is exceeded, the effected data file will not be sent to the recipient.

### Minimum objects to transfer data file

You can define a minimum number of objects to be written to the data file before sending to the recipient. As long as the data file contains less objects it will not be sent at all.

For example if you expect to export over 11000 objects, you can set a minimum of number of objects to 11000. Assuming that a network error occurs at runtime and GALsync identifies only 8000 objects for export (because of unavailability of your domain controller). The data file will not be sent to the recipient. Otherwise, in the target environment the missing number of contacts would have been deleted even though they still exist in the source.



### **Include hidden objects**

With this option, the objects, which are hidden from the GAL, are also exported. During the import the objects will be visible, in the GAL.

### **Synchronize Manager**

If this option is selected GALsync will not only export the manager's name of the mailbox but create the manager as contact. So you know at import side also the manager of an object.

### **Support cross-forest delegation**

Added compatibility for Cross-Forest Delegation for Exchange 2007 or 2010. GALsync handles the contact sync according to the chapter "Manually Creating a cross-forest mail contact" of this article:

<http://blogs.technet.com/b/neiljohn/archive/2011/10/12/exchange-server-2010-cross-forest-delegation.aspx>

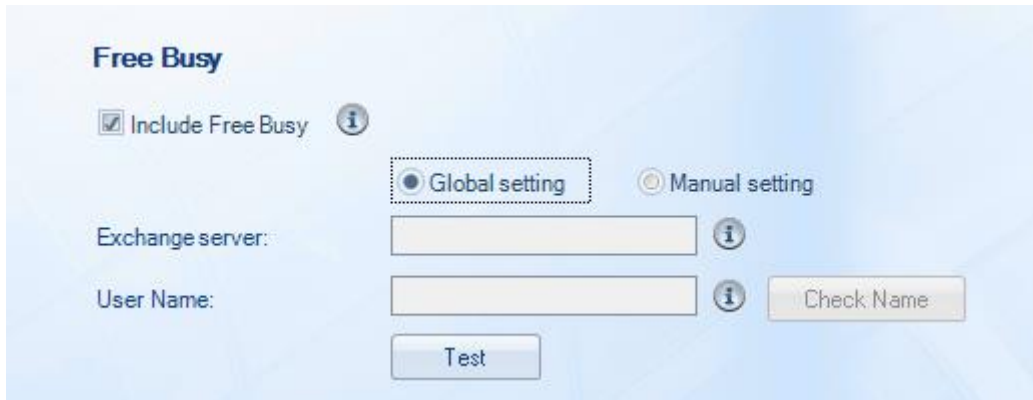
### **Synchronize Picture**

This will automatically synchronize the user's picture as well.

## Free Busy

For synchronization of Free Busy information, please fill in the name of the Exchange server and the user name. With this information, GALsync can create a MAPI profile in order to export Free Busy data from Schedule+ Free Busy public folder.

**Note:** In the Chapter, "Free Busy Information" you can find more details about how you need to configure your environment to be able to sync Free/Busy Information.



**Exchange Server:** Please check what kind of Exchange topology you have:

If the mailbox is placed on an Exchange 2003 or 2007 Server or and 2010 Server with Mailbox role as well as CAS role, then insert the name of the server. You may also first insert the username and use method *Check Name*.

If the mailbox is placed on an Exchange 2010 server with only mailbox role, insert the name of an appropriate CAS server. Do NOT use method *Check Name*, because this method takes the server with the mailbox role.

If you use a CAS-Array, insert then FQDN of the array.

**User name:** The name of the mailbox which will send the notification email. Usually this is the sender's user name.

**Check Name:** Use the "check name" button to resolve the user name you typed in. If GALsync does not find any mailbox, an error will be indicated. If GALsync finds the mailbox confirmation will be indicated. If GALsync finds multiple mailboxes a question mark will appear, please use a user name which is unique.

**Test:** This will test if GALsync can access the Free/Busy Information.

**Problem:** The test fails.

**Please Check:**

The GALsync GUI must run in the credentials of the Service Account.

The GALsync Service account must be the OWNER of the mailbox used to send the mail.

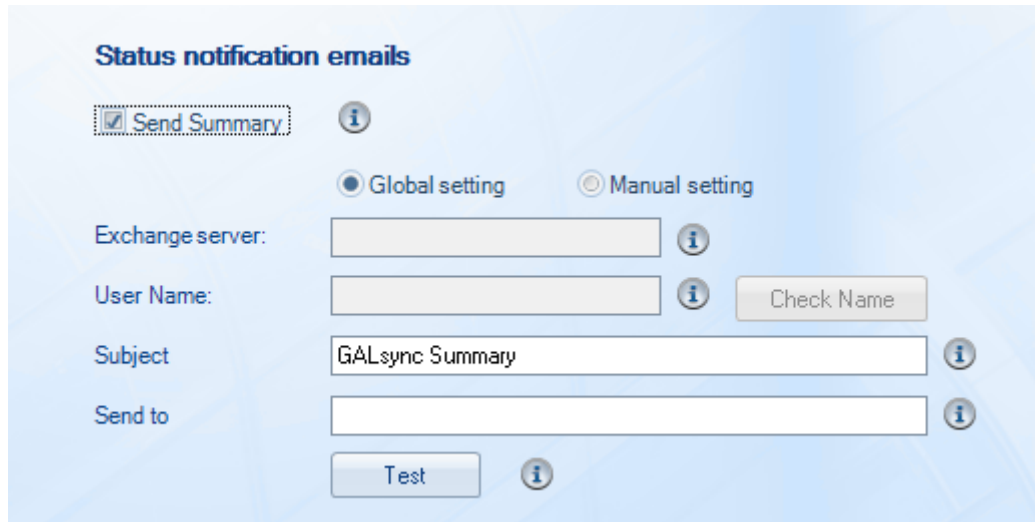
If you installed Standalone MAPI/CDO1.2.1 you must reboot the computer before it will work.

If you use Outlook on the Server with GALsync it must be 32 Bit and the Standard Profile for the GALsync Service must be configured.

With Exchange 2007 and Exchange 2010 SP1 you need to have a database for Public Folders.

## Status notification

GALsync can send status notification emails to inform you about errors that may have occurred. If you leave this option unselected no notification email will be sent.



**Exchange Server:** Please check what kind of Exchange topology you have:

If the mailbox is placed on an Exchange 2003 or 2007 Server or and 2010 Server with Mailbox role as well as CAS role, then insert the name of the server. You may also first insert the username and use method Check Name.

If the mailbox is placed on an Exchange 2010 server with only mailbox role, insert the name of an appropriate CAS server. Do NOT use method Check Name, because this method takes the server with the mailbox role.

If you use a CAS-Array, insert then FQDN of the array.

**User Name:** Insert the name of the mailbox which will send the administrative report.

**Check Name:** Use the "check name" button to resolve the user name you typed in. If GALsync does not find any mailbox, an error will be indicated. If GALsync finds the mailbox confirmation will be indicated. If GALsync finds multiple mailboxes a question mark appears, please use a user name which is unique.

**Subject:** Value for the subject line in email.

**Send to:** The SMTP-address of the person who will receive the administrative report.

**Test:** This tests if GALsync can send an email to the specified email address, and sends an email to the email address.

**Problem:** The test fails.

**Please Check:**

The GALsync GUI must run in the credentials of the Service Account.

The GALsync Service account must be the OWNER of the mailbox used to send the mail.

If you installed Standalone MAPI/CDO 1.2.1 you must reboot the computer before it will work.

If you use Outlook on the Server with GALsync it must be 32 Bit and the Standard Profile for the GALsync Service must be configured.

## Schedule Service

GALsync can perform the synchronization of policies automatically.

The screenshot shows the 'Scheduler service' configuration window. At the top, there are three radio buttons: 'No schedule service' (unselected), 'Weekly' (selected), and 'Monthly' (unselected). Below these, there is a tab labeled 'weekly'. Under the 'weekly' tab, there are checkboxes for each day of the week: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday. There is also a checkbox for 'every day'. Below the checkboxes, there are two rows of time selection: 'start time' and 'end time'. Each row has two spinners for hours (0 to 23) and minutes (0 to 59). To the right of the time selection, there is a dropdown menu for frequency. The dropdown is currently open, showing options: 'once a day' (selected), 'once a day', 'every 15 minutes', 'every 30 minutes', and 'every 45 minutes'.

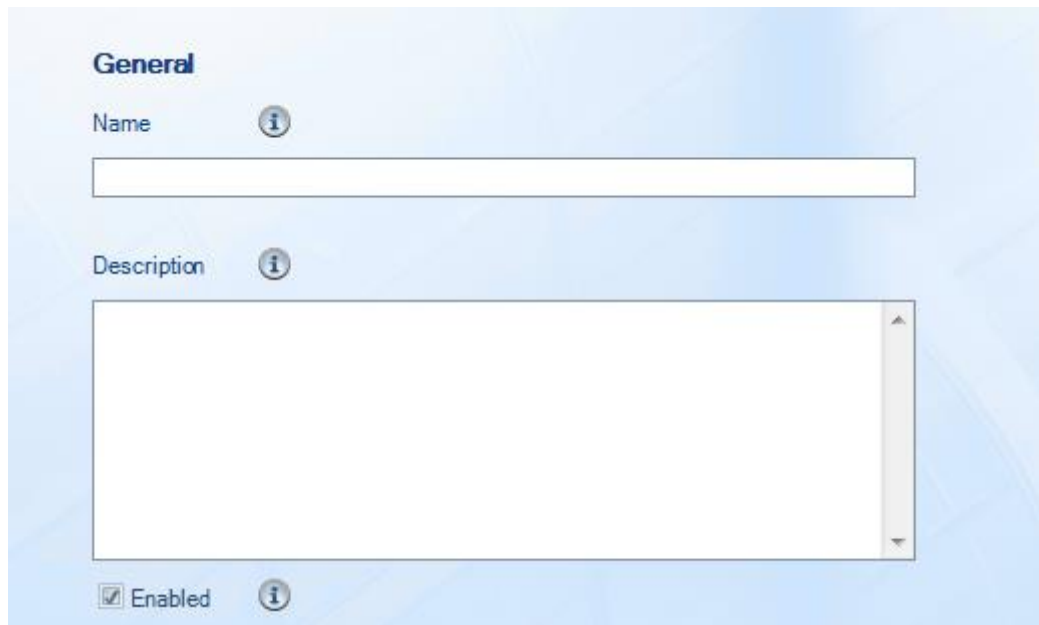
You can schedule weekly or monthly, on different days, the synchronization should be carried out. Furthermore, they can decide between what times and how many times a day the schedule service works. Here, it is possible to synchronize the schedule service every 15 minutes, every hour or once a day.

**Note:** The execution of a scheduled policy will not be handled by windows schedule service but by the GALsync Service.

## General

Finally you can define your own name and description for the created policy.

If the option *Enabled* is selected, GALsync Service will consider this policy for scheduled execution. If you have configured a policy with schedule information but you do not want the policy executed automatically then unselect this option.



The screenshot shows a 'General' configuration window with a light blue background. At the top, the title 'General' is displayed in bold. Below it, there are two main sections: 'Name' and 'Description'. Each section has a text input field and an information icon (a circle with an 'i') to its right. The 'Name' field is a single-line text box, while the 'Description' field is a multi-line text box with a vertical scrollbar on the right. At the bottom of the window, there is a checkbox labeled 'Enabled' which is currently checked, and an information icon to its right.

## How to create an Import policy

In order to create an import policy you need to configure the following settings:

- Data transfer mode
- Encryption
- Directory
- Free Busy
- Status notification emails
- General

### Data Transfer mode

In order to synchronize GALsync data you may choose from the following options to transfer the data file:

- Manual
- Via email
- Via network share
- Via FTP

In addition, you can decide to encrypt the GALsync data file.

**Data transfer mode**

Please choose a type of transfer.

- ☒ manual  
Import from a file. ⓘ
- ☐ via email  
Receive directory information from email. ⓘ
- ☐ via network share  
Receive directory information from a network share. ⓘ
- ☐ via FTP  
Download directory information from a FTP server. ⓘ
- ☐ Decrypt directory information. ⓘ



## Manual

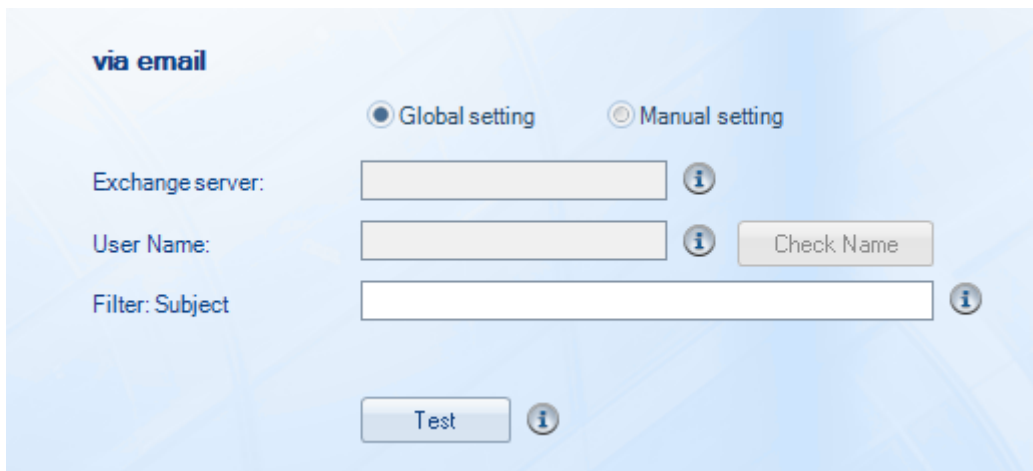
GALsync reads the information from a local file for importing into Active Directory. Please choose a drive, folder and file name, where the information is stored.



**Path:** Choose a file where directory information is stored.

## Via Email

GALsync automatically receives the directory information from an email account.



The screenshot shows a web-based configuration interface titled "via email". It features two radio buttons at the top: "Global setting" (selected) and "Manual setting". Below these are three input fields: "Exchange server:", "User Name:", and "Filter: Subject". Each input field has a small information icon (i) to its right. To the right of the "User Name:" field is a "Check Name" button. At the bottom of the form is a "Test" button, also with an information icon (i) to its right.

**Exchange Server:** Please check what kind of Exchange topology you have:

If the mailbox is placed on an Exchange 2003 or 2007 Server or and 2010 Server with Mailbox role as well as CAS role, then insert the name of the server. You may also first insert the username and use method *Check Name*.

If the mailbox is placed on an Exchange 2010 server with only mailbox role, insert the name of an appropriate CAS server. Do NOT use method *Check Name*, because this method takes the server with the mailbox role.

If you use a CAS-Array, insert then FQDN of the array.

**User name:** Insert the name of the mailbox which will receive the directory information. Usually the name is the recipient's user name.

**Check Name:** The "check name" button will try to resolve the name within the textbox. If GALsync cannot find a mailbox an error message will be displayed. If GALsync finds the mailbox that will be noted and if GALsync happens to find more than one mailbox you will need to be more specific in the searcher.

**Subject Filter:** If you leave the subject filter field empty GALsync will read all messages in the mailbox for checking, if new directory information has been sent from another exchange organization. If you receive directory information from multiple exchange organizations, you may want to distinguish between them using different subjects. GALsync recognizes subjects' content by using the "starts with" operator on the subject's string.

**Test:** This tests if GALsync can send an email to the specified email address, and sends an email to the email address.

**Problem:** The test fails.

**Please Check:**

The GALsync GUI must run in the credentials of the Service Account.

The GALsync Service account must be the OWNER of the mailbox used to send the mail.

If you installed Standalone MAPI/CDO 1.2.1 you must reboot the computer before it will work.

If you use Outlook on the Server with GALsync it must be 32 Bit and the Standard Profile for the GALsync Service must be configured.

### Via network share

GALsync automatically receives the directory information from a network share that is accessible for both exchange organizations. For an import, you need read access to the share.

The screenshot shows a configuration window titled "via network share". At the top, there is a text field containing the path "\\server\share\datafile.xml". Below this is a label "Path" followed by an empty text input field. To the right of the input field is an information icon (a lowercase 'i' inside a circle). Below the "Path" field is a section titled "Access Information" which contains three fields: "Domain", "User name", and "Password", each followed by an empty text input field. To the right of each of these three fields is an information icon. At the bottom left of the "Access Information" section is a button labeled "Test", and to its right is another information icon.

**Path:** The path specifies the qualified name of the share and file name where you want to receive the directory information from.

**Domain:** This is the domain of the user who wants to access the specified network share. Usually this is the NETBIOS name of the domain.

**User name:** This is the user who wants to access the specified network share.

**Password:** This is the password of the user.

**Test:** Pressing this button GALsync will validate the access to the share.

## Via FTP

GALsync automatically receives the directory information from a FTP server that is accessible for both exchange organizations. For export, you need read/write access to the FTP server.

The screenshot shows the 'via FTP' configuration interface. It includes a URI field with the example 'ftp://ftp.mycompany.com/exp.xml'. Below this are two main sections: 'Access Information' and 'Proxy Information'. The 'Access Information' section has fields for 'User name' and 'Password'. The 'Proxy Information' section has fields for 'Address / Port', 'Domain', 'User name', and 'Password'. A 'Test' button is located at the bottom left. Information icons (i) are present next to the URI field and each of the four fields in the 'Proxy Information' section.

**URI:** The Uniform Resource Identifier (URI) specifies the qualified name of the FTP server and file name where you want to download the directory information from.

**User name:** This is the user who wants to access the specified FTP server.

**Password:** This is the password of the user.

**Address/Port:** If your environment uses proxy server to gain access to the FTP server please type the name of the proxy server and the port which should be used.

**Domain:** This is the domain the user belongs to who wants to access the specified proxy. Usually this is the NETBIOS name of the domain.

**User name:** This is the user who wants to access the specified proxy.

**Password:** This is the password of the user.

**Test:** Pressing this button GALsync will validate the access to the FTP server and proxy (if configured).

## Decryption

The Active Directory Information can be encrypted. This option, „Decrypt Directory Information“, can be activated while selecting the Data Transfer Mode.

**Data transfer mode**

Please choose a type of transfer.

- ☐ manual  
Import from a file. ⓘ
- ☒ via email  
Receive directory information from email. ⓘ
- ☐ via network share  
Receive directory information from a network share. ⓘ
- ☐ via FTP  
Download directory information from a FTP server. ⓘ

☒ Decrypt directory information ⓘ

After setting up the Data Transfer Mode you can setup the Encryption.

**Encryption**

Choose the security level. Encryption is used to secure the data file which contains all the directory objects to synchronize.

- ☒ **Symmetric Keys** ⓘ  
Create a key and share this key with your partner.
- ☐ **Asymmetric Keys** ⓘ  
Import: Create a public key and send this key to your partner.  
Export: Store the received file with the public key you received from your partner.

ⓘ Open Key : Insert file you received from your partner.

ⓘ Generate Key: A file is created which you may send to your partner.

### Symmetric Keys

If you choose symmetric keys a single key is used for both, encryption and decryption. This means sender and receiver use the same key.

#### Procedure

Once you create an export policy create a key-file and hand it over to your partner organization. Then your partner creates an import policy. Imported information will be accessible after using the key-file.

If you want to use this key in any other of your own policies simply refer to the created key-file.

### Asymmetric Keys (Public Key)

If you choose asymmetric keys the key for encrypting the message is different to the key for decryption. This means you use a public key to encrypt the message, whereas the private key is kept secretly and will be used to decrypt the message. If you want the other exchange organization to send encrypted directory information to you, you have to generate a pair of keys and hand over the public key to the other exchange organization first. They will use the key for encryption and send you the encrypted file. The private key is stored directly in the policy file.

**Note:** Using an asymmetric key the private key is built upon the machines GUID. As soon as you move GALsync to another machine you have to renew your existing key.

### Procedure

If you create an import policy create a key-file and hand it over to your partner organization. Your partner himself creates an export policy to be opened with the key-file.

Once you create an export policy, first you should receive a key-file generated by your partner's organization inside the appropriate import policy at their hand side.

### Further information

For further information see

[http://en.wikipedia.org/wiki/Symmetric-key\\_algorithm](http://en.wikipedia.org/wiki/Symmetric-key_algorithm)

[http://en.wikipedia.org/wiki/Asymmetric\\_key\\_algorithm](http://en.wikipedia.org/wiki/Asymmetric_key_algorithm)



## Directory

Configure all import related directory settings.

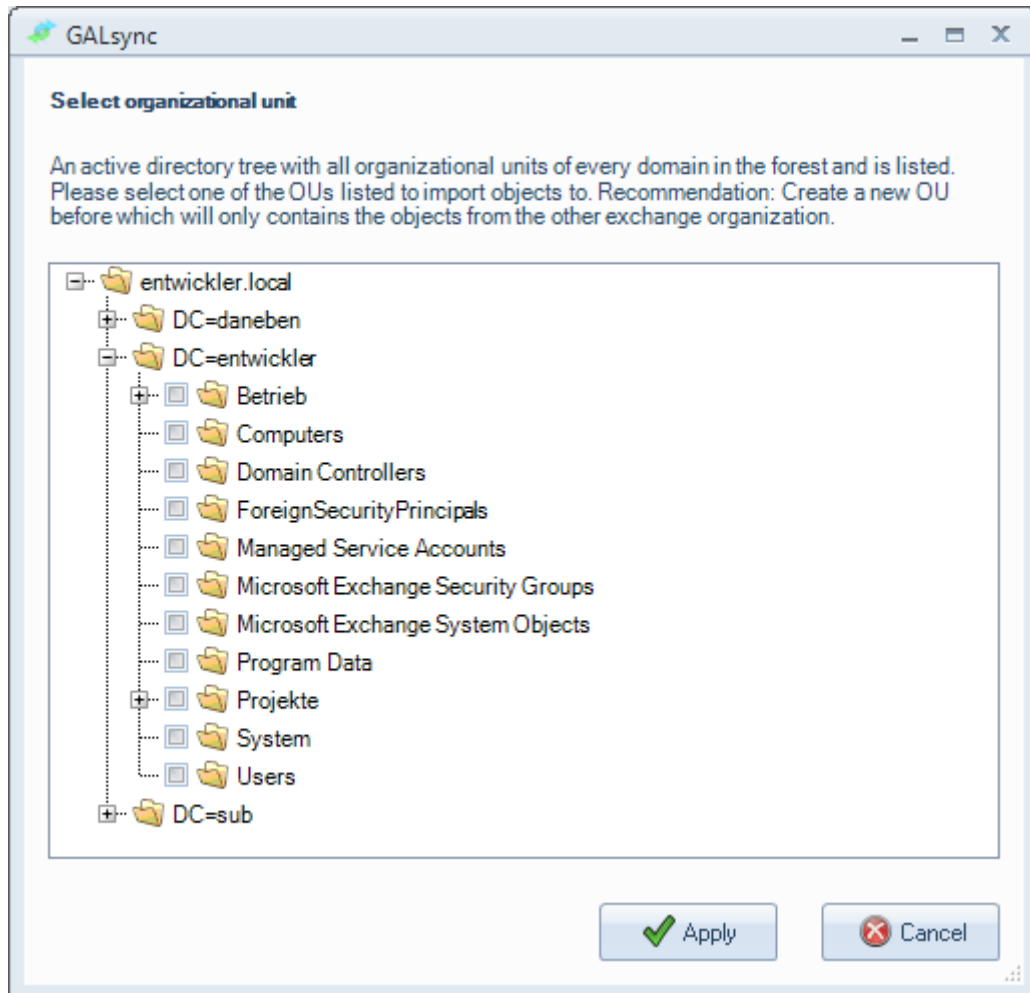
**Note:** You can configure these settings for each policy.



## Choose

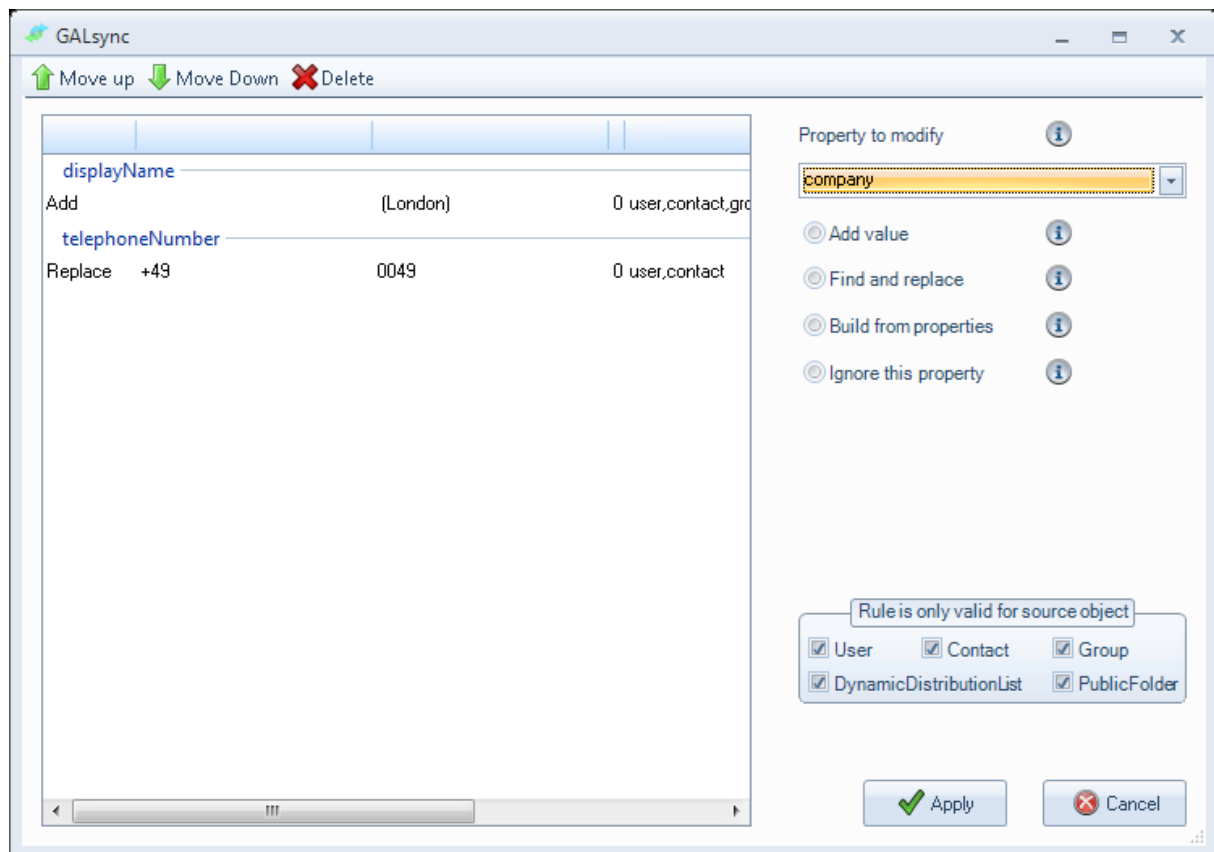
Choose an Organizational Unit; you want to store the imported directory information in.

**Recommendation:** Create a special Organizational Unit for import. Do not bind any group policy to this OU, which could lead to unexpected results. Grant the GALsync service account full permissions to this OU.



## Properties

Modify the values for the Import Policy. The modified objects are prioritized during the import.



Usually in your import list, there are different classes of objects (i.e. User, contact, group). Because these classes have different attributes rules are apply related to the object class. Because all object classes have the attribute "displayName" the first rule displayed in the screenshot will be apply to all classes. Because a group does not have an attribute "telephoneNumber", the second rule is only apply to users and contacts.

### Add value

You can add a text to a property. Choose the property that you want to add a value to, and then choose the option „Add Value“.

You then have the option to add your value before the property (Prefix) or after it (Suffix).

## Find and replace

You can replace a specific string with a new value. Choose the property, select find and replace.

In the find textbox insert the text which you wish to replace and in the replace textbox insert the new text.

You can use Regular Expressions.

Example, you have the string "Dueren Germany", however want to switch the words and separate them with a comma.

You expect the following string as an outcome "Germany, Dueren", and then insert:

```
(?<first>\S+) (?<last>\S+)
```

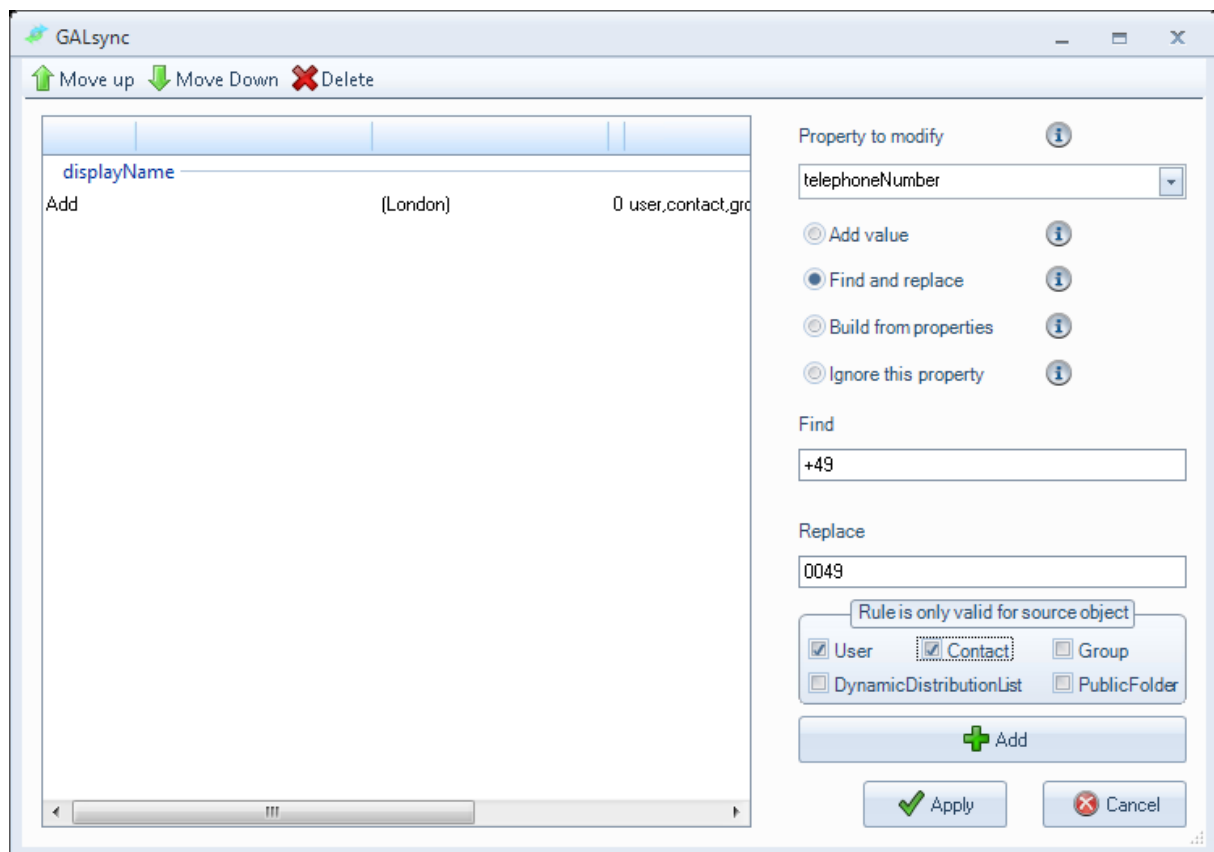
into the "Find" field.

In the Replace field, add the following text:

```
${last},${first}
```

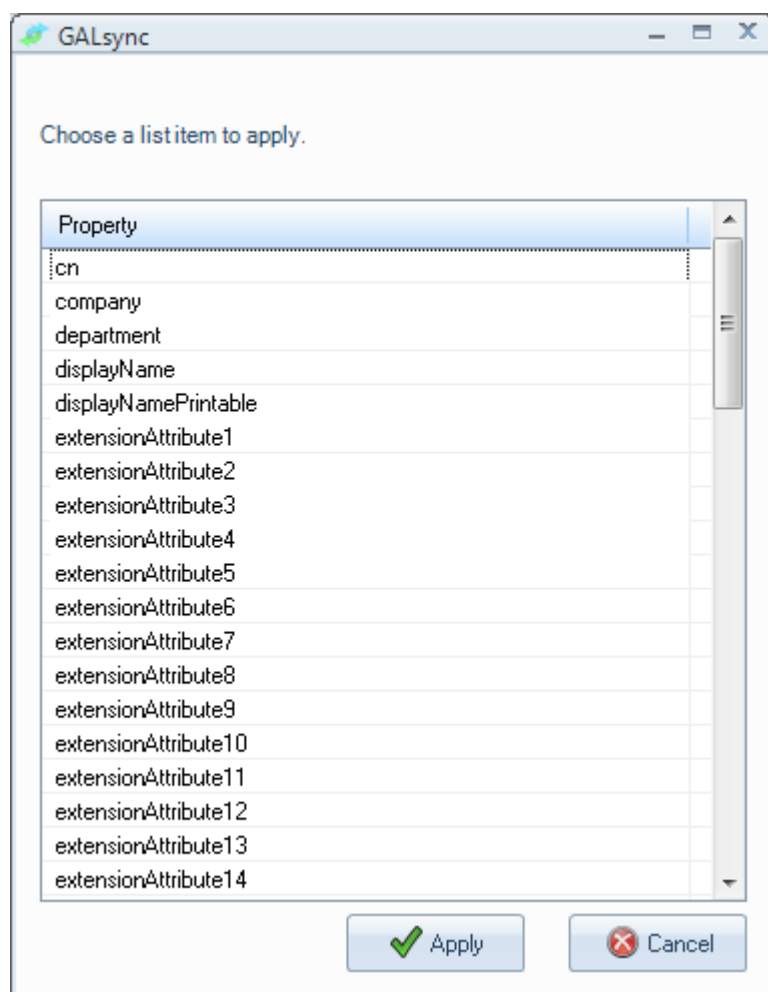
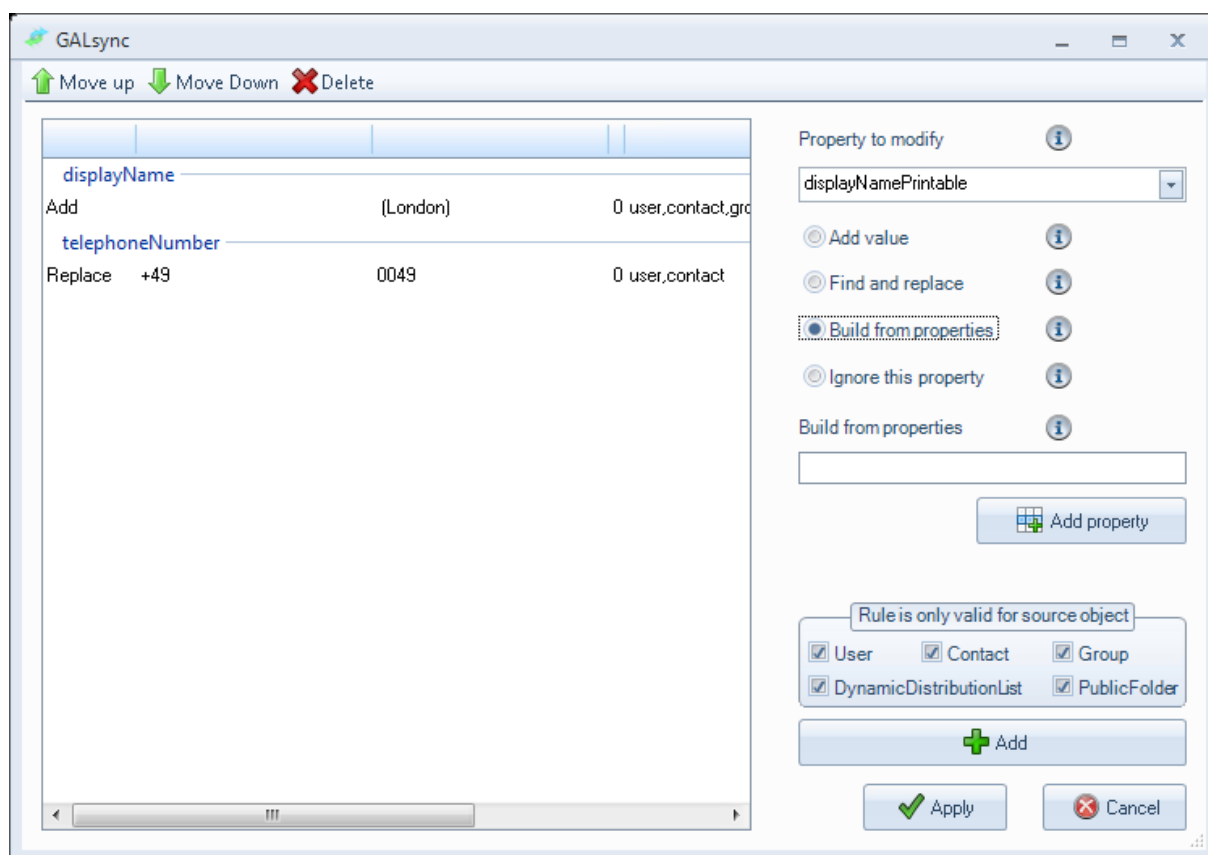
Here are a few Regular Expressions, which are allowed to be used:

\$&	matched text
\$_	original source string
\$`	text before match
\$'	text after match
\${group_name}	text matched by named group
\$1, \$2	text matched by numbered group
\$\$	the literal "\$"



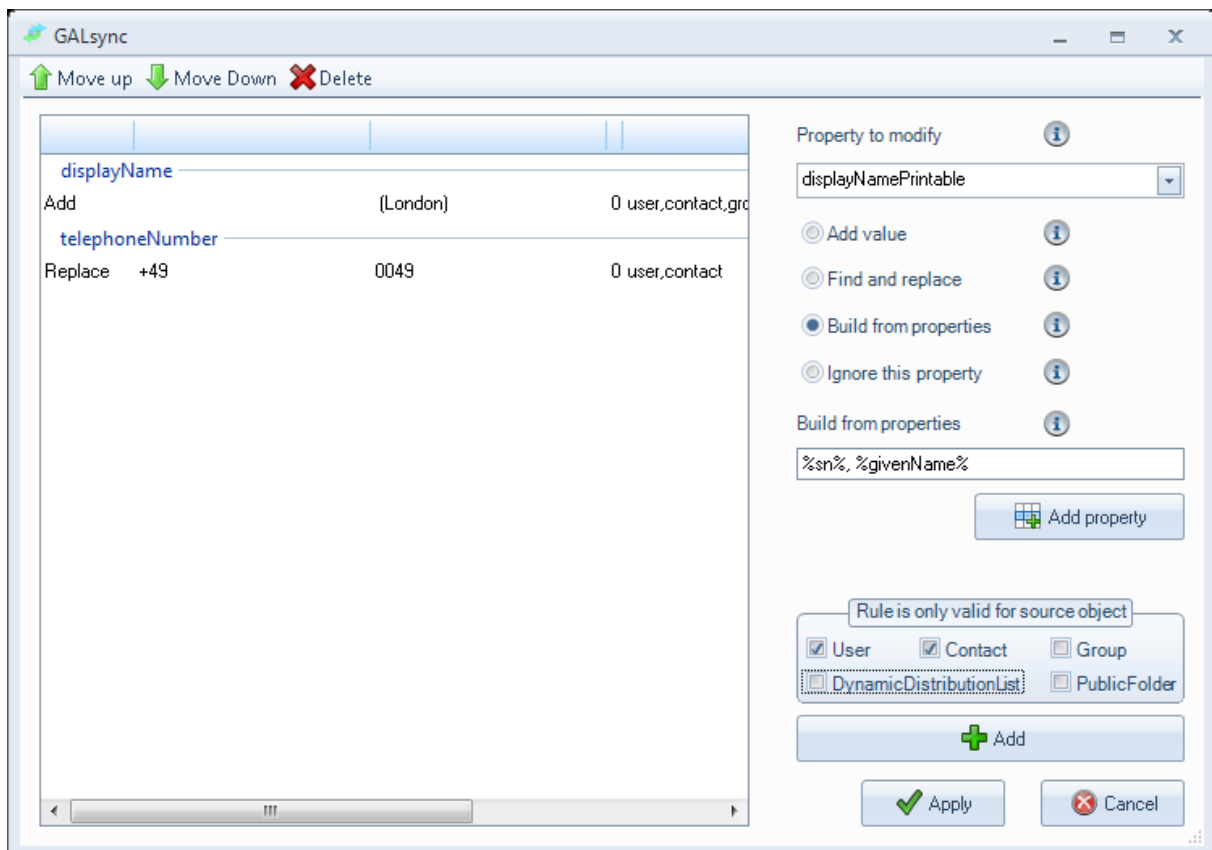
### Build from properties

You can create Properties by concatenating other Property values. Choose the property and select the option "Build from Properties".



In the textbox "Build from Properties", add a string, how the property value should be built. Via the "Add Property" button, you can choose which properties are used.

For Example, you want to generate the Property, "displayNamePrintable" from the last name, and first name comma separated. Choose the property, "sn" and the property "givenName" and insert a comma and space between them in the textbox "Build from Properties".



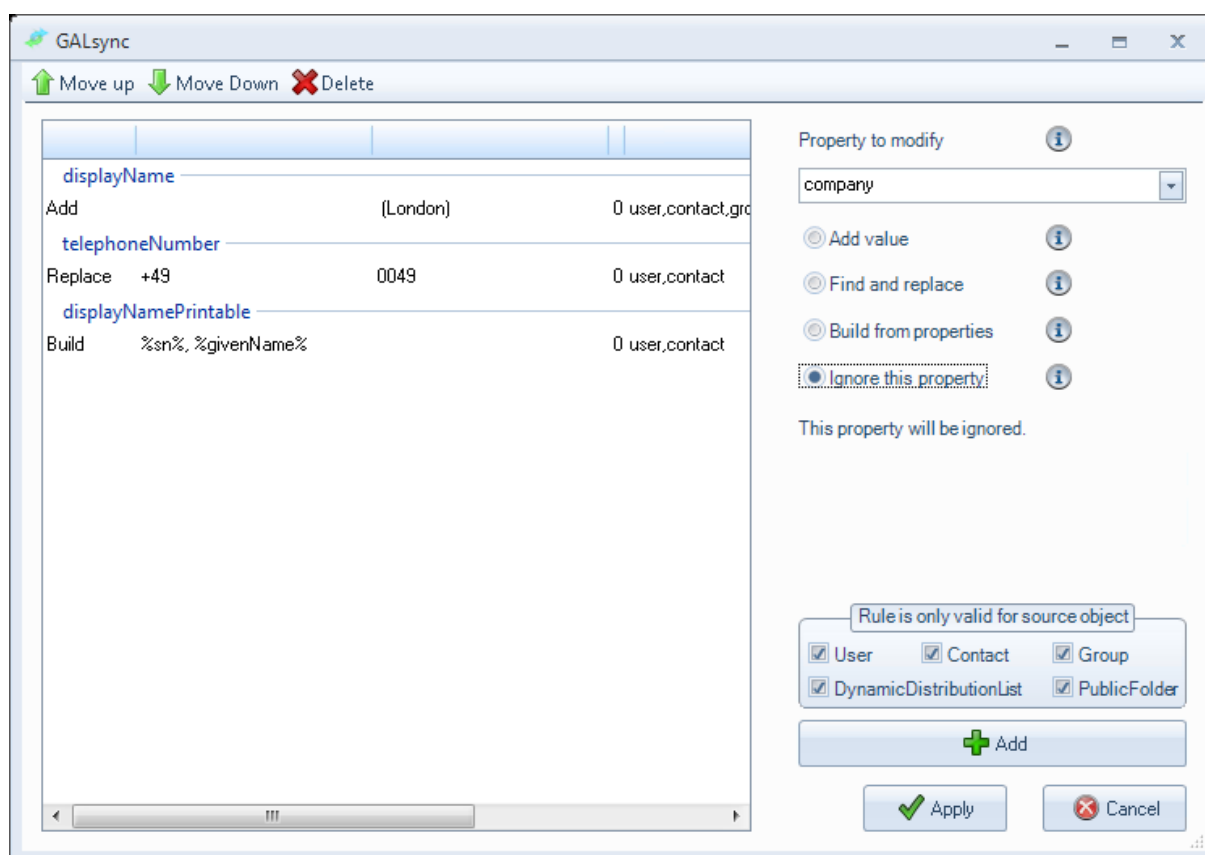
Thereafter, all "displayNamePrintable" will be created from a comma separated "sn" and "givenName".

#### Ignore this property

If you do not want to import a specific property, then you can select "Ignore this property".

**Note:** Values which are already assigned to the objects property will not be modified by GALsync.

In the following example the property "company" will never be imported.



### Exporting a property, and importing a different property in the target environment

By combining the options "Build from properties" and "Ignore this property" you can either copy or move a property value to a different property.

#### *Copy Property*

You can copy a property by choosing the end property and selecting the option "Build from properties". Then choose the property you wish to copy via the "Add property" dialog. Add the rule with the button "Add".



### *Move Property*

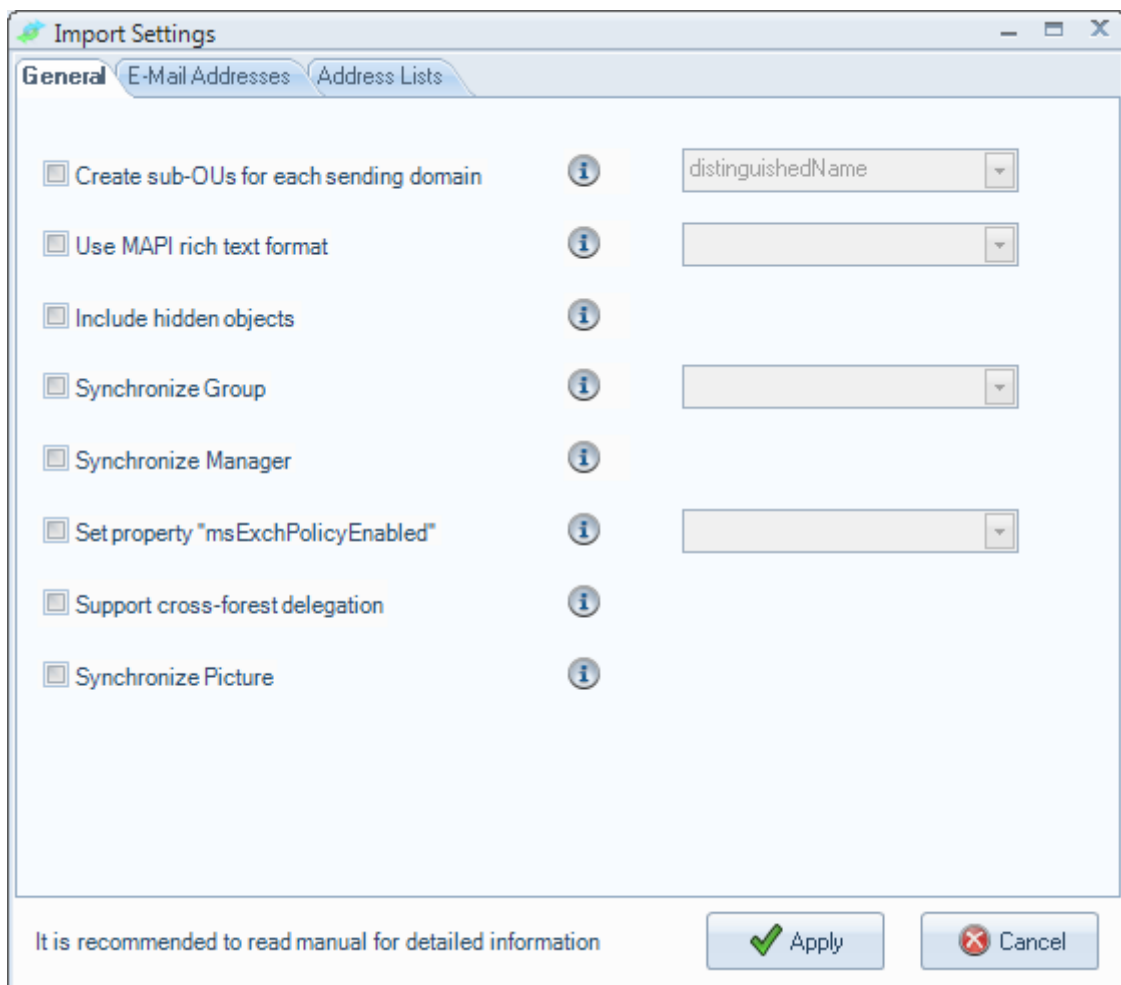
You can move a property by doing the following:

1. Choose the end property and selecting the option "Build from properties". Then choose the property you wish to copy via the "Add property" dialog. Add the rule with the button "Add".
2. Choose the initial property and select the option "Ignore this property", and add the rule by clicking the "Add" button.

Ergo the property value moved from the initial property to the end property.

## Settings

You can configure some additional settings concerning different requirements.



### Create sub-OUTs for each sending domain

You can choose to import all objects into one import OU with different sub OUTs. GALsync creates sub-OUTs depending on the original domain names. Therefore, you are able to create one Import OU and GALsync will create for each received domain a sub-OU. GALsync also can read the names of the sub-OUTs from a Custom Attribute („Settings“ of an Import-Policy, „Property for source domain“). In this case the name must be present at time of export.

### Use MAPI rich text format

Here you choose whether to use MAPI-RTF for the contacts you will import. The following options are available:

**Never:** If you select this option, messages sent to this recipient convert to plain text.

**Always:** If you select this option, messages sent to this recipient will be in the MAPI rich text format (RTF).

**Use Default Settings:** If you select this option, messages sent to this recipient are in either MAPI RTF or plain text, depending on the settings of the client computer.

See: <http://technet.microsoft.com/en-us/library/aa997434.aspx>

### Include hidden objects

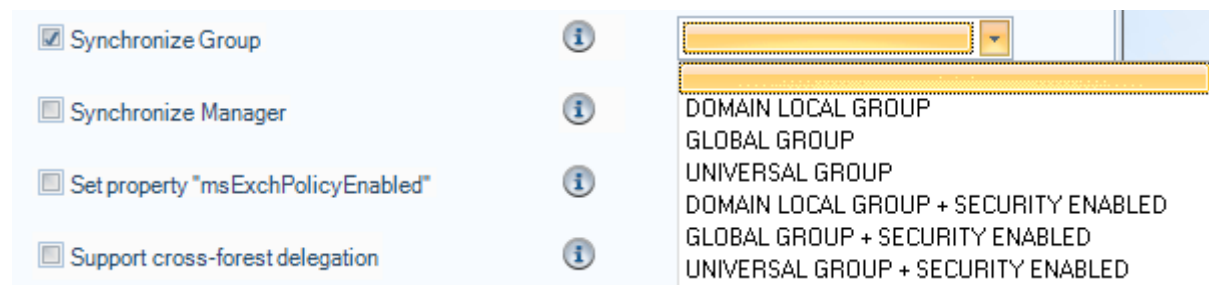
If objects, which are hidden in the source surrounding of the GAL, are going to be exported, then they will be hidden in the purpose surrounding of the GAL, too.

**Important:** With the synchronization of objects which are also hidden as a contact from the GAL, it is possible that problems arise, because GALsync cannot correctly determine, whether the contact of the object which should be imported, or if it already exist or not.

## Synchronize Group

Normally, groups are imported as a contact in the target environment, exactly like the members of a group if they are exported. You can import groups as group objects to see who is a member of the group.

If you activate the option "Synchronize Group", all groups with exported members are imported in the target and the group is created in the target environment. The members are added to the group.



During the creation of groups, the group type is by default the same as the source, however if you choose a specific group type, the prior group type will be ignored.

**Note:** Not every Group type can be created in every environment. If GALsync cannot create a group type, an error will be logged. This is not an error of GALsync, but this is an environment issue. Choose a different group type, so GALsync can create it in the target environment.

## Synchronize Manager

With this option, the "manager" attribute link to the contacts, if the option is also active on the export side, if activated this will automatically export the managers even if they are in another OU.

### Set property „msExchPolicyEnabled“

Exchange Server 2003: Specifies whether or not policies should be applied to this recipient.

See: <http://msdn.microsoft.com/en-us/library/ms982433%28v=exchg.65%29.aspx>

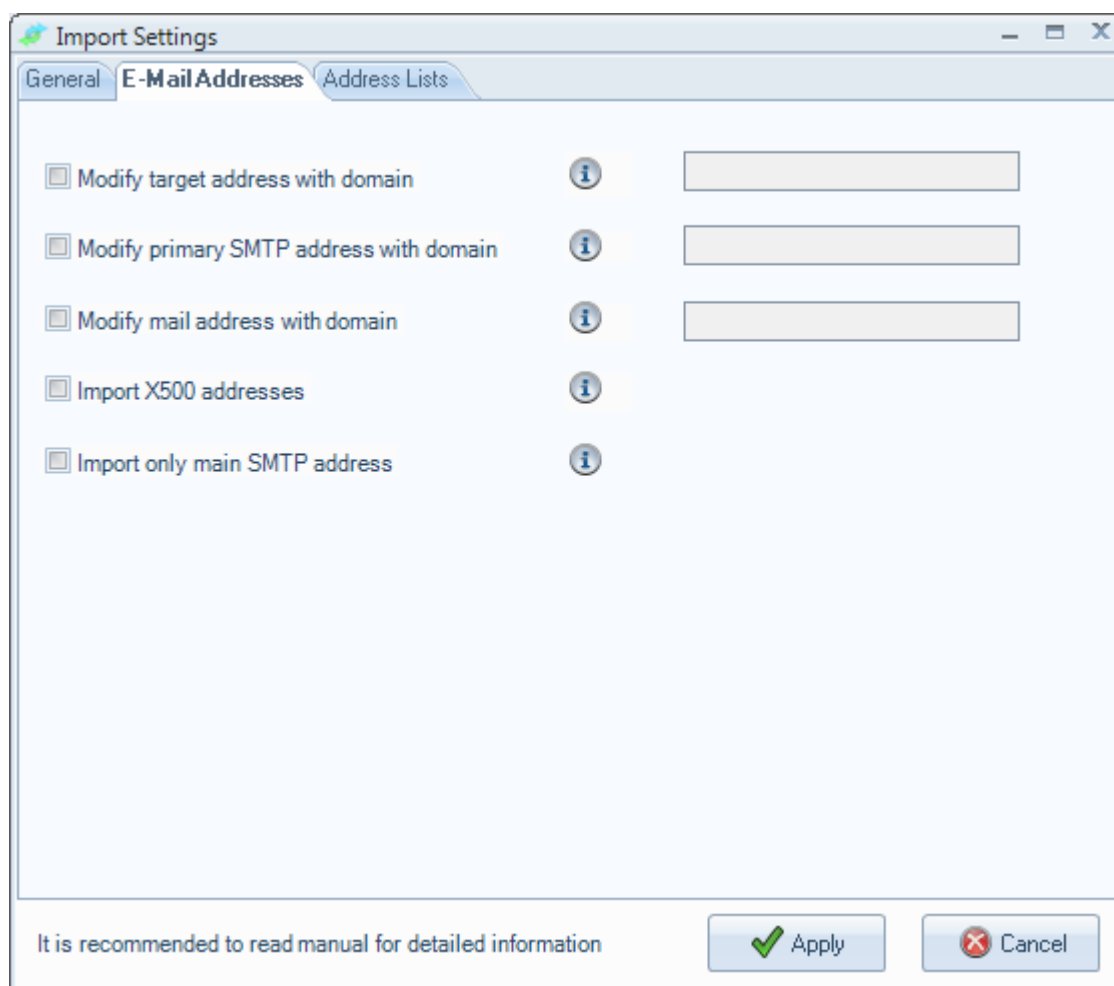
### Support cross-forest delegation

Added compatibility for Cross-Forest Delegation for Exchange 2007 or 2010. GALsync handles the contact sync according to the chapter “Manually Creating a cross-forest mail contact” of this article:

<http://blogs.technet.com/b/neiljohn/archive/2011/10/12/exchange-server-2010-cross-forest-delegation.aspx>

### Synchronize Picture

This will automatically synchronize the user’s picture as well.



### Modify target address with domain

To modify the attribute "targetAddress" correctly it is possible that we need to take a value out of the "ProxyAddresses" Attribute from the source, which is not the main SMTP address. For Example, the mailbox in the source has two SMTP Addresses the main address is: @mail.com and a secondary address: "@mig.mail.com" and you would like to use the "@mig.mail.com" address as the "targetAddress" attribute after the import.

Insert the filter "@mig.mail.com" in the Textbox next to the option "Modify target address with domain". GALsync will change the target address if "@mig.mail.com" is found in the "proxyAddresses" using the first found instance of "@mig.mail.com" and set it as "targetAddress" for the imported contact.

Please read the chapter "How to use GALsync in a migration" for more information.

### Modify primary SMTP address with domain

To modify the attribute "primary SMTP address" correctly it is possible that we need to take a value out of the "proxyAddresses" Attribute from the source, which is not the primary SMTP address. For Example, the mailbox in the source has two SMTP Addresses the main address is: @mail.com and a secondary address: "@mig.mail.com" and you would like to use the "@mig.mail.com" address as the "primary SMTP address" attribute after the import.

Insert the filter "@mig.mail.com" in das Textbox next to the option "Modify primary SMTP address with domain". GALsync will change the primary SMTP address if "@mig.mail.com" is found in the "proxyAddresses" using the first found instance of "@mig.mail.com" and set it as "primary SMTP address" for the imported contact.

Please read the chapter "How to use GALsync in a migration" for more information.

### Modify mail address with domain

To modify the attribute "mail" correctly it is possible that we need to take a value out of the "ProxyAddresses" attribute from the source, which is not the main SMTP address. For Example, the mailbox in the source has two SMTP Addresses the main address is: @mail.com and a secondary address: "@mig.mail.com" and you would like to use the "@mig.mail.com" address as the "primary SMTP address" attribute after the import.

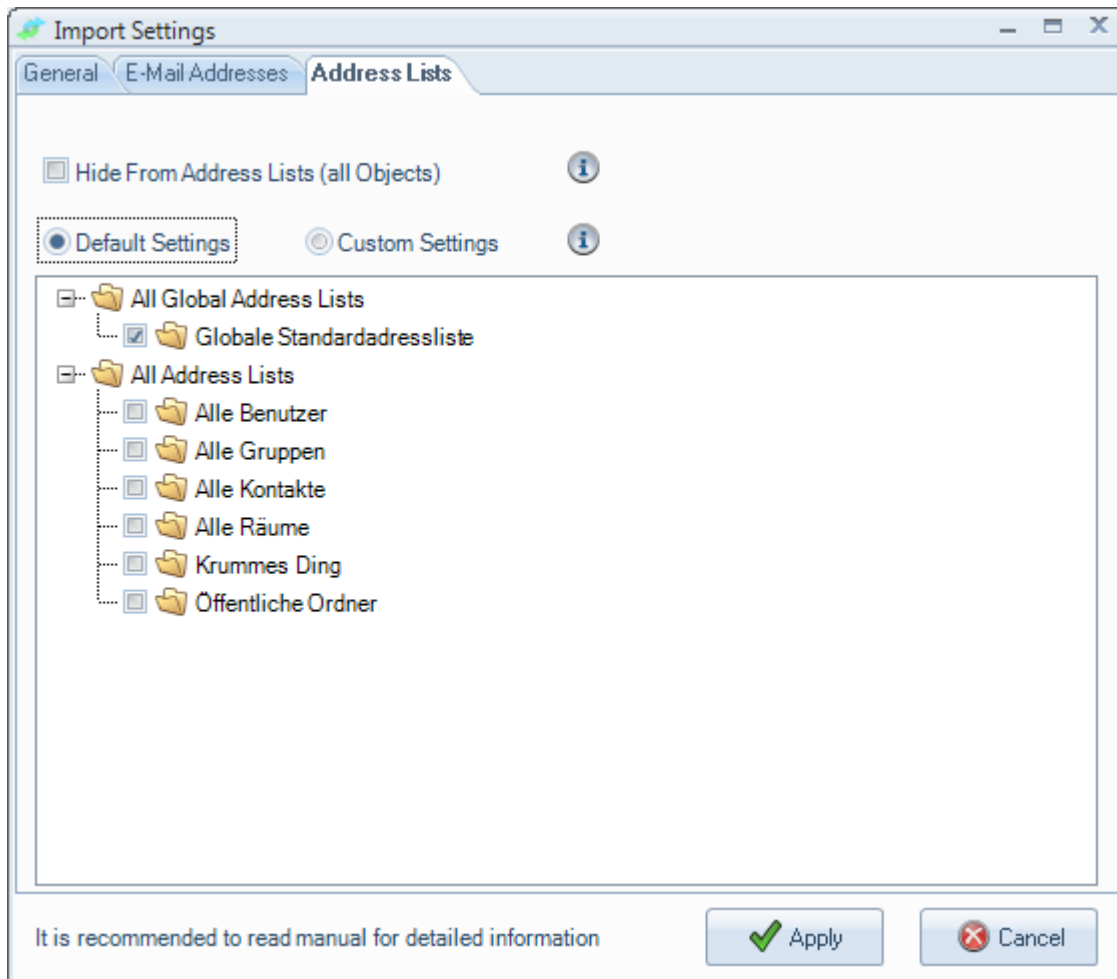
Insert the filter "@mig.mail.com" in das Textbox next to the option "Modify mail address with domain". GALsync will change the mail address if "@mig.mail.com" is found in the "proxyAddresses" using the first found instance of "@mig.mail.com" and set it as "mail" attribute for the imported contact.

### Import X500 addresses

Sometimes it is required to synchronize the X500 Addresses in the "ProxyAddresses". This helps if you get NDRs (Non-Delivery Reports) due to earlier migrations.

### Import only main SMTP address

In some scenarios (when more than one SMTP address is present within the "ProxyAddresses",) it is required to import the primary SMTP Address only.





### Hide from Address Lists (all Objects)

If you select this option all imported contacts are hidden from address book.

If you unselect this option all hidden, imported contacts will be visible after running the policy.

We recommend concerning this requirement to configure a different export policy containing only the affected objects. In the target forest create a special OU which is used to import all contacts which should be hidden from address book.

**Important:** With the synchronization of objects which are also hidden as a contact from the GAL, it is possible that there can be problems, because GALsync cannot correctly determine, whether the contact of the object which should be imported, does already exist or not.

### Default Settings

GALsync set the default global address lists (GALs).

### Custom Settings

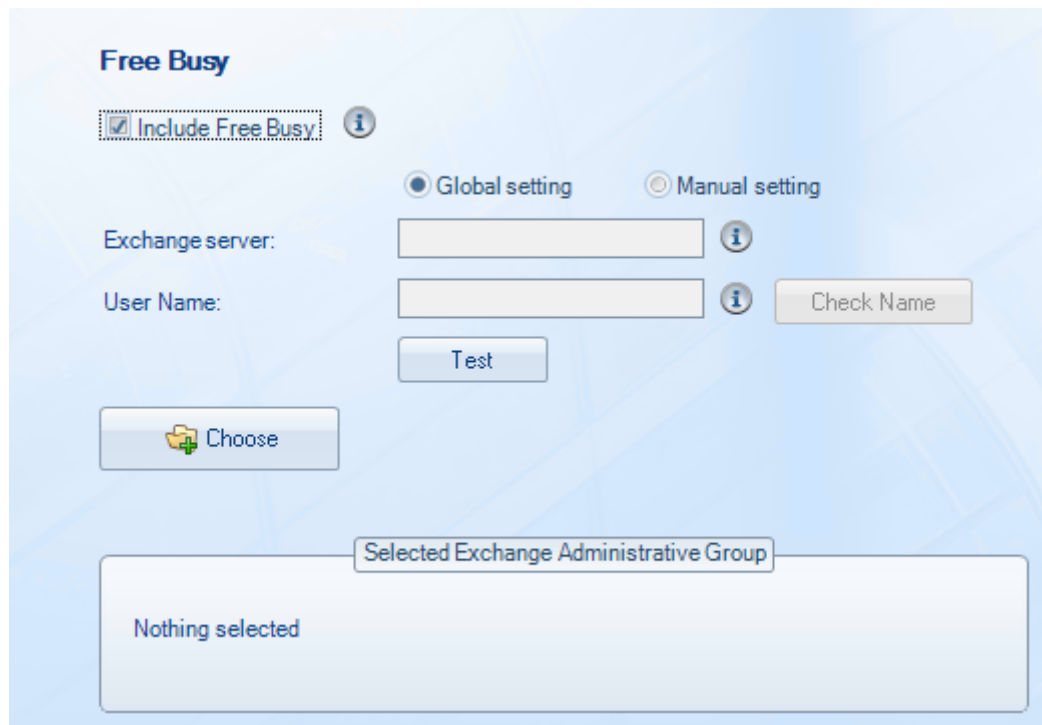
GALsync set the choosen address lists.

Please consider: This will not change any recipient filters of other address lists. You may want to change your global address lists (GALs) recipient filter to not include these objects, and the recipient filter of the choosen to include them.

## Free Busy

To synchronize Free/Busy information please enter the Exchange Server and enter the Service Account username. GALsync will then create a MAPI Profile to access the Administrative Group in the Schedule++ Free Busy Public Folder, which contains all the Free/Busy information.

**Note:** In the Chapter "Free Busy Information" is more information on how to configure your environment so that GALsync can export Free/Busy Information.



The screenshot shows the 'Free Busy' configuration window. At the top, there is a checkbox labeled 'Include Free Busy' which is checked, and an information icon. Below this are two radio buttons: 'Global setting' (selected) and 'Manual setting'. There are two text input fields: 'Exchange server:' and 'User Name:'. Each has an information icon to its right. To the right of the 'User Name:' field is a 'Check Name' button. Below the 'User Name:' field is a 'Test' button. Further down is a 'Choose' button with a folder icon. At the bottom, there is a section titled 'Selected Exchange Administrative Group' which contains the text 'Nothing selected'.

**Exchange Server:** Please check what kind of Exchange topology you have:

If the mailbox is placed on an Exchange 2003 or 2007 Server or and 2010 Server with Mailbox role as well as CAS role, then insert the name of the server. You may also first insert the username and use method Check Name.

If the mailbox is on an Exchange 2010 server with only mailbox role, insert the name of an appropriate CAS server. Do NOT use method Check Name, because this method takes the server with the mailbox role.

If you use a CAS-Array, insert then FQDN of the array.

**User Name:** The name of the mailbox, which will receive the data, usually this is the sender's / GALsync Service Account.

**Check Name:** The "check name" button will try to resolve the name within the textbox. GALsync displays an error message if it cannot find the mailbox. If GALsync finds the mailbox it notifies the user that it found a mailbox, and if GALsync happens to find more than one mailbox, you will need to be more specific in the searcher.

**Test:** This tests if GALsync has access to the Schedule++ Free / Busy Public Folder.

**Problem:** The test fails.

**Please Check:**

The GALsync GUI must run in the credentials of the Service Account.

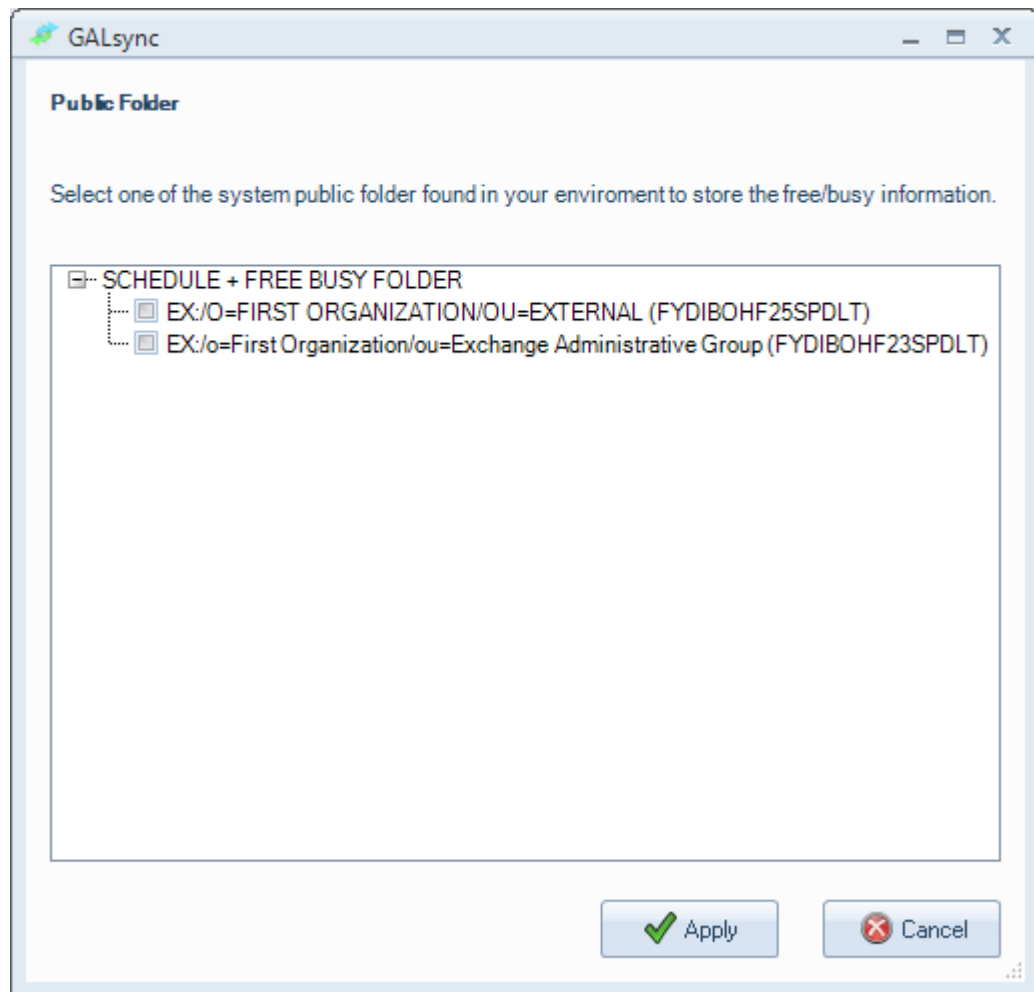
The GALsync Service account must be the OWNER of the mailbox used to send the mail.

If you installed Standalone MAPI/CDO 1.2.1, you must reboot the computer before it will work.

If you use Outlook on the Server with GALsync, it must be 32 Bit and the Standard Profile is for the GALsync Service Account.

## Choose

Choose an Exchange Administrative Group, where to store the imported Free Busy information.



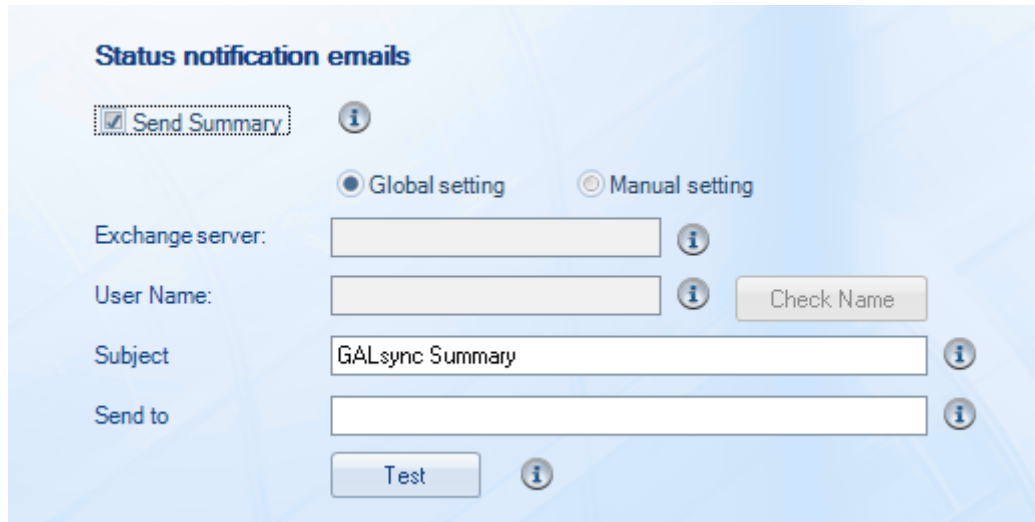
**Problem:** There are no administrative groups shown.

**Solution:** The GALsync GUI must run in the credentials of the Service Account.

**Note:** With Exchange 2007 or Exchange 2010 SP1, there must be a public folder store present. It is possible that it is not there; because public folder stores do not install by default anymore ergo, you may need to install it manually.

## Status notification

GALsync can send status notification emails to inform you about errors that may have occurred. If you leave this option unselected no notification email will be sent.



**Exchange Server:** Please check what kind of Exchange topology you have:

If the mailbox is placed on an Exchange 2003 or 2007 Server or and 2010 Server with Mailbox role as well as CAS role, then insert the name of the server. You may also first insert the username and use method Check Name.

If the mailbox is on an Exchange 2010 server with only mailbox role, insert the name of an appropriate CAS server. Do NOT use method Check Name, because this method takes the server with the mailbox role.

If you use a CAS-Array, insert then FQDN of the array.

**User Name:** Insert the name of the mailbox, which will send the administrative report.

**Check Name:** Use the “check name” button to resolve the user name you typed into the textbox. GALsync shows an error message if it cannot find the Mailbox. GALsync will confirm if it finds the mailbox. If GALsync finds multiple mailboxes a question mark appears, please use a user name that is unique.

**Subject:** The email header

**Send to:** The SMTP-address of the person who will receive the administrative report

**Test:** This tests if GALsync can send an email to the specified email address, and sends an email to the email address.

**Problem:** The test fails.

**Please Check:**

The GALsync GUI must run in the credentials of the Service Account.

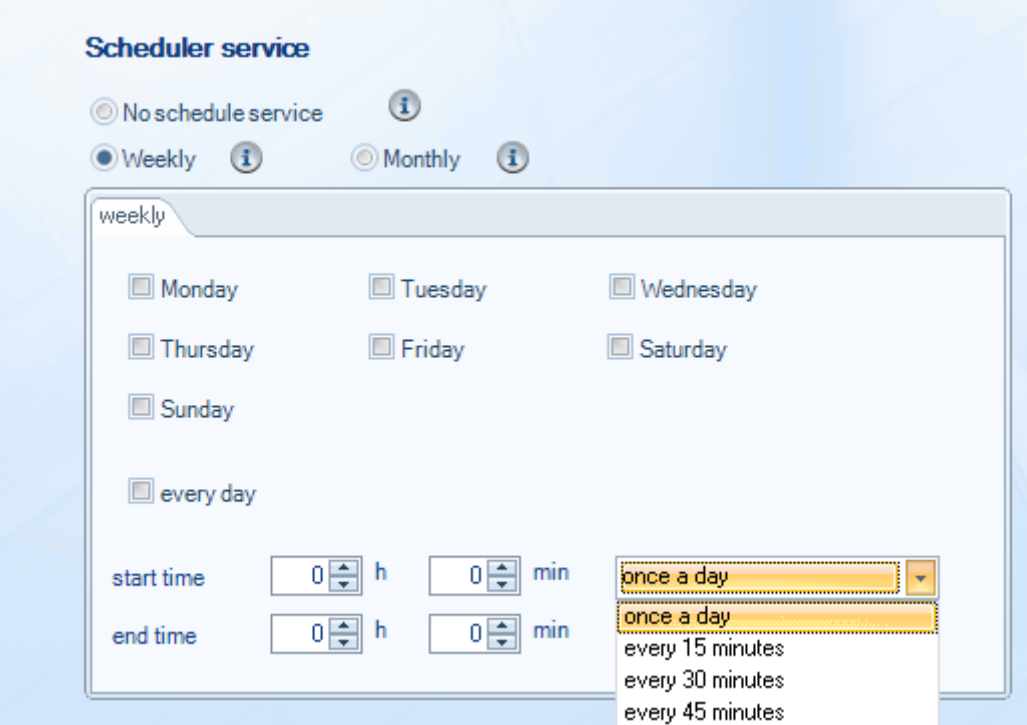
The GALsync Service account must be the OWNER of the mailbox used to send the mail.

If you installed Standalone MAPI/CDO 1.2.1, you must reboot the computer before it will work.

If you use Outlook on the Server with GALsync, it must be 32 Bit and the Standard Profile is for the GALsync Service.

## Schedule Service

GALsync can perform the synchronization of policies automatically.



The screenshot shows the 'Scheduler service' configuration window. At the top, there are three radio buttons: 'No schedule service', 'Weekly', and 'Monthly'. The 'Weekly' option is selected. Below these, there is a tab labeled 'weekly'. Under the 'weekly' tab, there are checkboxes for each day of the week: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, and Sunday. There is also a checkbox for 'every day'. Below the checkboxes, there are two rows of time selection controls. The first row is labeled 'start time' and the second row is labeled 'end time'. Each row has two spinners for hours (0 to 23) and minutes (0 to 59). To the right of the time controls, there is a dropdown menu. The dropdown menu is open, showing the following options: 'once a day', 'once a day', 'every 15 minutes', 'every 30 minutes', and 'every 45 minutes'. The 'once a day' option is selected.

You can schedule weekly or monthly, on different days, the synchronization should be carried out. Furthermore, they can decide between what times and how many times a day the scheduler service works. Here, it is possible to synchronize the scheduler service every 15 minutes, every hour or once a day.

Using start time and end time option GALsync starts only in the defined period. The synchronization itself may take a longer time.

## General

Finally, you can define your own name and description for the created policy.



The screenshot shows a web interface for configuring a policy. It has a light blue background. At the top, the word "General" is written in bold blue text. Below it, there are two main sections. The first section is labeled "Name" in blue text, followed by a small circular icon with an "i" inside. Below this is a single-line text input field. The second section is labeled "Description" in blue text, followed by a similar "i" icon. Below this is a larger, multi-line text area with a vertical scrollbar on the right side. At the bottom of the form, there is a checkbox that is checked, followed by the word "Enabled" in blue text, and another "i" icon.



## Free Busy Information

During the Synchronization of different Mail Organizations GALsync will read the Free/Busy Information for the selected User objects in the Source, and saves these in the Target as Free/Busy information for the synced Contact objects.

GALsync, however, does not synchronize Free/Busy information with every change. You can set the Sync interval to 15 minutes.

GALsync will synchronize Free/Busy Information for two months, the current month and the next. This can be set on the client itself.

**GALsync requires that every Exchange Organization set the Free/Busy data in the Public Folder Store. If you are running Exchange 2007 or Exchange 2010 SP1, you also need the Public Folders.**

Think about this, not only Mail-Enabled Users can have Free/Busy Information, also Mail-Enabled Contacts. Even if a Contact can't logon, use Outlook, and doesn't have a mailbox, it is still possible for it to have Free/Busy Information.

The Free/Busy Information is visible within Outlook, when trying to plan a meeting using the Scheduling Assistant.

The required Free/Busy Information must be replicated on every Exchange Server.

## GALsync Free Busy Matrix

In the Table below, you can see where Outlook can see the Free/Busy Information that is published to the Public Folder Store.

Outlook	Exchange 2003	Exchange 2007	Exchange 2010	Exchange 2010 SP1
<b>2003</b>	Works by default	Works with an unencrypted connection <sup>1</sup>	Update to Exchange 2010 SP1 required	Works with an unencrypted connection <sup>1</sup>
<b>2007</b>	Works by default	Requires a registry key on the client <sup>2</sup> Works with the correct server configuration <sup>3</sup>	Update to Exchange 2010 SP1 required	Requires a registry key on the client <sup>2</sup> or the correct server configuration <sup>3</sup>
<b>2010</b>	Update to Exchange 2010 SP1 required	Works with the correct server configuration	Update to Exchange 2010 SP1 required	Works with the correct server configuration <sup>3</sup>

<sup>1</sup> For all Exchange 2007 / 2010 SP1 turn off the encryption.

<sup>2</sup> For all Outlook 2007 Clients in the Registry add the DWORD "UseLegacyFB" with a value of 1 here:

HKEY\_CURRENT\_USER\Software\Microsoft\Office\12.0\Outlook\Options\Calendar

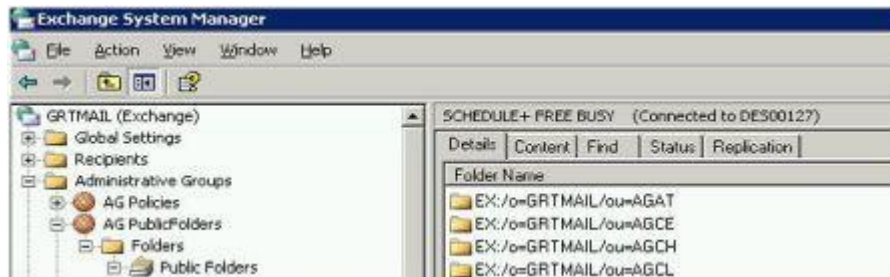
<sup>3</sup> Run the PowerShell Command "Add-AvailabilityAddressSpace" on the Exchange Server.

**Note:** Microsoft will stop supporting Exchange 2003 on the 8th April 2014. As much as we would like to keep compatibility up for all versions, we cannot support an environment, which is no longer supported by the manufacturer himself. Starting on the deprecation of Exchange 2003, GALsync 4 will be completely replaced by GALsync 5.

Within the given scenarios we will support both GALsync 5 and 4 until the 8th April 2014.

## Exchange 2003

Up to Exchange 2003 all Free/Busy Information is stored in the public folders in the "Schedule+ Free/Busy" folder.



For each User/Contact there is a special ".eml" file, which contains the Free/Busy information.

A screenshot of a table titled 'EX:/o=Erste Organisation/ou=Erste administrative Gruppe'. The table has columns: Instance Key, Att?, From, T., and Subject. It contains four rows of data, each representing a user's Free/Busy information.

Instance Key	Att?	From	T.	Subject
cb: 20 lpb: 06...	False	Err:0x8004010F...		USER-/CN=RECIPIENTS/CN=CHARTWIG
cb: 20 lpb: 06...	False	Err:0x8004010F...		USER-/CN=RECIPIENTS/CN=HWKREMER
cb: 20 lpb: 06...	False	Err:0x8004010F...		USER-/CN=RECIPIENTS/CN=MZIMMERMANN
cb: 20 lpb: 06...	False	Err:0x8004010F...		USER-/CN=RECIPIENTS/CN=TSCHMIDT

GALsync uses the same Technique to synchronize Free/Busy Information.

During an Export the .eml files are read.

During an Import the .eml Files are created and linked to the created Contacts.

## Exchange 2007 and Exchange 2010 SP1

After Exchange 2007 the Free/Busy information isn't saved into the Public Folders anymore. Via an Availability Service the information is read directly from the mailbox. Synchronization between Organizations with different Outlook / Exchange versions you must use the Public Folders.

More in Paul Robichaux Blog:

### **Creating a public folder store for Exchange 2007 Free Busy**

[http://paulrobichaux.wordpress.com/2007/05/29/creating\\_a\\_public\\_folder\\_store\\_for\\_excha/](http://paulrobichaux.wordpress.com/2007/05/29/creating_a_public_folder_store_for_excha/)

or

### **Technet Artikel "At Least One Exchange 2007 Public Folder Store is Required"**

<http://technet.microsoft.com/en-us/library/cc655657.aspx>

## Server side Configuration

In order for Outlook 2007 / Outlook 2010 to work in an Exchange 2007 environment with Free/Busy Information in the Public Folder Store we recommend the following is implemented.

The PowerShell Cmdlet "Add-AvailabilityAddressSpace" forces the Availability WebService to look for Free/Busy Information in the Public Folder Store instead of the mailbox calendar. Thereafter, Outlook connects to the Availability WebService, which connects to the Database in the Public Folders.

The cmdlet must be used in every domain that uses GALsync with Free/Busy Information

For Example:

You have an SMTP Domain "us.com" and want to synchronize with your Partner "partner.com". After GALsync synchronizes the contacts, you will find contacts like "[jane.doe@partner.com](mailto:jane.doe@partner.com)" in your Active Directory.

You will need to run the following command: `Add-AvailabilityAddressSpace -ForestName partner.com -AccessMethod PublicFolder`

`iisreset` is required to let the changes take effect.

Result: All Outlook 2007 / 2010 Clients can see the Free/Busy Information from the Imported Contacts.

## Multiple SMTP domains

If your users/contacts are distributed among multiple SMTP domains in the target forest, run the Add-AvailabilityAddressSpace command once for each SMTP domain.

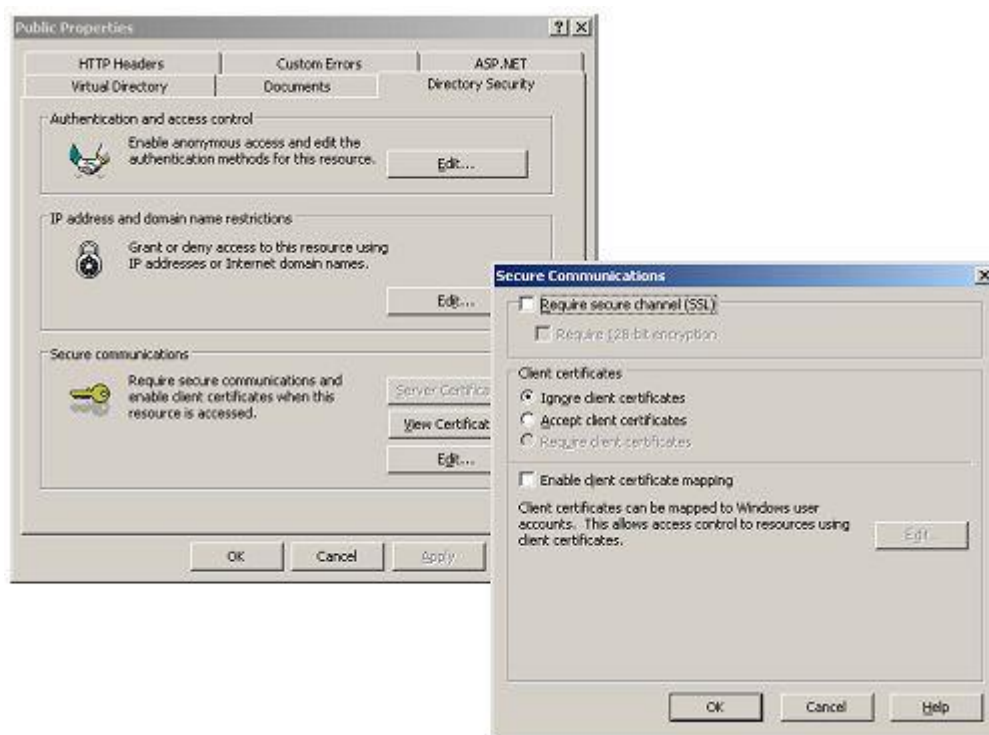
See TechNet Article: **Add-AvailabilityAddressSpace**

<http://technet.microsoft.com/en-us/library/bb124122.aspx>

## Availability Service will make HTTP (not HTTPS) requests against Public Folder data

The Availability Service will make HTTP (not HTTPS) requests against Public Folder data. Because of this, we need to ensure that the /public directory on our CAS does not require SSL. Go into IIS Manager

**Start > Control Panel > IIS Manager > Expand Default Website > Right-Click Public > Directory Security Tab > Uncheck require secure channel (SSL)**



After that a `iisreset` is required to let the changes take effect.

## How to check why Outlook 2007/2010 cannot see the Free/Busy Information?

Prerequisites:

- GALsync imports correctly, no errors occurring.
- Free/Busy Information is present in the Public Folder Store.

You can check that the Free/Busy Information are present in the Public Folder Store via Outlook 2003 or Outlook 2007, when you set the Registry Key (see chapter "Outlook 2007"), or the Microsoft Exchange Server Information Store Viewer (MDBVU32).

You can download this Microsoft tool here:

<http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=1784>

Please also check that SSL is not required for public folder data.

See chapter "Availability Service will make HTTP (not HTTPS) requests against Public Folder data"

If Free/Busy Information is present in the Public Folder Store:

Using Exchange Management Shell (Exchange PowerShell) on CAS Exchange 2010:

Check AvailabilityAddressSpace:

```
Get-AvailabilityAddressSpace
```

If not yet created, create the AvailabilityAddressSpace for every SMTP domain:

```
Add-AvailabilityAddressSpace -ForestName partner.com -  
AccessMethod PublicFolder
```

After that a `iisreset` is required to let the changes take effect.

See chapter „Multiple SMTP domains“.

After that, test the Availability Service:

```
Test-OutlookWebServices -TargetAddress john.doe@partner.com
```

Repair all occurring errors

If Free/Busy Information is not present in the Public Folder Store:

Consult GALsync log files to find any errors while writing the Free/Busy Information. If there are no errors, please check with your partner if his export is running correctly.

### Outlook 2003

Outlook 2003 can only see Free/Busy Information within the Public Folder Store. If you use Exchange 2007 / 2010 SP1, you must create a database for Public Folders.

### Outlook 2007

Outlook 2007 uses the Availability Service for querying contact information. With Exchange 2007 / 2010 SP1, you must correctly configure the server so that Outlook 2007 can find the Free/Busy Information.

We described the process in the prior section: "Exchange 2007 and Exchange 2010 SP1".

In an Exchange 2007 environment, there is also a client side solution for Outlook 2007 **Note:** This is not for Outlook 2010.

The following settings are required:

Run: `regedit.exe`

`HKEY_CURRENT_USER\Software\Microsoft\Office\12.0\Outlook\Options\Calendar`

Add a dword "UseLegacyFB" with value of 1.

You can share this registry key via a Group Policy.

See TechNet Article: **Distributing Registry Changes**

<http://technet.microsoft.com/en-us/library/bb727154.aspx>

### Outlook 2010

Outlook 2010 can see Free/Busy Information when the Exchange environments (2007 – 2010 SP1) are configured correctly. See the section "Exchange 2007 and Exchange 2010 SP1" for more information.

## Cons

One problem of this Architecture is that, all Information is physically present in the Target, which requires hard drive space. The source object is copied to the Target as a contact and the Free/Busy Information is copied into the Store, and linked to the contact. In comparison, newer Architectures due to the Availability Web Service in Exchange 2007 and newer require no physical presence for the objects from other Organizations.

Otherwise, the newer Architecture does not offer access to Free/Busy Information in all topologies; furthermore, they require Internet Access and certificates.

There are multiple synchronization methods with Availability Web Service with Exchange 2007 and higher, however, much synchronization occurs within mixed environments, where various Exchange Versions run simultaneously. These use the Microsoft Federation technology.

## Cross Org Free Busy with Federation Trust and NETsec GALsync

In this blog we comment on GALsync in the Article "Cross Org Availability using Federation Trust and Organization Relationship" - published by The Exchange Team. The Article explains how you can use GALsync and Federation together.

Read More:

<http://www.tools4exchange.com/2011/10/cross-org-freebusy-with-federation-trust-and-netsec-galsync.html>



## How to use GALsync in a migration

### Different SMTP-namespace

In this first part we describe how to use GALsync in inter-org migration. Every mail-organization uses its own SMTP-namespace.

It should be guaranteed that all users can send mails to each other, no matter if they had been moved to the new environment or not.

### Description of source domain

Several mailbox-enabled users, mail-enabled groups and mail-enabled contacts are present in the source forest / Exchange organization.



- The main name space in this example is *a.com*.
- *Peter* and *Angela* are members of group *sales*.
- *Angela* and *external* are members of group *it*.

### What would we like to have and to do?

All mailbox-enabled or mail-enabled objects from *a.com* should be present in the GAL of the target forest / Exchange organization *b.com* so that all users in *b.com* can send mails to objects in *a.com*. Any user that was moved from source to target is to be visible in both GALs and able to receive emails.

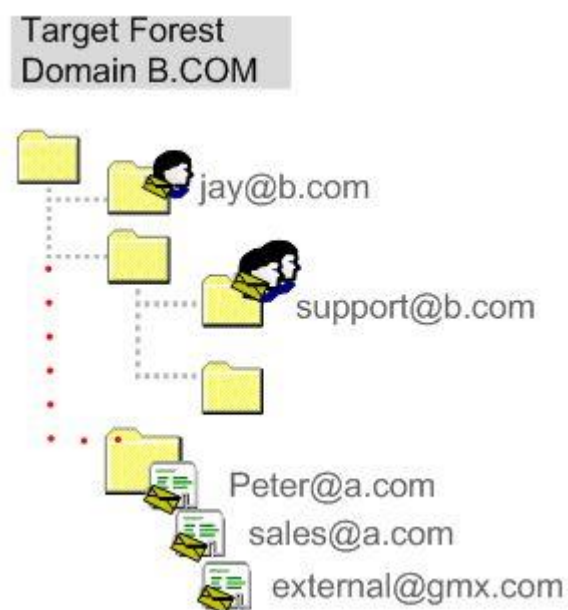
With GALsync you can meet some of these requirements: the software creates all selected objects from *a.com* and creates appropriate mail-enabled contacts in *b.com*. This also works vice versa.

### Description of target domain

In target domain *b.com* there are some objects present prior to migration. *Jay* and *support* are native users and groups.

With GALsync these objects from *a.com* have been imported to a special OU and created as contacts. These objects refer with the attribute *targetAddress* to their original address in *a.com*.

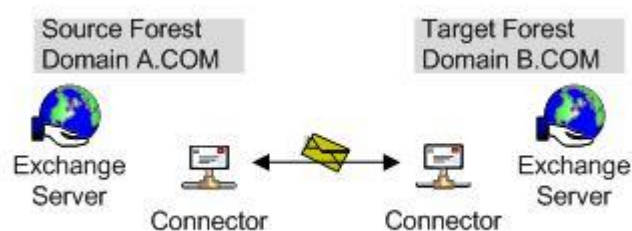
**Result:** *Jay* will now see *Peter* in the GAL of *b.com* by using Outlook and he can send emails to him.



### Path required

There is only one condition for successful sending mail to *Peter*: Exchange in target must know a path to *a.com*. Therefore, the administrator has to configure a route (SMTP-connector) which targets an SMTP-server for the source environment.

If *a.com* is a public name space emails can be sent by using the existing Internet connector. If a special route is available, i.e. VPN company WAN, you may configure a dedicated route.

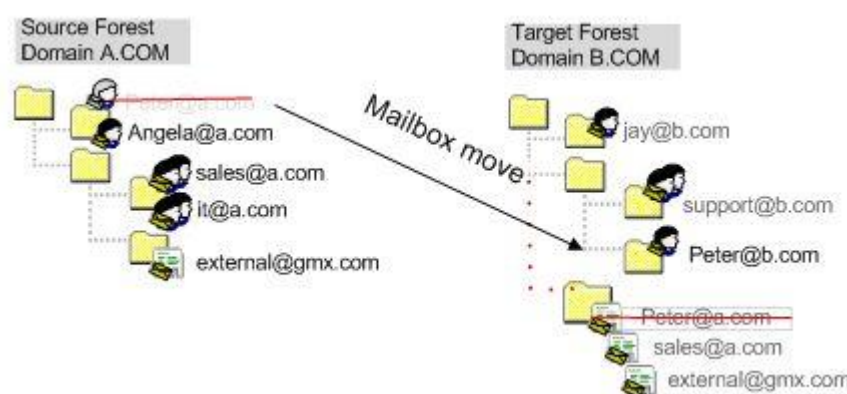


### Migrate a user with mailbox and delete source object

If you now migrate *Peter* from source to target, you can create a new user object in target, move his mailbox to target, and associate the mailbox with the new user. The user object in source can now be deleted.

If GALsync runs the next scheduled time, the contact *Peter@a.com* in target forest *b.com* will be deleted automatically (because in source the object does not exist anymore).

The process of deletion in source has also removed him from sales-group. If *Jay* in target sends an email to *sales@a.com* only *Angela* will receive this mail.



### How to Email now?

**Note:** In this example, Peter cannot get any emails, sent to his old address *peter@a.com*.

In order to have Peter receive emails again, there are two options:

#### Using Auto-Responder

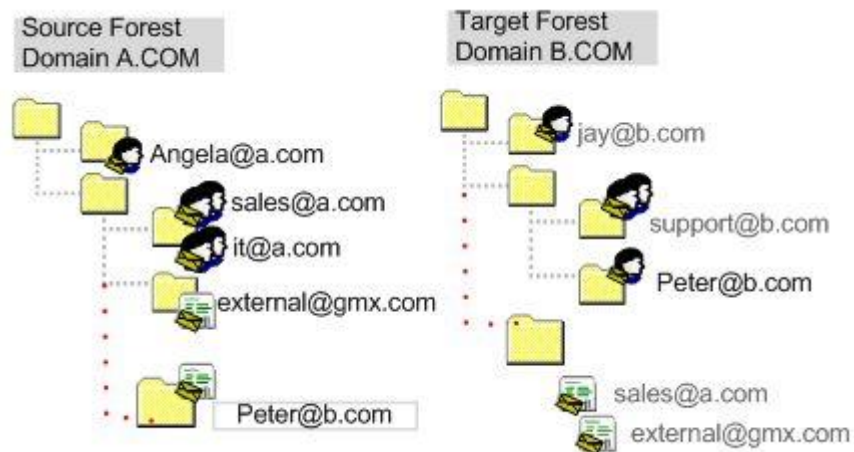
You might want to auto-respond to people still sending mails to *peter@a.com*. The auto-responder message could inform senders by a reply like this: "This address is not valid any more. Please send messages to his new address *peter@b.com*".

The advantage is that incoming mail from internet as well as internal mail to Peter is not accepted anymore and the sender gets a correspondingly notification. The disadvantage of this procedure is the temporary difficulty to communicate with Peter. Internal people at a.com cannot send mails to him using the GAL. This is probably an unacceptable condition in daily business.

## Using Contacts

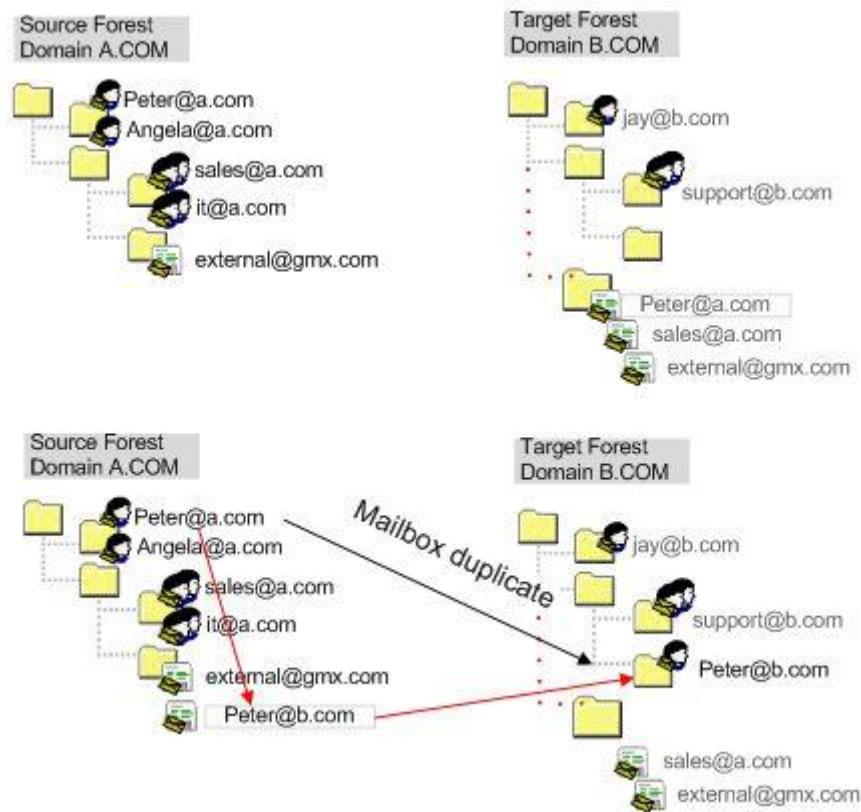
Alternatively, you can publish all mail-enabled contacts of *b.com* also in *a.com*. Therefore, *Peter* would be published in *a.com*'s GAL.

For this task you could use GALsync, so that all internal users at *a.com* can send mails to Peter. Furthermore, *Peter* can be member of the *sales* group in Source forest. Disadvantage: Incoming mail from Internet for *Peter@a.com* will not be accepted as long as there is no mailbox.



## Migrate a user with mailbox by keeping source object with additional contact

You can migrate a user object by creating the user in the target and duplicating the mailbox. In this example the user gets a new smtp-address in target forest.



With GALsync, the *peter@a.com* object is synchronized to forest *b.com*.

The object *peter@b.com* is synchronized to forest *a.com*.

Now all mails to *peter@a.com* from internet and from internal - will be accepted, the user will be visible in GAL of forest A and messages will be forwarded to the migrated user *Peter* in *b.com*.

### Migrate a user with mailbox by keeping source object without additional contact

In this example you would not create an additional contact in source but modify the **targetAddress** of the source mailbox object *peter*.

#### Using targetAddress

Do not delete *Peter's* user object and mailbox in source. Configure the objects property **targetAddress** with its new address *peter@b.com*. Now any email in *a.com* that is sent to the GAL object of *Peter*, will be forwarded to *peter@b.com*. No messages will be stored in his source mailbox. The advantage is that incoming mail from internet as well as internal mail to *Peter* will be accepted and forwarded to his new address in environment *b.com*. The disadvantage is that you have to keep a physical object (with mailbox) in your Active Directory, even though it is not member of this forest anymore.

## Shared SMTP-namespace

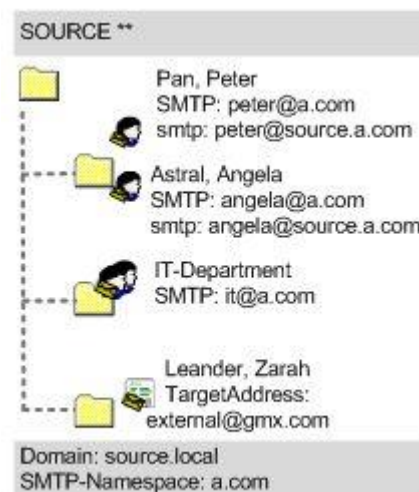
In this second part we describe how to use GALsync for cross-forest migration using exchange shared name space. If a shared SMTP-namespace is present, both organizations will be responsible for all SMTP addresses.

### Description

The source forest has a domain with different mailbox-enabled and mail-enabled objects. The domain name is *source.local*, the SMTP namespace is *a.com*.

We already added a second smtp address to all mailbox-enabled user objects. This address will be used during migration.

You can use the cost-free tool [admodify.net](http://admodify.net) tool to bulk modify objects attribute values.

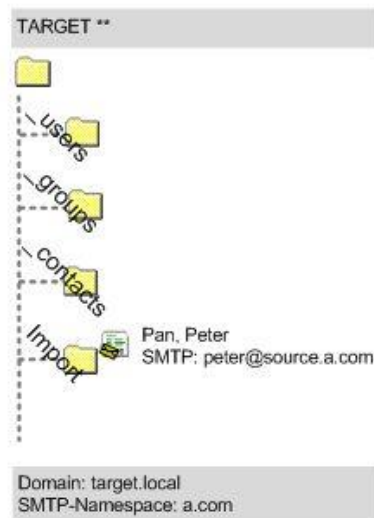


**In next step** we synchronize the source objects to the new target forest's domain. Objects will be created as contacts and placed in a special organizational unit (i.e. *import*). Because both Exchange organizations share their name space we use the secondary SMTP proxy address as new targetAddress. This modification can be done automatically by GALsync.

Chapter "How to create an Import policy"

The contact in the target now refers to the mailbox in the source forest - so it is possible that anyone in target forest can see *peter* in the Global Address List (GAL).

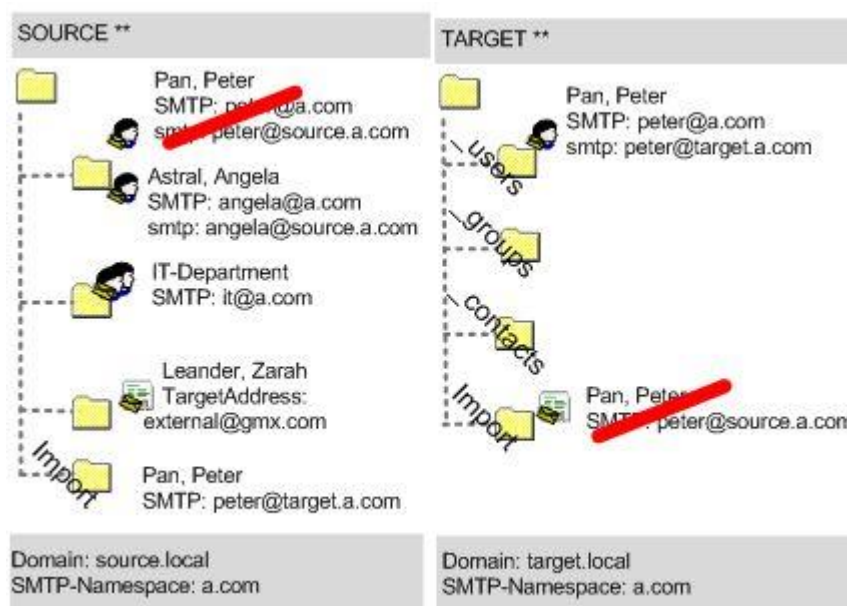
**Note:** Before start of migration you need to configure a routing path in target organization that is able to route messages to the source *a.com*.



**After migrating** *Peter's* user object and mailbox to the target, *Peter's* source object will be deleted. The appropriate target objects secondary smtp-address as *target.a.com*. Next time GALsync synchronization is run *Peter's* contact in target will be deleted, too.

To provide messaging functionalities in both directions, GALsync is installed in target forest, too. It will be configured to synchronize *Peter* back to the source, so that anyone in source can look up *Peter* in GAL. The object *Peter* will be created by GALsync as contact in source referring to *Peter's* address in target.

**Note:** Before migration you need to configure a routing path in source organization, so that (incoming) messages can be routed to *target.a.com*.





## Message Routing

In Microsoft Exchange 2000/2003 organizations, you need to check the option "This Exchange Organization is responsible for all mail delivery to this address".

In Microsoft Exchange 2007/2010 organizations, you need to configure an accepted domain of type internal relay domain.

For more information see these great articles:

### Exchange 2003 SMTP Namespace Sharing

<http://www.msexchange.org/tutorials/Exchange-2003-SMTP-Namespace-Sharing.html>

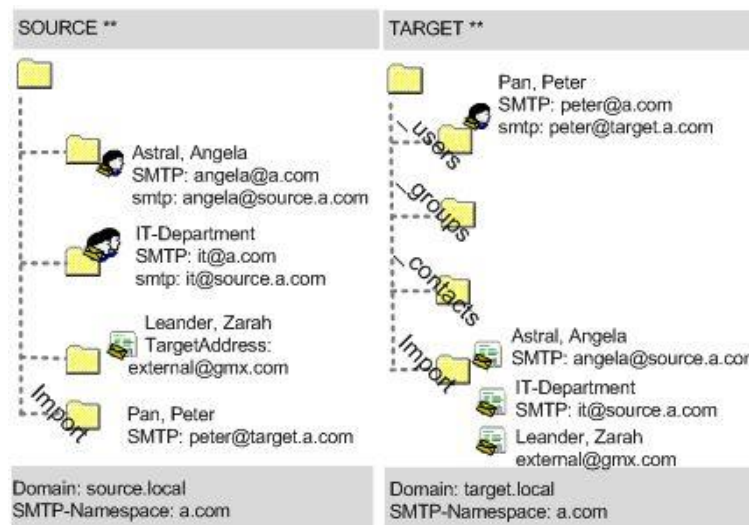
### How to share an SMTP address space in Exchange 2000 Server or in Exchange

<http://support.microsoft.com/kb/321721>

### How to share your Exchange Server 2007 SMTP namespace with another messaging system and how to create internal and external mail relay domains.

[http://www.msexchange.org/articles\\_tutorials/exchange-server-2007/planning-architecture/exchange-2007-smtp-namespace-sharing-different-relay-domain-types.html](http://www.msexchange.org/articles_tutorials/exchange-server-2007/planning-architecture/exchange-2007-smtp-namespace-sharing-different-relay-domain-types.html)

**Finally**, you can provide all addresses to both organizations with GALsync. So everybody will be able to see all objects in Global Address List (GAL) when using Outlook, Outlook Web Access (OWA) or mobile devices.





## Frequently Asked Questions (FAQ)

### Which Exchange Versions does GALsync support?

The synchronization of GALs via GALsync requires primarily Active Directory. GALsync can be used with Exchange 2003 – 2010 SP1 (except 2010 no SP1) and also with AD Versions used in Windows Server 2003 – 2008 R2

**Note:** Your Exchange Server should always be up to date with all Service Packs from Microsoft. We cannot support older versions of Exchange.

### On what servers can I install GALsync?

We recommend installing GALsync on a dedicated server, a file or on a print server of the domain. The server should have a high-bandwidth connection to a domain controller, global catalog and an Exchange server.

### How does GALsync work when there is a firewall or the Internet between the forests?

GALsync addresses exactly this scenario: By synchronizing with SMTP, you go across any border like firewalls and do not lose any security. Further on you may encrypt the data.

### What are GALsync features compared to Microsoft's offer of synchronization?

GALsync only addresses the synchronization of GAL, and for small groups the feature "synchronization of Free Busy information" is available (included in license).

Compared to Microsoft Identity Integration Server (MIIS) or Microsoft Identity Lifecycle Manager 2007 (ILM 2007) or Microsoft Forefront Identity Manager (FIM) 2010, GALsync is much easier to handle, and does not need any additional software (i.e. SQL Server). GALsync itself does not address Identity Management (i.e. with a meta directory).

You may use i.e. Microsoft's federation architecture to get information about foreign forests. But in most cases you need to have the objects of the other site present as contacts in your own directory. That's the point you need GALsync.

### Can I program synchronization by myself with i.e. VBScript?

The first versions of GALsync have been developed with scripts. But keep in mind, that sync is a complex action. It is more than simply copying an object. You need a failback / transaction management, administrative notifications, scheduled execution and so on. Time for developing and testing similar software will take you more than a few months.

### I selected an Organizational Unit with 250 objects to be exported. How can I configure a special object in this OU not to be exported?

Insert the value "NoGALsync" in any of the extension attributes. GALsync will not export any object of this value.

### What happens when the attribute "Hide from address book" of an object is selected?

If the attribute "Hide from address book" is selected the object will not be exported by default. But you can configure GALsync also to export hidden objects.

### What happens to disabled objects?

GALsync will export all mailbox- or mail-enabled objects no matter if they are enabled or not. User or groups must have a SMTP proxy address value; contacts must have a target address value.

### Can I modify attributes when importing?

Yes, you may add pre- or suffixes to attributes' values or change values by using find and replace

### What happens when I move an imported object into another OU?

If GALsync finds an object with the same SMTP-address already existing in a local OU, it will not import the new object. The existing object will not be deleted or modified. If it's not in the import OU no real sync happens any more to this object!

### Company policies enforce to log all modifications to Active Directory objects. How can I log modifications with GALsync?

You can mark all objects, which need to be deleted. They will not be deleted automatically but will be marked for deletion. You can also mark all objects which have been inserted or modified.

### How does GALsync handle mail-enabled groups / distribution groups?

If you select mail-enabled groups or distribution lists for synchronization, only the objects themselves will be exported. In the target the group will be created as mail-enabled contact referring to the original SMTP-address of the source group. Users will be able to see these objects in GAL and can send mails to these addresses but they are not able to look up their memberships.

### What should I do before installation?

The Service Account must be in the Domain that also contains the computer running the Software

The Service Account is not hidden from Exchange Lists.

The Service Account requires Administrative Privileges on the Local Computer, and is allowed to "Logon as a Service". This "Logon as a Service" right is added during the installation process; however, it is possible that your Company Policies remove this right.

Please check if the Service Account can log onto the computer running GALsync, it may occur that this user requires membership in the "Remote Desktop Users" group.

Please verify that the Service Account has the required access to the Import/Export OU(s).

**When using SMTP for transferring data between source and target, what do I have to pay attention to?**

You need to have a mailbox-enabled account (recommended is to use the service account). Before you configure GALsync you should test if the service accounts mailbox can send mails to the other organization.

**May I use only one mailbox for receiving multiple imports from different sites?**

If the exporting site uses a subject, which is different from the subject the importing site uses, you can configure import policies using the same mailbox for receiving.

**What is the maximum number of active configuration policies that can be defined?**

You can create a limitless number of policies. Multiple policies must be scheduled for execution – no concurrent executions are possible. Policies are kept in a queue and will be run sequentially. This is a requested feature for upcoming versions.

Alternatively you can install multiple GALsync instances on different servers (no additional license fee is required) and spread the policies over the machines. So you can schedule multiple policies for the same time.

**Is there any limitation in the number of Exchange forests that can be synchronized?**

You can synchronize a limitless number of Exchange Forests. We have customers with 40 forests using GALsync. You may design a star-architecture synchronizing all branch offices to the Headquarter and receiving all objects from HQ. Effectively everybody needs at least one import and one export policy to be configured.

**What is the maximum number of objects that can be handled in a single configuration policy?**

In a single configuration policy there is no technical limitation in the number of objects you want to select for sync.

## How is the Encryption verified for the Client Access and set to EncryptionRequired=false?

### Exchange 2007/2010

With the following Powershell command you can check the settings.

```
PowerShell> Get-RpcClientAccess
```

or

```
PowerShell>
```

```
Get-MailboxServer ServerName | fl MapiEncryptionRequired
```

With this command you can change the setting.

```
PowerShell> Set-RpcClientAccess -EncryptionRequired $false
```

or

```
PowerShell>
```

```
Set-MailboxServer ServerName -  
MapiEncryptionRequired:$false
```

More Information:

<http://technet.microsoft.com/en-us/library/dd439391%28EXCHG.80%29.aspx>

<http://technet.microsoft.com/en-us/library/dd335190.aspx>

<http://technet.microsoft.com/en-us/library/dd351072.aspx>

## What does the MAPI Error mean?

### **IMsgServiceAdmin::ConfigureMsgService: WSAECONNRESET**

The service account is **not** allowed to be hidden from Exchange lists.

[http://www.red-gate.com/supportcenter/Content?p=Exchange%20Server%20Archiver&c=Exchange\\_Server\\_Archiver%5Cknowledgebase%5CESA\\_WSAECONNRESET.htm](http://www.red-gate.com/supportcenter/Content?p=Exchange%20Server%20Archiver&c=Exchange_Server_Archiver%5Cknowledgebase%5CESA_WSAECONNRESET.htm)

## How to check why Outlook 2007/2010 cannot see the Free/Busy Information?

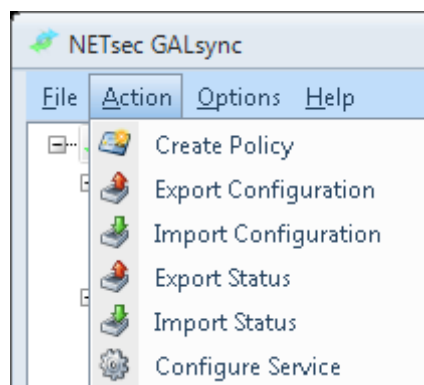
Please read the chapter "*Free Busy Information*".

## Support: What to do when I notice an error / bug?

Please contact our support and give them the following information, otherwise we will not be able to correctly support you:

- Please describe your error thoroughly, in detail, what you wanted to do and what you were doing as the error occurred.
- A screenshot of the error often helps us more than a description
- How is your Active Directory structured? What version is it? What does it Run on (i.e. Windows Server 2008 SP2 DC)
- What is your Exchange Version, and what does it run on? (i.e. Exchange 2010 SP1 on Windows Server 2008 R2)
- What version of GALsync are you using, and where is it installed? (i.e. GALsync 4.2 on Windows Server 2008 R2)
- Are you using MAPI via Outlook, or are you using Standalone MAPI / CDO 1.2.1?
- Are you trying to Synchronize Free/Busy information?
- Which version of Outlook is installed and if not using standalone MAPI / CDO 1.2.1 (i.e. Outlook 2010 x86)
- We also require the configuration and the logs, preferably zipped.

Use the Menu: Action -> Export Configuration to zip the configuration files, and the Menu: Action -> Export Status to zip the log files.



Do you have more questions or need further support than please do not hesitate to contact the GALsync Technical Support.

### **GALsync Technical Support**

Tel.: +49 2421 998 78 20

or Email us at: [support@netsec.de](mailto:support@netsec.de) .