



CONTACTSYNC® v8.5

Manual

NETsec

01. April 2025

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Introduction

contactSync

contactSync synchronizes contacts contained in a Shared Mailbox or in a modern Public Folder into users' mailboxes in the same Exchange environment.

It will also synchronize the Global Address List (GAL) into users' mailboxes, which are in the same environment. Mail-enabled objects of an on-premises Active Directory can be synchronized into Exchange mailboxes from the same Exchange environment and mail-enabled objects from a Microsoft 365 tenant can be synchronized into Exchange mailboxes in the same Exchange environment.

contactSync synchronizes the contacts into a subfolder within the user's mailbox contacts.

contactSync Documentation

<https://www.netsec.de/en/products/contactsync/documentation.html>

GALsync

GALsync synchronizes the Global Address List (GAL) between different Exchange environments, which can be on-premises Exchange environments or Exchange Online of Microsoft 365 tenants.

For each Exchange environment, you can configure which mail-enabled objects will be synchronized as mail-enabled contacts to the other Exchange environments. Also, you can configure how the received mail-enabled objects from the other Exchange environments will be synchronized as mail-enabled contacts to your own Exchange environment.

This will make the mail-enabled objects from the other Exchange environments visible as contacts in the Global Address List (GAL).

Please take a look in the GALsync documentation for further information.

GALsync Documentation

<https://www.netsec.de/en/products/galsync/documentation.html>

How to start?

1. Check out the **System Requirements** and the **Prerequisites**.
2. Check out the **Global Settings** of contactSync.
3. Configure an **Environment Configuration** corresponding to the Exchange environment.
4. Configure the **Policy Configuration** for the corresponding **Environment Configuration**.

Recommendations (Do's and Don'ts)

Suggestions to test contactSync policies

We recommended to test contactSync before using with your production accounts. This way you will prevent any unwanted changes, or impact you might not have considered during setup.

First use some test accounts and groups

Then use only 1-5 real accounts

Schedule without overlaps

It is strongly recommended that you configure the scheduler in such a way, that policies do not overlap. Try the time for each policy will run by a manual execution. After that configure your schedules.

Performance (Exchange Online)

When using any Exchange Online related policy in contactSync, please be aware of the possibility of some lag. This is due Exchange Online being a remote organization, which contactSync connects to using Exchange Online PowerShell and the Exchange Web Services of Exchange Online. This puts contactSync inside any existing limitation Microsoft might apply to the connections.

Licensing

Trial license

It is possible to run contactSync without a license. Please note that in this case only up to 20 mailboxes can be synchronized with contacts for up to 21 days.

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

 Trial version with random results. For purchase please contact sales@netsec.de

If you have any licensing questions or queries, please feel free to contact our **contactSync Sales Team**

by phone +49 2421 998 78 20

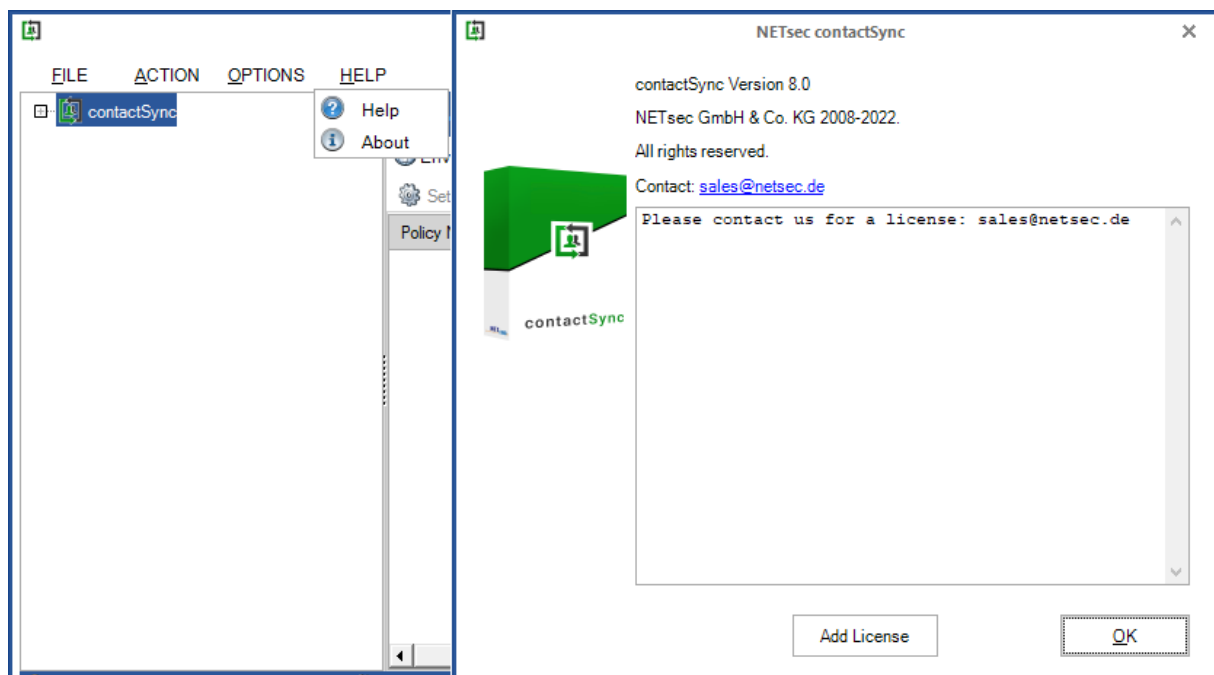
or via e-mail sales@netsec.de

How to add a license


Click **Help** and select **About**.

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

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



How many objects are to be licensed?

 **Counter** Create a contactSync policy, choose the appropriate objects. Then you can count all of the mailboxes which are valid for synchronization and would be synchronized during a run. This can help you choose for how many sync mailboxes you need to license.

System Requirements

Components	Required
OS (64Bit)	Windows Server 2016 Windows Server 2019 Windows Server 2022 Windows Server 2025
Hardware	Processor: minimum dual core RAM: minimum 4GB
Software	.NET Framework 4.8.0 or later Windows PowerShell 5.1 and ExchangeOnlineManagement PowerShell module version 3.6 or later for Exchange Online PowerShell V3
Recommendations	Exchange On-Premises: We recommend to install contactSync on a member server within the domain (e.g., dedicated contactSync server or file server). The machine should be uncritical (e.g., may be restarted without complications). The contactSync server must have a high bandwidth connection to the DC/GC. Exchange Online: See recommendations for on-premises; but you can use also a standalone computer.
Supported Exchange Versions*	Exchange 2013* SP1 and later Exchange 2016 and later Exchange 2019 and later Microsoft 365 Exchange Online

** Microsoft stopped supporting Exchange 2013 on the 11th April 2023. Microsoft stopped supporting for Windows Server 2012 and Windows Server 2012 R2 on the 10th October 2023.*

As much as we would like to keep up compatibility for all versions, we cannot support an Environment, which is no longer supported by the manufacturer.

Prerequisites

Overview

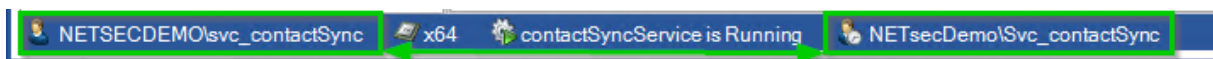
contactSync requires a service account. The contactSync service account is only a domain user in the Active Directory and has an Exchange mailbox. The mailbox of the contactSync service account can be located at the on-premises Exchange or in Exchange Online.

On your contactSync server, the service account should be a local administrator and it should be possible to log on to the server as this account. Remote desktop connectivity may also be required.

Furthermore, the service account on the contactSync server needs the right to run as a service.

It is recommended to run the contactSync GUI always with the credentials of the local contactSync service account.

This can be confirmed on the information bar at the bottom of the contactSync GUI.



Exchange on-premises:

To access the mailboxes on your on-premises Exchange server, the contactSync service account needs to be member of the Exchange **Application Impersonation** role to gain access to the mailboxes to which the contacts are to be synchronized.

Please take a look at the chapter

How to configure Exchange Application Impersonation

Exchange Online:

To access the mailboxes in Exchange Online, you have the option of user-based authentication or certificate-based authentication. Certificate-based authentication for Exchange Online is recommended so the contactSync service account will not require any additional authorizations.

The certificate-based authentication for Exchange Online is described in the chapter **Exchange Online certificate-based authentication via App Registration**

Service Account (on-premises)

The on-premises contactSync service account is a domain user of the on-premises Active Directory.

The on-premises service account is a member of the **Local Administrators** group on the Windows Server, where contactSync is installed.

The on-premises service account needs the local right to **run as a service** on the Windows Server, where contactSync is installed. This permission is added to the service account during the installation.

Make sure you can logon as the on-premises service account to the Windows Server, where contactSync is installed. It is likely that the on-premises service account requires membership in the local **Remote Desktop Users** group.

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

The contactSync Service must run in the credentials of the on-premises service account.

In order to install contactSync you need administrative permission. Setup will also install the contactSync Service on the Windows Server you install contactSync on.

Important: If you configure the logon information for the Active Directory domain service account in the contactSync GUI using on-premises Exchange, it will be necessary use the format domain\username.

Exchange mailbox for the contactSync Service Account

The contactSync service account needs a licensed Exchange mailbox in the environment.

- contactSync must have direct access to the user mailbox of the service account via Exchange Web Services (EWS).
- Ensure that the mailbox is accessible (e.g., by Outlook Web Access).
- Ensure that the mailbox can send and receive email.

On-premises mailbox

For an on-premises Exchange scenario, the on-premises contactSync service account needs a mailbox located on the on-premises Exchange Server.

Exchange Online mailbox

An Exchange Online mailbox for the contactSync service account needs to be licensed with an Exchange Online license in the Microsoft 365 tenant.

For example: Microsoft 365 Business Basic, Exchange Online (Plan 1) or Microsoft 365 E1 license will work for the service account.

Local service account on a standalone server

If you run contactSync on a standalone Windows server, please create a local account for contactSync. This is only valid in Exchange Online cloud-only scenarios.

Please use the local account to configure and run the contactSync Service and the contactSync GUI in the credentials of this local account.

The local account needs the same local permissions as a domain user described above.

The local account will be required to use Modern Authentication for Microsoft 365 Exchange Online. The contactSync Service Account of the Microsoft 365 Exchange Online tenant is independent of this local account.

For example: **contactSync** is a local account of the **standalone Windows server**.

Please run also the contactSync GUI in the credentials of this local account.

Important: If you configure the logon information for the local service account in the contactSync GUI, it will be necessary use the format `computername\username`.

Execution Policy (Microsoft 365 Exchange Online)

If you configure a policy for Microsoft 365 Exchange Online, contactSync needs the parameter **ExecutionPolicy** to be set to **RemoteSigned** for the Windows PowerShell to connect to Exchange Online.

The reason for this is a security setting built into **Windows PowerShell** called execution policy. Execution policy determines how (or if) PowerShell runs scripts. By default, PowerShell's execution policy is set to Restricted; this means that scripts will not run. contactSync requires that scripts can be run.

```
Get-ExecutionPolicy
```

<http://technet.microsoft.com/en-us/library/hh849821.aspx>

```
Set-ExecutionPolicy RemoteSigned
```

<https://technet.microsoft.com/en-us/library/hh849812.aspx>

ExchangeOnlineManagement PowerShell module

contactSync requires **Windows PowerShell 5.1** and **ExchangeOnlineManagement PowerShell module version 3.6 or later** for Exchange Online PowerShell V3.

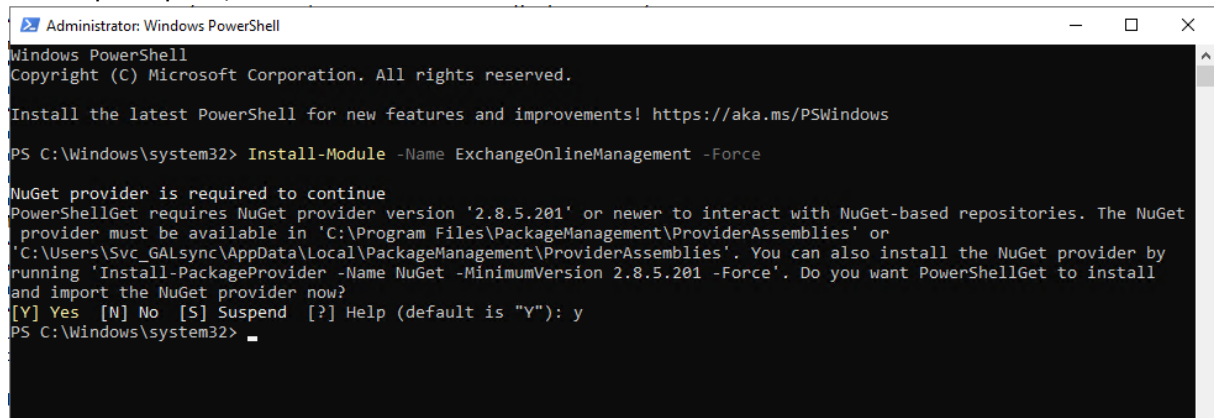
On the contactSync Server you need to install the **ExchangeOnlineManagement PowerShell module** so that contactSync direct can communicate with a Microsoft 365 Exchange Online tenant.

Install ExchangeOnlineManagement PowerShell module

On the contactSync Server, open **Windows PowerShell as Administrator**, then run the following to install:

```
Install-Module -Name ExchangeOnlineManagement -Force
```

When prompted, enter **Y** for Yes then Return



```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Windows\system32> Install-Module -Name ExchangeOnlineManagement -Force

NuGet provider is required to continue
PowerShellGet requires NuGet provider version '2.8.5.201' or newer to interact with NuGet-based repositories. The NuGet
provider must be available in 'C:\Program Files\PackageManagement\ProviderAssemblies' or
'C:\Users\Svc_GALsync\AppData\Local\PackageManagement\ProviderAssemblies'. You can also install the NuGet provider by
running 'Install-PackageProvider -Name NuGet -MinimumVersion 2.8.5.201 -Force'. Do you want PowerShellGet to install
and import the NuGet provider now?
[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): y
PS C:\Windows\system32> _
```

Please have look at the **Prerequisites for the Exchange Online PowerShell module** chapter of the **Microsoft Docs: About the Exchange Online PowerShell module**

<https://learn.microsoft.com/en-us/powershell/exchange/exchange-online-powershell-v2?view=exchange-ps#install-the-exchange-online-powershell-module>

Update ExchangeOnlineManagement PowerShell module

On the contactSync Server, open **Windows PowerShell as Administrator**, then run the following to update:

```
Update-Module -Name ExchangeOnlineManagement -Force
```

Please have look at the **Prerequisites for the Exchange Online PowerShell module** chapter of the **Microsoft Docs: About the Exchange Online PowerShell module**

<https://learn.microsoft.com/en-us/powershell/exchange/exchange-online-powershell-v2?view=exchange-ps#update-the-exchange-online-powershell-module>

How to install a specific version of Exchange Online PowerShell?

This applies if you need a specific version of the Exchange Online PowerShell module in **Windows PowerShell 5.1** on the Windows Server, because a higher version does not currently work.

Start the Windows PowerShell as Administrator

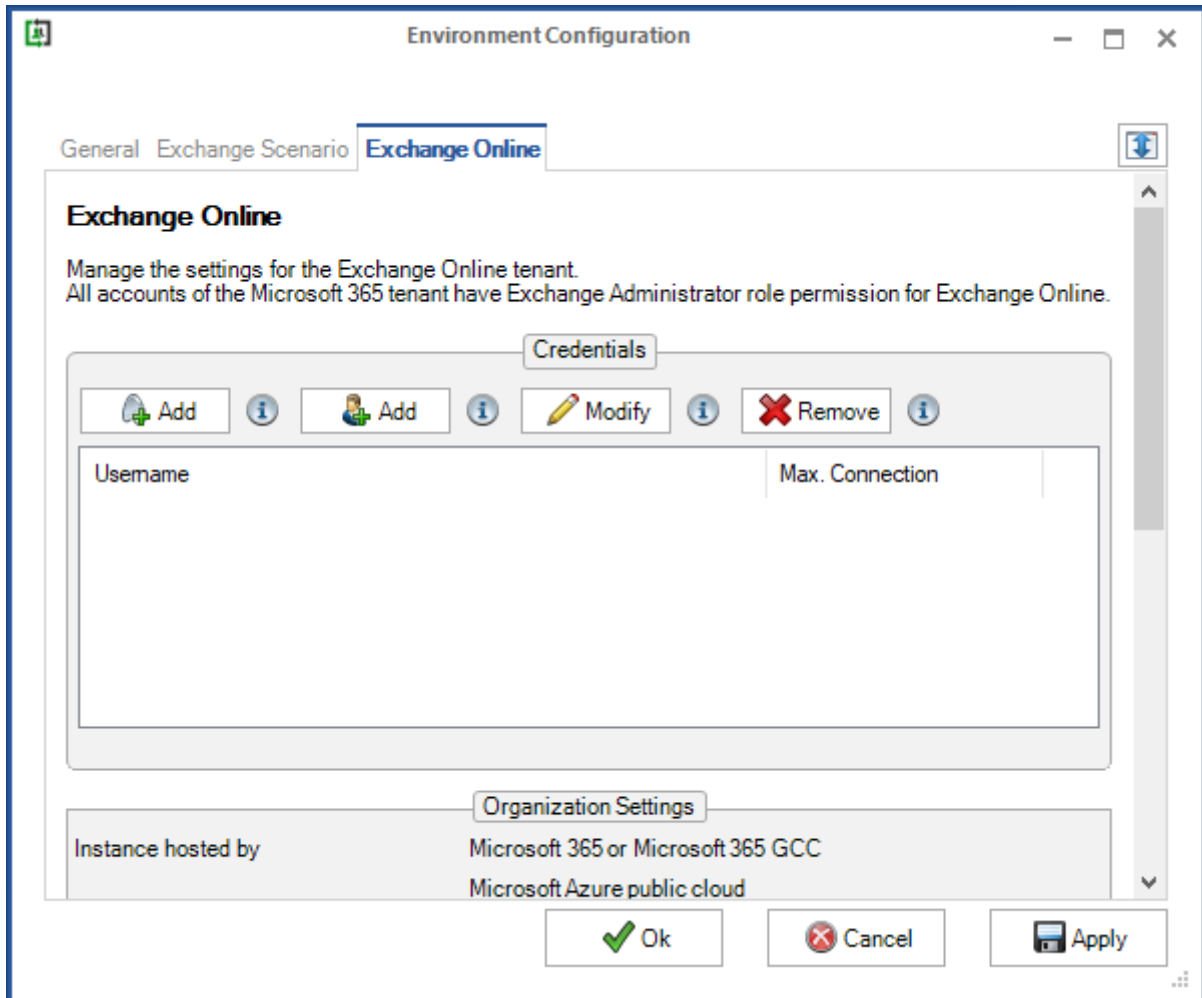
```
# Uninstall all existing versions
Uninstall-Module -Name ExchangeOnlineManagement -AllVersions;
```

```
# Install the required version, e.g. version 3.6.0
Install-Module -Name ExchangeOnlineManagement -RequiredVersion 3.6.0 -Force;
```

```
# Check installed version
Import-Module ExchangeOnlineManagement; Get-Module ExchangeOnlineManagement;
```


Exchange Online authentication via App registration or Service Account

There are two available methods to establish a connection to Exchange Online on the Exchange Online tab in the **Environment Configuration**.



Note, the user-based authentication is deprecated. The certificate-based authentication is recommended.

Please note, that user-based authentication via OAuth 2.0 works only for the Microsoft Azure Public Cloud instance. If your Microsoft 365/Office 365 instance is hosted by a national cloud, please use **Exchange Online certificate-based authentication via App Registration**.

Exchange Online certificate-based authentication via App registration

The **Add** button on the left, will open a dialog window in which to configure **certificate-based authentication** via **App registration** for the Exchange Online tenant.

General Exchange Scenario **Exchange Online**

Exchange Online

Manage the settings for the Exchange Online tenant.
All accounts of the Microsoft 365 tenant have Exchange Administrator role permission for Exchan

Credentials

+ Add ⓘ + Add ⓘ ✎ Modify ⓘ ✖ Remove ⓘ

Exchange Online App Registration

Corresponding settings for the Enterprise Application in the Microsoft Entra ID (formerly Azure AD) App registrations that enables access to Exchange Online.

Organization / Tenant ⓘ

Application Display Name ⓘ

Application ID ⓘ

Certificate

Friendly Name	FriendlyName
Not After	Not After
Subject	Subject
Thumbprint	Thumbprint
Has PrivateKey	Has PrivateKey
User	User

Choose Certificate Create Certificate ⓘ

Assigned API permissions

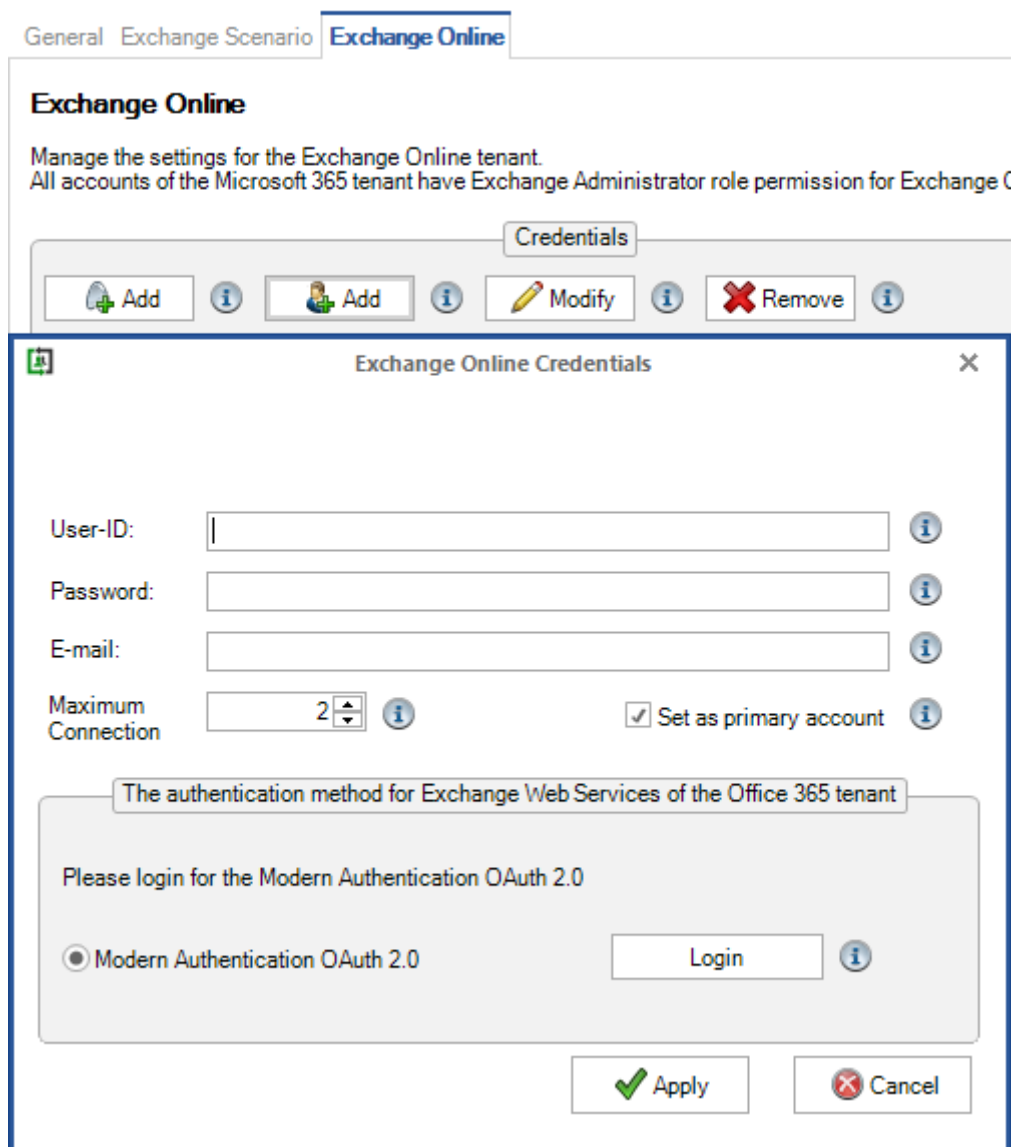
Detailed description is in chapter
Exchange Online certificate-based authentication via App Registration

Exchange Online authentication via Service Account

The **Add** button on the right, will open a dialog window in which to configure **user-based authentication** via **Service Account** for the Exchange Online tenant.

Note, the user-based authentication is deprecated. The certificate-based authentication is recommended.

*Please note, that user-based authentication via OAuth 2.0 works only for the Microsoft Azure Public Cloud instance. If your Microsoft 365/Office 365 instance is hosted by a national cloud, please use **Exchange Online certificate-based authentication via App Registration**.*

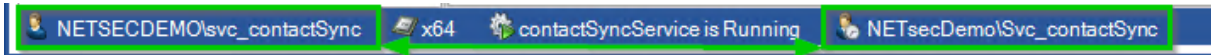


Detailed description is in chapter
Exchange Online authentication via Service Account

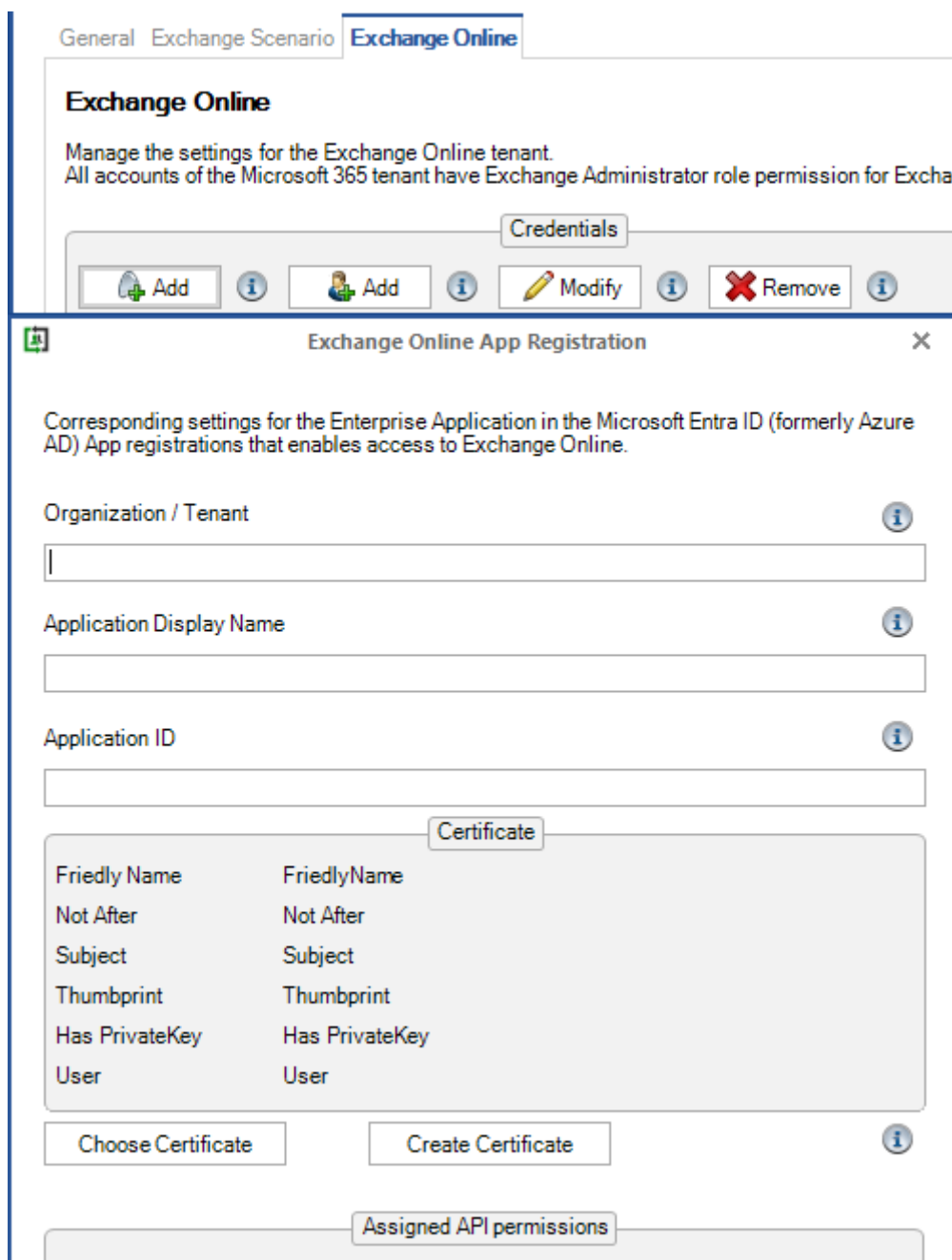
Exchange Online certificate-based authentication via App Registration

First, please verify the contactSync GUI is running in the credentials of the local contactSync service account, otherwise contactSync cannot decrypt the Application Id and cannot find the certificate later.

This can be confirmed on the information bar at the bottom of the contactSync GUI.



Register an Enterprise Application in the **Microsoft Entra admin center** (formerly known as **Azure Active Directory admin center**) and enter the corresponding values in the **Exchange Online App Registration** dialog.



The following description is based on the **Microsoft Documentation** article:

App-only authentication for unattended scripts in Exchange Online PowerShell and Security & Compliance PowerShell

<https://learn.microsoft.com/en-us/powershell/exchange/app-only-auth-powershell-v2?view=exchange-ps>

Exchange Online App Registration

Corresponding settings for the Enterprise Application in the Microsoft Entra ID (formerly Azure AD) App registrations that enables access to Exchange Online.

Organization / Tenant i

Application Display Name i

Application ID i

Certificate

Friendly Name	FriendlyName
Not After	Not After
Subject	Subject
Thumbprint	Thumbprint
Has PrivateKey	Has PrivateKey
User	User

Choose Certificate Create Certificate i

Assigned API permissions

Microsoft Graph i

Exchange Web Services i

Maximum Connection i Set as primary account i

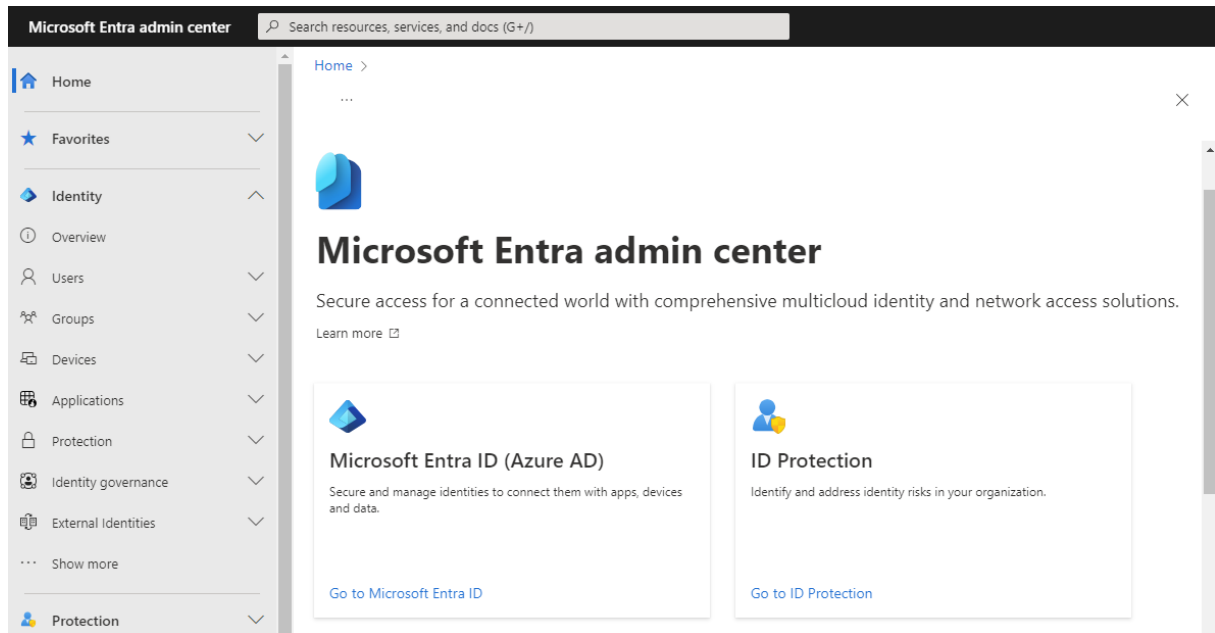
Email Address i

Apply Cancel

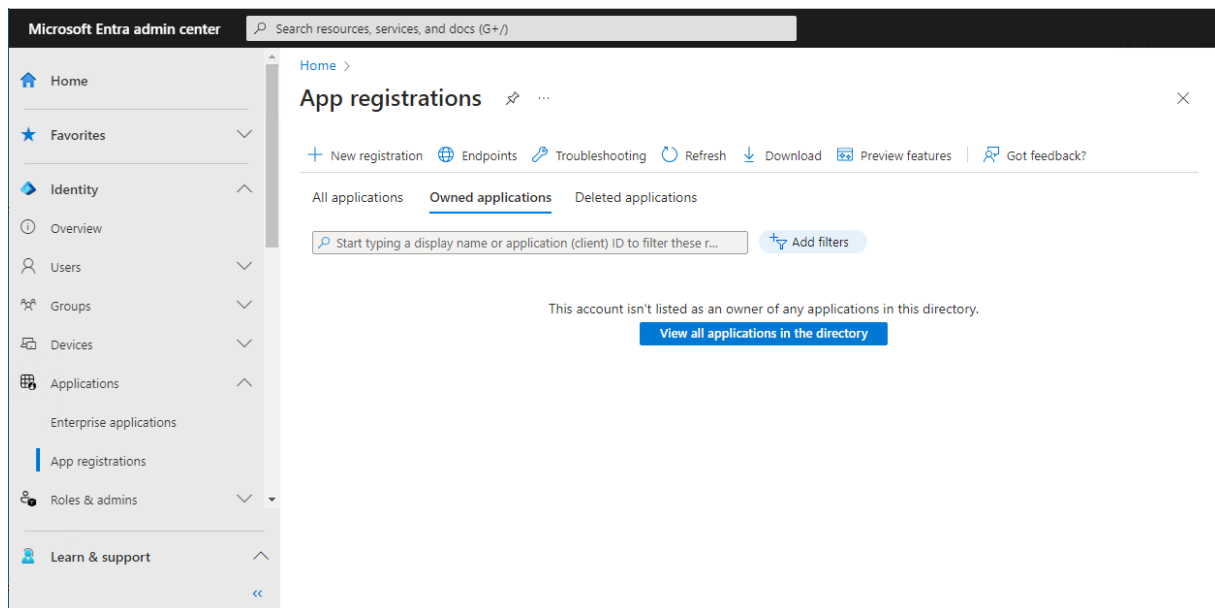
Register an Enterprise Application in Microsoft Entra ID

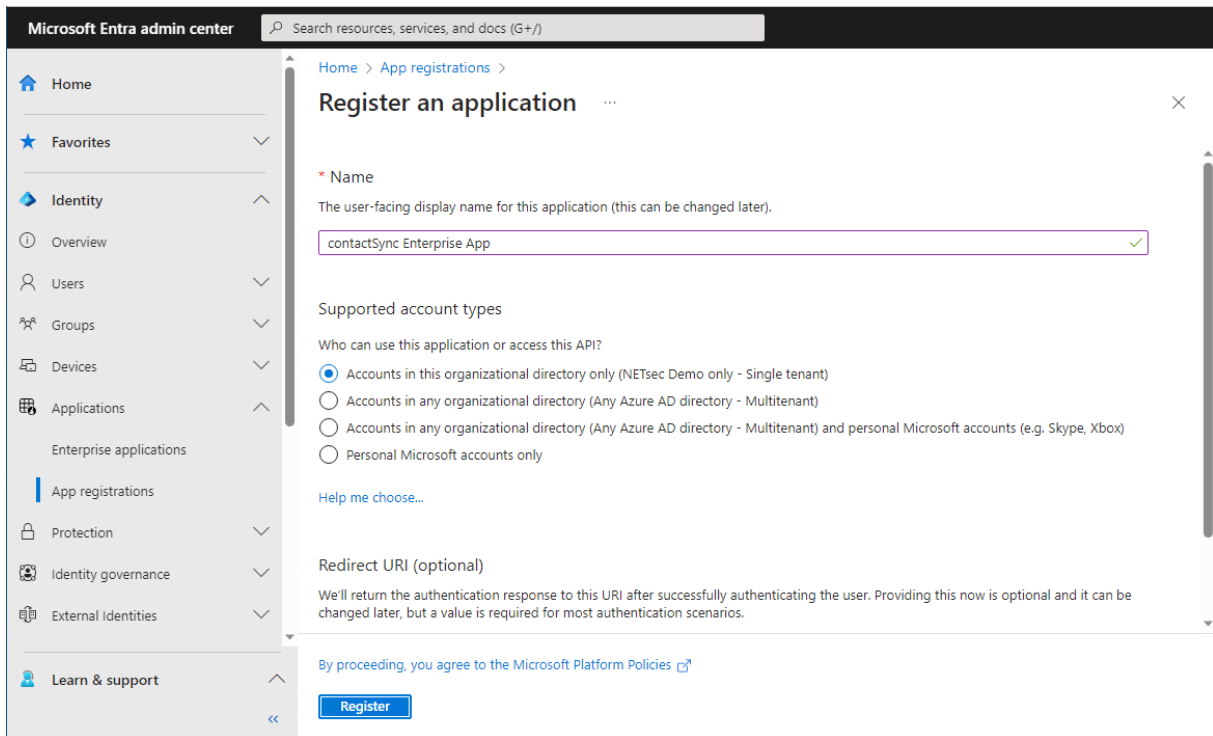
Logon to the **Microsoft Entra admin center** <https://entra.microsoft.com>

as a global administrator and expand **Identity** (formerly Azure Active Directory).



Expand **Applications** and go to **App registrations**. Then select **New registration**.



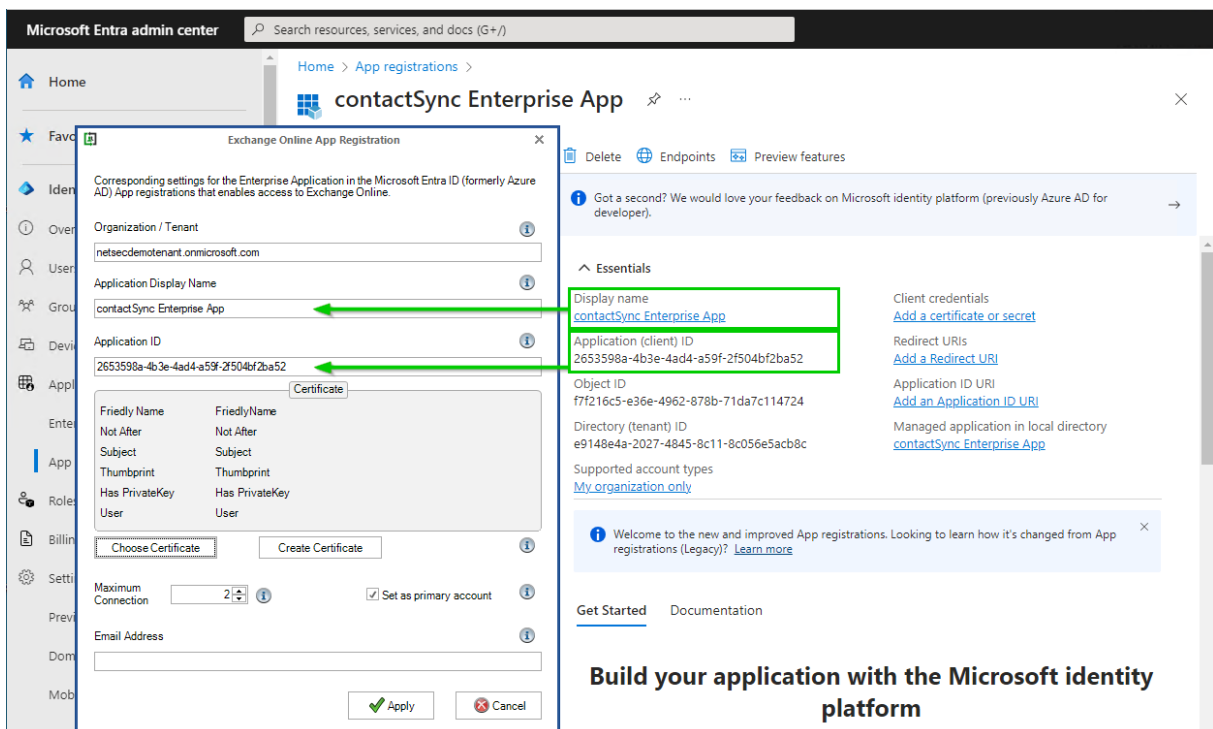


Enter a name for the **Application**.

In this example, it has been named **contactSync Enterprise App**.

Select the **Accounts in this organizational directory only (<YourOrganizationName> only - Single tenant)** radio button and click **Register**.

Transfer the information of the registered Application to the **Exchange Online App Registration** dialog.

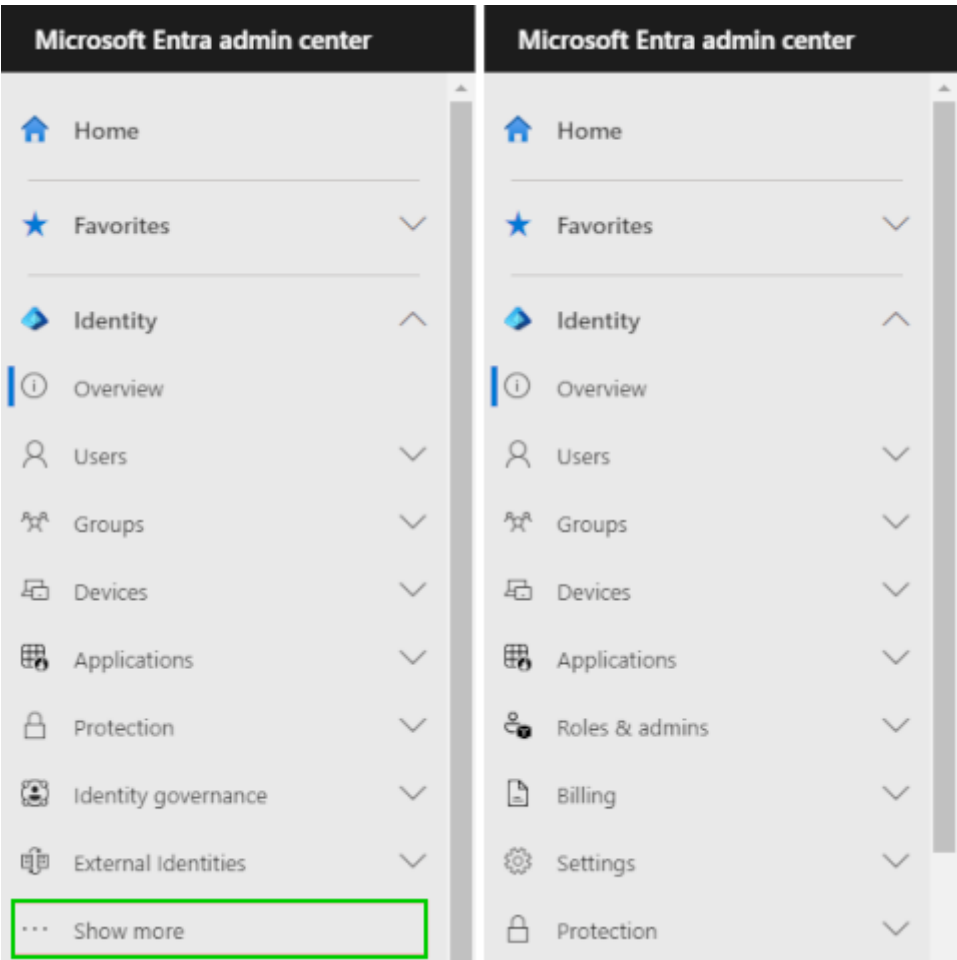


Organization / Tenant needs the **.onmicrosoft.com** domain name of the Microsoft 365 tenant. Otherwise, you may encounter cryptic permission issues when you run a policy in the app context. The next chapter will describe where to find the domain name of the Microsoft 365 tenant.

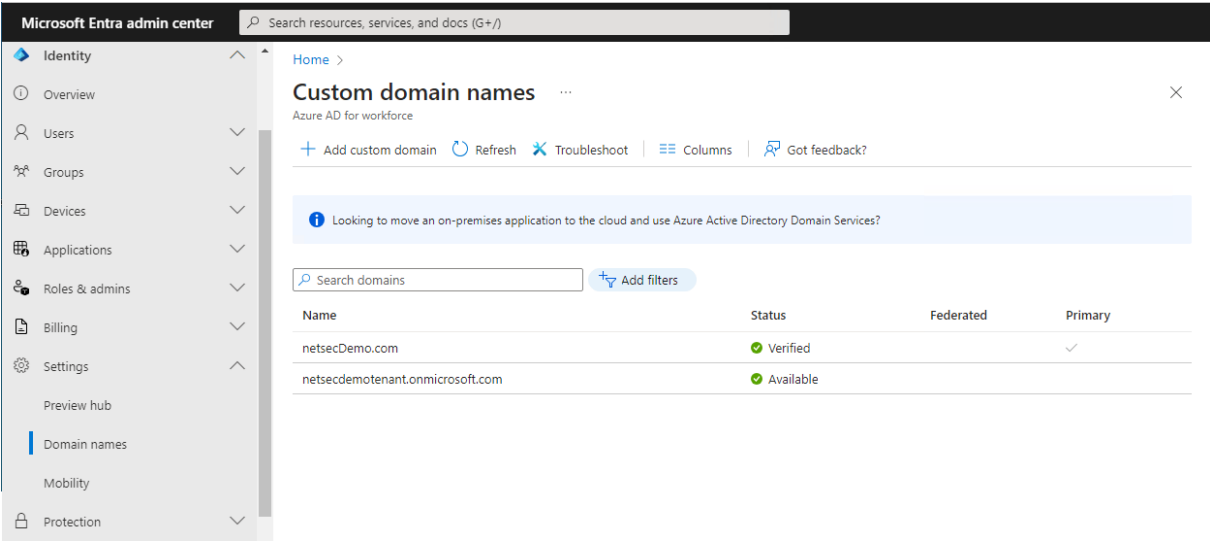
Application Display Name must have the value of the **Display name** of the registered Application.

Application ID must have the value of the **Application (Client) ID** of the registered Application.

Where to find the domain name of the Microsoft 365 tenant?
Click **Show more** to see **Settings**



Expand **Settings**, go to **Domain names** and use the **.onmicrosoft.com** domain name.



Please do not confuse the Microsoft 365 tenant domain names with the Exchange Online accepted domains.

Certificate for the registered Application

For app-only authentication in **Microsoft Entra ID** (formerly known as Azure Active Directory), you typically use a certificate to request access. Anyone who has the certificate and its private key can use the application, and the permissions granted to the application.

Exchange Online App Registration

Corresponding settings for the Enterprise Application in the Microsoft Entra ID (formerly Azure AD) App registrations that enables access to Exchange Online.

Organization / Tenant *i*
netsecdemotenant.onmicrosoft.com

Application Display Name *i*
contactSync Enterprise App

Application ID *i*
2653598a-4b3e-4ad4-a59f-2f504bf2ba52

Certificate

Friendly Name	NETsecDemo from contactSync Server
Not After	2025-08-18
Subject	CN=NETsecDemoFromContactSyncServer
Thumbprint	7719A99A5BA61FD9F72E3CD9D51783D79DCB254F
Has PrivateKey	True
User	NETSECDEMO\svc_contactSync

Choose Certificate Create Certificate *i*

Assigned API permissions

Microsoft Graph *i*

Exchange Web Services *i*

Maximum Connection: *i* Set as primary account *i*

Email Address *i*

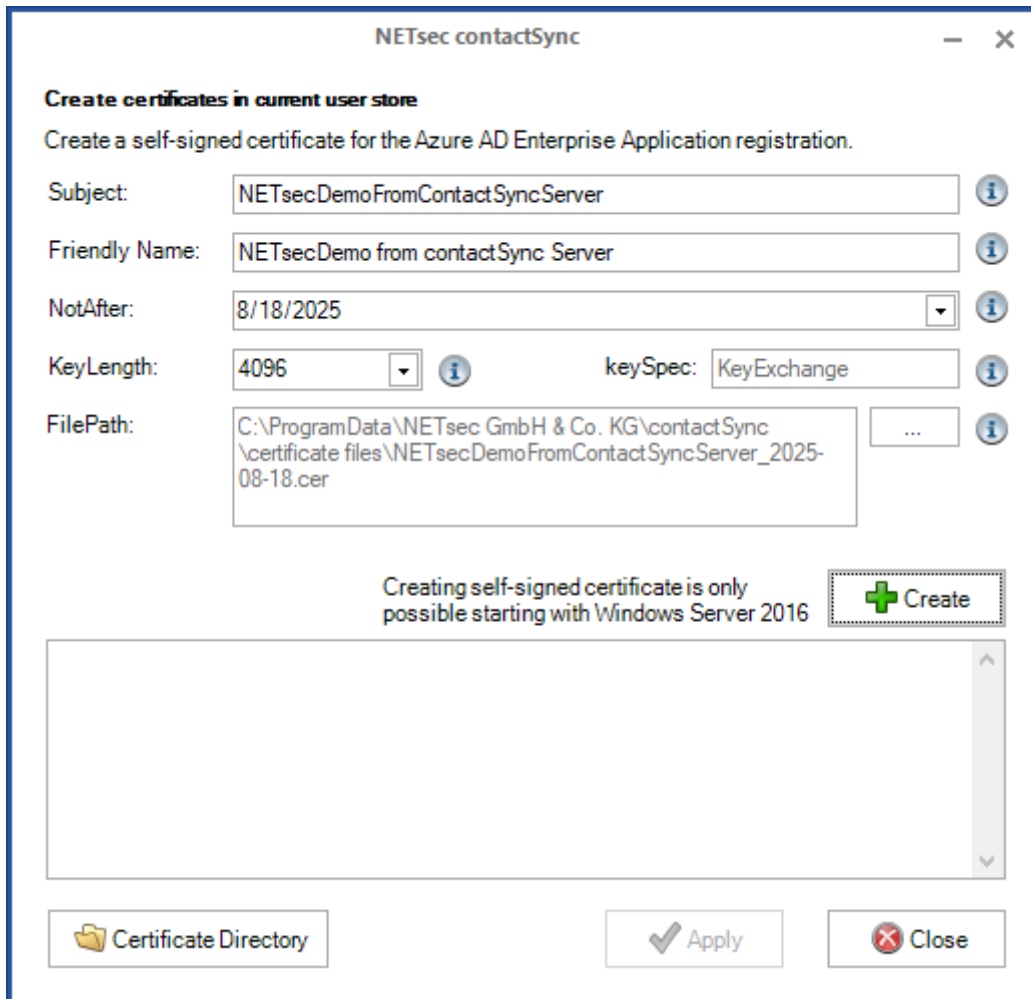
Choose Certificate

Choose an existing certificate and its private key from the user certificate store of the current user, which runs the contactSync GUI.

The corresponding public key file of this selected certificate must be uploaded to the registered Application.

Create Certificate

Create a self-signed certificate, which will be saved in the current user certificate store and will be used to authenticate your Application against **Identity** (formerly Azure Active Directory), while requesting the app-only access token.

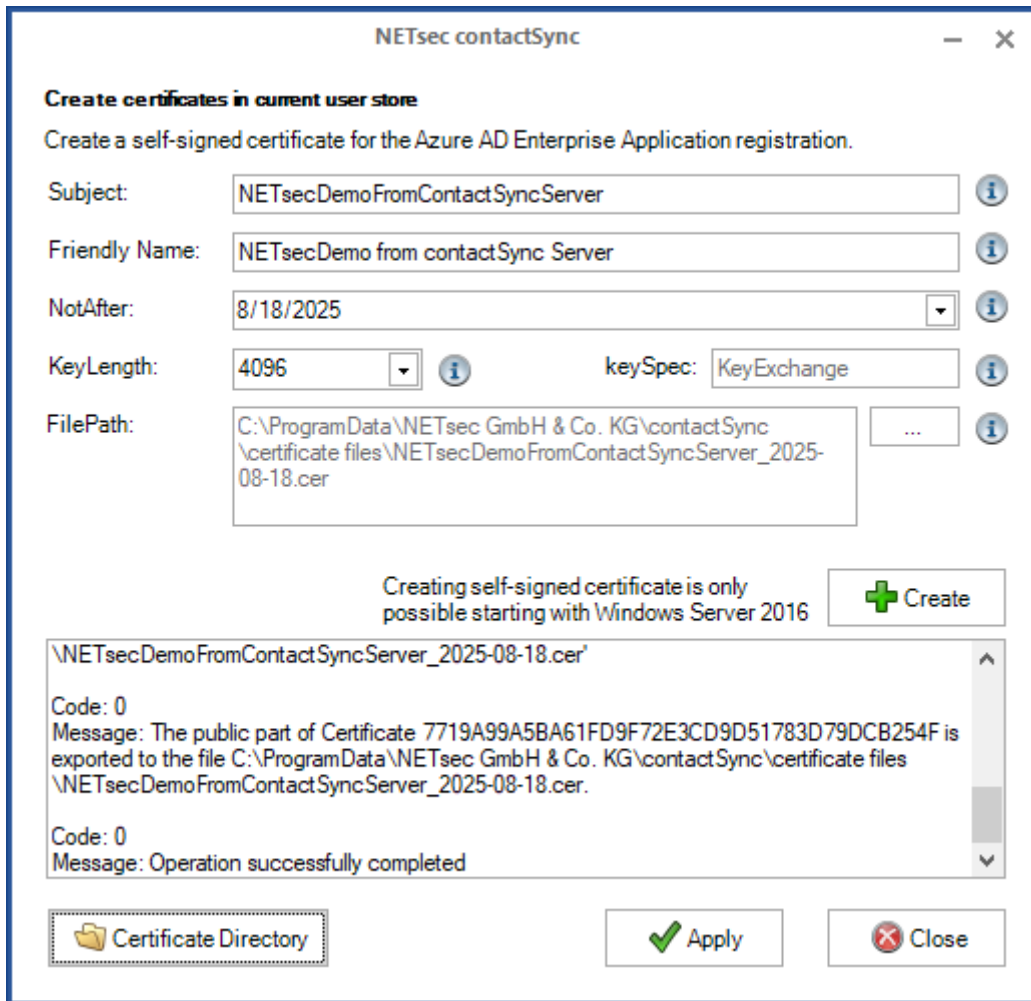


The screenshot shows a dialog box titled "NETsec contactSync" with a close button in the top right corner. The main heading is "Create certificates in current user store". Below this, a sub-heading reads "Create a self-signed certificate for the Azure AD Enterprise Application registration." The dialog contains several input fields: "Subject" with the value "NETsecDemoFromContactSyncServer", "Friendly Name" with "NETsecDemo from contactSync Server", "NotAfter" with a date picker set to "8/18/2025", "KeyLength" with a dropdown set to "4096", and "keySpec" with a dropdown set to "KeyExchange". The "FilePath" field contains a long path: "C:\ProgramData\NETsec GmbH & Co. KG\contactSync\certificate files\NETsecDemoFromContactSyncServer_2025-08-18.cer". To the right of the "FilePath" field is a button with three dots. Below the input fields, a message states "Creating self-signed certificate is only possible starting with Windows Server 2016" next to a "Create" button with a green plus icon. At the bottom of the dialog are three buttons: "Certificate Directory" (with a folder icon), "Apply" (with a checkmark icon), and "Close" (with a red X icon).

Enter the **Subject**, and **Friendly Name** of the certificate.

In the example above, the forest name (NETsecDemo) and the name of the server (contactSync Server) from which the connection is established will be incorporated in both.

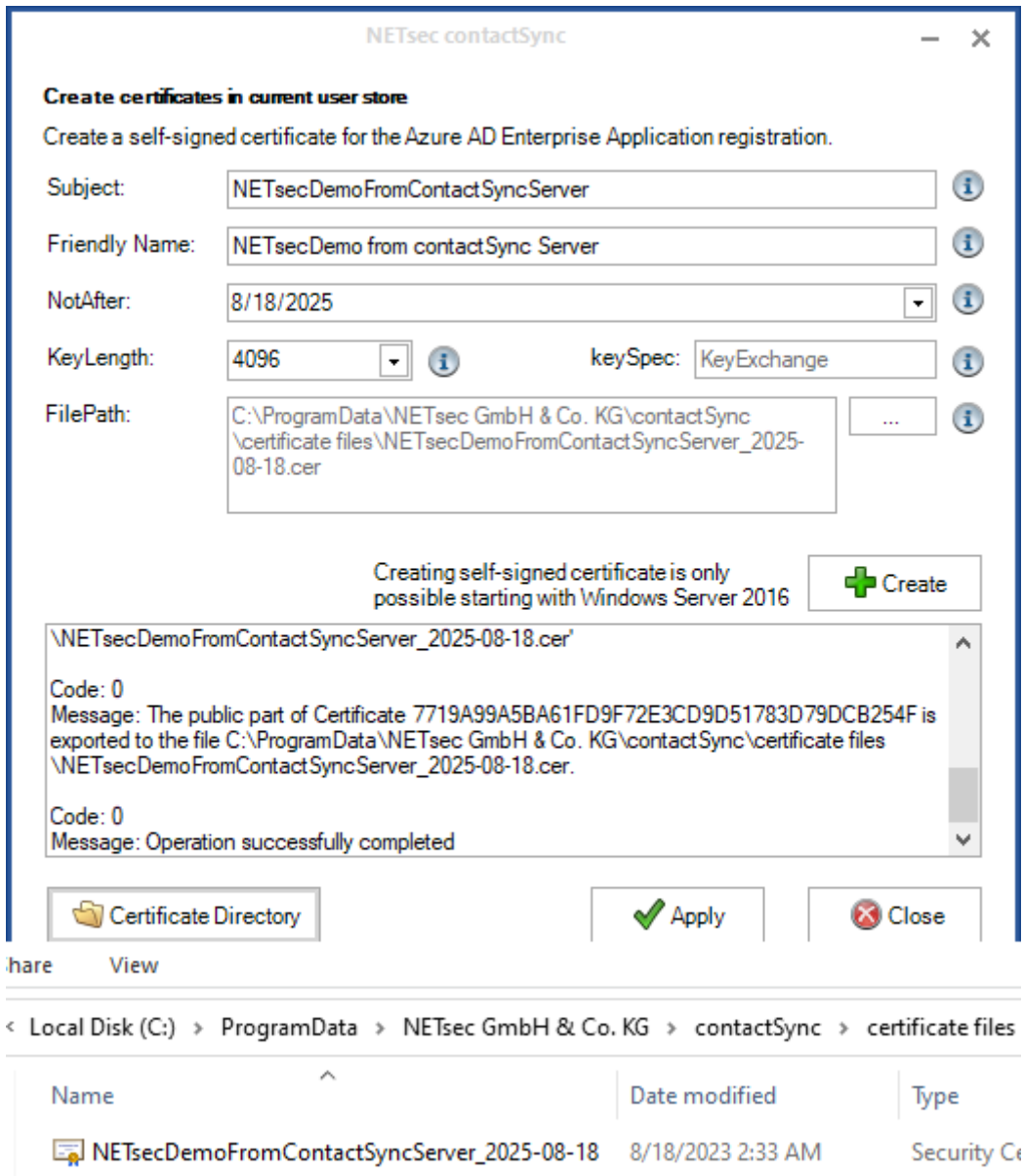
Click **Create** to generate a new certificate.



The public key file is created in the default path

```
C:\ProgramData\NETsec GmbH & Co. KG\contactSync\certificate files\
```

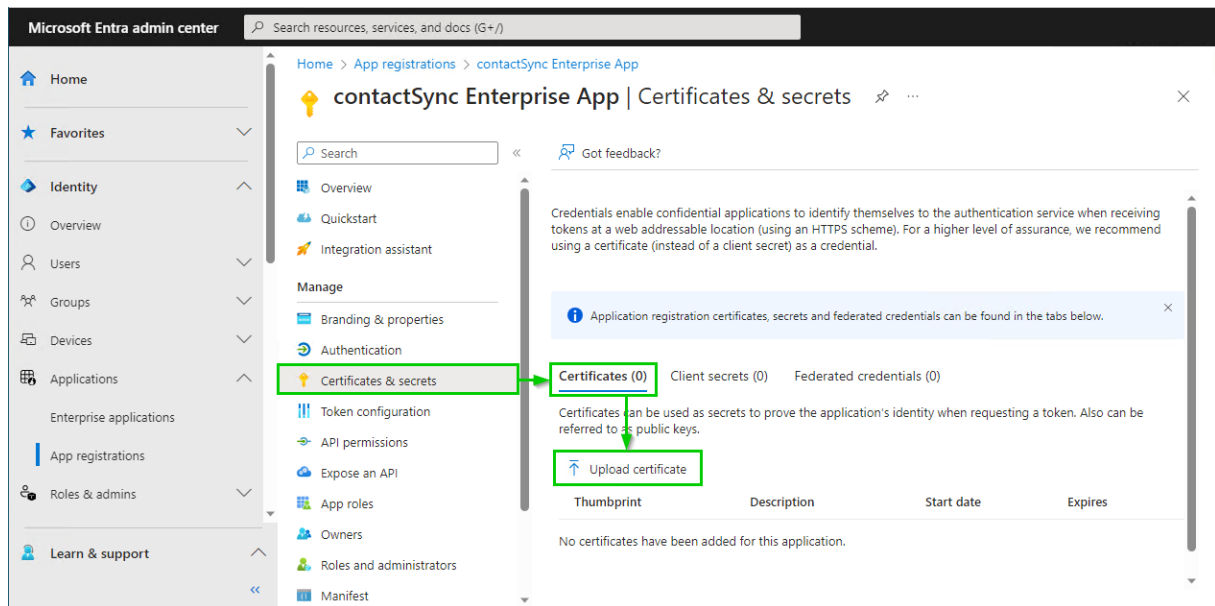
Click on the **Certificate Directory** button to open the folder in **File Explorer**



Then click **Apply** to close the Create Certificate dialog.

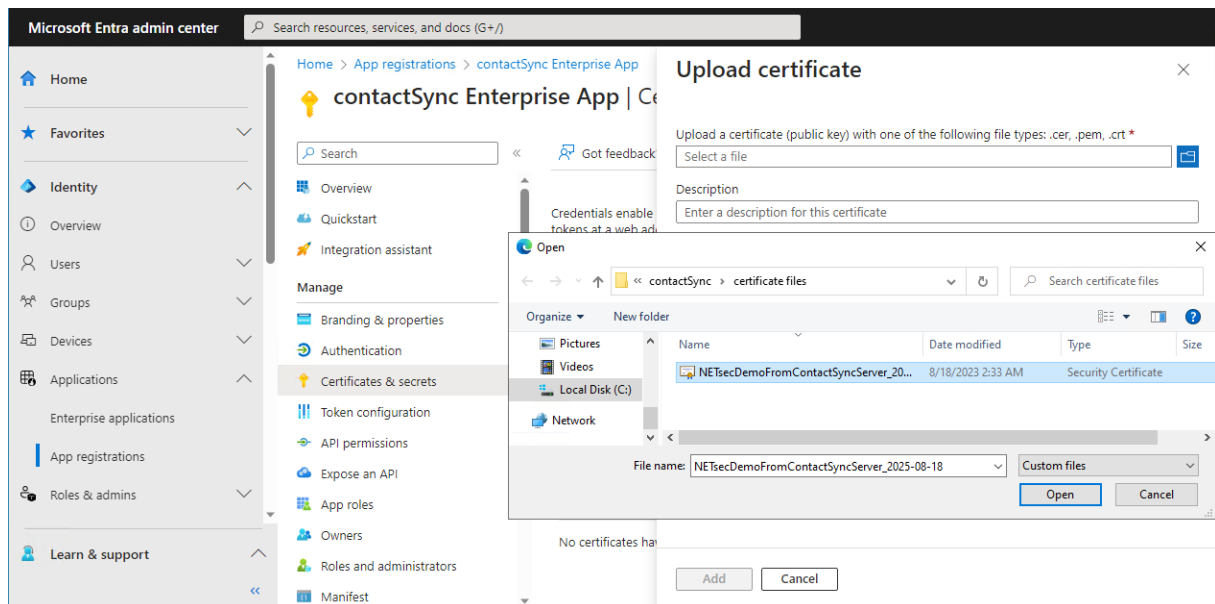
Upload certificate file for the registered Application

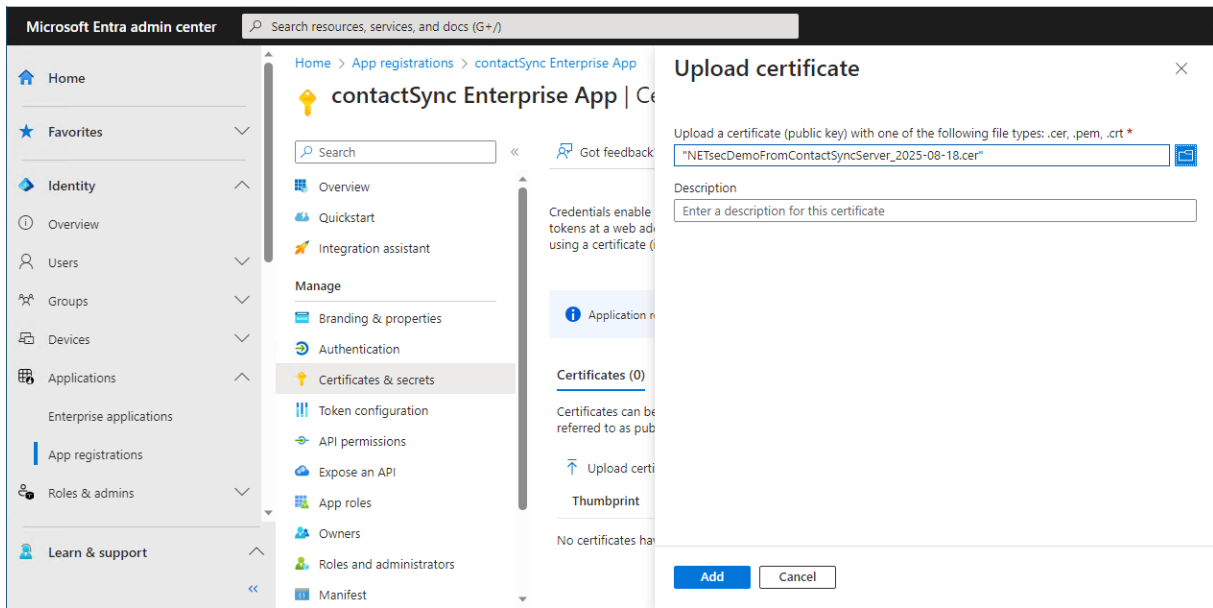
Go to **Certificates & secrets** of the registered Application in **Microsoft Entra ID (Azure AD)**, and select the **Certificates** tab.



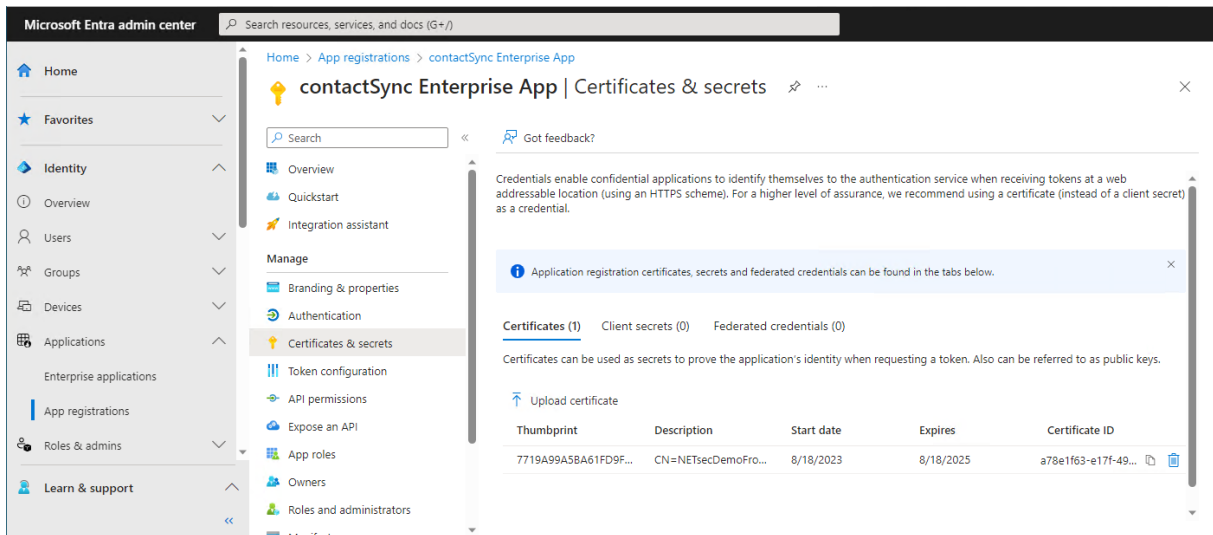
Select **Upload certificate**, then browse to the location where the certificate was saved. Select, and open it. The default path is:

```
C:\ProgramData\NETsec GmbH & Co. KG\contactSync\certificate files
```





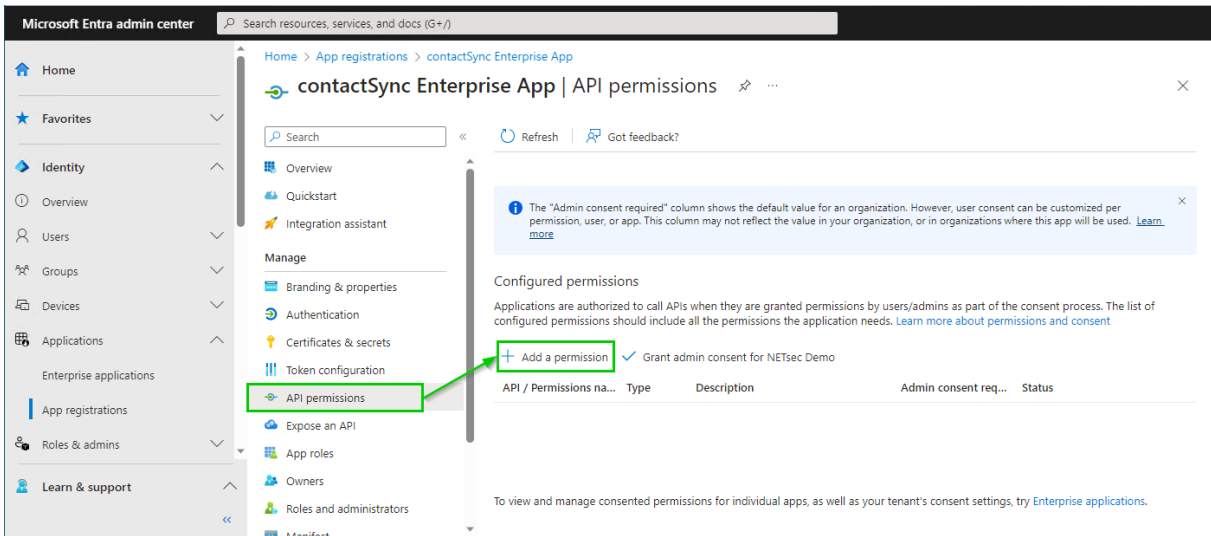
Add the selected certificate.



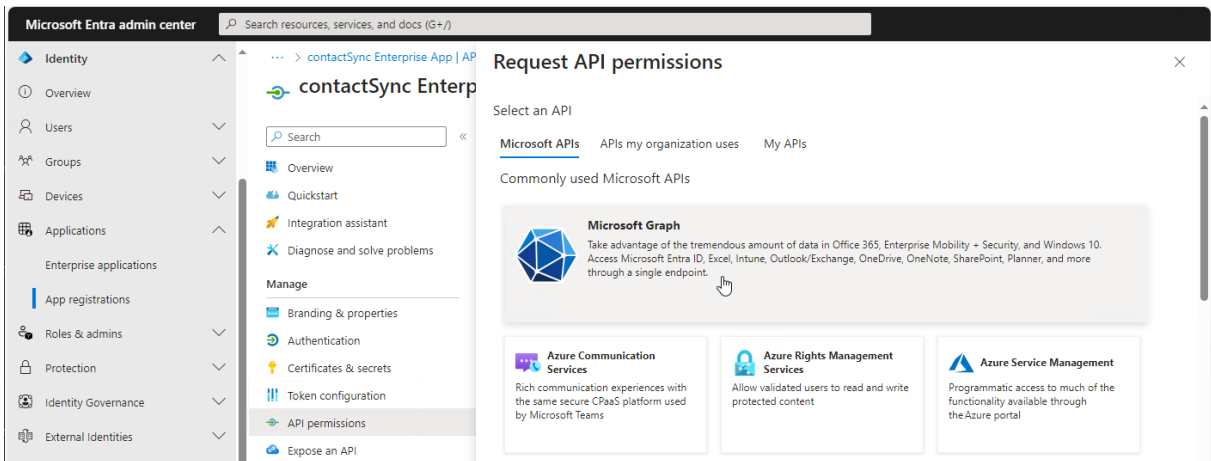
Assign API permissions to the registered Application

API permissions for Microsoft Graph

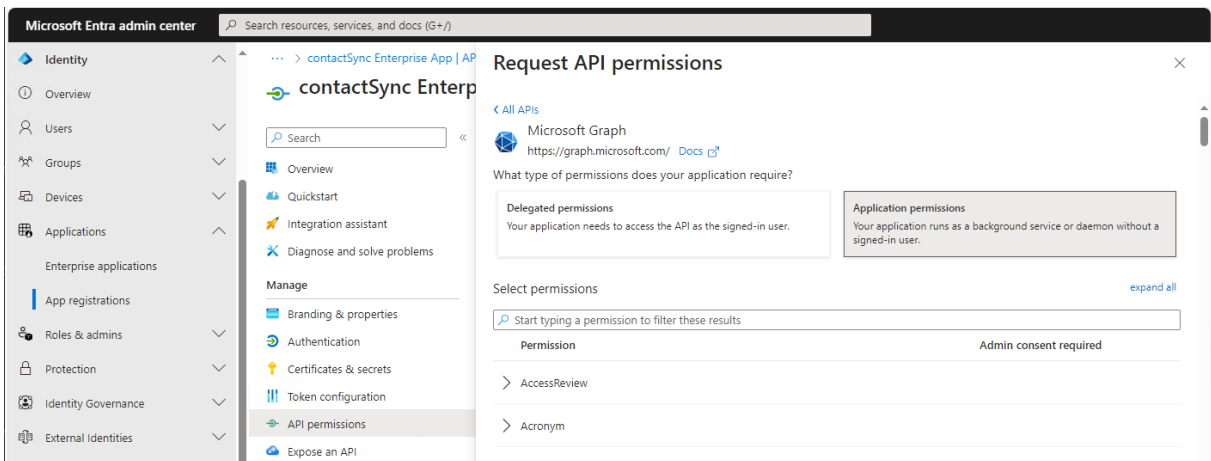
Go to **API permissions**, then select **Add a permission**



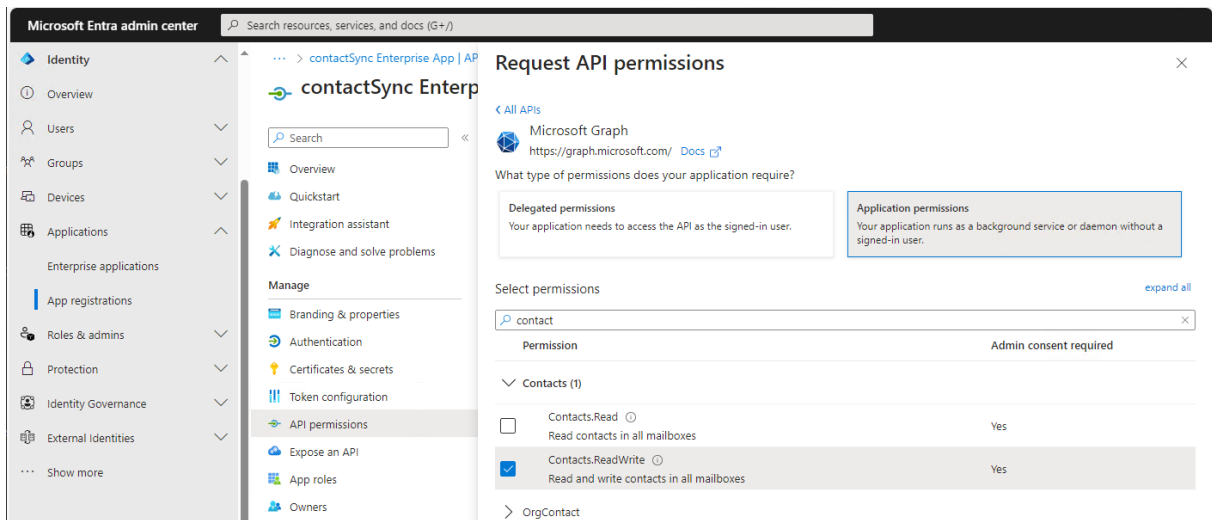
Select the **Microsoft APIs** and click on **Microsoft Graph**



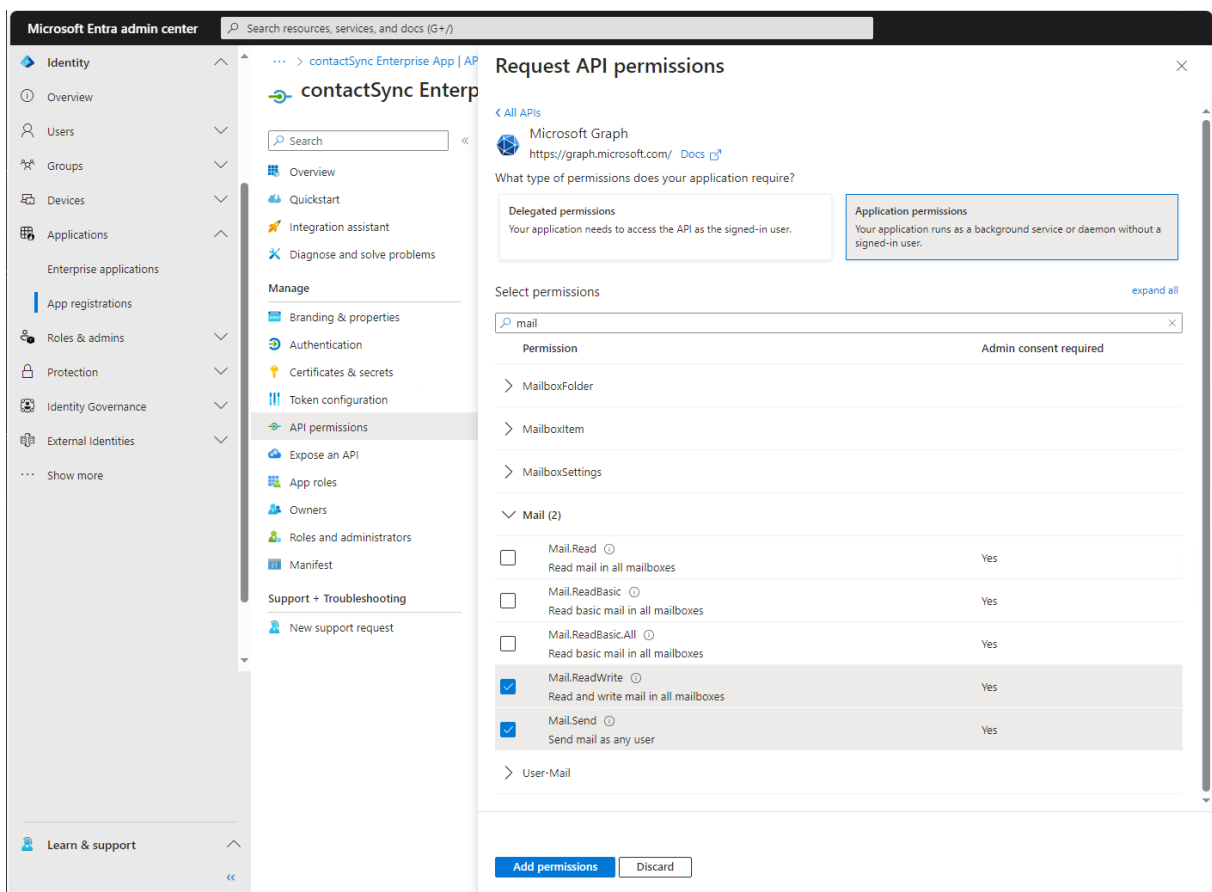
Select **Application permissions**



Search for **contact** and expand the **Contacts** in the result list.
Select
Contacts.ReadWrite

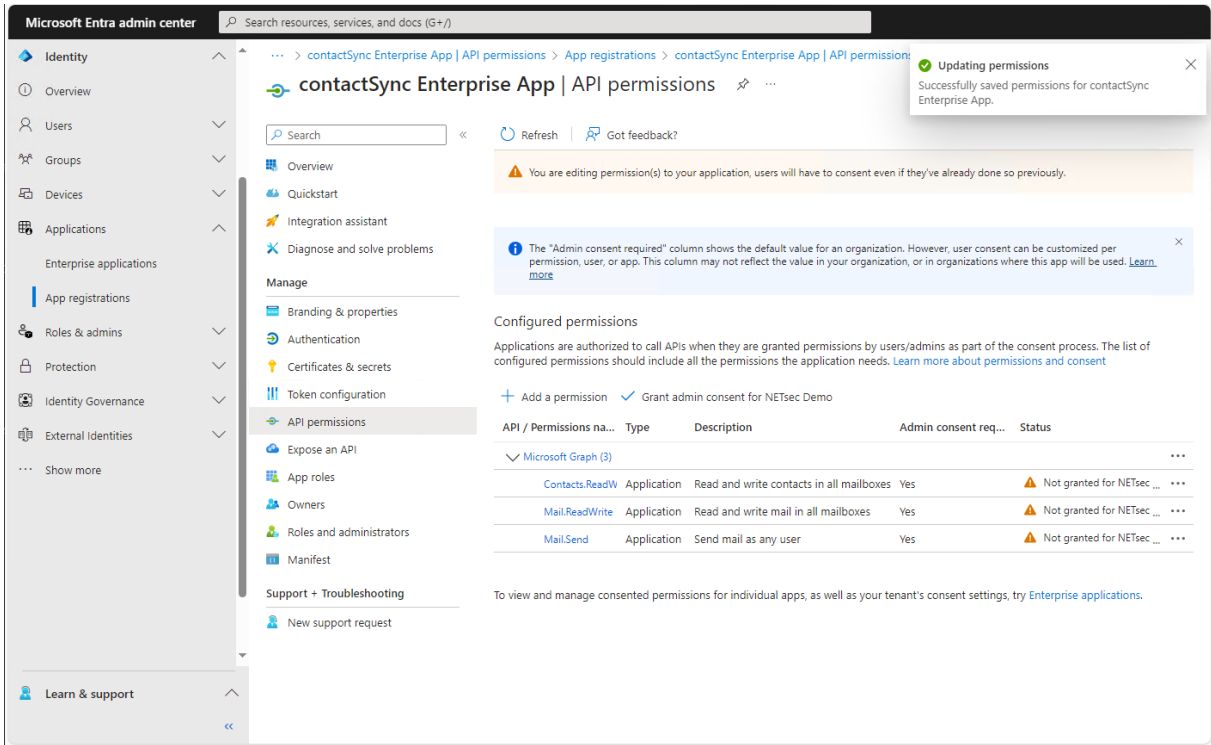


Search for **mail** and expand the **Mail** in the result list.
Select
Mail.ReadWrite
and
Mail.Send

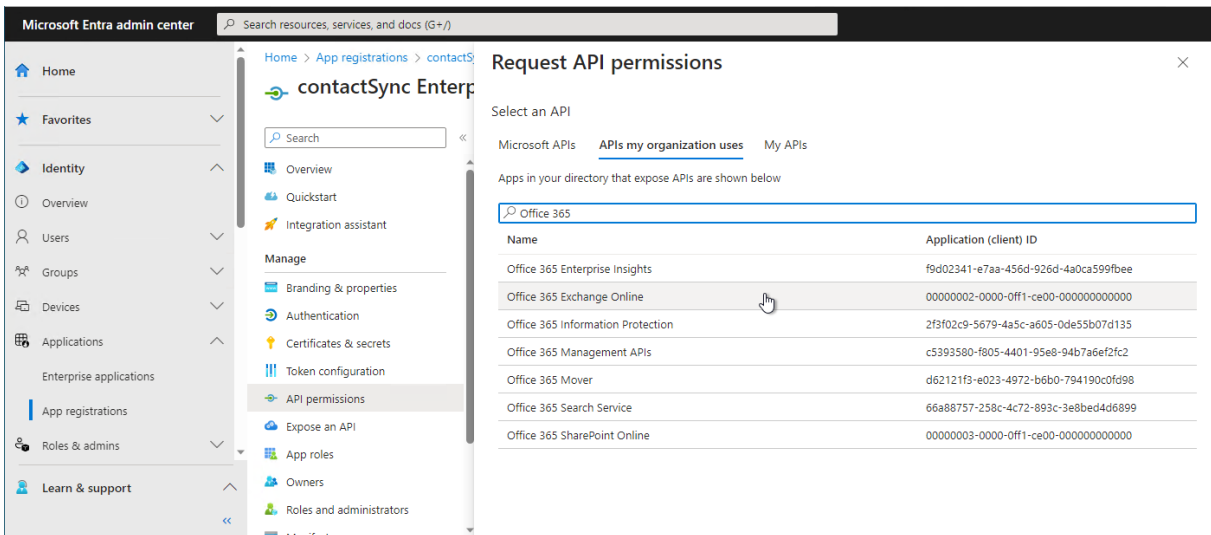


Click **Add permissions**

Select **Add a permission** again.

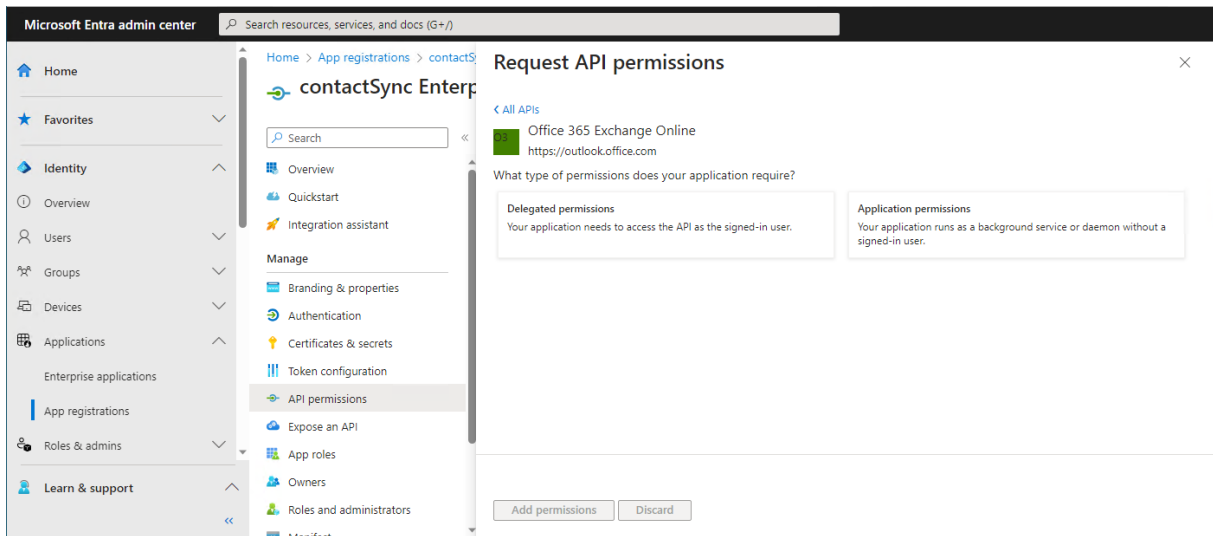


Select the **APIs my organization uses** tab on the **Request API permissions** dialog and search for **Office**.



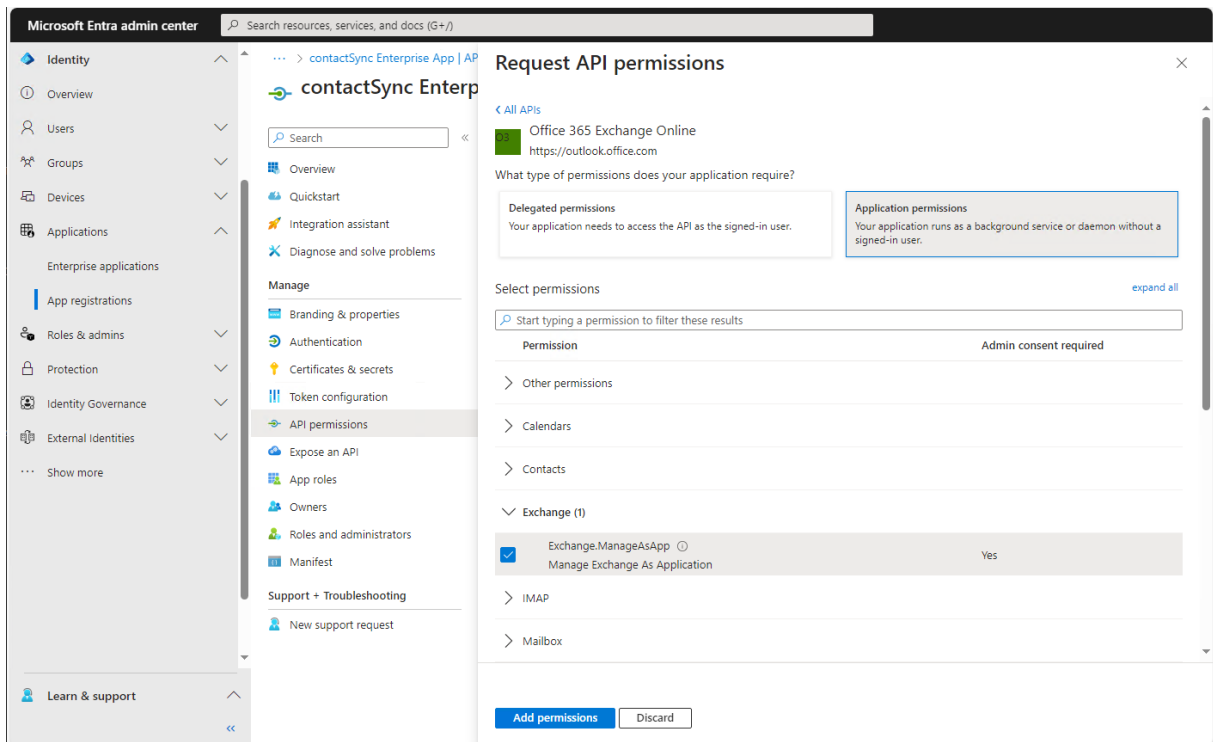
Click on **Office 365 Exchange Online** in the result list to open it.

Select Application permissions



Policies synchronizing contacts from Exchange Online and from Shared Mailboxes, which are located in Exchange Online, need only Microsoft Graph permissions.

Select Exchange.ManageAsApp Manage Exchange As Application



Click **Add permissions**

Policies synchronizing contacts from Public Folder, which are located in Exchange Online, need additionally the permission for Exchange Web Services at the moment.

Select

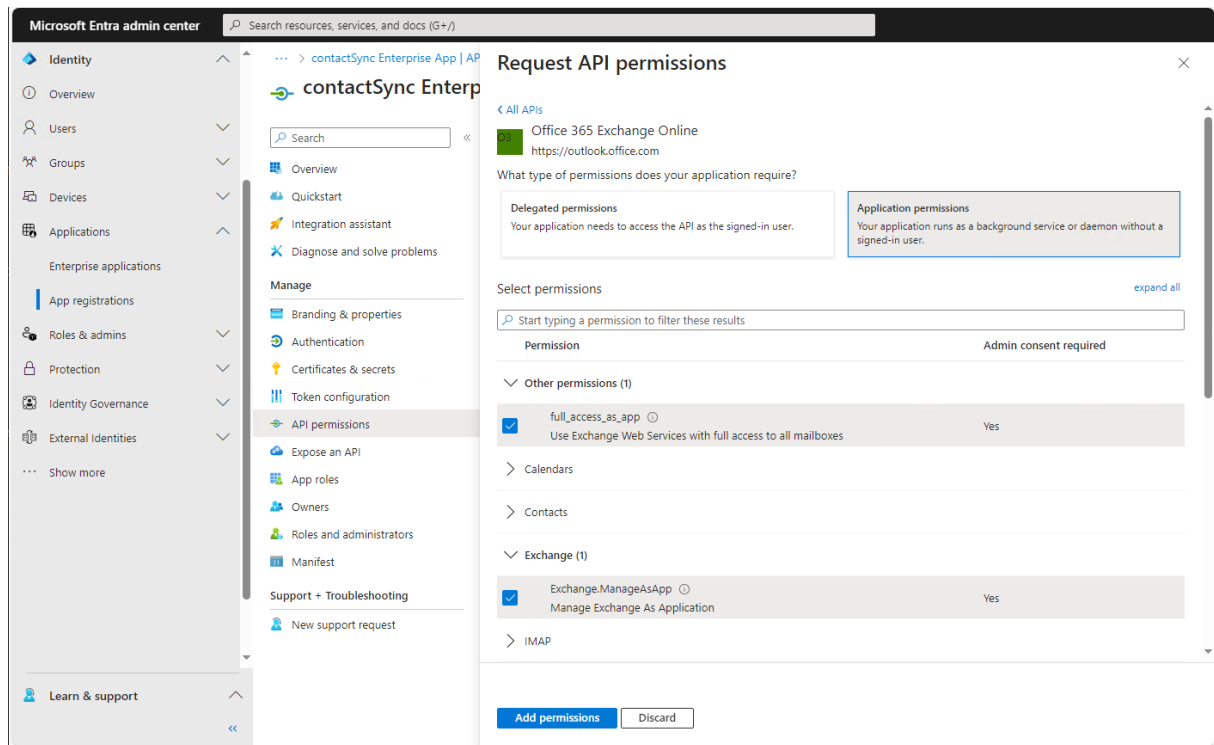
full_access_as_app

Use Exchange Web Services with full access to all mailboxes

and

Exchange.ManageAsApp

Manage Exchange As Application



Click **Add permissions**

Click **Grant admin consent** for your tenant.

The screenshot shows the Microsoft Entra admin center interface. The left-hand navigation pane includes sections for Identity, Overview, Users, Groups, Devices, Applications, Enterprise applications, App registrations, Roles & admins, Protection, Identity Governance, External Identities, and Show more. The main content area is titled 'contactSync Enterprise App | API permissions'. It features a search bar, a refresh button, and a 'Got feedback?' link. A warning message states: 'You are editing permission(s) to your application, users will have to consent even if they've already done so previously.' Below this is an information box about the 'Admin consent required' column. The 'Configured permissions' section includes a table with columns for API / Permissions name, Type, Description, Admin consent required, and Status. The table lists permissions from Microsoft Graph (3) and Office 365 Exchange Online (2). The 'Grant admin consent for NETSec Demo' button is highlighted in blue.

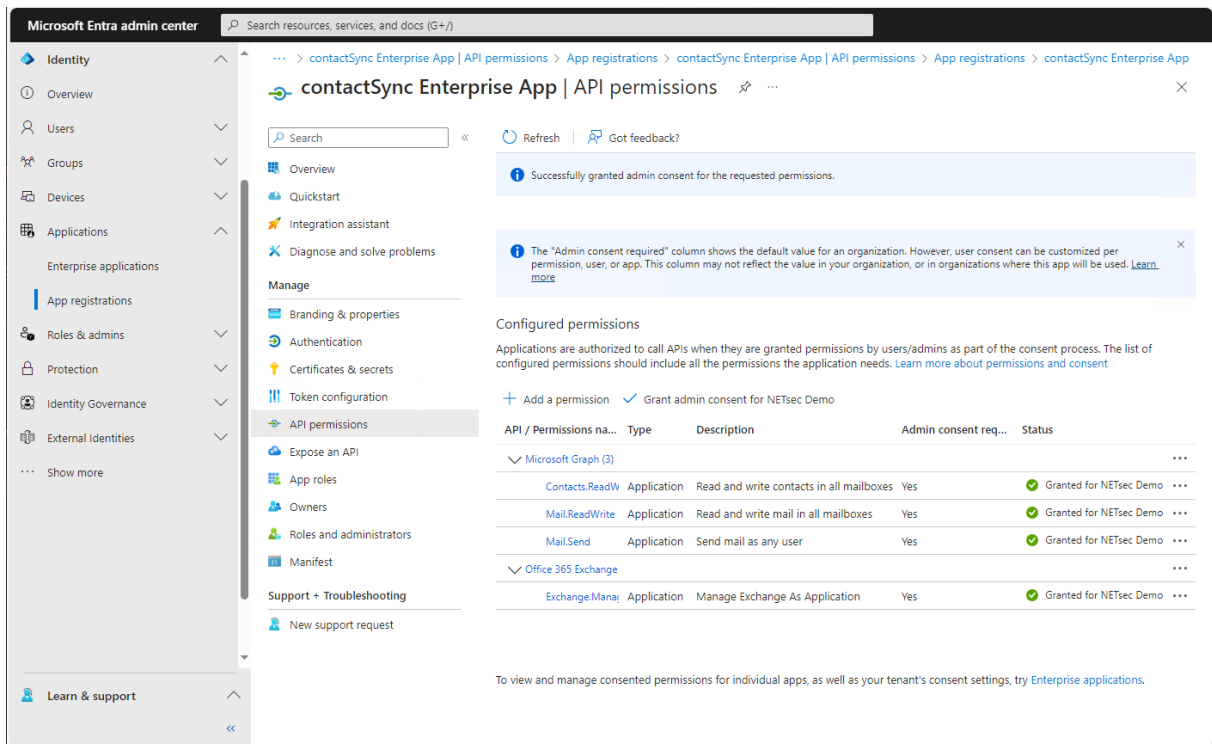
API / Permissions name	Type	Description	Admin consent required	Status
Microsoft Graph (3)				
Contacts.ReadWrite	Application	Read and write contacts in al...	Yes	⚠ Not granted for NETSec ...
Mail.ReadWrite	Application	Read and write mail in all ma...	Yes	⚠ Not granted for NETSec ...
Mail.Send	Application	Send mail as any user	Yes	⚠ Not granted for NETSec ...
Office 365 Exchange Online (2)				
Exchange.ManageAsApp	Application	Manage Exchange As Applic...	Yes	⚠ Not granted for NETSec ...

Click **Yes** to confirm the consent.

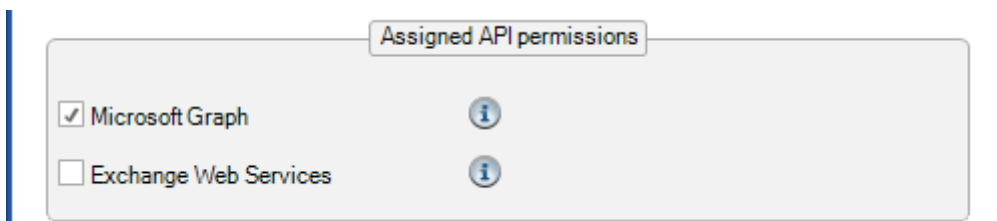
The screenshot shows the same Microsoft Entra admin center interface as above, but with a 'Grant admin consent confirmation' dialog box overlaid. The dialog box asks: 'Do you want to grant consent for the requested permissions for all accounts in NETSec Demo? This will update any existing admin consent records this application already has to match what is listed below.' It features 'Yes' and 'No' buttons. The 'Yes' button is highlighted in blue. The background content is dimmed.

API permissions are assigned to the registered Application.

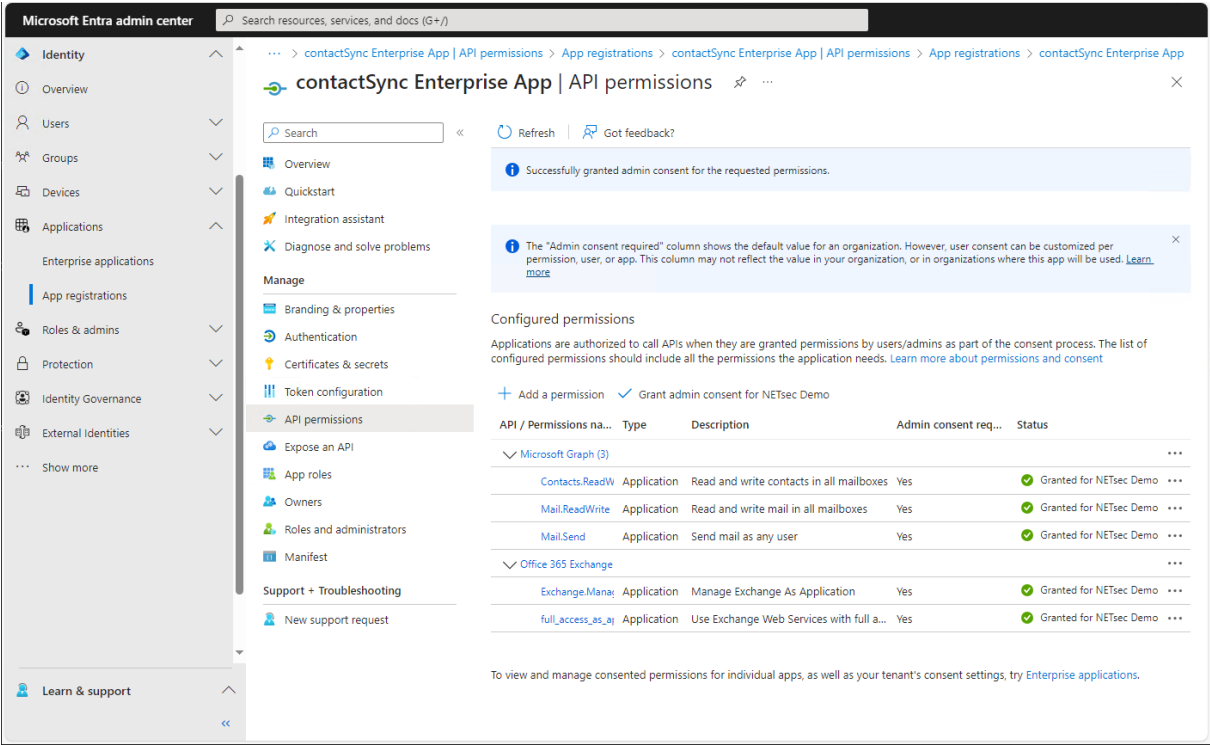
Policies synchronizing contacts from Exchange Online and from Shared Mailboxes, which are located in Exchange Online, need these API permissions.



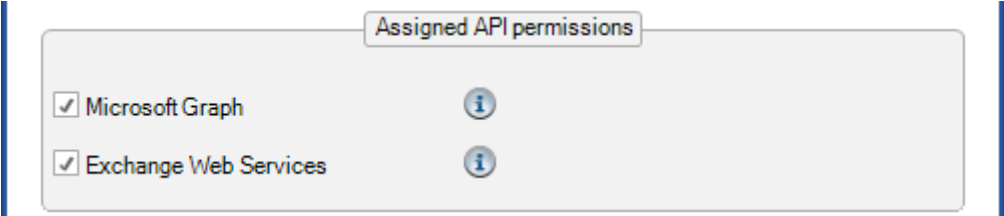
Accordingly, select **Microsoft Graph** at the **Assigned API permissions** group box in the Exchange Online App Registration dialog.



Policies synchronizing contacts from Public Folder, which are located in Exchange Online, need additionally the permission for Exchange Web Services at the moment.



Accordingly, select **Microsoft Graph** and **Exchange Web Services** at the **Assigned API permissions** group box in the Exchange Online App Registration dialog.



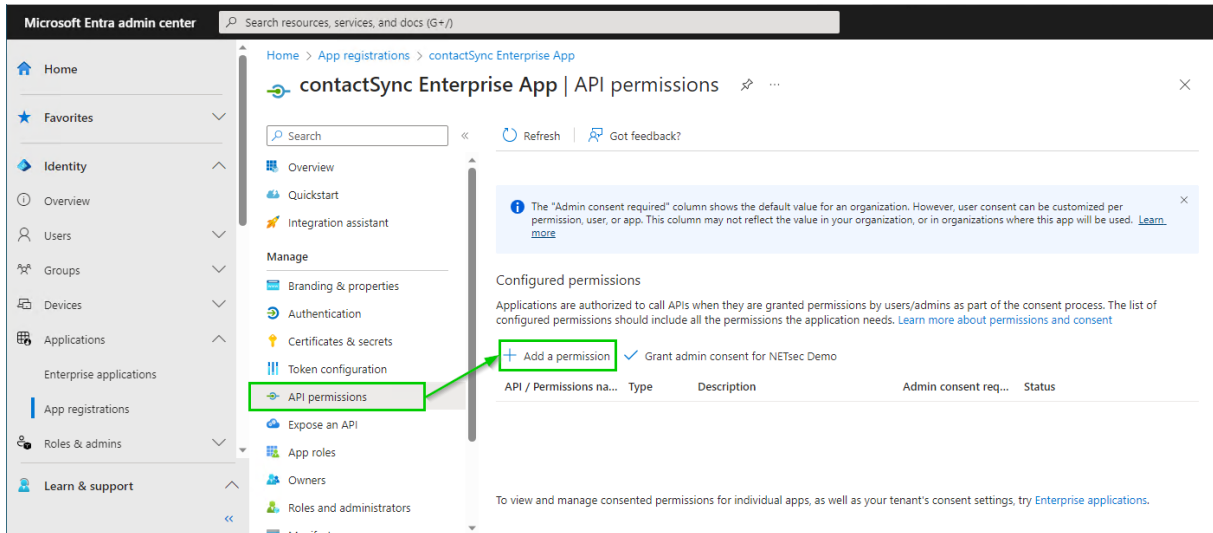
API permissions for Exchange Web Services (deprecated)

Please note, Microsoft has announced that on 1. October 2026 blocking Exchange Web Services (EWS) requests from non-Microsoft apps to Exchange Online.

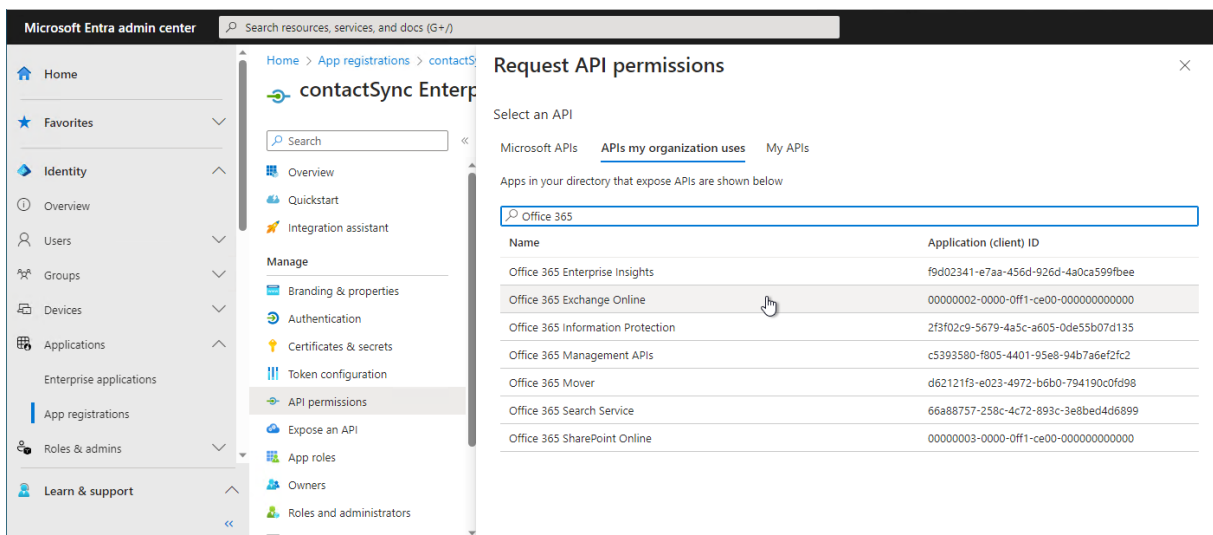
Retirement of Exchange Web Services in Exchange Online

<https://techcommunity.microsoft.com/t5/exchange-team-blog/retirement-of-exchange-web-services-in-exchange-online/ba-p/3924440>

Go to **API permissions**, then select **Add a permission**

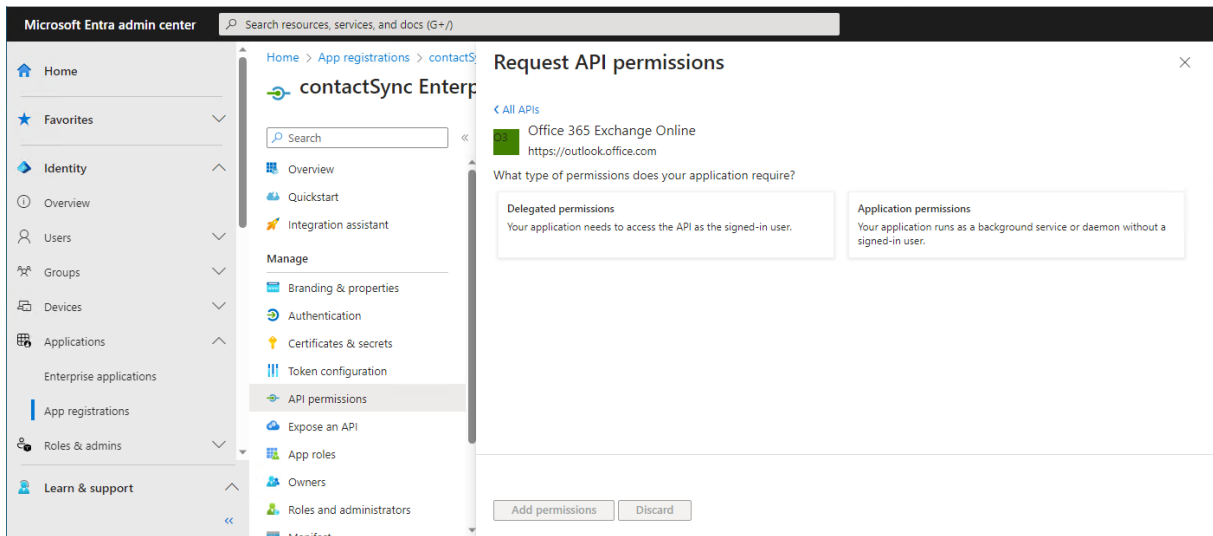


Select the **APIs my organization uses** tab on the **Request API permissions** dialog and search for **Office**.

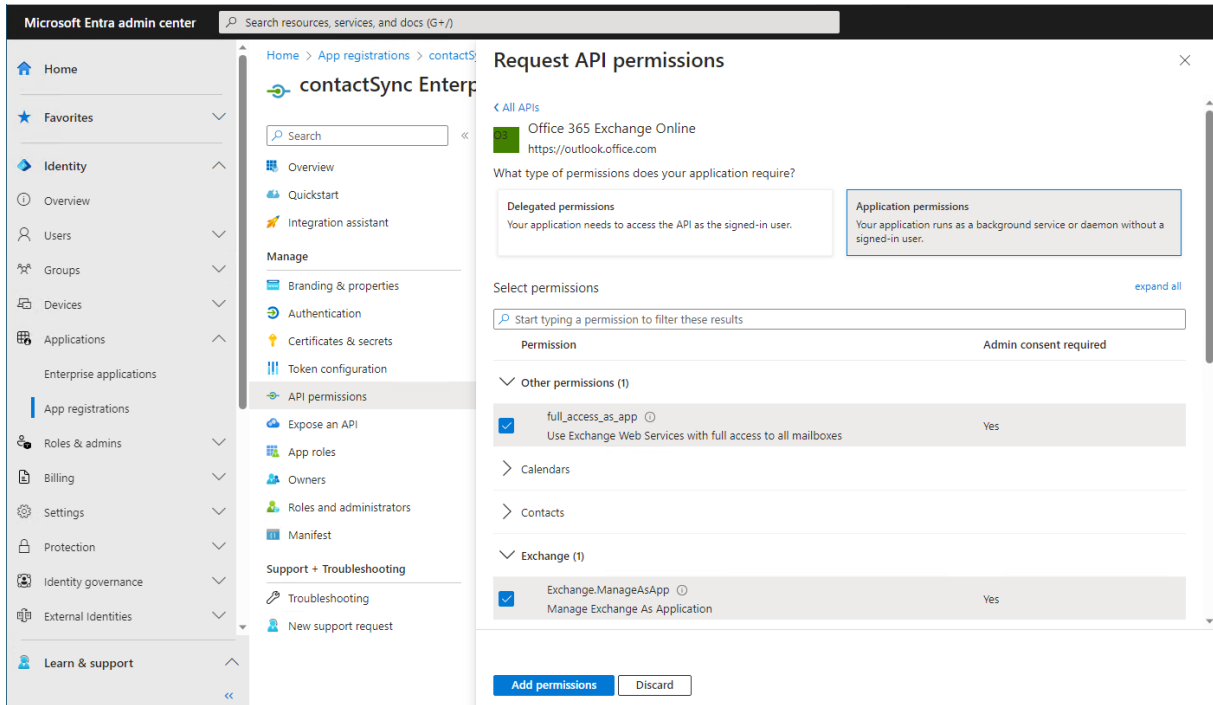


Click on **Office 365 Exchange Online** in the result list to open it.

Select Application permissions



Select
full_access_as_app
Use Exchange Web Services with full access to all mailboxes
and
Exchange.ManageAsApp
Manage Exchange As Application



Click **Add permissions**

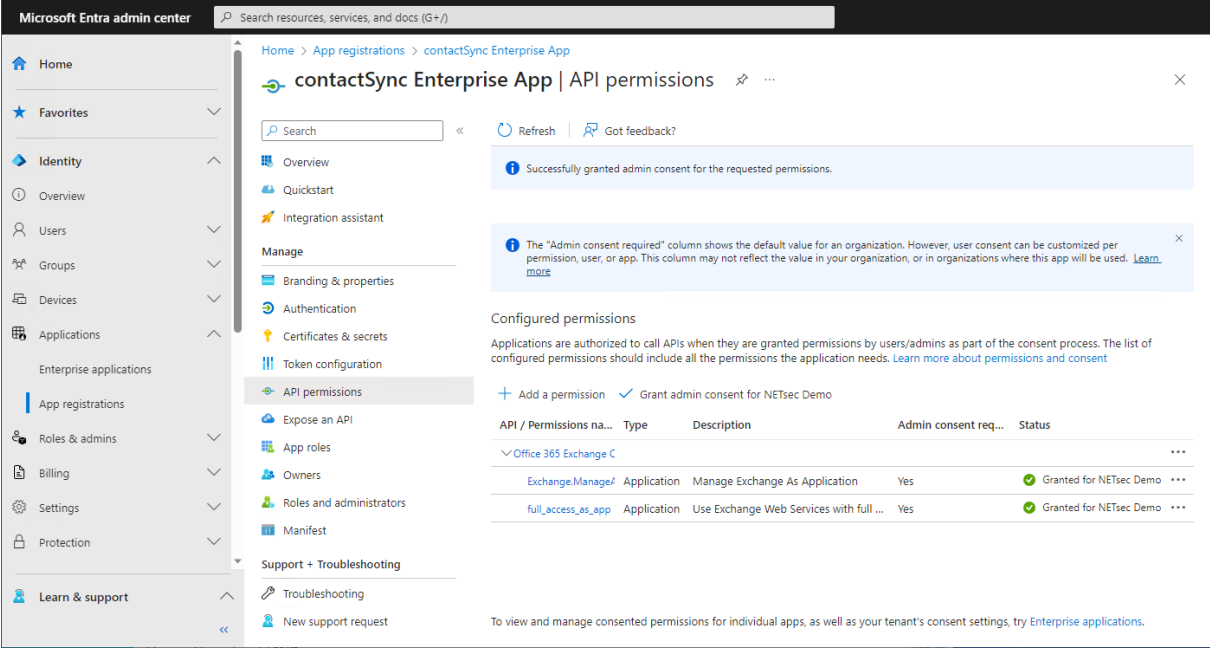
Click **Grant admin consent for your tenant**.

The screenshot shows the Microsoft Entra admin center interface. The left-hand navigation pane is visible, with 'API permissions' selected under 'App registrations'. The main content area displays the 'API permissions' page for the 'contactSync Enterprise App'. A green box highlights the 'Grant admin consent for NETSec Demo' button. A table of configured permissions is shown below, with columns for 'API / Permissions na...', 'Type', 'Description', 'Admin consent req...', and 'Status'. The table lists two permissions: 'Exchange.Manage' and 'full_access_as_app', both with a status of 'Not granted for NETSec ...'. A notification at the top right indicates 'Updating permissions' and 'Successfully saved permissions for contactSync Enterprise App'. A warning message states: 'You are editing permission(s) to your application, users will have to consent even if they've already done so previously.'

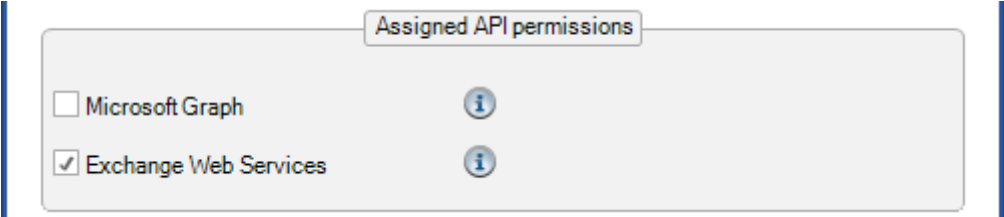
Click **Yes** to confirm the consent.

The screenshot shows the Microsoft Entra admin center interface, similar to the previous one, but with a 'Grant admin consent confirmation' dialog box overlaid. The dialog box asks: 'Do you want to grant consent for the requested permissions for all accounts in NETSec Demo? This will update any existing admin consent records this application already has to match what is listed below.' There are 'Yes' and 'No' buttons. The background page shows the 'API permissions' page for the 'contactSync Enterprise App', with the 'Grant admin consent for NETSec Demo' button now checked. The table of configured permissions is visible, showing two permissions: 'Exchange.Manage' and 'full_access_as_app', both with a status of 'Not granted for NETSec ...'.

API permissions are assigned to the registered Application.



Accordingly, select **Exchange Web Services** at the **Assigned API permissions** group box in the Exchange Online App Registration dialog.



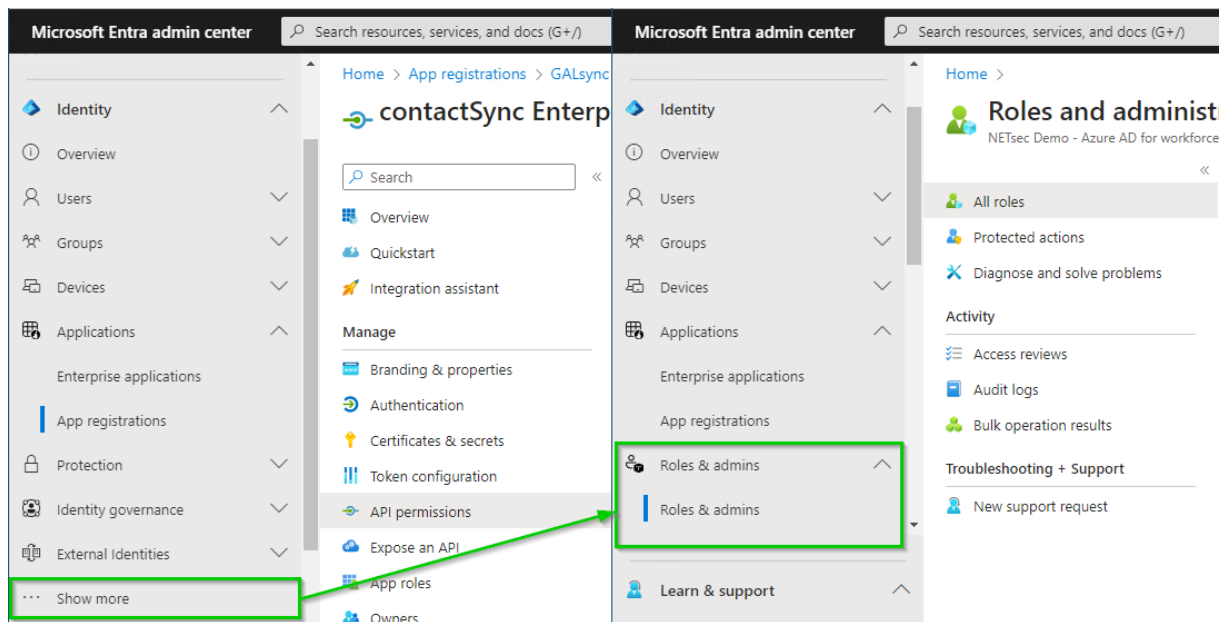
Exchange Administrator role or Exchange Recipient Administrator role for the registered Application (App Registration)

The **Exchange Recipient Administrator** role or the **Exchange Administrator** role for Exchange Online is necessary because contactSync communicates via the **Exchange Online PowerShell** with the Microsoft 365 tenant.

Please note that the Exchange Recipient Administrator role for Exchange Online has restrictions, e.g. it is not possible to check whether application access policies exist for the registered application (App Registration).

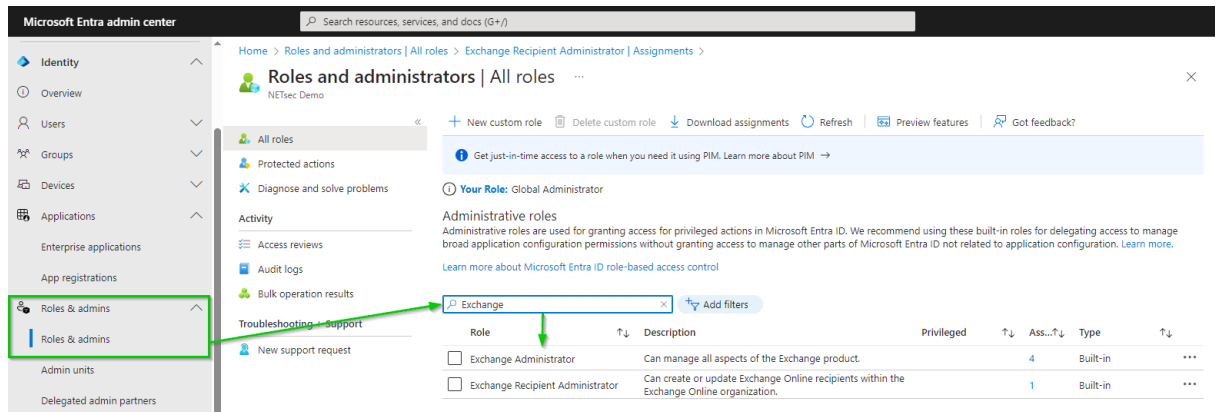
It may be that the Exchange Administrator role must be assigned to the registered application (App Registration) in the event of problems.

The application requires **Exchange Recipient Administrator** role or the **Exchange Administrator** role in the Microsoft 365 tenant, otherwise contactSync will not have access to the complete set of Exchange Online PowerShell cmdlets which are needed to function properly.



Expand **Roles & admins**. If you do not see **Roles & admins** in the **Identity** menu, click **Show more ...**

Go to **ROLES & admins** in the expanded **ROLES & admins** menu and search for **Exchange**.



The result is **Exchange Administrator** and **Exchange Recipient Administrator**.

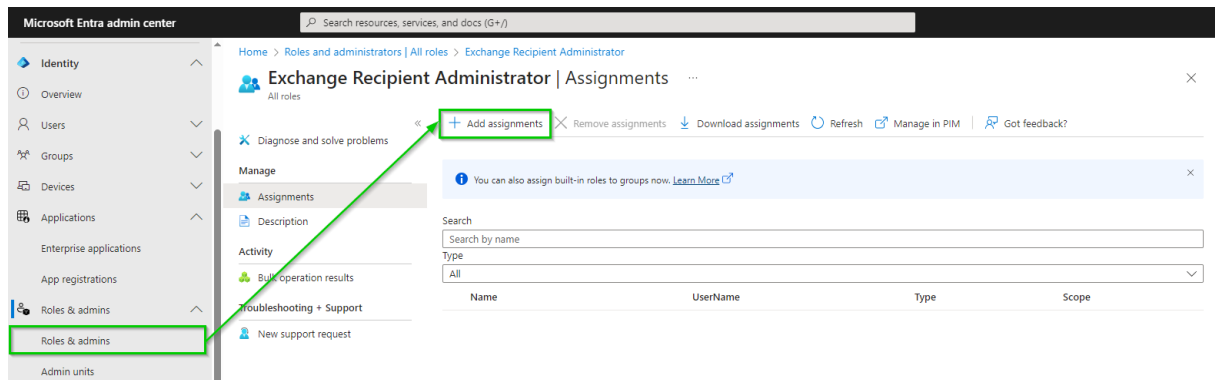
Decide which of the two roles should be assigned to the App Registration.

Please note that the Exchange Recipient Administrator role for Exchange Online has restrictions, e.g. it is not possible to check whether application access policies exist for the registered application (App Registration).

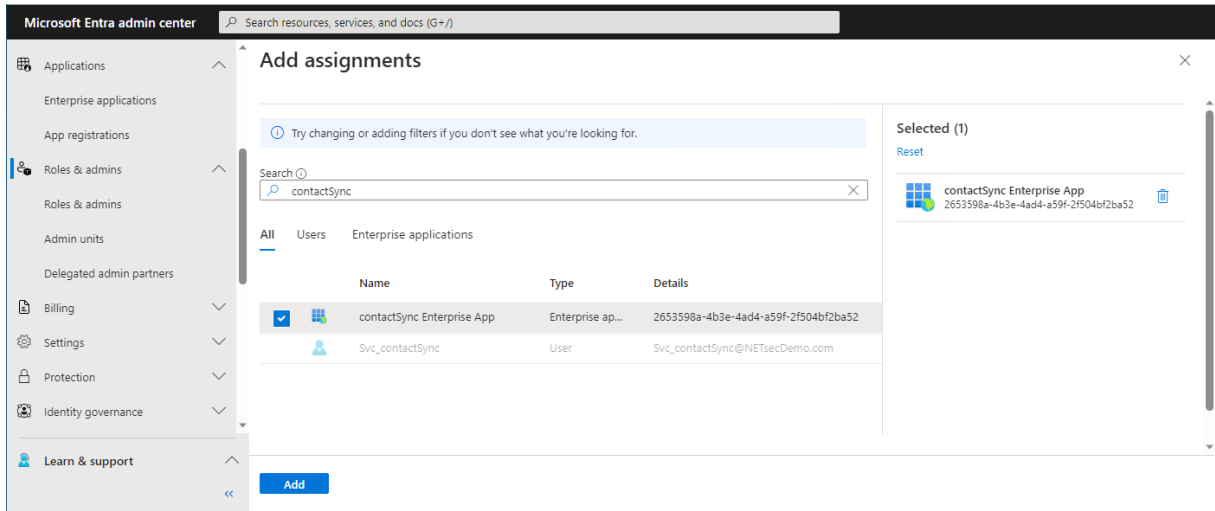
It may be that the Exchange Administrator role must be assigned to the registered application (App Registration) in the event of problems.

For example, the **Exchange Recipient Administrator** for Exchange Online.

Click on the **Exchange Recipient Administrator** in the result list to open the Exchange Recipient Administrator role.

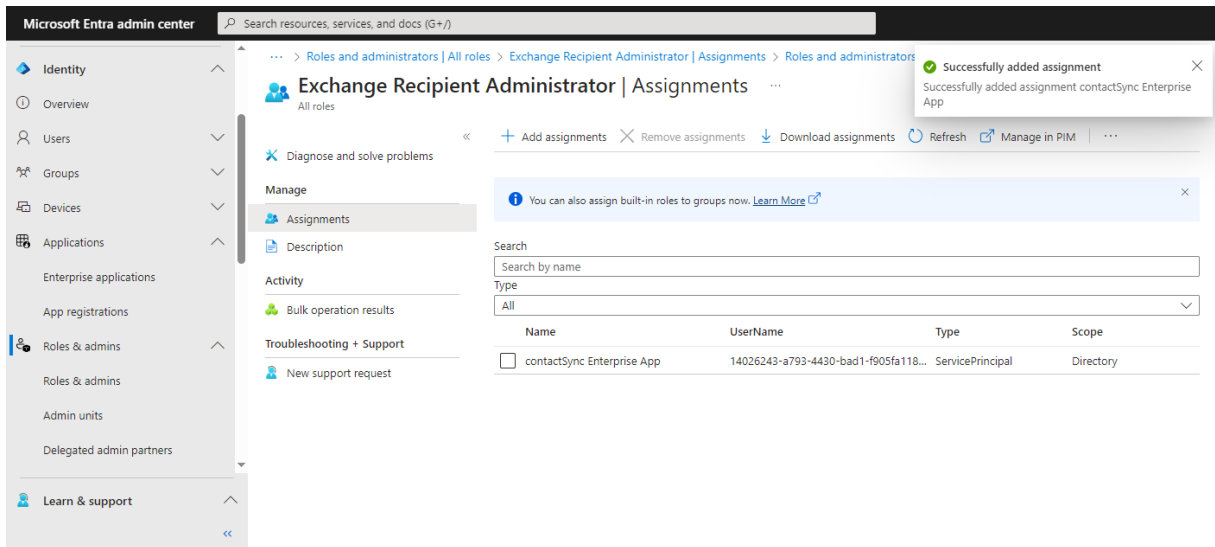


Click **Add assignments**, then search for the newly registered application.



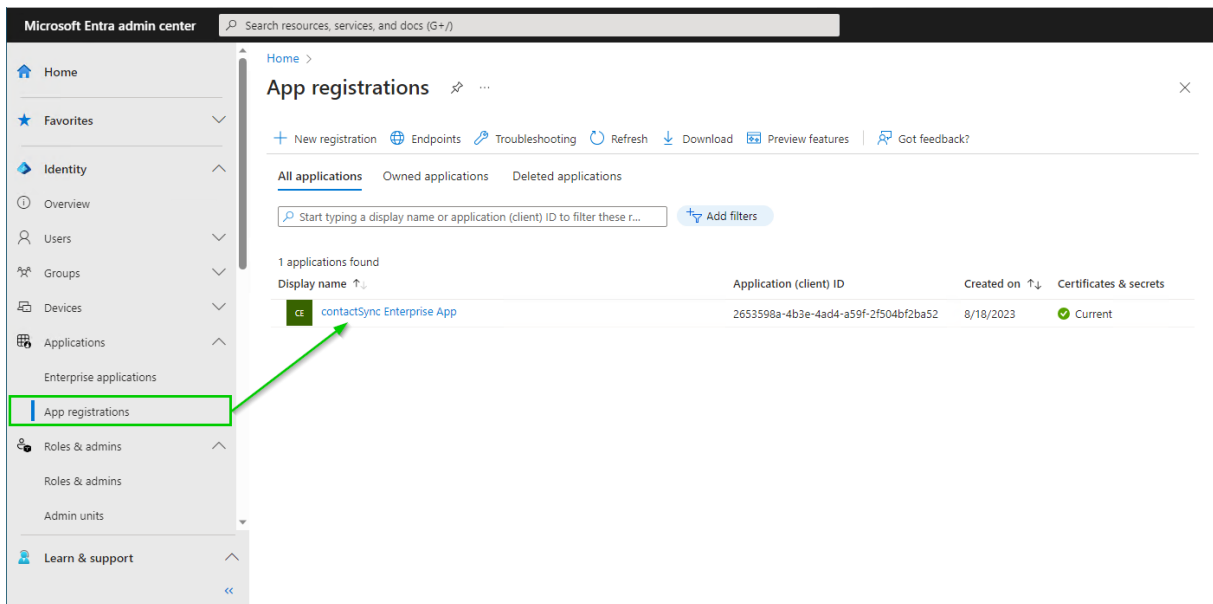
Select the newly registered application and click **Add**.

The application has been assigned the **Exchange Recipient Administrator** role.

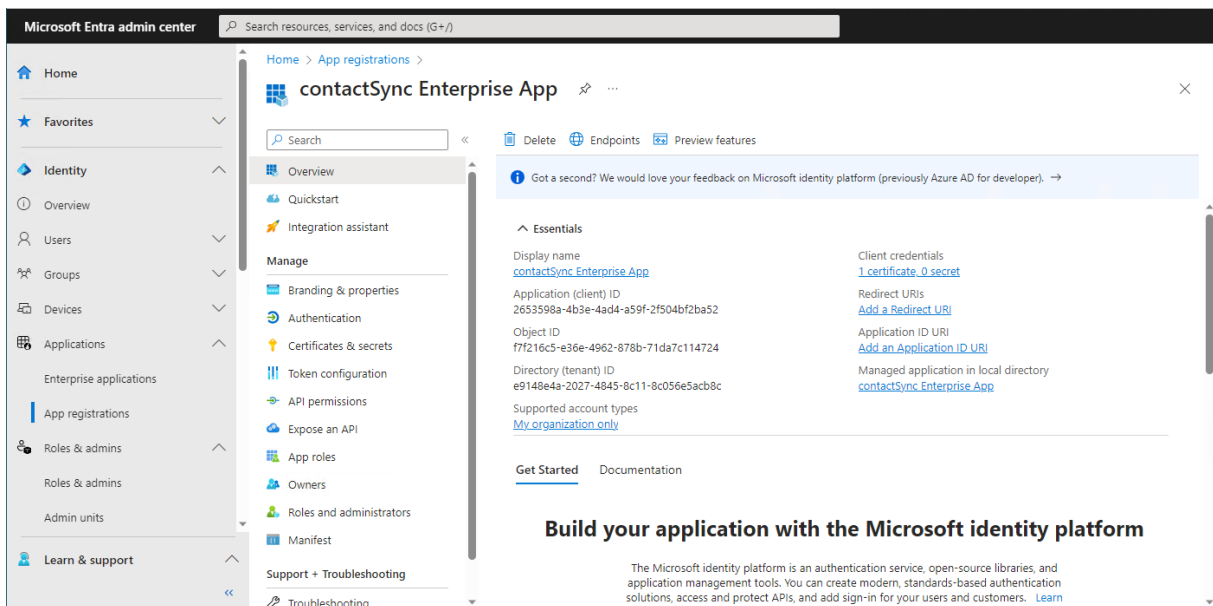


Overview of the registered Application in App registrations

Go to **Identity** in the **Microsoft Entra admin center** menu, expand **Applications** and select **App registrations**.



Select the registered Application to see the overview.



Please check whether the values of the registered Application are corresponding with the values in the **Exchange Online App Registration** dialog.

The image shows two side-by-side screenshots. On the left is the 'contactSync Enterprise App' configuration page in the Microsoft Entra ID portal. It displays various application details under 'Essentials' and 'Get Started' tabs. On the right is the 'Exchange Online App Registration' dialog box, which is used to configure the application's settings for Exchange Online access.

contactSync Enterprise App

Delete Endpoints Preview features

Got a second? We would love your feedback on Microsoft identity platform (previously Azure AD for developer).

Essentials

Display name: [contactSync Enterprise App](#)

Application (client) ID: 2653598a-4b3e-4ad4-a59f-2f504bf2ba52

Object ID: f7f216c5-e36e-4962-878b-71da7c114724

Directory (tenant) ID: e9148e4a-2027-4845-8c11-8c056e5acb8c

Supported account types: [My organization only](#)

Client credentials: [1 certificate_0 secret](#)

Redirect URIs: [Add a Redirect URI](#)

Application ID URI: [Add an Application ID URI](#)

Managed application in local directory: [contactSync Enterprise App](#)

Get Started Documentation

Build your application with the Microsoft identity

The Microsoft identity platform is an authentication service, open-source libraries, an application management tools. You can create modern, standards-based authentication solutions, access and protect APIs, and add sign-in for your users and customers. [Learn more](#)

Exchange Online App Registration

Corresponding settings for the Enterprise Application in the Microsoft Entra ID (formerly Azure AD) App registrations that enables access to Exchange Online.

Organization / Tenant:

Application Display Name:

Application ID:

Certificate

Friendly Name	NETsecDemo from contactSync Server
Not After	2025-08-18
Subject	CN=NETsecDemoFromContactSyncServer
Thumbprint	7719A99A5BA61FD9F72E3CD9D51783D79DCB254F
Has PrivateKey	True
User	NETSECDEMO\svc_contactSync

Assigned API permissions

Microsoft Graph

Exchange Web Services

Maximum Connection:

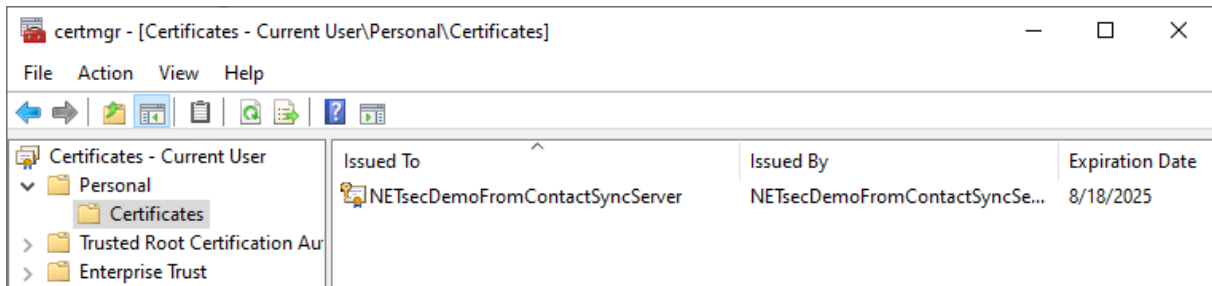
Email Address:

Organization / Tenant needs the **.onmicrosoft.com** domain name of the Microsoft 365 tenant. Otherwise, you might encounter cryptic permission issues when you run a policy in the app context.

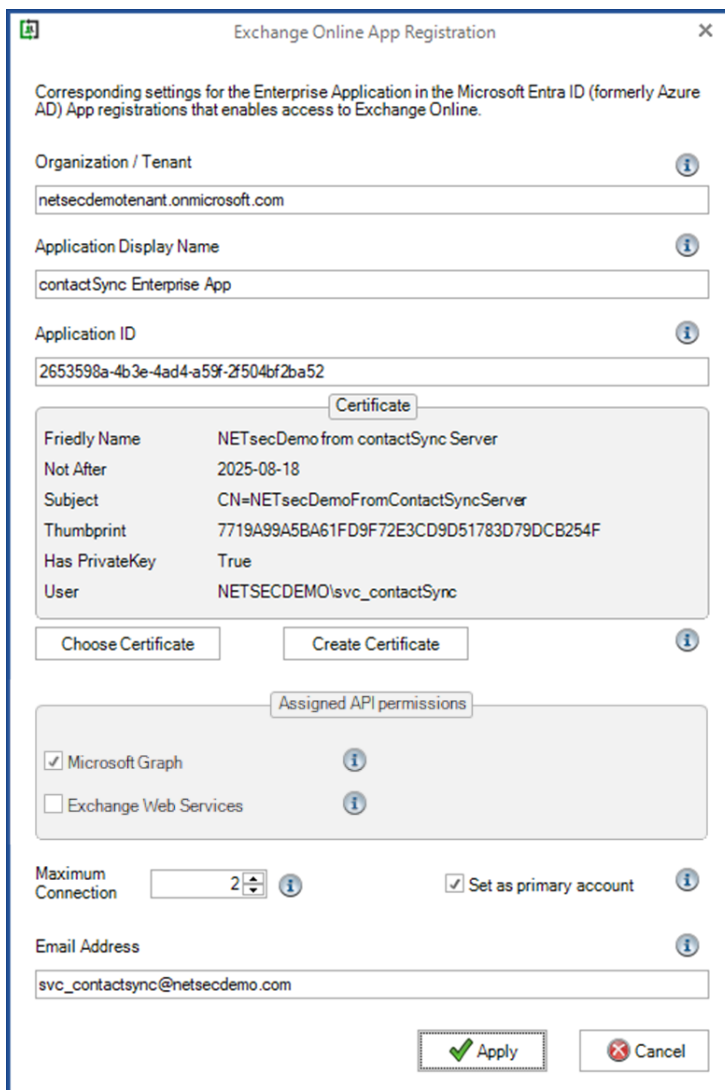
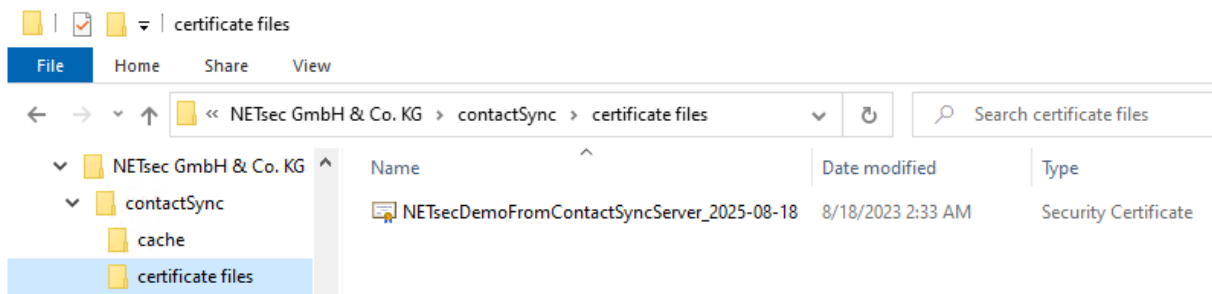
Application Display Name must have the value of the **Display name** of the registered Application.

Application ID must have the value of the **Application (Client) ID** of the registered Application.

A Certificate is created and selected from **Current User Personal Certificates** store



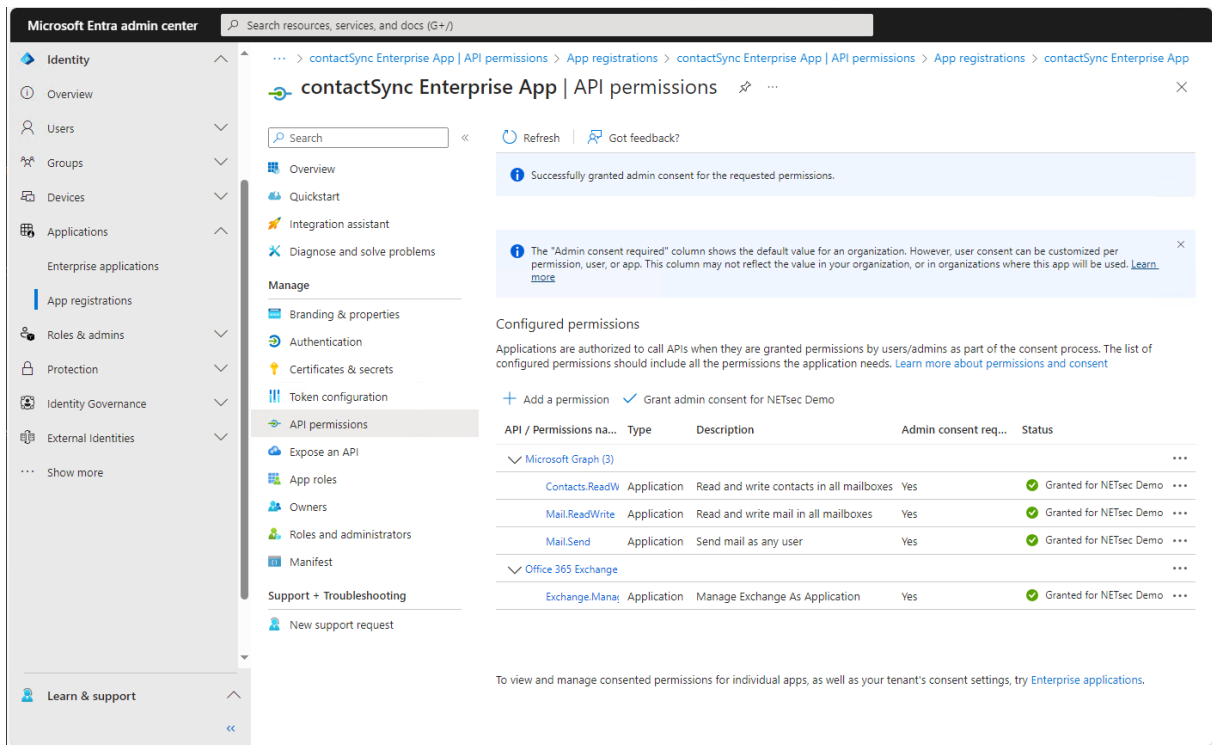
and the corresponding certificate file is attached to the **Entra ID** application.



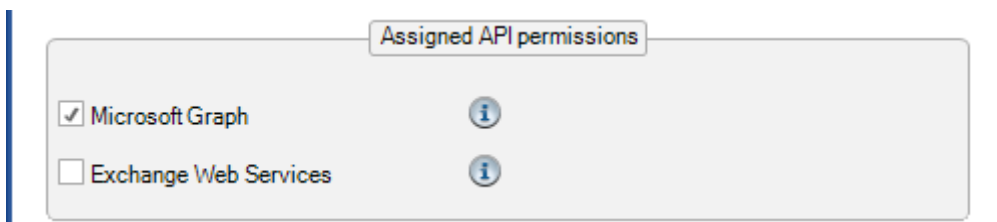
The selection of the **Assigned API permissions** group box in the **Exchange Online App Registration** dialog must be corresponding with the **API permissions** in the App Registration.

Please check the settings of the **API permissions for Microsoft Graph**.

Policies synchronizing contacts from **Exchange Online** and from **Shared Mailboxes**, which are located in Exchange Online, need these API permissions.

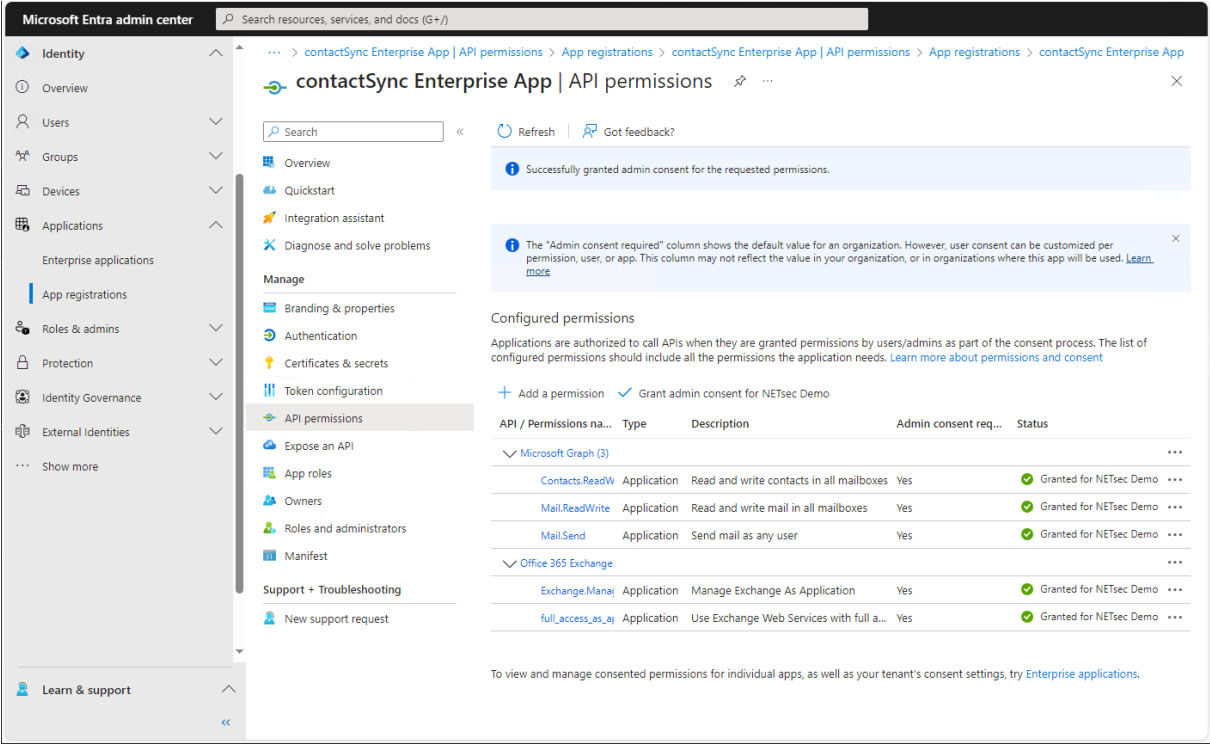


Accordingly, the **Microsoft Graph** at the **Assigned API permissions** group box must be selected in the Exchange Online App Registration dialog.

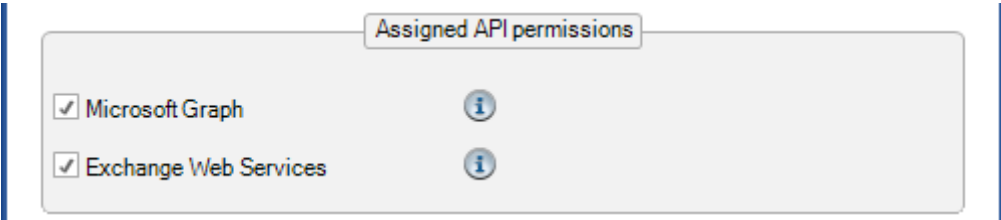


Please check the settings of the **API permissions for Microsoft Graph and Exchange Web Services**, if **Public Folder contacts from Exchange Online** need to be synchronized in the users' mailboxes.

Policies synchronizing contacts from **Public Folder**, which are located in Exchange Online, need additionally the permission for Exchange Web Services at the moment.



Accordingly, the **Microsoft Graph and Exchange Web Services** at the **Assigned API permissions** group box must be selected in the Exchange Online App Registration dialog at the moment.



Exchange Online App Registration

Corresponding settings for the Enterprise Application in the Microsoft Entra ID (formerly Azure AD) App registrations that enables access to Exchange Online.

Organization / Tenant i

Application Display Name i

Application ID i

Certificate

Friendly Name	NETsecDemo from contactSync Server
Not After	2025-08-18
Subject	CN=NETsecDemoFromContactSyncServer
Thumbprint	7719A99A5BA61FD9F72E3CD9D51783D79DCB254F
Has PrivateKey	True
User	NETSECDEMO\svc_contactSync

i

Assigned API permissions

Microsoft Graph i

Exchange Web Services i

Maximum Connection i Set as primary account i

Email Address i

To complete the **Exchange Online App Registration** dialog, insert an **Email Address** of an Exchange Online mailbox.

Email Address of an Exchange Online mailbox is necessary to send and receive email. We recommend to use a dedicated Exchange Online mailbox for this purpose.

Click **Apply** to finish and close the **Exchange Online App Registration** dialog.

Test the Exchange Online PowerShell connection and the Exchange mailbox

The screenshot shows the 'Environment Configuration' dialog box with the 'Exchange Online' tab selected. The dialog is titled 'Environment Configuration' and has standard window controls. The 'Exchange Online' tab is active, showing instructions to manage settings for the Exchange Online tenant. Below the instructions are three main sections: 'Credentials', 'Organization Settings', and 'Remote PowerShell Connection Test'. The 'Credentials' section contains a table with one entry: 'Primary Mailbox Account' with a 'Max. Connection' value of 2. The 'Organization Settings' section shows the instance hosted by Microsoft 365 or Microsoft 365 GCC in the Microsoft Azure public cloud, with the Exchange Web Services URL as https://outlook.office365.com/EWS/Exchange.asmx. The 'Remote PowerShell Connection Test' section has a 'Test' button and a 'Show log' button. The 'Exchange Mailbox Test' section has an 'Email address' input field and a 'Send test email' button. At the bottom of the dialog are 'Ok', 'Cancel', and 'Apply' buttons.

Environment Configuration

General Exchange Scenario **Exchange Online**

Exchange Online

Manage the settings for the Exchange Online tenant.
All accounts of the Microsoft 365 tenant have Exchange Administrator role permission for Exchange Online.

Credentials

Username	Max. Connection
Primary Mailbox Account contactSync Enterprise App	2

Organization Settings

Instance hosted by: Microsoft 365 or Microsoft 365 GCC
Microsoft Azure public cloud

Exchange Web Services URL: https://outlook.office365.com/EWS/Exchange.asmx

Remote PowerShell Connection Test

Please test the Remote PowerShell connection to Exchange Online

Test Show log

Exchange Mailbox Test

Send a test email to the recipient:

Email address: [Input field]

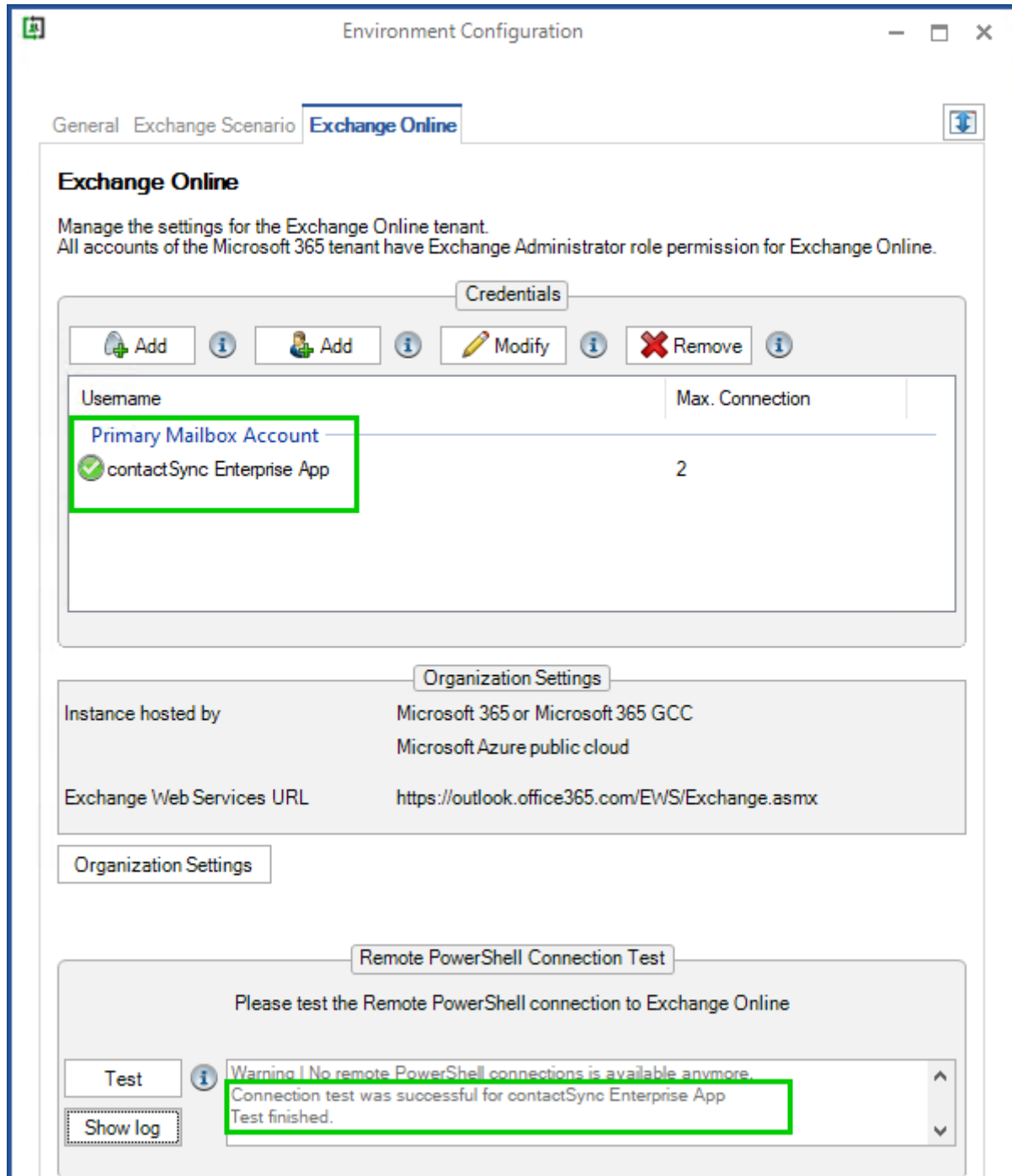
Send test email

Ok Cancel Apply

Click the **Test** button for the **Remote PowerShell Connection Test**, to test connectivity to Exchange Online PowerShell.

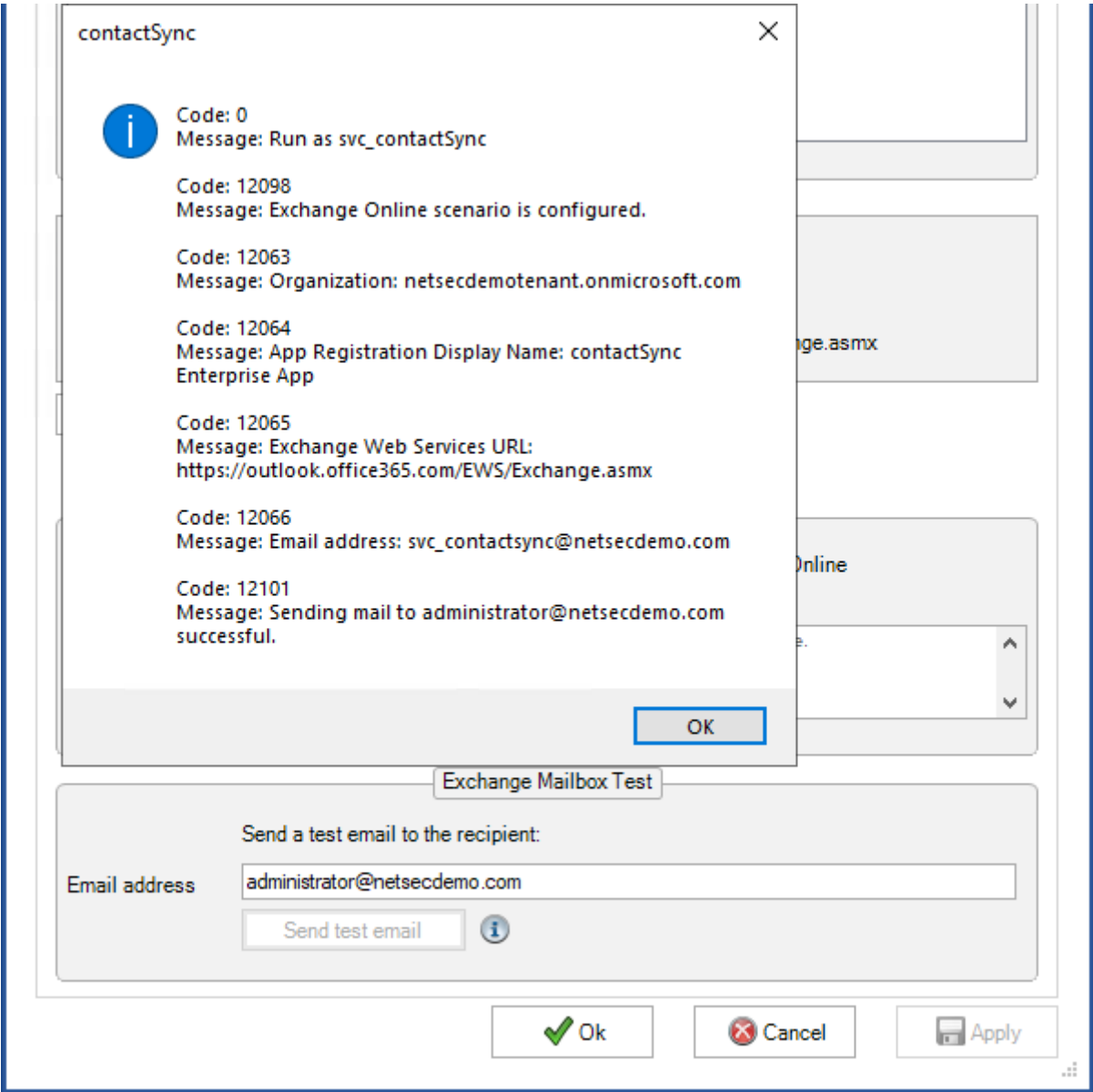
Please wait for the test to finish before proceeding.

Upon a successful connection, a green circle with a checkmark will be displayed.



If the connection test failed, click the **Show log** button for detailed information.

A test email can also be sent to the desired recipient as an additional test to validate mail flow. To do this, click the **Send test email** button for the **Exchange Mailbox Test**.



Please note, that the e-mail address of the recipient for the test email will not be saved.

Exchange Online authentication via Service Account

Please note, that user-based authentication via OAuth 2.0 works only for the Microsoft Azure Public Cloud instance. If your Microsoft 365 instance is hosted by a national cloud, please use **Exchange Online certificate-based authentication via App Registration**.

Note, the user-based authentication is deprecated. The certificate-based authentication is recommended.

Service Account (Microsoft 365 Exchange Online)

The contactSync service account needs to be a licensed Exchange Online mailbox user in the Microsoft 365 tenant.

For example: Microsoft 365 Business Basic, Exchange Online (Plan 1) or Microsoft 365 E1 license will work for the service account.

The service account must be a member of the **Exchange Administrator** role. contactSync uses the Exchange Online PowerShell commands, which are incomplete if the service account is not an Exchange Administrator for Exchange Online.

Note: By default, the Exchange Online password has to be changed within 30 days. To ensure, that contactSync works properly, you have to configure user passwords to never expire. To configure your password please follow the steps described in the following article:

<https://support.office.com/en-us/article/Set-a-user-s-password-expiration-policy-0f54736f-eb22-414c-8273-498a0918678f>

- contactSync must have direct access to the user mailbox of the service account via Exchange Web Services (EWS) of Exchange Online.
- Ensure that the mailbox is accessible (e.g., by Outlook Web Access).
- Ensure that the mailbox can send email.

Please note, service accounts are non-human privileged accounts used by applications, automated services, and that execute other IT processes. Because these are machine accounts, they cannot be protected by **multi-factor authentication (MFA)**, since there is no way for it to interactively logon.

We recommend disabling **multi-factor authentication (MFA)** for this account, and use conditional access policies to lock down this account, such as allowing login only from trusted public IP addresses.

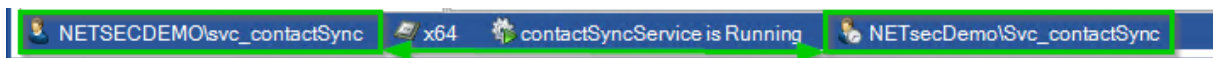
Modern Authentication OAuth 2.0 for Exchange Web Services (EWS) to access Exchange Online

The contactSync service account of a Microsoft 365 tenant needs access to its own mailbox, therefore, Modern Authentication OAuth 2.0 for Exchange Web Services (EWS) must be configured.

Please note, that user-based authentication via OAuth 2.0 works only for the Microsoft Azure Public Cloud instance. If your Microsoft 365 instance is hosted by a national cloud, please use **Exchange Online certificate-based authentication via App Registration**.

First, please verify the contactSync GUI is running in the credentials of the local contactSync service account, otherwise contactSync cannot decrypt the token later.

This can be confirmed on the information bar at the bottom of the contactSync GUI.

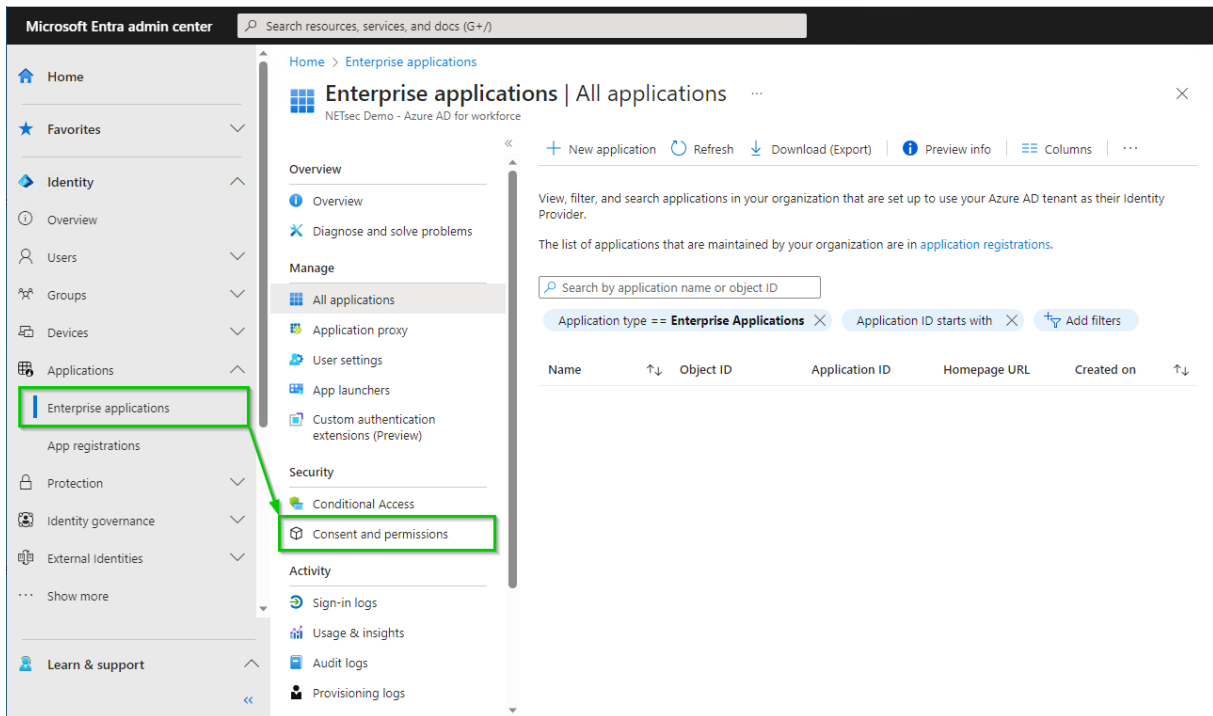


Admin consent requires in Entra ID Enterprise Applications (formerly Azure AD Enterprise Applications) to register NETsec contactSync as Enterprise Application.

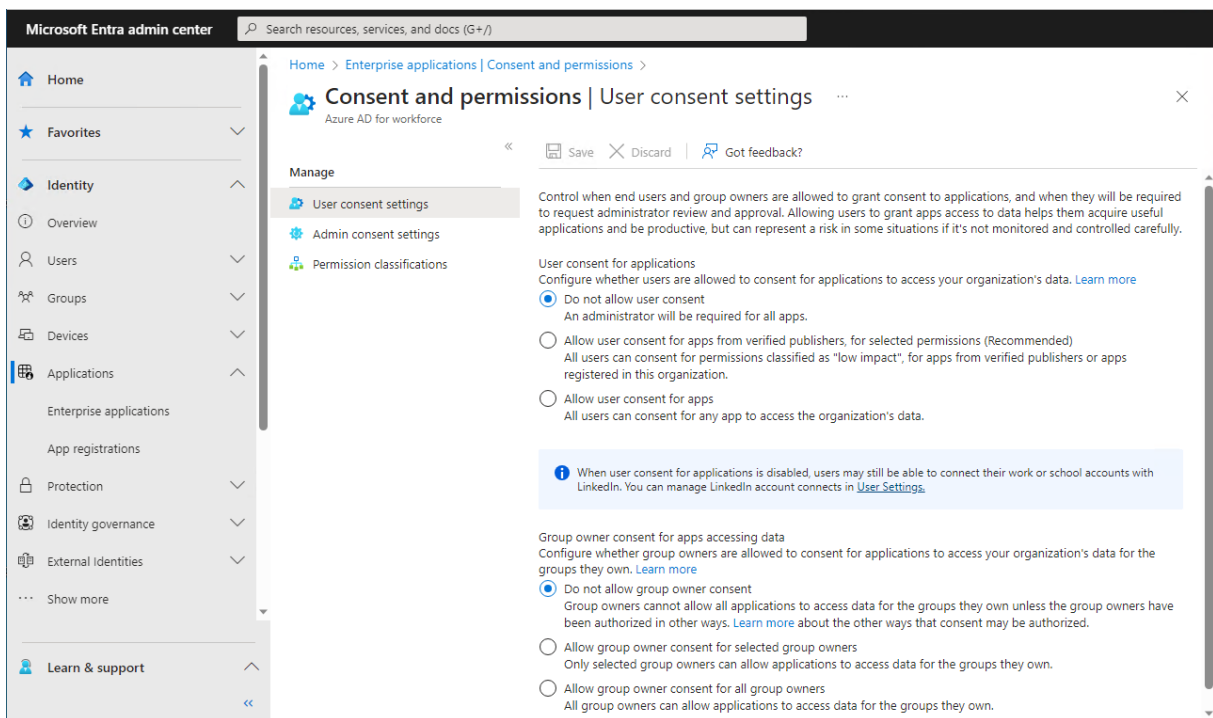
*Please note, that contactSync cannot request the necessary **User consent** for a non admin user with restricted settings **Consent and permissions** for Modern Authentication OAuth 2.0 for Exchange Web Services (EWS) of Exchange Online.*

[How to check the Consent and permissions settings for Enterprise Applications?](#)

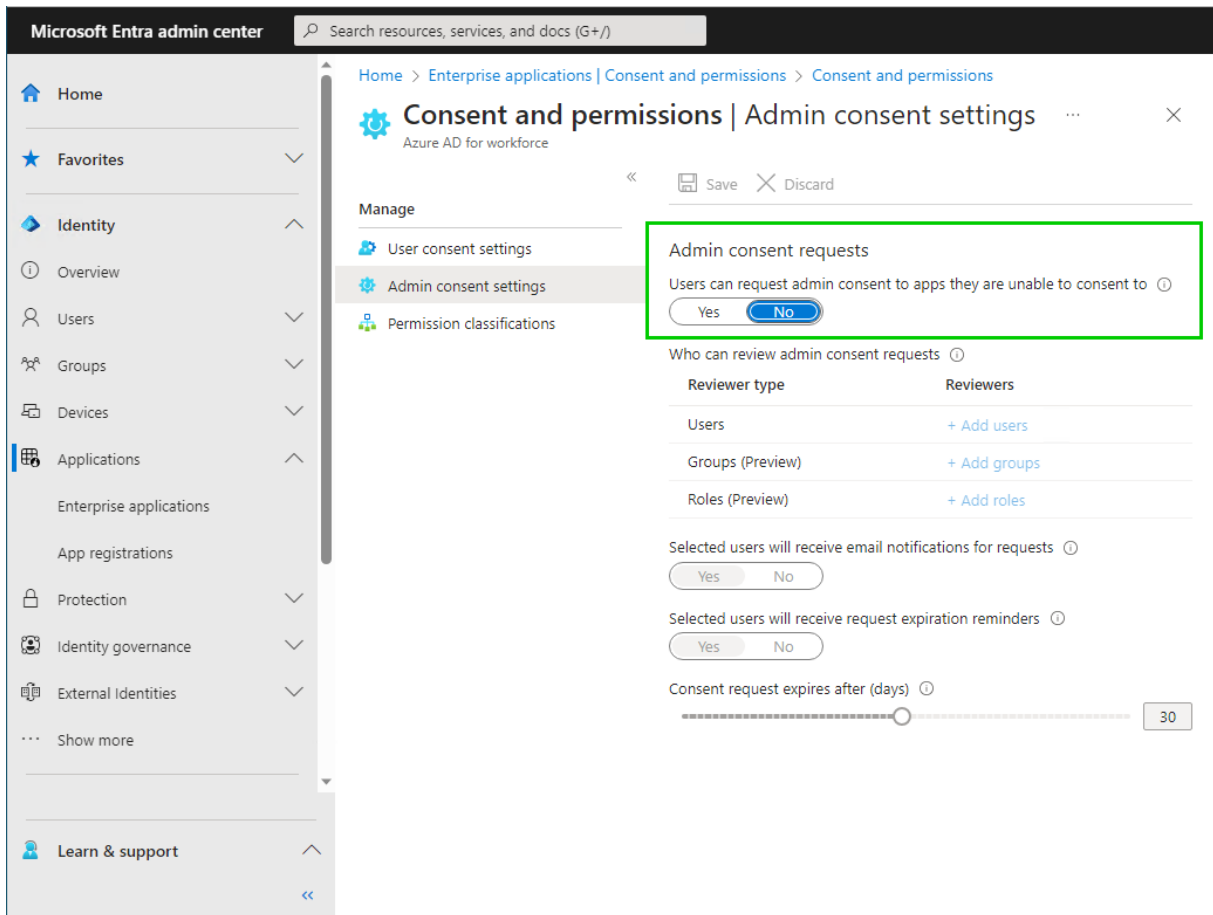
Microsoft Entra admin center -> Identity -> Applications -> Enterprise applications -> Consent and permissions



The **Consent and permissions** settings of the **Enterprise applications** are restricted:



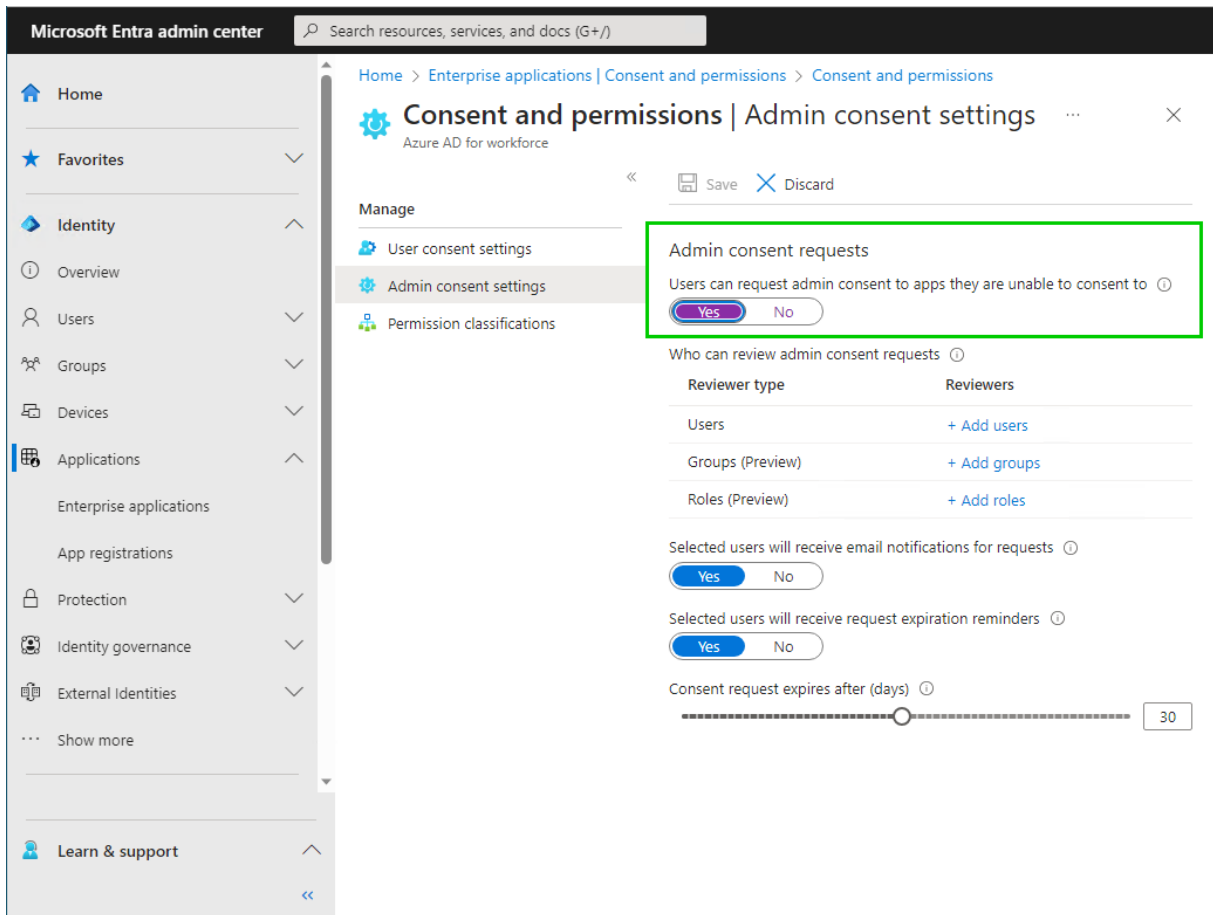
The **Consent and permissions** settings of the **Enterprise applications** are restricted and a Global Administrator account of the Microsoft 365 tenant must grant admin consent for the permissions of the Enterprise Application.



If the **Admin consent requests** in the **Admin consent settings** is **No**, the admin consent for the permissions of the Enterprise Application can be done with a sign in of a Global Administrator account during the first login process for Modern Authentication OAuth 2.0 for Exchange Web Services (EWS) of Exchange Online. This process is described in the following chapter.

*Please note, the contactSync service account should only be an Exchange Administrator of Exchange Online, but **not** a Global Administrator of the Microsoft 365 tenant.*

If the **Admin consent requests** in the **Admin consent settings** is **Yes**, the contactSync service account will send an admin consent request during the first login process for Modern Authentication OAuth 2.0 for Exchange Web Services (EWS) of Exchange Online.



After that a user, who can review admin consent requests, must accept the request, before the contactSync service account does the login for Modern Authentication OAuth 2.0 for Exchange Web Services (EWS) of Exchange Online a second time to get the token successfully.

Login for Modern Authentication OAuth 2.0 for Exchange Web Services (EWS) of Exchange Online

Proceed with the Login for Modern Authentication OAuth 2.0 for Exchange Web Services (EWS) of Exchange Online with your contactSync Service Account.

Exchange Online Credentials

User-ID: ⓘ

Password: ⓘ

E-mail: ⓘ

Maximum Connection: ⓘ Set as primary account ⓘ

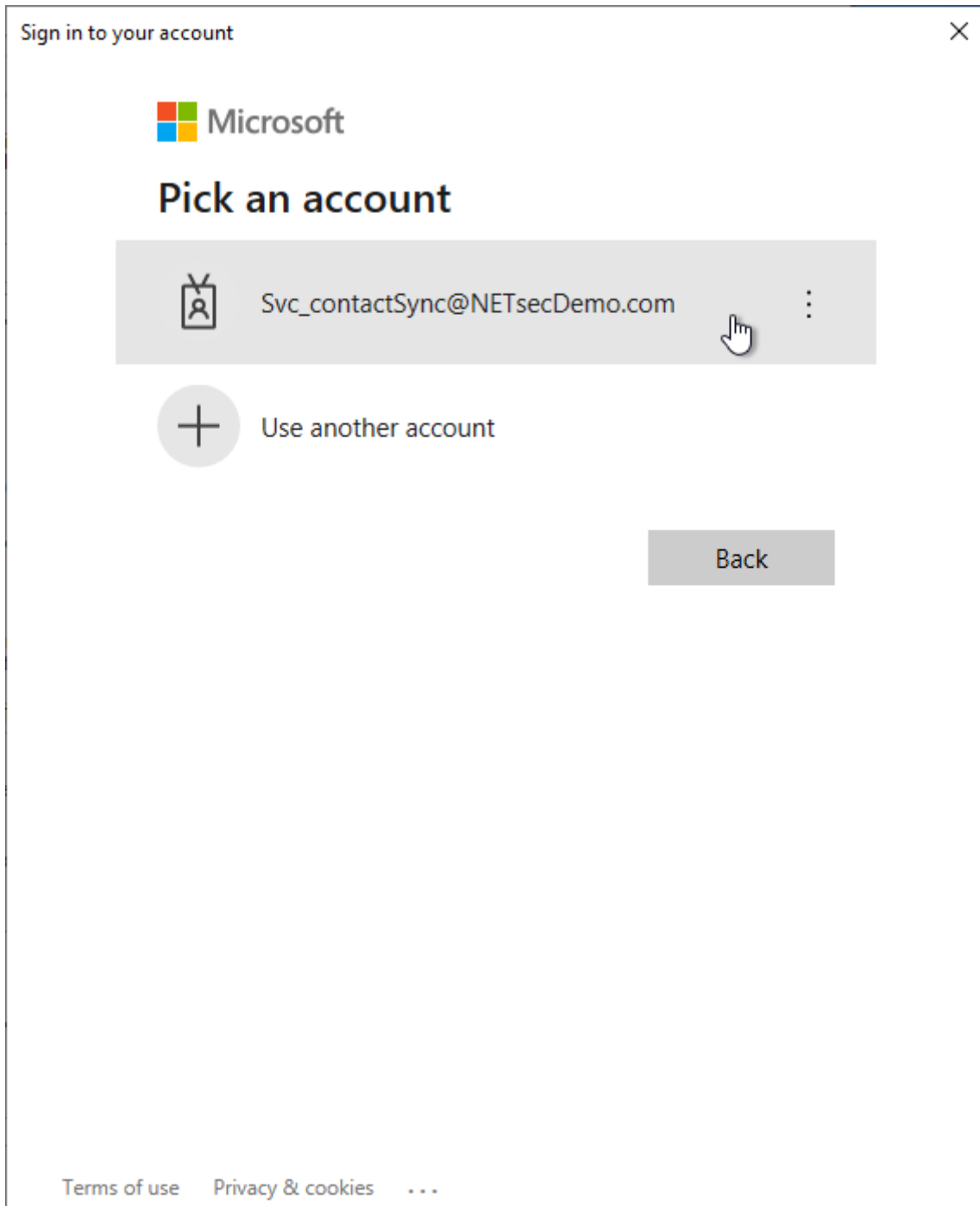
The authentication method for Exchange Web Services of the Office 365 tenant

Please login for the Modern Authentication OAuth 2.0

Modern Authentication OAuth 2.0 ⓘ


Please note, that the User-ID and the E-mail address can be different for an Exchange Online mailbox user. This depends on your Microsoft 365 Exchange Online tenant.

Insert the credentials for the contactSync service account, and click the **Login** button.



Select the same contactSync service account, which you have used in the **Exchange Online Credentials** dialog before.

Sign in to your account ✕

 Microsoft

← svc_contactsync@netsecdemo.com

Enter password

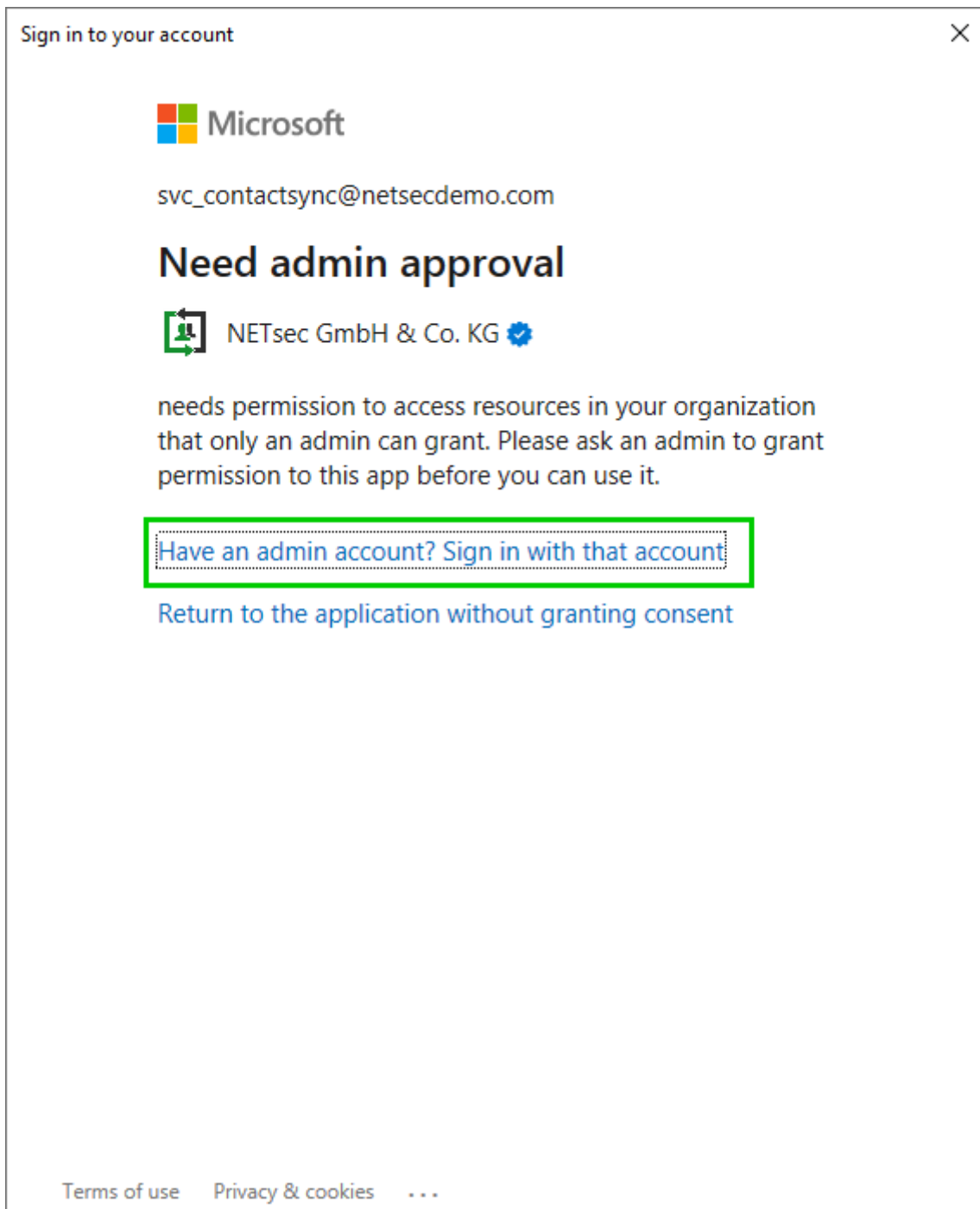
Password

[Forgot my password](#)

[Sign in](#)

[Terms of use](#) [Privacy & cookies](#) ...

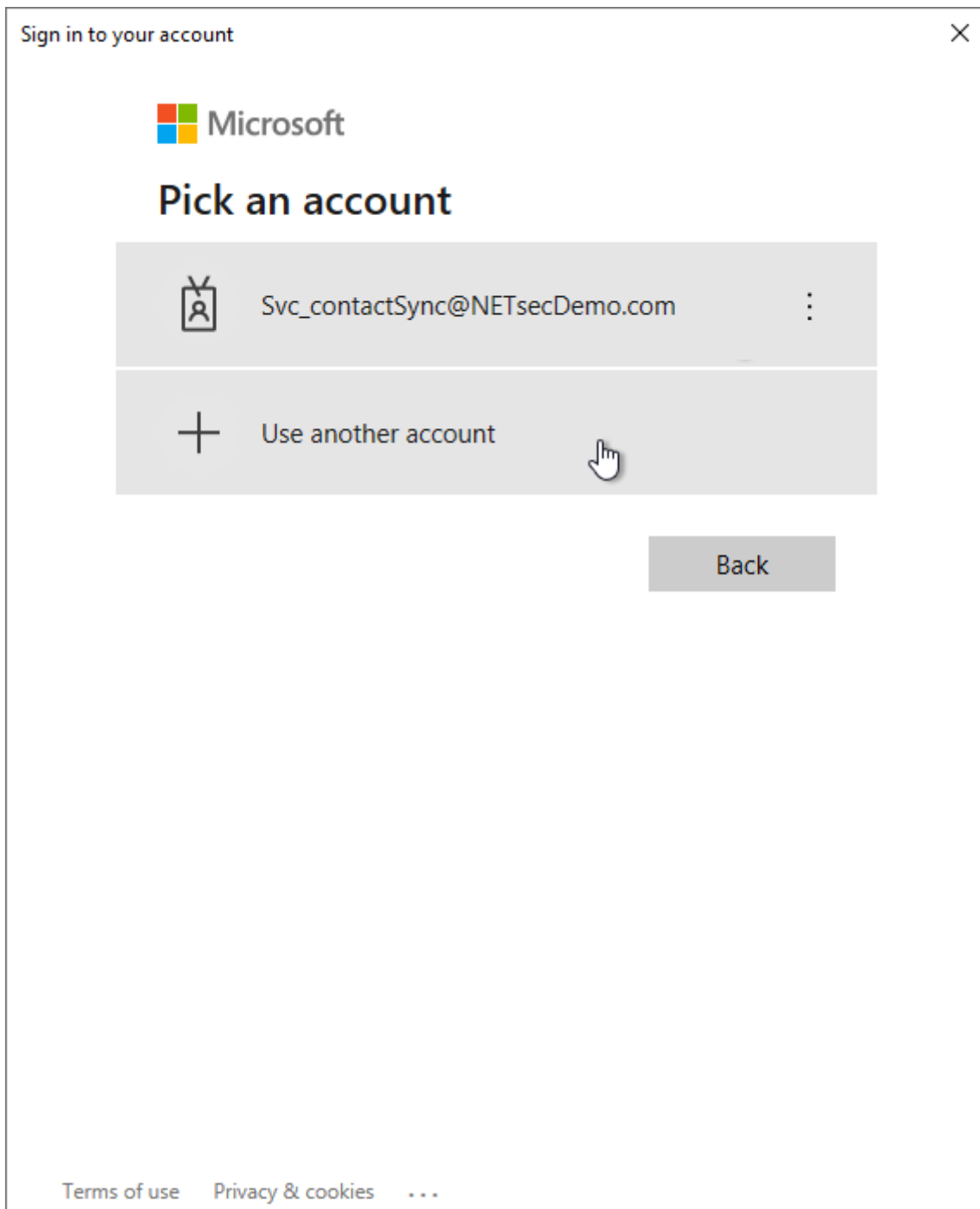
Insert the password of the contactSync service account.



NETsec contactSync needs a sign in of a Global Administrator, who will accept the requested permissions for the Enterprise Application.

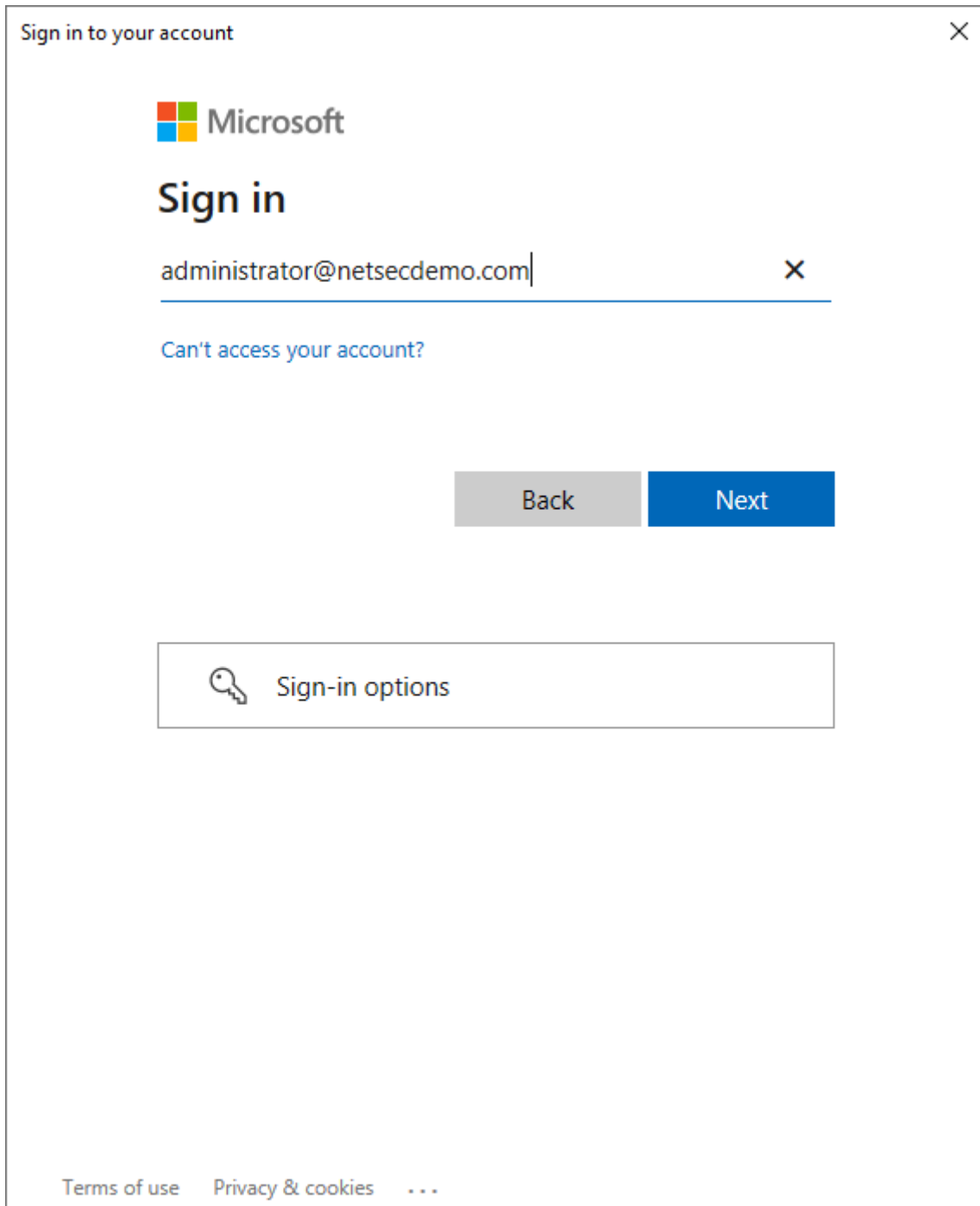
Click on **Have an admin account? Sign in with that account.**

Otherwise, a Global Administrator account grants consent for the requested permissions to the application under **Permissions** of the **NETsec contactSync Enterprise Application** in the **Microsoft Entra ID**, before the contactSync service account does the login for Modern Authentication OAuth 2.0 for Exchange Web Services (EWS) of Exchange Online a second time to get the token successfully.




Use another account to sign in as a Global Administrator.

*Please note, the contactSync service account should only be an Exchange Administrator of Exchange Online, but **not** a Global Administrator of the Microsoft 365 tenant.*



Sign in with a **Global Administrator** account of the Microsoft 365 tenant.

Sign in to your account ✕

 Microsoft

← administrator@netsecdemo.com

Enter password

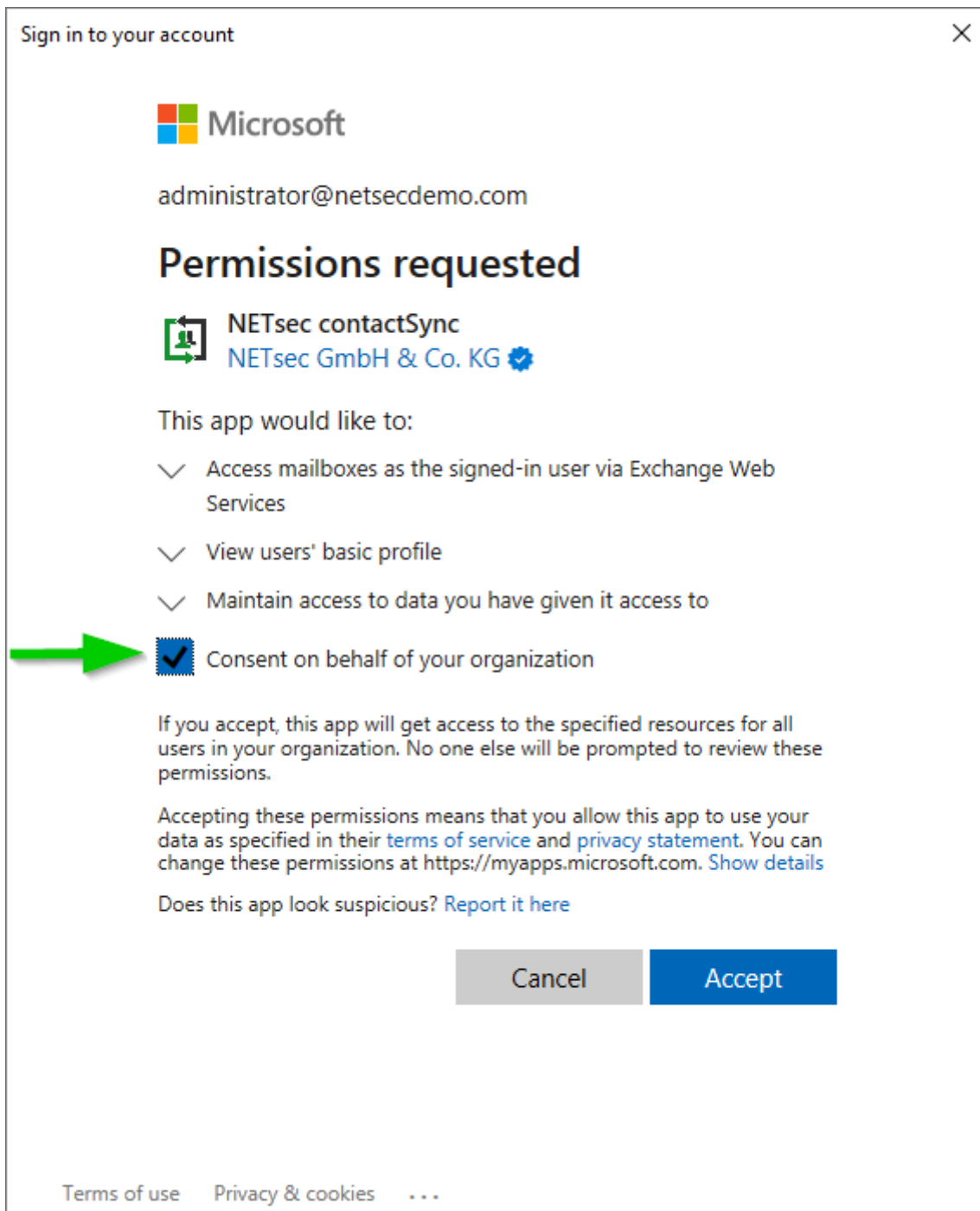
Password

[Forgot my password](#)

[Sign in](#)

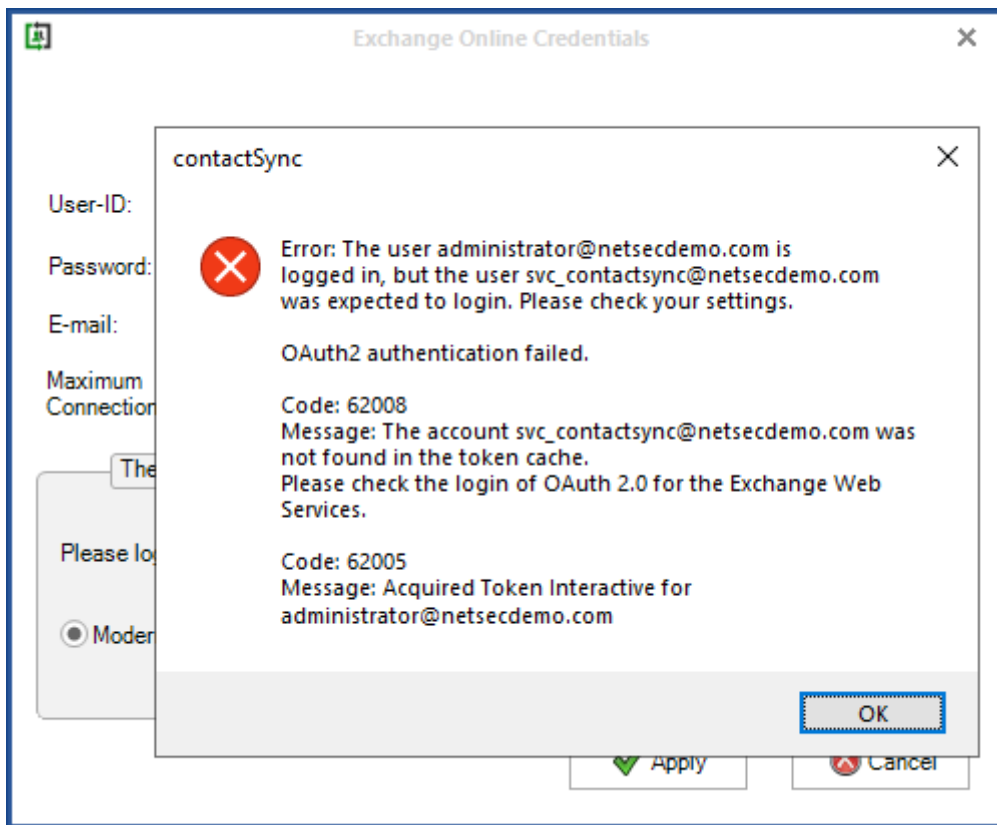
[Terms of use](#) [Privacy & cookies](#) ...

Insert the password of the **Global Administrator** account.

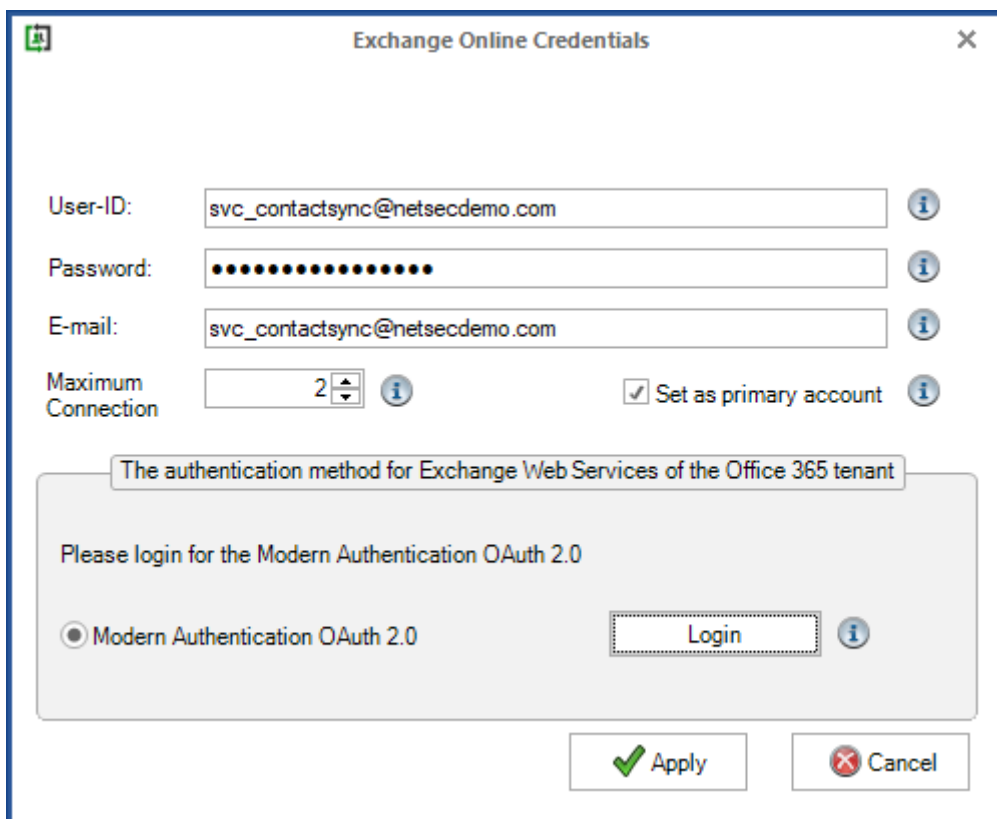


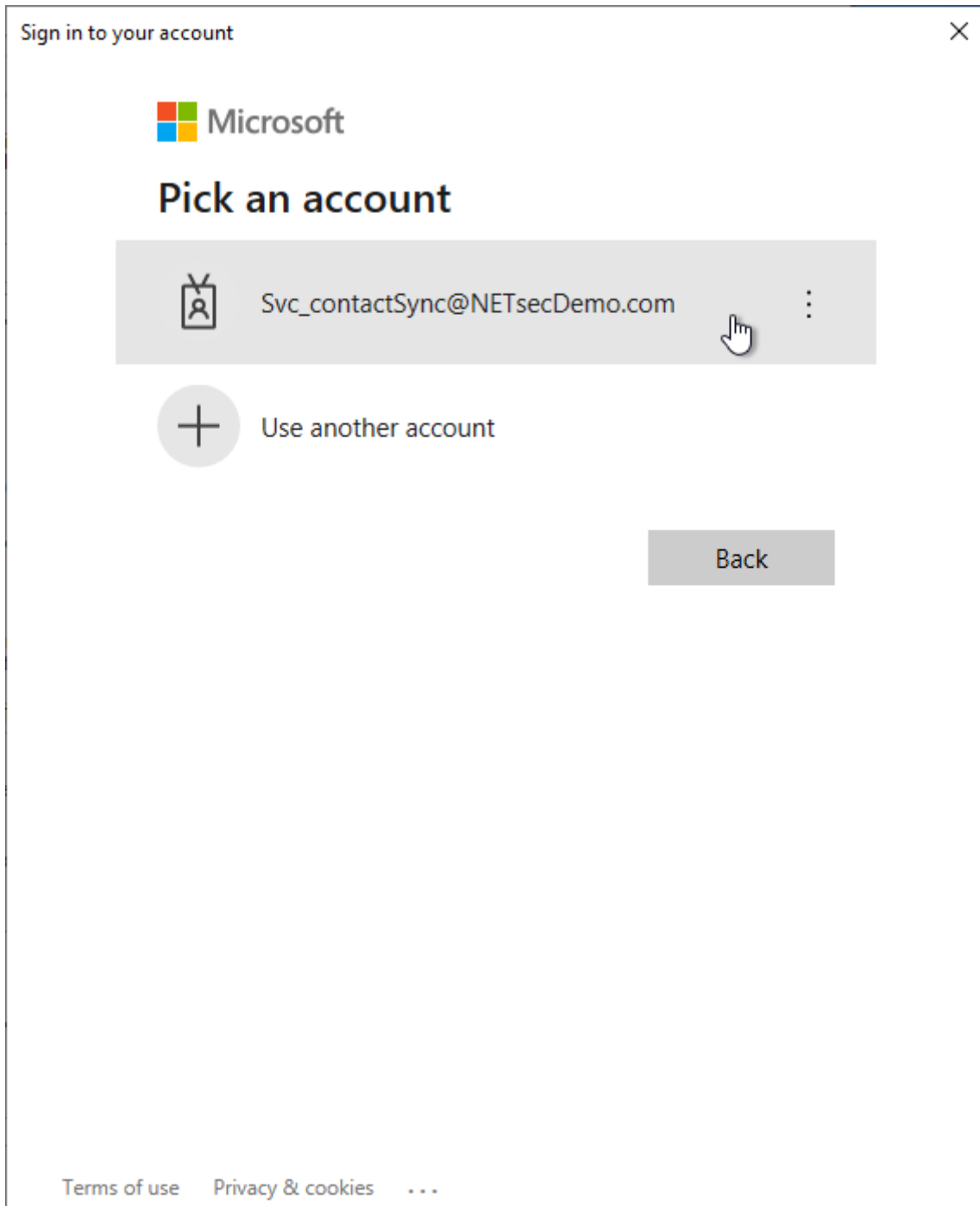
Enable **Consent on behalf of your organization**, then click **Accept**.

The OAuth2 authentication will fail after the first login process.




Proceed with the **Login** for Modern Authentication OAuth 2.0 for Exchange Web Services (EWS) of Exchange Online with your contactSync Service Account again.





Once again select the same contactSync service account, which has been previously used in the **Exchange Online Credentials** dialog.

Sign in to your account ✕

 Microsoft

← svc_contactsync@netsecdemo.com

Enter password

Password

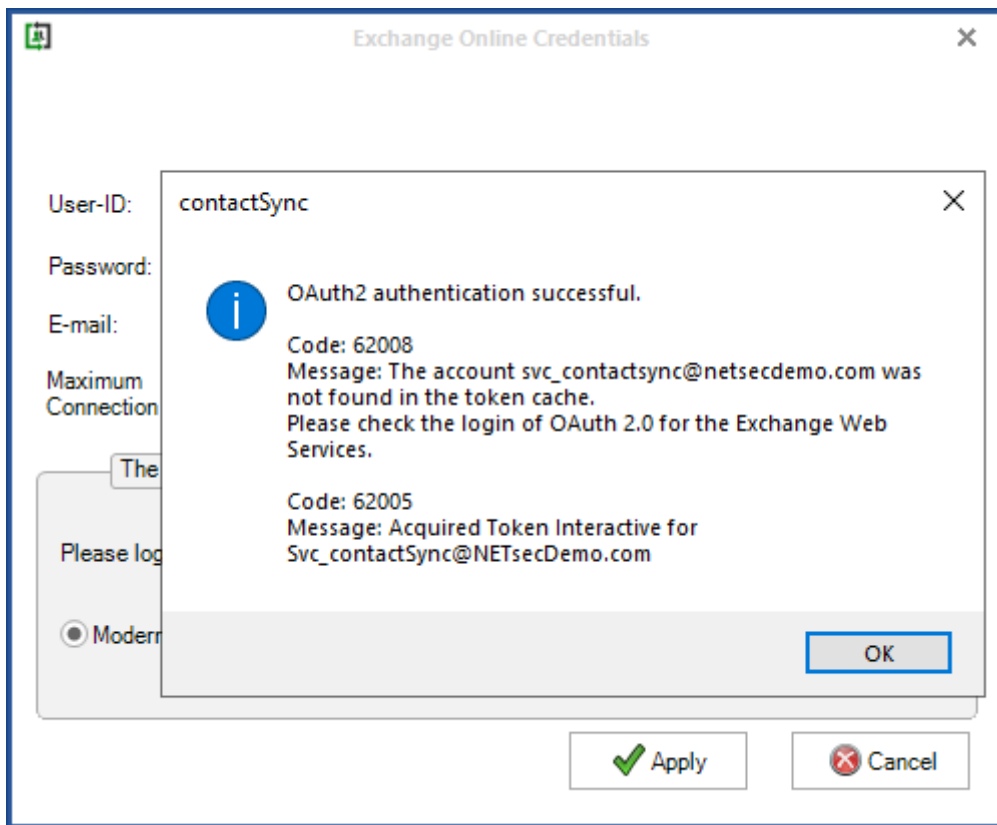
[Forgot my password](#)

[Sign in](#)

[Terms of use](#) [Privacy & cookies](#) ...

Insert the password of the contactSync service account.

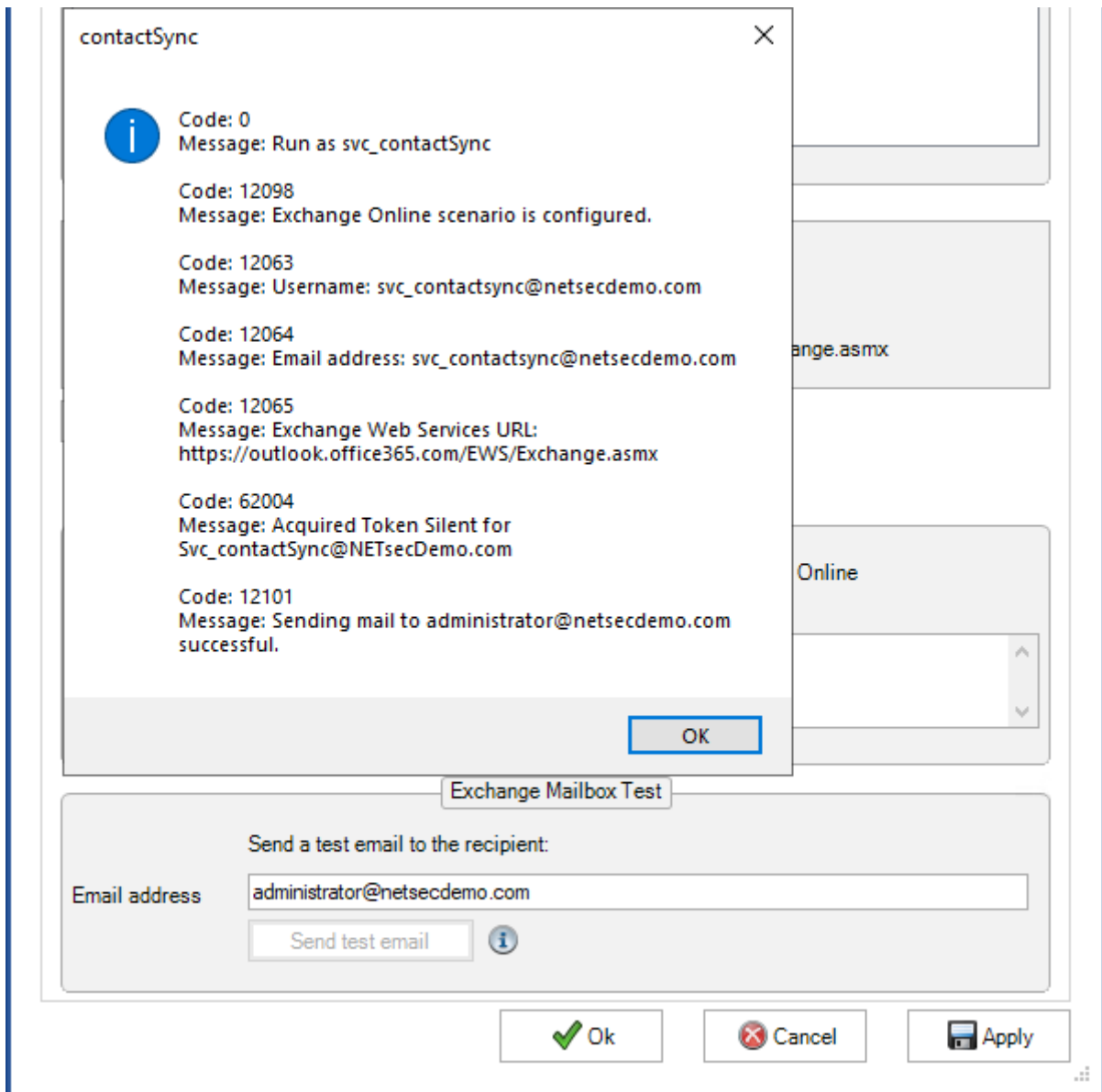
The login will now be successful.



contactSync can now use OAuth tokens for authentication to access the Exchange Web Services (EWS) for your Exchange Online during the policy runs.

Click **Apply** to close the **Exchange Online Credentials** dialog.

A test email can also be sent to the desired recipient as an additional test to validate mail flow. To do this, click the **Send test email** button for the **Exchange Mailbox Test**.



Please note, that the email address of the recipient for the test email will not be saved.

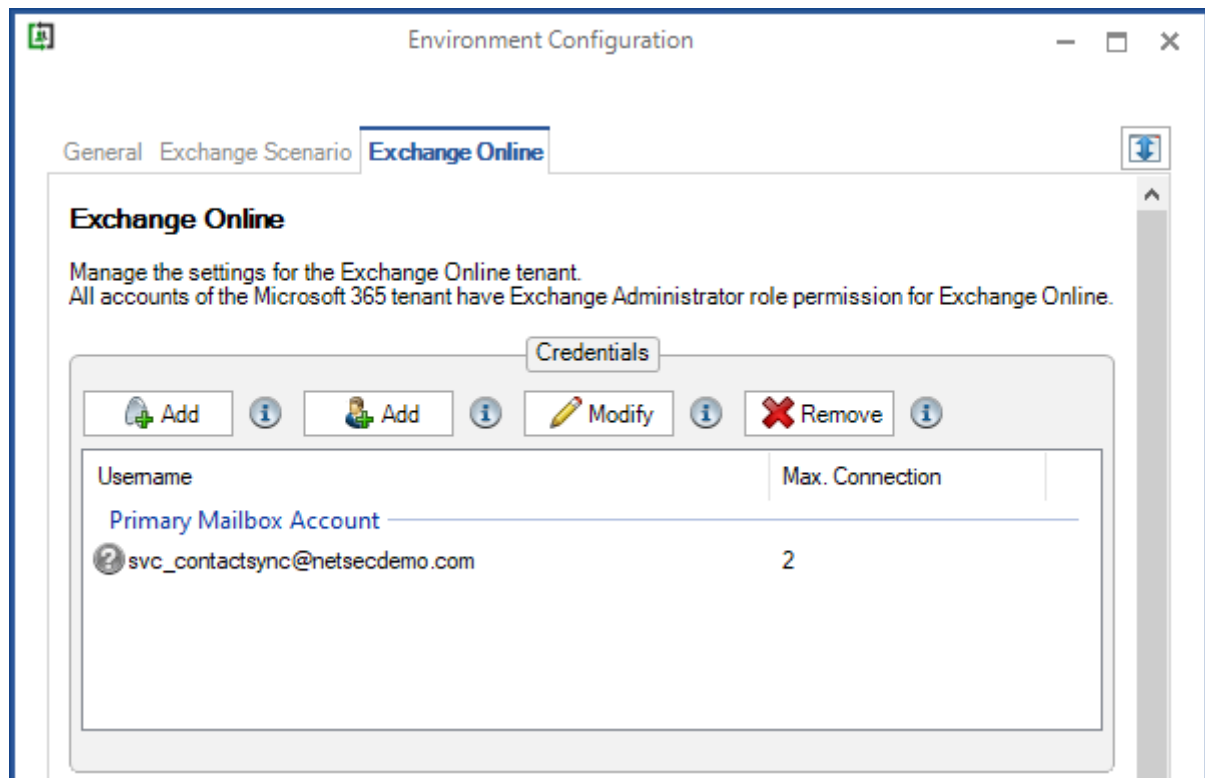
Also, please see the contactSync manual chapter:

12010 - Error getting Exchange Online connection

Account for access of Exchange Online mailboxes

contactSync uses the **Primary Mailbox Account** on the Exchange Online tab of the Environment Configuration to access Exchange Online mailboxes by default.

In this example, the user credentials of a service account are configured as a **Primary Mailbox Account**.



If the user credentials of a service account are configured for Exchange Online, contactSync requires the Exchange Application Impersonation role in Exchange Online for this service account to access Exchange Online mailboxes.

contactSync can also use a dedicated Exchange Online mailbox user, which has the Exchange Application Impersonation role in Exchange Online to access Exchange Online mailboxes.

Please take a look at the chapter:

How to configure Exchange Application Impersonation

contactSync components

Files

The executables are stored by default in **C:\Program Files\NETsec contactSync**, but you may change this during setup routine. This folder will be removed if you uninstall the software.

Files containing your configured policies, created encryption keys, log files and so on are placed in folder

%programdata%\NETsec GmbH & Co. KG\contactSync.

Note: the folder %programdata% usually is hidden. you may activate the option 'Show hidden files, folders, and drives' in folder 'options' of the Windows Explorer.

Environment Configuration

An Environment Configuration describes the Exchange environment for which the Policies are to be configured and contains the environment-specific settings.

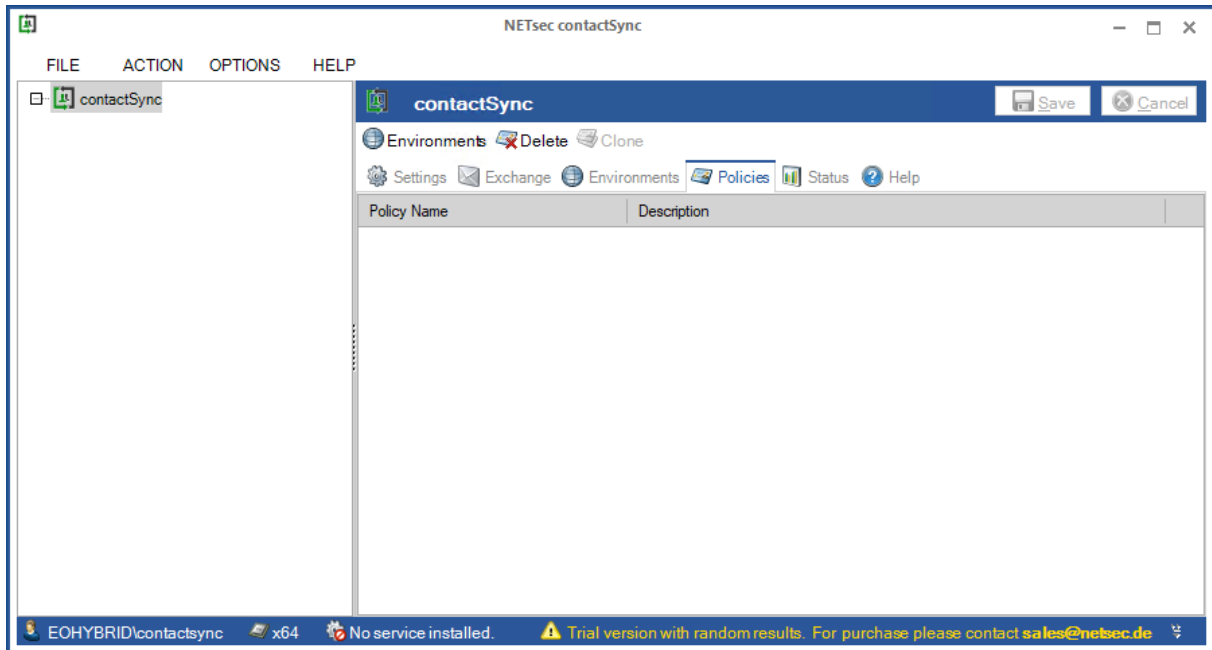
- The Exchange environment can be an on-premises Exchange environment.
- The Exchange environment can be a hybrid Exchange environment.
- The Exchange environment can be a Microsoft 365 Exchange Online environment.

Policy

Policies are the core logical component. A policy defines

- which data you want to share, by filtering the objects from your own directory,
- to which mailboxes you want to send the data included in this policy,
- to which email address you want to send an administrative report,
- at what times you want the policy to be executed automatically.

GUI



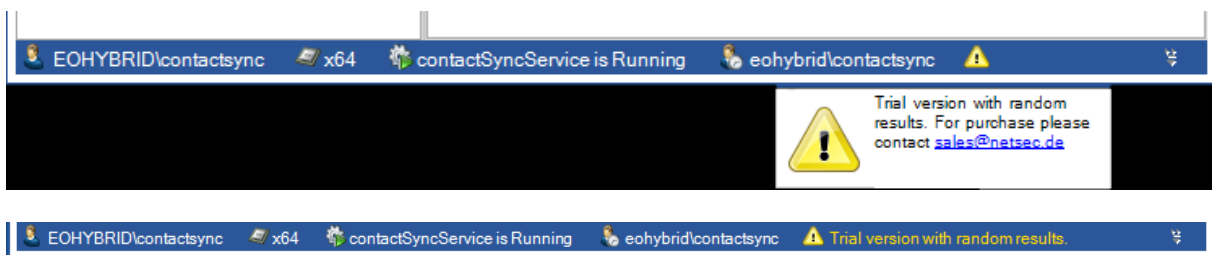
The Graphical User Interface is used to configure the environment configuration for the Exchange environment and the corresponding policies for synchronize the contacts into mailboxes. You can also test and execute policies manually.

Note: If you run a policy using the GUI the policy runs in the context of the user that is logged in. Therefore, it is recommended to log in with the same account which is configured for the contactSync service.

The GUI is executed as a process named **contactSync.exe**.





Information Bar

The bar at the bottom of the contactSync window shows information about the user account running the contactSync Graphical User Interface (GUI), and the status of contactSync Service. Additionally, it will inform you about the licensing state.



Policy Wizard

The contactSync Console also provides Wizards for simplifying the tasks of creating policies. The Wizards walk you through each step-in order to create a usable policy that can be run manually, or on a schedule. If you go through the wizard contactSync provides you with different information

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

Service

The contactSync Service is only used to execute the scheduled policies.

The contactSync 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.

The service is executed as a process named **contactSyncService.exe**.

Every scheduled policy runs in the context of the user that is used by the contactSync Service.

Running contactSync Policies via command line

Start a contactSync policy with the following command:

Syntax

```
cd "<program files>\NETsec contactSync\  
NETsecPolicyExecuter.exe "%programdata%\NETsec GmbH & Co.  
KG\contactSync\policies\<policy file>"
```

Note: the folder %programdata% usually is hidden. you may activate the option 'Show hidden files, folders, and drives' in folder 'options' of the Windows Explorer.

Example

```
cd "C:\Program Files\NETsec contactSync\  
NETsecPolicyExecuter.exe "C:\ProgramData\NETsec GmbH & Co.  
KG\contactSync\policies\policyname.xml"
```



As of contactSync Version 7.0.5 the **contactSyncPolicyExecuter.exe** has been renamed to **NETsecPolicyExecuter.exe**.

Important: If you use the Windows Task Scheduler for running the policies, then you have to correct the command in your scheduled tasks.

Internal Marks

NoContactSync (internal mark)

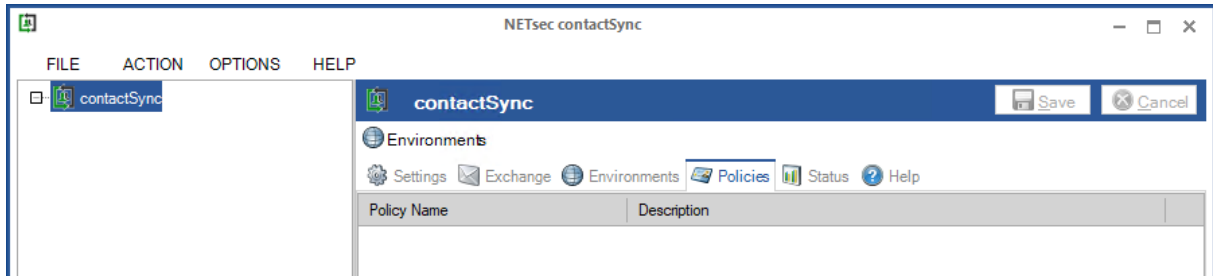
If you do not want a special object to be synchronize as a contact, you may insert the value **NoContactSync** in any of the custom attributes (on-premises Exchange: **extensionattribute1** - **extensionattribute15** or Exchange Online: **customAttribute1** - **customAttribute15**). This prevents contactSync from adding this object to the synchronization list.

NoMailboxSync (internal mark)

If you do not want to import into a special mailbox, you may insert the value **NoMailboxSync** in any of the custom attributes (on-premises Exchange: **extensionattribute1** - **extensionattribute15** or Exchange Online: **customAttribute1** - **customAttribute15**). This prevents contactSync from adding this mailbox to the list of mailboxes, which get directory objects into the contact folder.

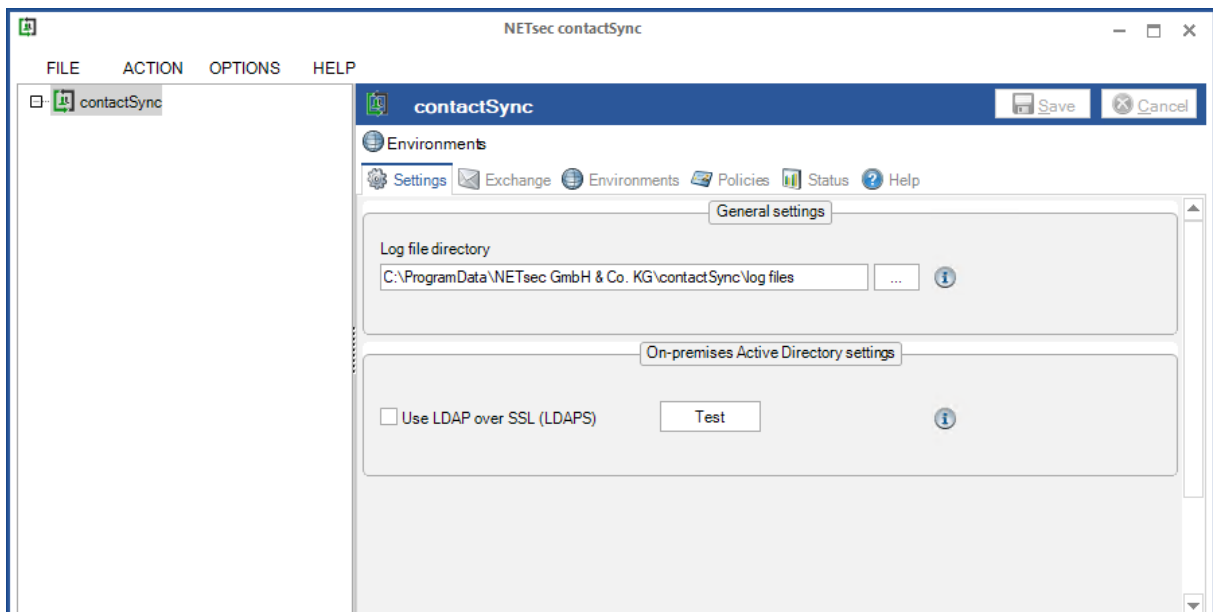
Global Settings

The Global Settings are available if you click the **contactSync** node in the left hierarchy tree. The content pane now displays the TABS **Settings**, **Exchange**, **Environments**, **Policies**, **Status** and **Help**.



Settings Tab

Here you can configure general settings used in all policies.



Log file directory

contactSync stores the log files in the application data of the program for all users. If the log files need to be stored elsewhere, the suitable directory path can be specified here.

Use LDAP over SSL (LDAPS)

Use LDAP over SSL (LDAPS) to connect an on-premises Active Directory.

If you have configured LDAP over SSL (LDAPS) in your on-premises Active Directory, contactSync can use LDAP over SSL (LDAPS) to communicate with your on-premises Active Directory.

Note: The Active Directory Schema Partition is only read using LDAP.

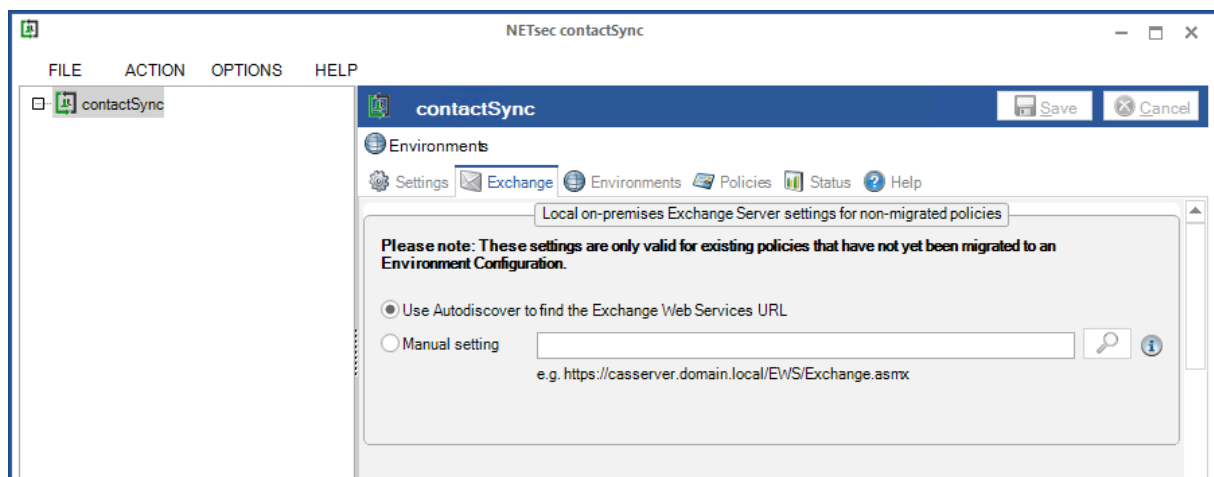
You can get more information about LDAP over SSL (LDAPS) in the Microsoft TechNet Wiki article **LDAP over SSL (LDAPS) Certificate**

<https://social.technet.microsoft.com/wiki/contents/articles/2980.ldap-over-ssl-ldaps-certificate.aspx>

You can check if LDAP over SSL (LDAPS) works at your environment/machine with Microsoft **ldp.exe** tool.

Exchange Tab

Here you can configure general Exchange settings used in all old policies, which are not yet migrated to an Environment Configuration.



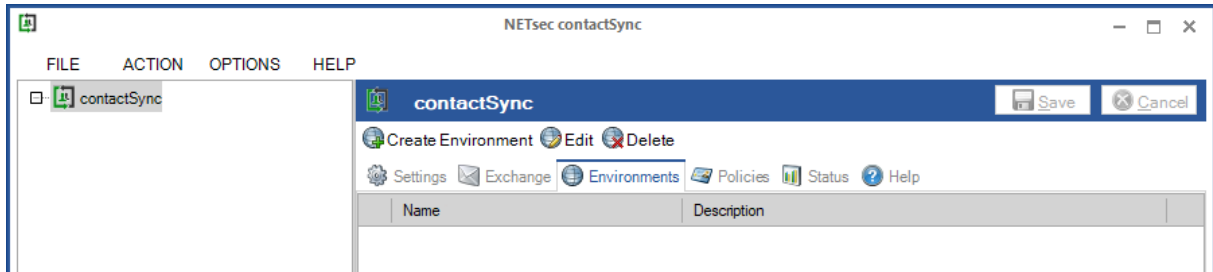
Local on-premises Exchange Server for non-migrated policies

If you work with on-premises Exchange Server you can choose **Use Autodiscover to find the Exchange Web Services URL**. If Autodiscover does not work you may set the value for Exchange Web Services (EWS) manually. If you click the SEARCH icon then contactSync tries to discover the **Exchange Web Services URL** via **Autodiscover**.

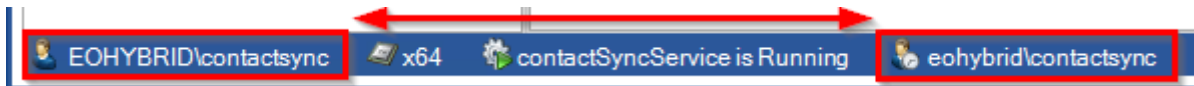
Note: This setting is also on the 'Exchange Server on-premises' tab of the Environment Configuration for the corresponding policies.

Environments Tab

contactSync requires details concerning the Exchange environment and general settings for which a synchronization should be configured. The information about the Exchange environment is set in an Environment Configuration.

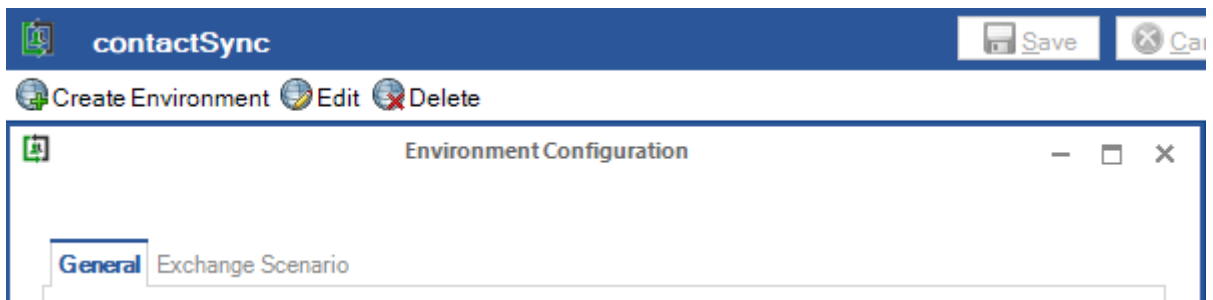


Before you configure an Environment Configuration, please ensure the contactSync GUI is running in the same credentials as the contactSync Service. This can be verified in the information bar at the bottom of the GUI.

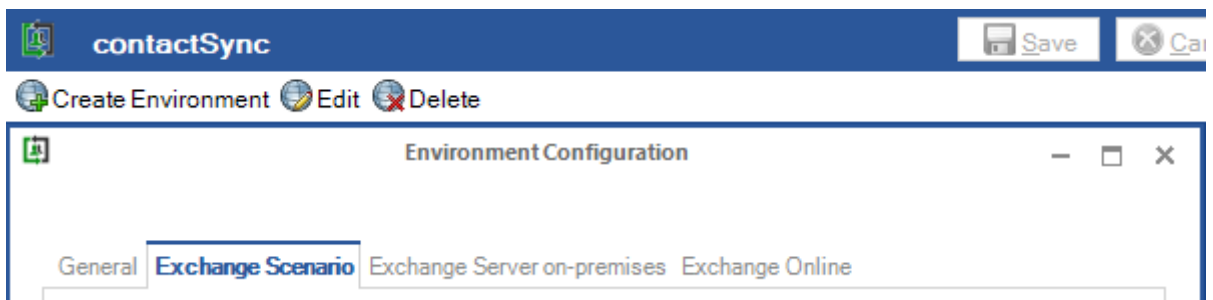


Create Environment

An **Environment Configuration** can be created on the Environments tab by clicking on **Create Environment**. This opens the **Environment Configuration** dialog.



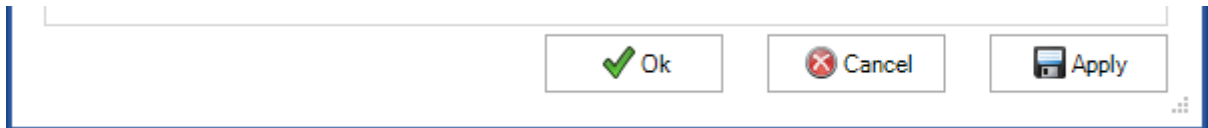
Upon commencement, only the **General** tab and the **Exchange Scenario** tab are visible.



Depending on the selection of the Exchange scenario on the **Exchange Scenario tab**, a variance of additional tabs appears. There is an **Exchange Server on-premises tab** and an **Exchange Online tab**. One of the two tabs can appear, or both.

After an **Exchange Configuration** is configured, it is possible to create policies for it.

Buttons of the Environment Configuration dialog



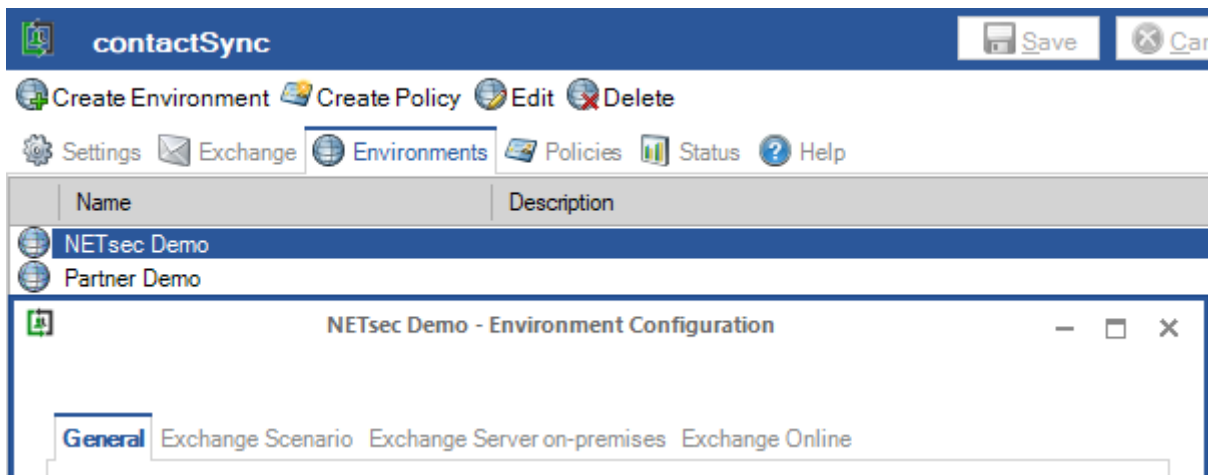
Ok will save the Environment Configuration and close the dialog.

Cancel will close the dialog without saving the Environment Configuration.

Apply will only save the Environment Configuration, but not close the dialog.

Edit

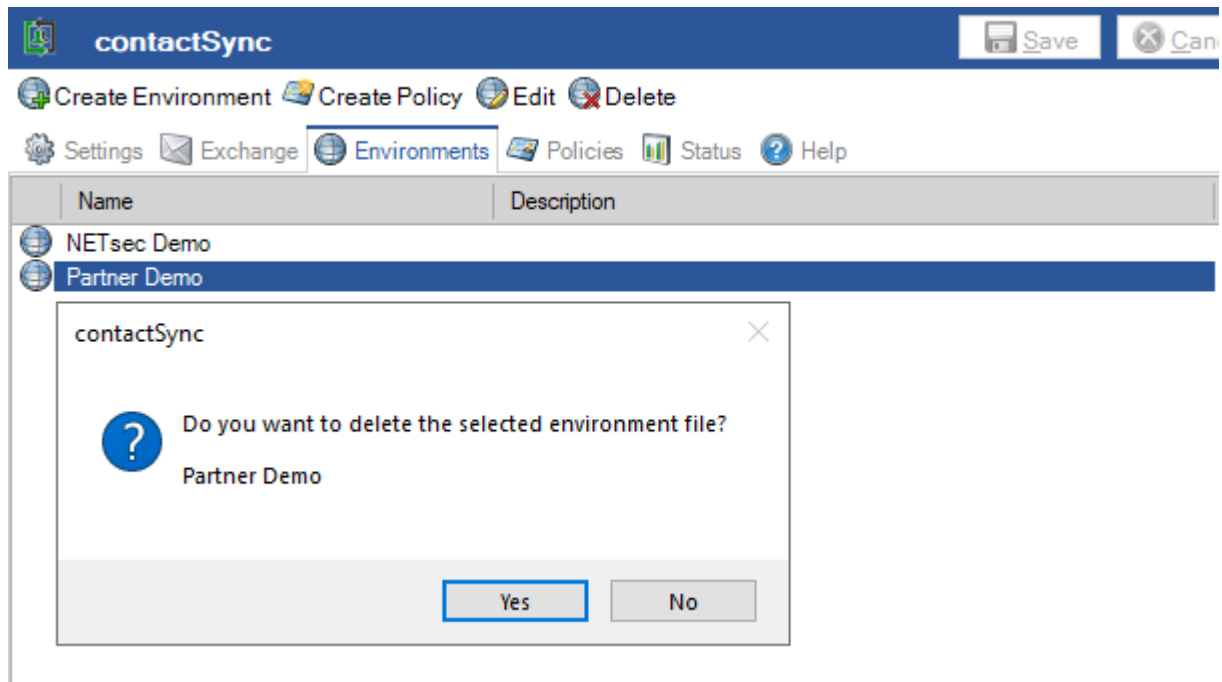
Select an **Environment Configuration** entry of the existing Environment Configuration list and click on **Edit** to open the **Environment Configuration dialog** for the selected Environment Configuration.



The Environment Configuration can be modified at the **Environment Configuration dialog**.

Delete

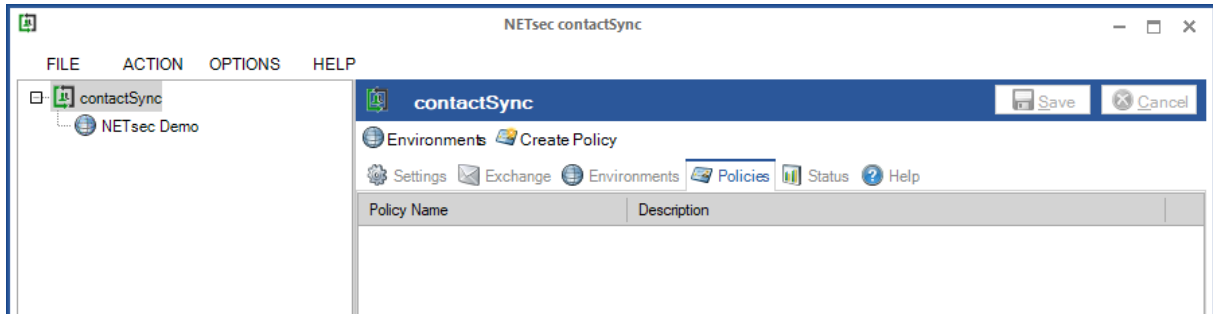
Select the **Environment Configuration** to be deleted in the existing Environment Configuration list, and click **Delete**.



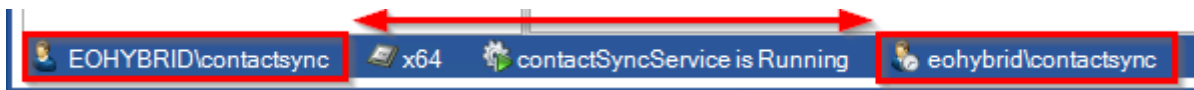
Note: An Environment Configuration can only be deleted if no further policies exist for the Environment Configuration. This ensures no Environment Configuration is deleted that is still being used by a Policy.

Policies Tab

The **Policies** tab lists all existing contactSync policies. Select a listed policy to view or modify its configuration. After initial setup, as shown below, this list is empty until a policy is created.

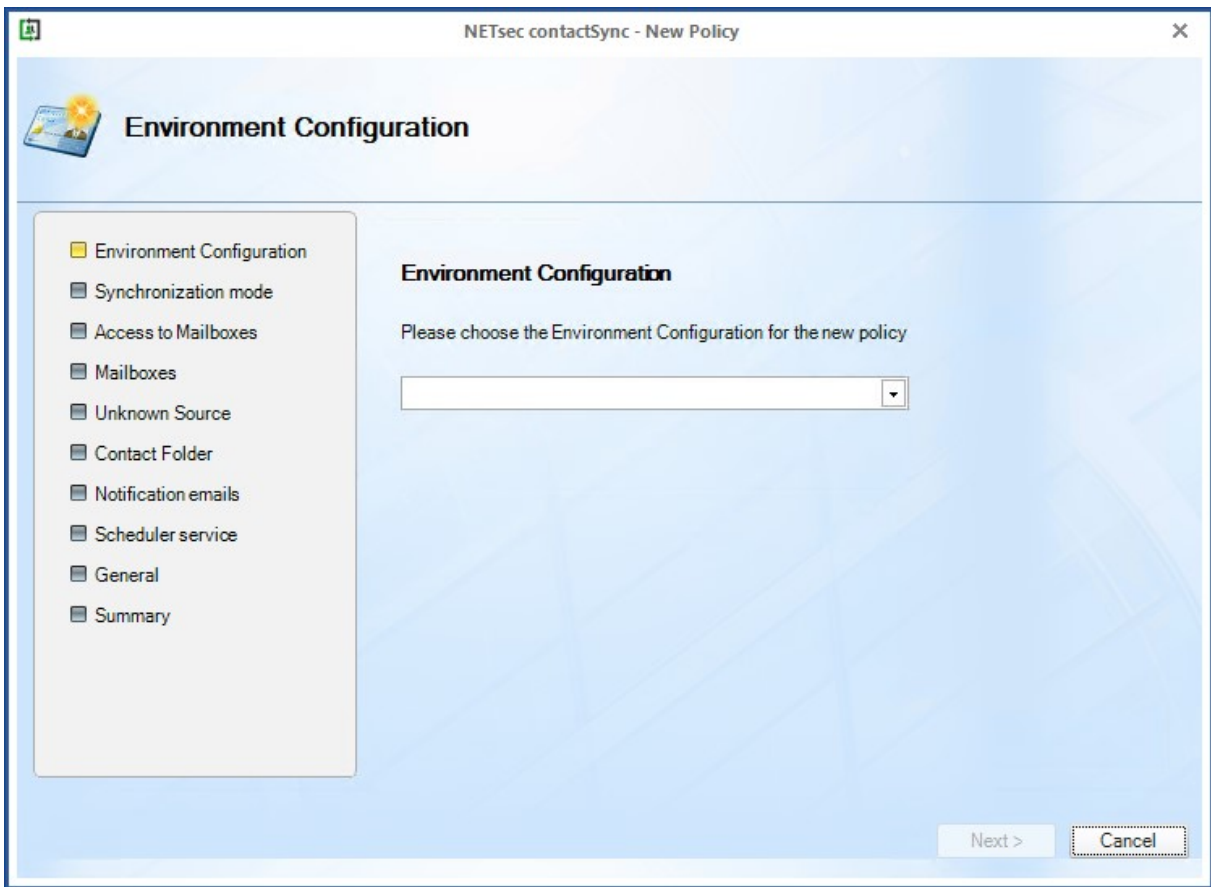


Before you configure a policy, please ensure the contactSync GUI is running in the same credentials as the contactSyncService. This can be verified in the information bar at the bottom of the GUI.



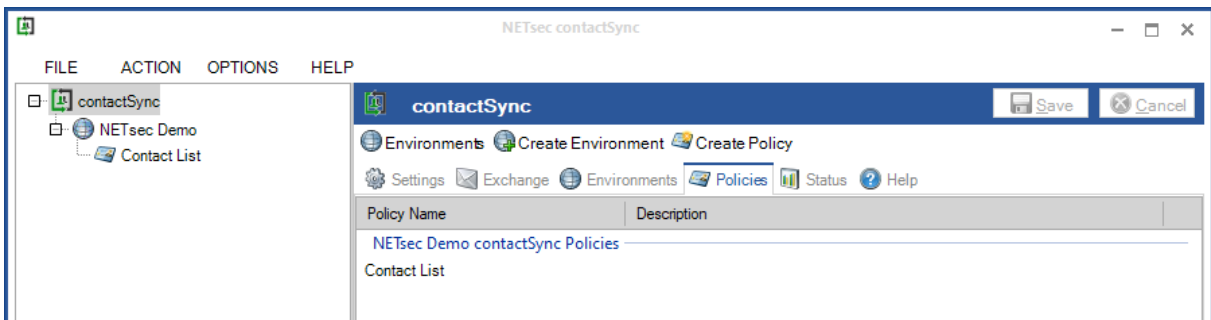
Create Policy

A **Policy** can be created on the Policies tab by clicking on **Create Policy**. This opens the **Policy wizard**.



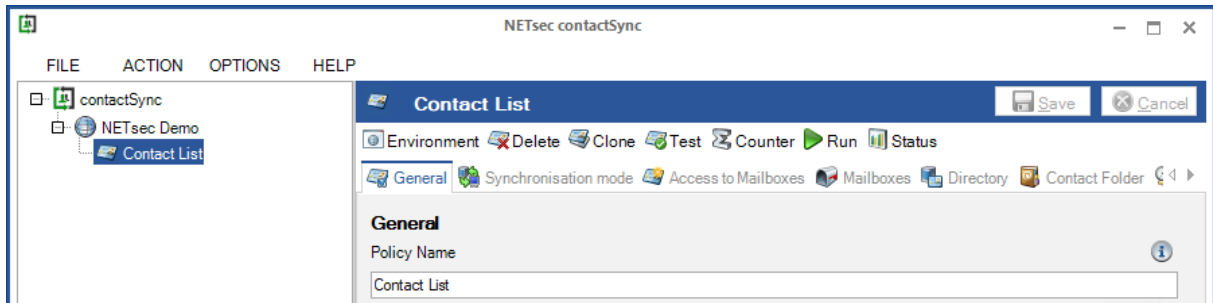
*Please note that an Environment Configuration is required first to be able to create a Policy. If you have not yet created and configured an Environment Configuration for your Exchange environment, please create and configure one first. Please take a look at the **Environment Configuration** chapter.*

After finishing the Policy Wizard, the new created policy will be listed on the Policies tab.



Edit policy

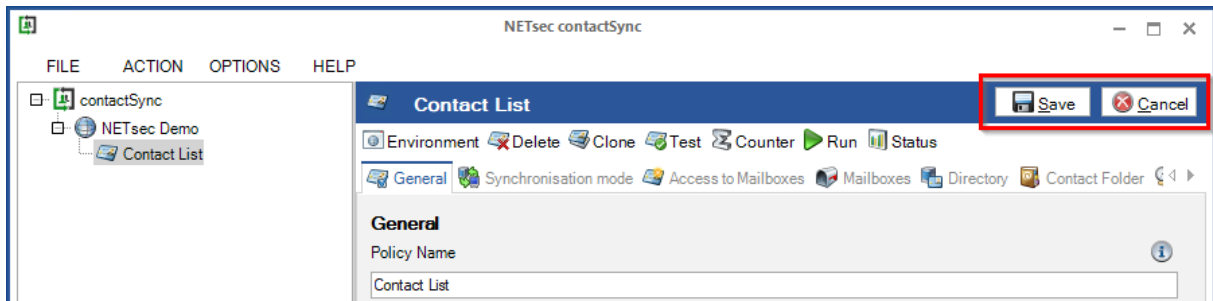
Click on the policy entry to show the policy configuration in the main window.



By clicking the tabs, you can view and modify the policy configuration.

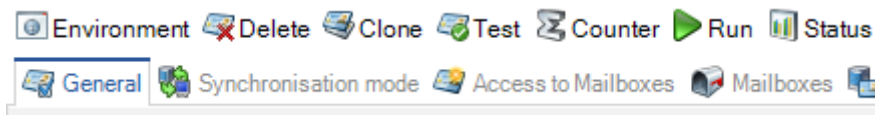
Please take a look at the **Policy Configuration** chapter.

After modifying the policy, please do not forget to save your changes.



Delete

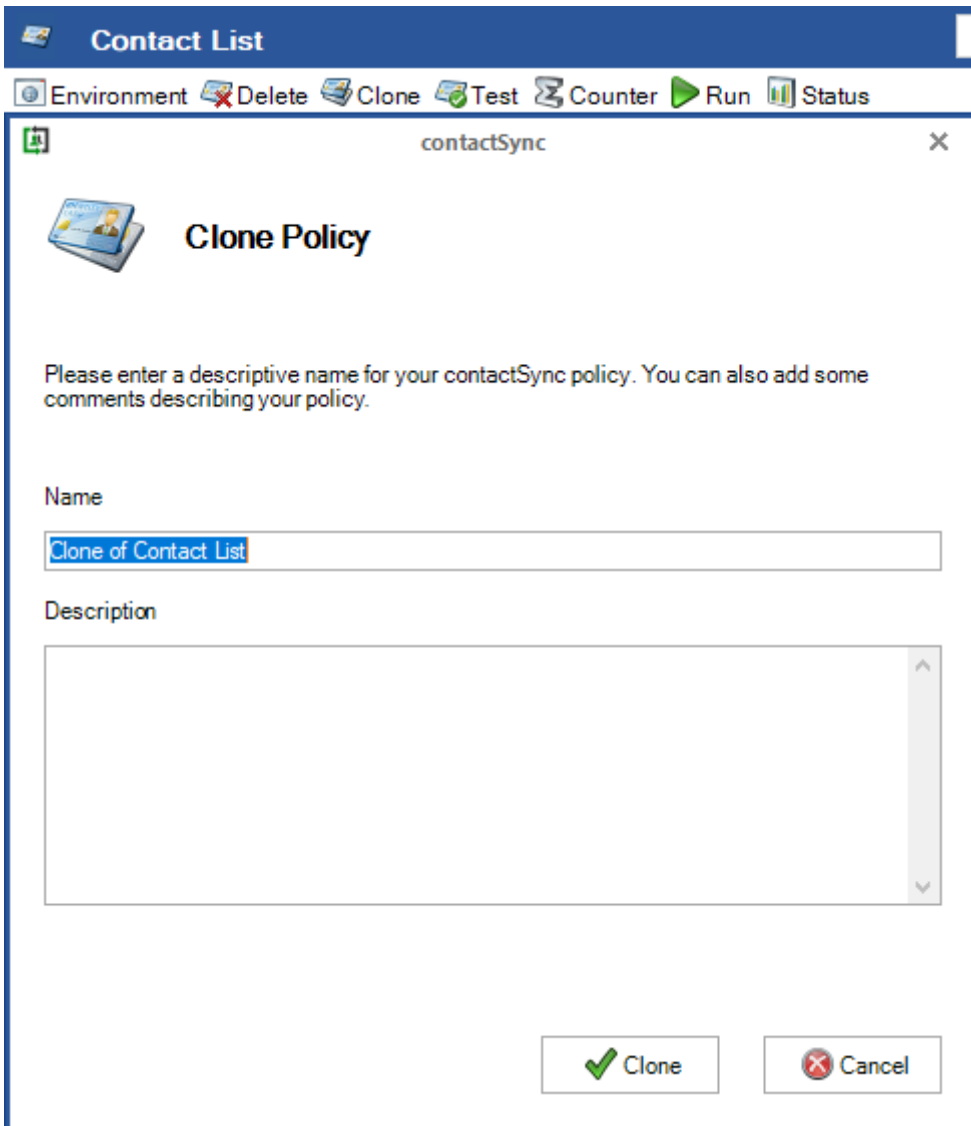
Select the **Policy** to be deleted, and click **Delete**.



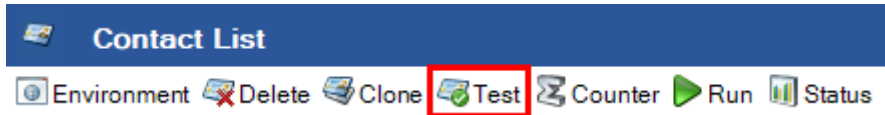
Clone

Select the **Policy** to be cloned, and click **Clone**.

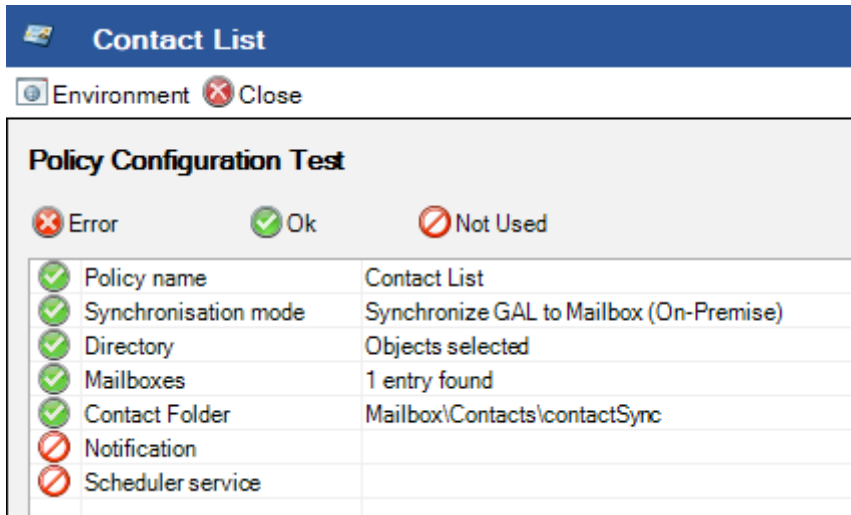
Please insert a new policy name and click **Clone** on the Clone Policy dialog.



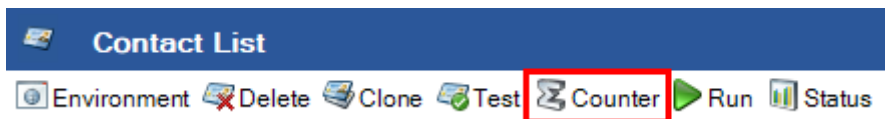
Test



A rudimentary check is run against the policy settings to see if anything is missing. It's the same test as at the end of the wizard when creating a new policy.

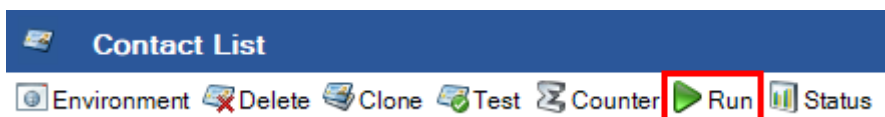


Counter



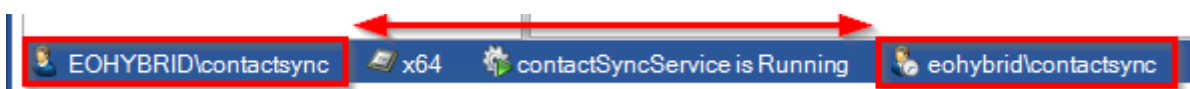
Counts the number of mailboxes that are expected to be synchronized.

Run



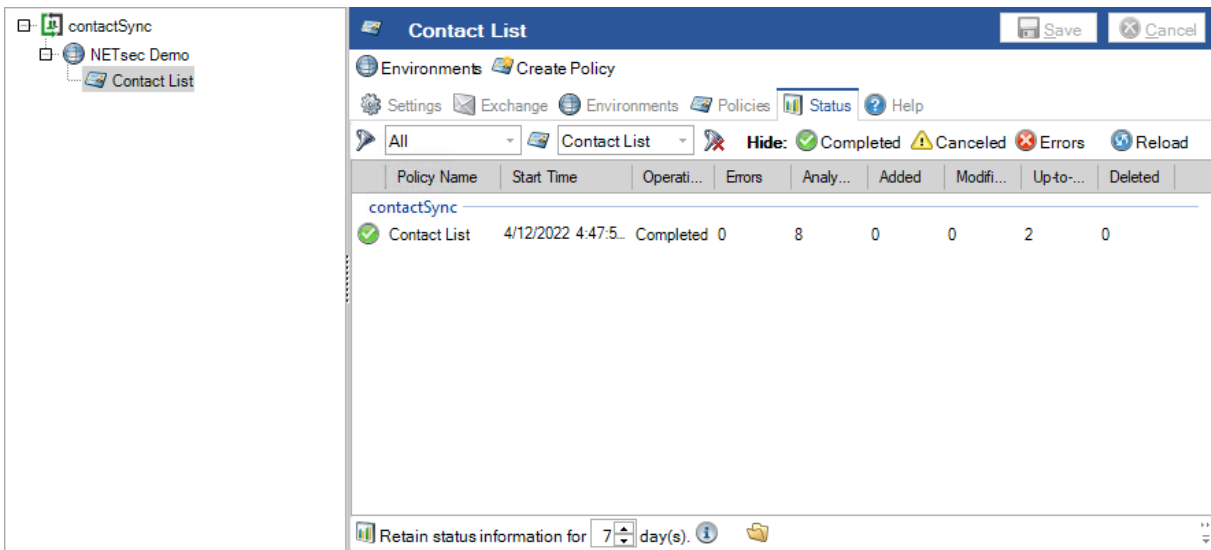
This will run the policy manually.

Please check beforehand, that the contactSync GUI is running in the same credentials as the contactSyncService. This can be verified in the information bar at the bottom.



Status

For each policy run a log file entry is displayed on the status tab.



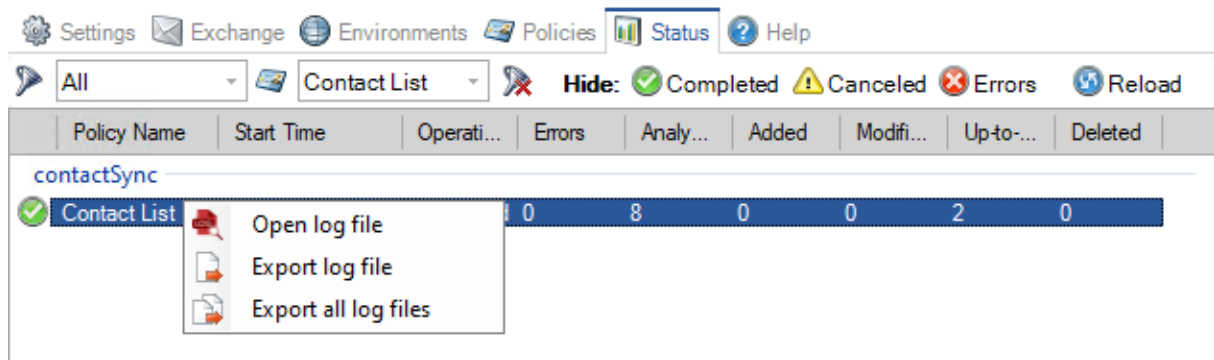
Note: If a policy just is running access to the log file may not be possible. The log file will be displayed at the top of the list and is indicated with "error".

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. Here you will find a link to the folder where the log files are stored. Please keep in mind that windows explorer usually hides this folder by default. If you do not see this link, please click at the folder symbol at the bottom to open the folder with the windows explorer.

Open and export log files

You can open the log file of the corresponding policy run with a double click on the entry or open the context menu with a right-click.



For support purposes you may open or export the status files / log files.

Open log file.

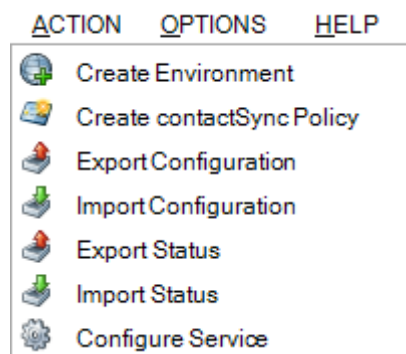
1. You can double-click an entry of the status table and the log file will open in the **NETsec LogViewer**.
2. After you select an entry of the status table, you can right-click to open the context-menu and **Open the log file** will open it in the **NETsec LogViewer**.

Export log file

Exports only the selected log file to a zip file.

Export all log files

1. Exports all filtered log files from the status table to a zip file.
For example: all log files of the last week or all log files of a selected policy.
2. The menu **ACTION** -> **Export Status** exports all log files to a zip file.



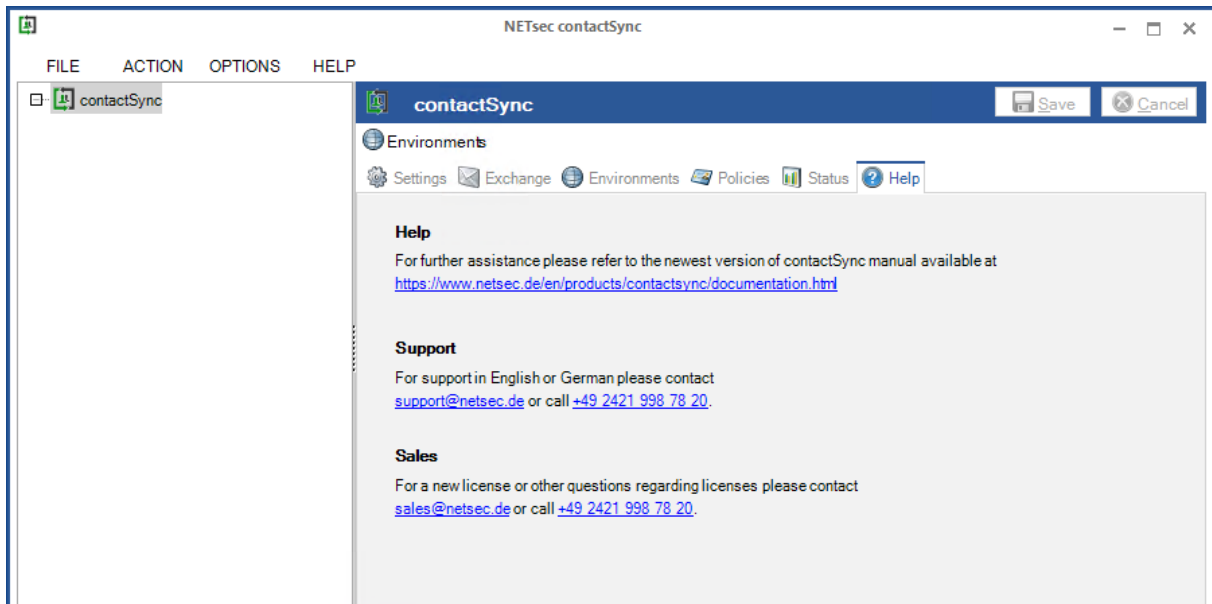
NETsec LogViewer

Please take a look at the NETsec LogViewer manual

https://www.netsec.de/fileadmin/download/LogViewer/NETsec_LogViewer_manual.pdf

Help Tab

The **Help** tab provides you with a hyperlink for downloading the latest documentation as well as mail-addresses and phone numbers for support and sales.

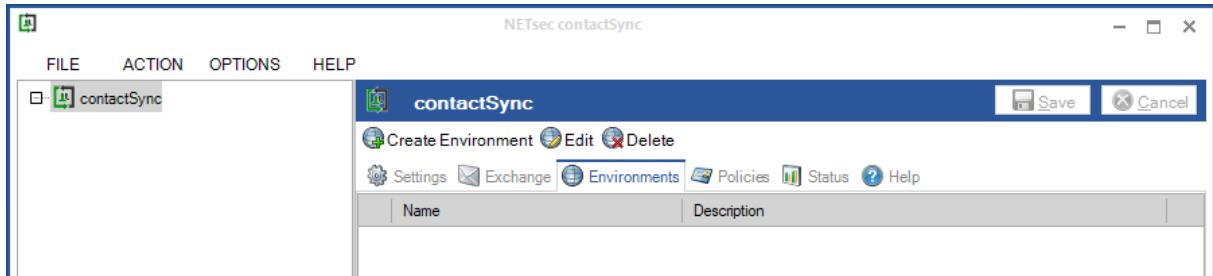


For more information, please take a look at the chapter

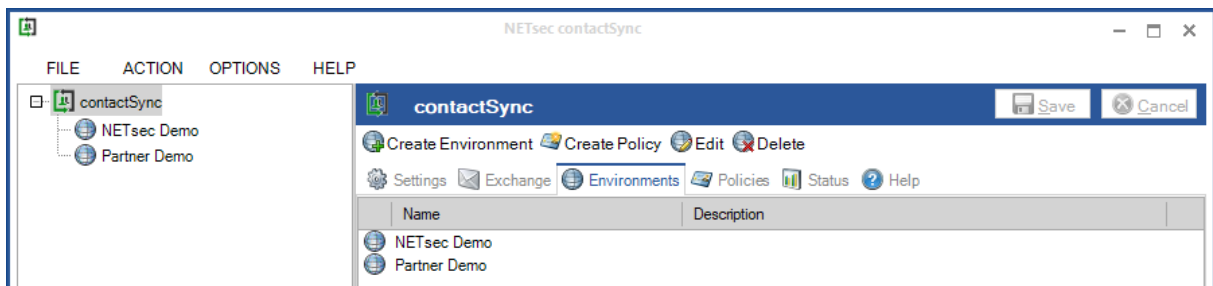
Support: What to do when I notice an error / bug?

Environment Configuration

contactSync requires details concerning the Exchange environment and general settings for which a synchronization should be configured. The information about the Exchange environment is set in an Environment Configuration.



After the Environment Configuration is created, its settings will be used in the policies, which can be configured for the Exchange environment.

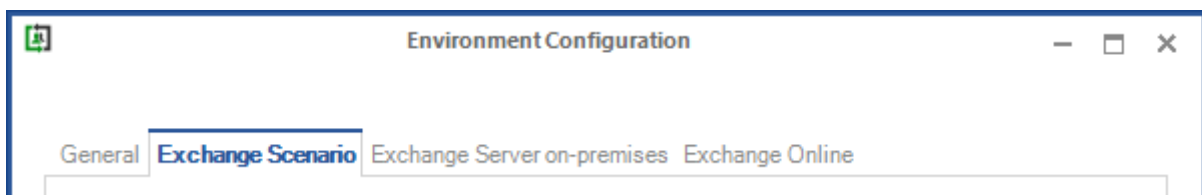


Environment Configuration dialog

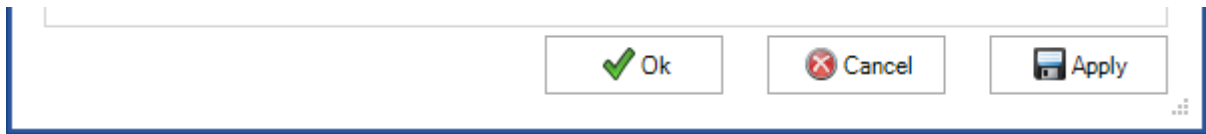
Upon commencement, only the **General** tab and the **Exchange Scenario** tab are visible.



Depending on the selection on the **Exchange Scenario** tab, a variance of additional tabs appears. There is an **Exchange Server on-premises** tab and an **Exchange Online** tab. One of the two tabs can appear or both.

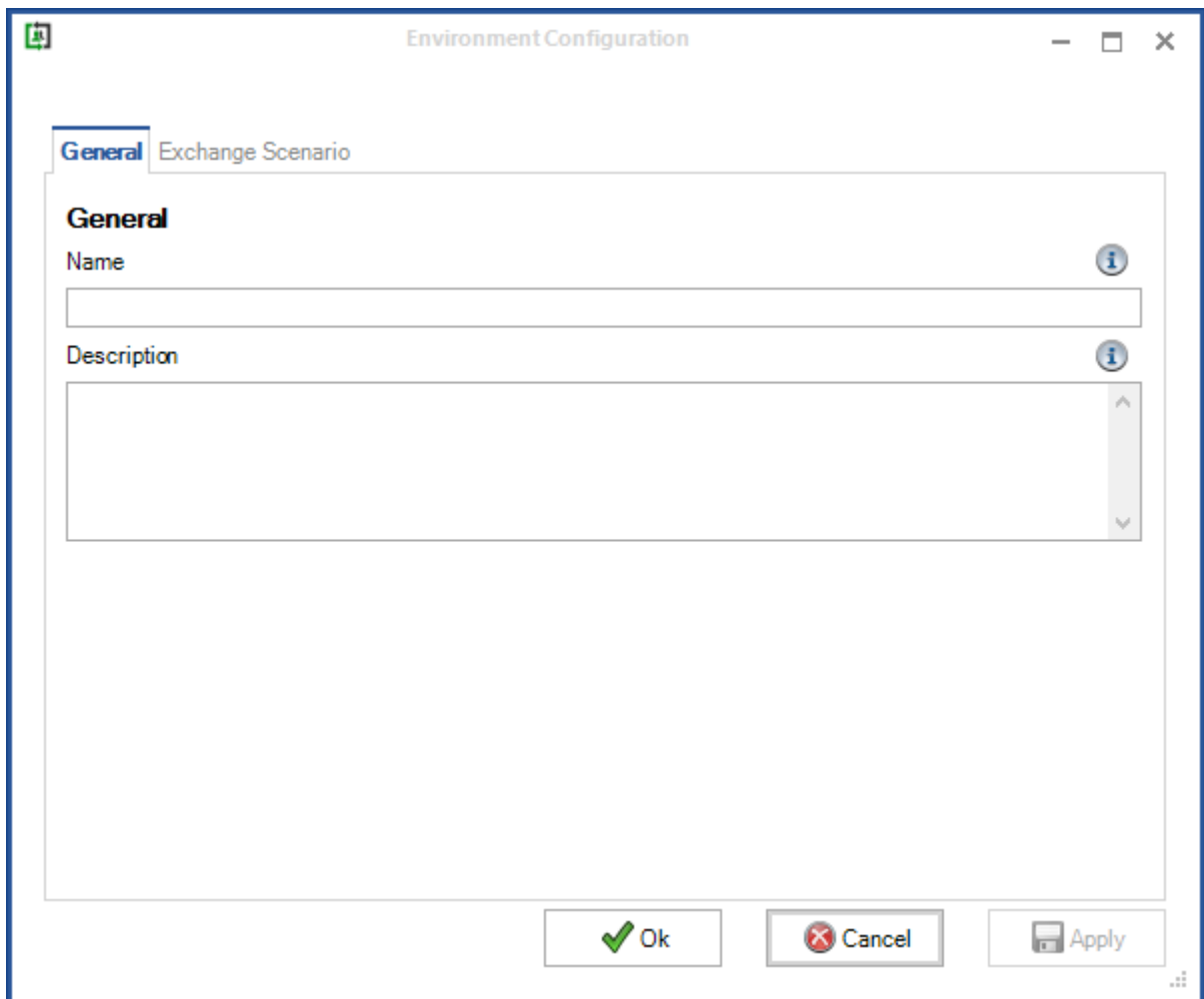


Buttons of the Environment Configuration dialog



- Ok** will save the Environment Configuration and close the dialog.
- Cancel** will close the dialog without saving the Environment Configuration.
- Apply** will only save the Environment Configuration, but not close the dialog.

General tab



On the **General tab** of the **Environment Configuration** dialog, the **Name** of the Environment Configuration must be defined and a **Description** of the Exchange environment can be added.

After that switch to the **Exchange Scenario tab** of the Environment Configuration dialog.

Exchange Scenario tab

The screenshot shows a window titled "Environment Configuration" with two tabs: "General" and "Exchange Scenario". The "Exchange Scenario" tab is active. The main content area is titled "Exchange Scenario" and contains the instruction "Please choose the Exchange scenario". There are three radio button options:

- On-premises Exchange environment
The contactSync Server must be member of the on-premises Active Directory.
- Hybrid Exchange environment
 The contactSync Server is member of the on-premises Active Directory.
This on-premises Active Directory is connected to the Microsoft 365 / Office 365 tenant of Exchange Online with Microsoft Azure Active Directory Connect.
- Exchange Online environment
 The contactSync Server is member of the on-premises Active Directory.
This on-premises Active Directory is connected to the Microsoft 365 / Office 365 tenant of Exchange Online with Microsoft Azure Active Directory Connect.

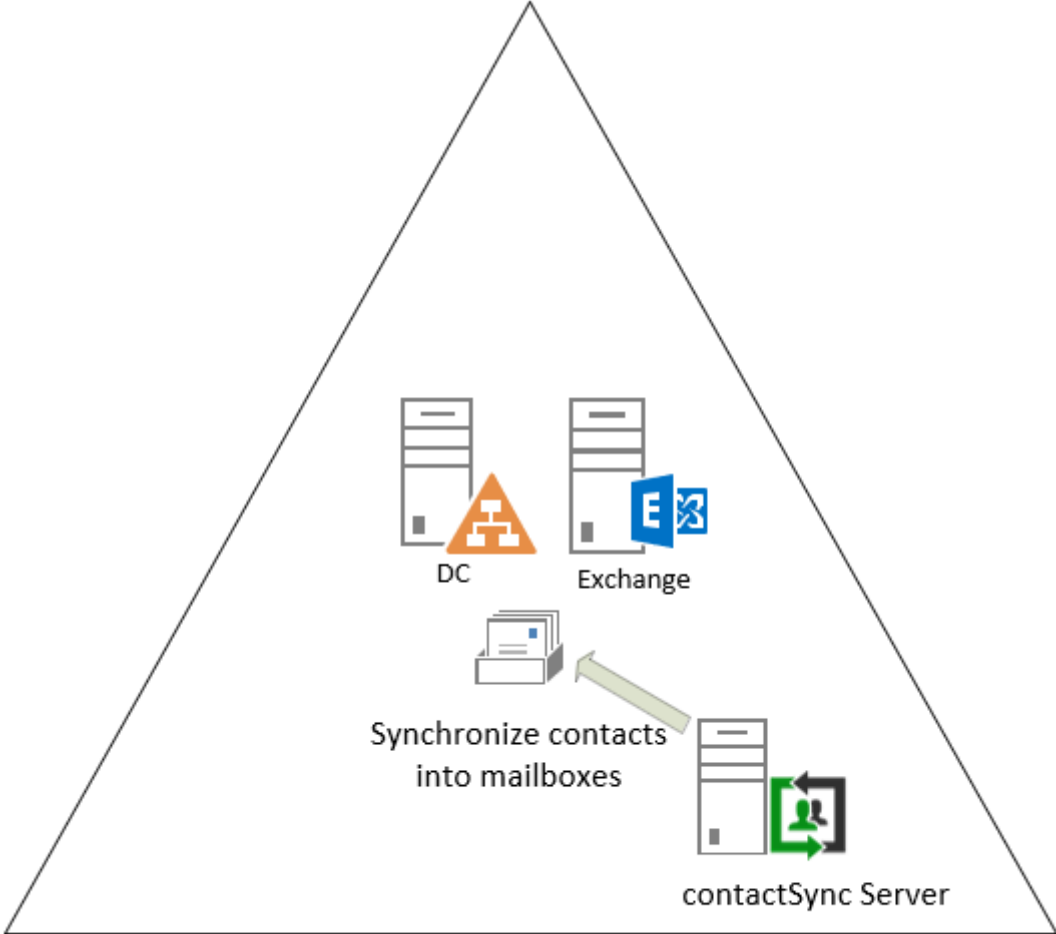
At the bottom of the dialog, there are three buttons: "Ok" (with a green checkmark icon), "Cancel" (with a red X icon), and "Apply" (with a floppy disk icon).

Please choose the Exchange scenario for which you want to configure the synchronization.

Three Exchange scenarios can be configured.

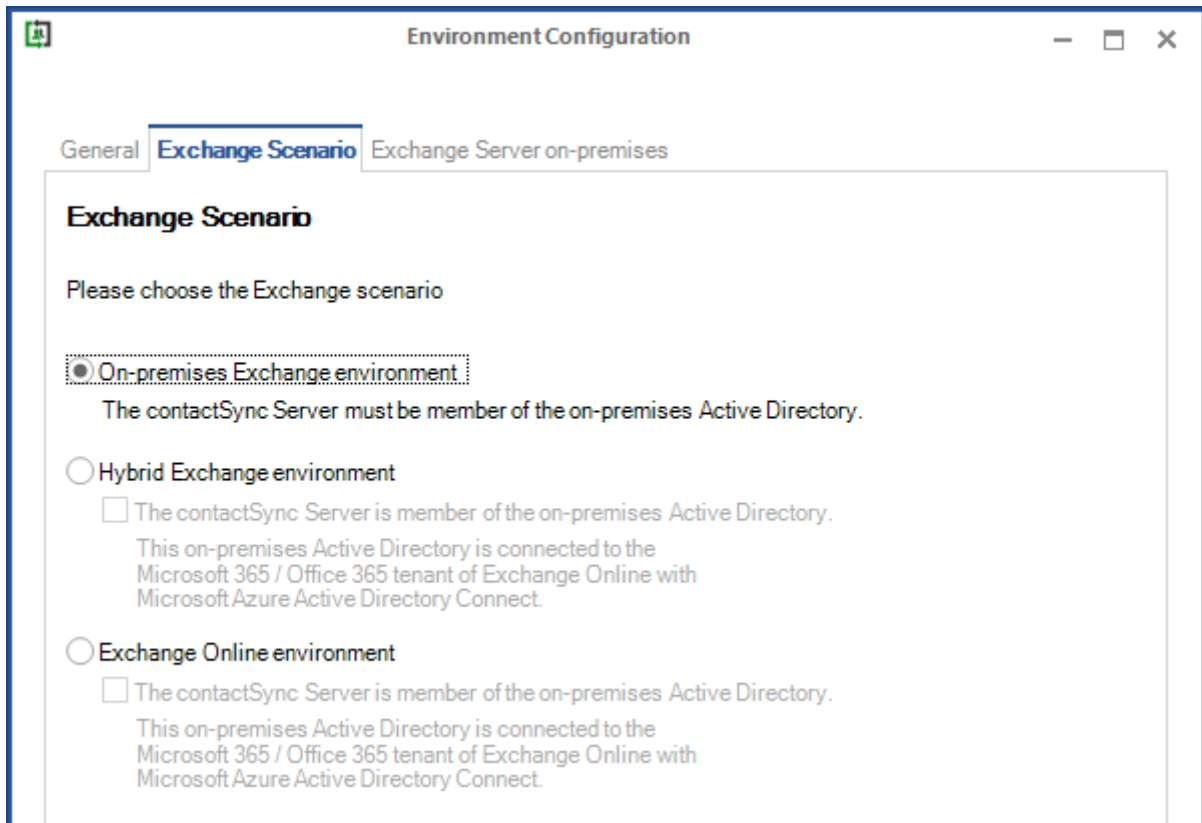
- On-premises Exchange environment
- Hybrid Exchange environment
- Exchange Online environment

On-premises Exchange environment



contactSync installed on a non-critical member server in the Active Directory domain

contactSync will need to be installed on a non-critical member server in the same domain that hosts Exchange, if configured with an on-premises Exchange Environment Configuration.



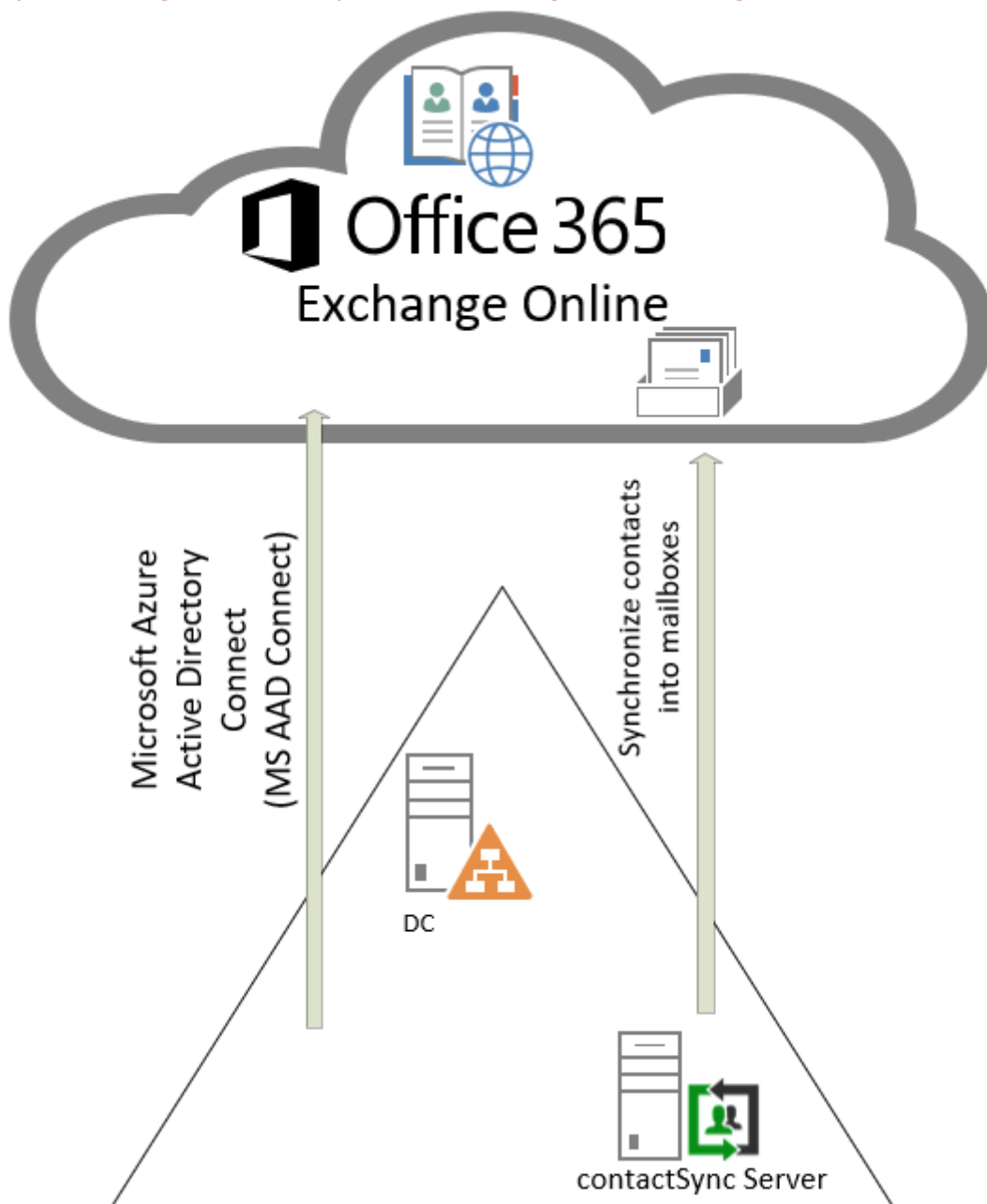
Select the **On-premises Exchange environment**. The contactSync Server must be a member of the on-premises Active Directory.

Note: Only one Environment Configuration with an on-premises Active Directory part can be configured in each environment.

After selecting the Exchange scenario, switch to the **Exchange Server on-premises tab** of the Environment Configuration dialog.

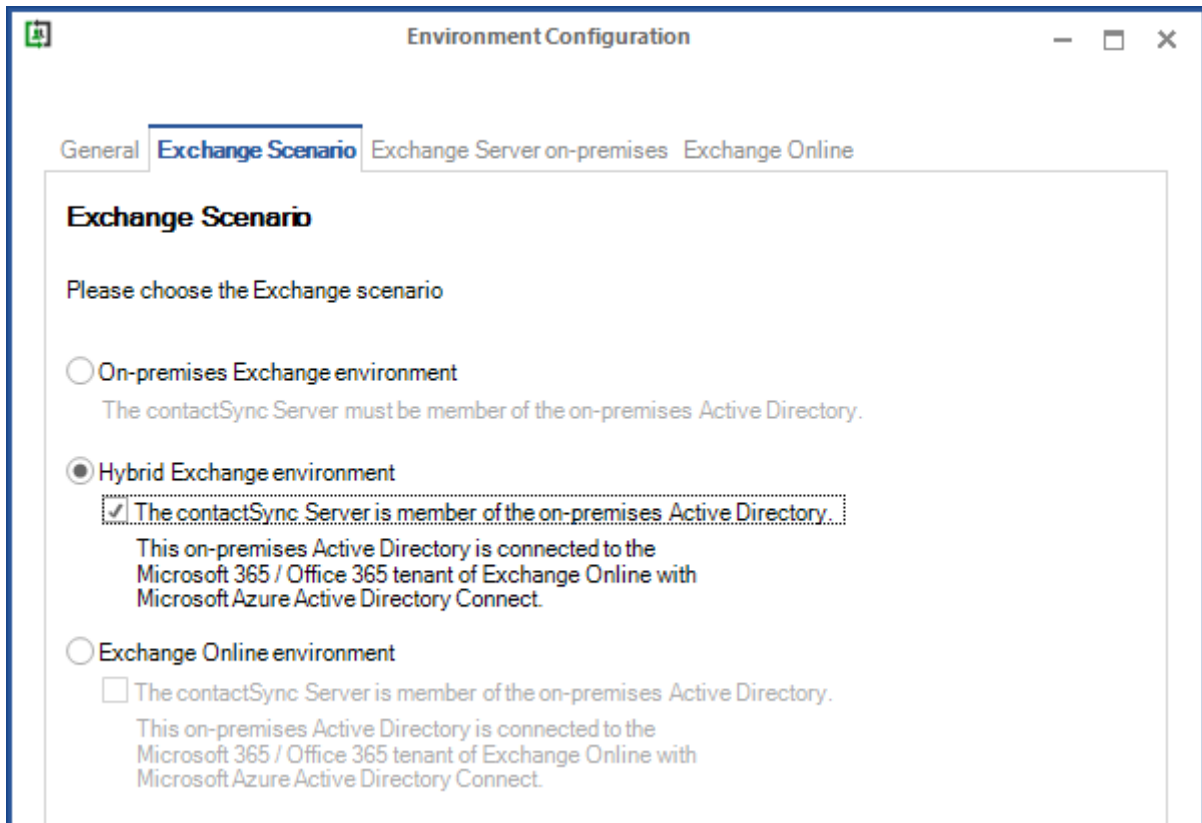
Hybrid Exchange environment

Synchronizing with the on-premises Exchange and Exchange Online



contactSync installed on a non-critical member server in the on-premises Active Directory

contactSync will need to be installed on a non-critical member server in the same domain that hosts Exchange, if configured with a Hybrid Exchange Environment Configuration.

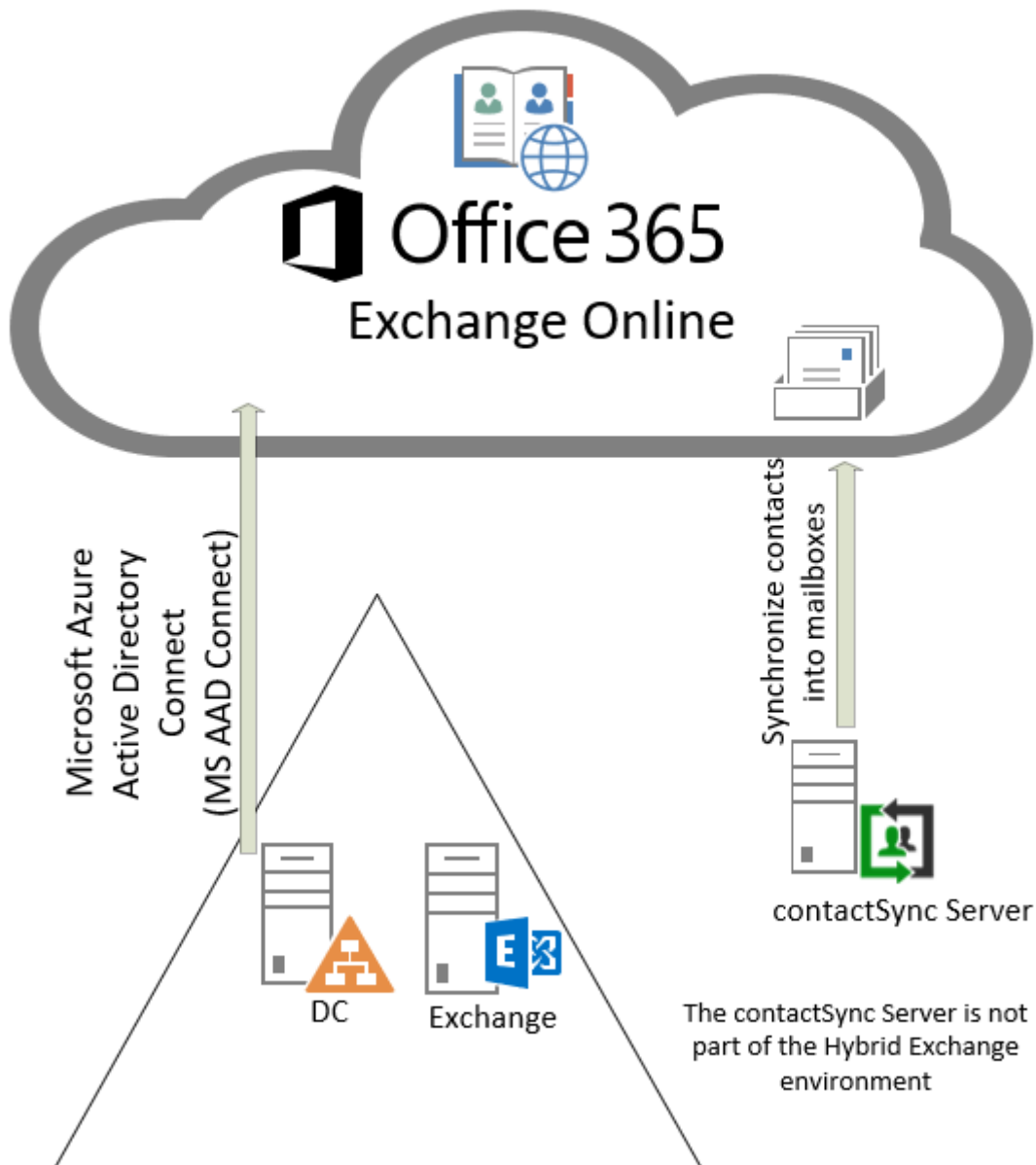


Select the **Hybrid Exchange environment** and enable the option **The contactSync Server is member of on-premises Active Directory**.

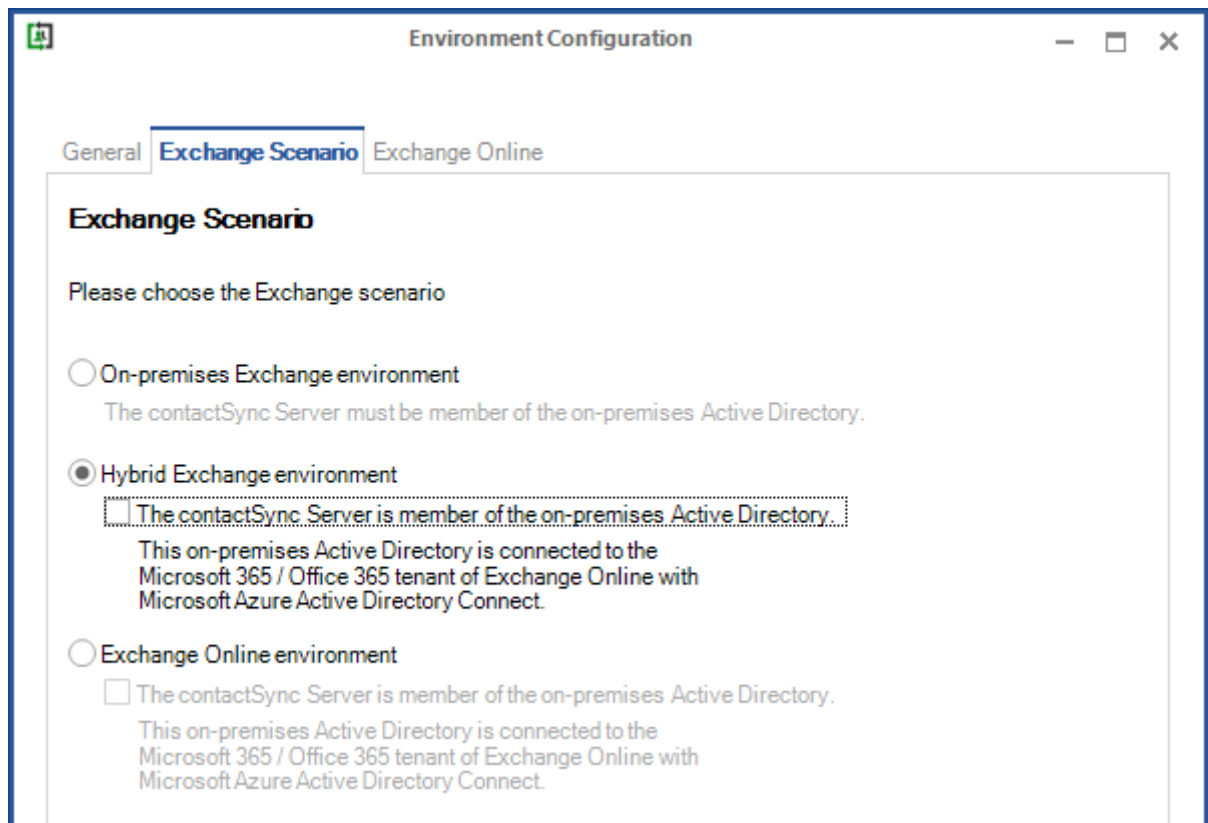
Note: Only one Environment Configuration with an on-premises Active Directory part can be configured in each environment.

After selecting the Exchange scenario switch to the **Exchange Server on-premises tab** and the **Exchange Online tab** of the Environment Configuration dialog.

Synchronizing only with Exchange Online of the hybrid Exchange environment.



If the Exchange scenario is a hybrid Exchange environment, and the contactSync Server is not part of a Hybrid Exchange environment, contactSync will only communicate with the Exchange Online component of the hybrid Exchange environment.



Select only the **Hybrid Exchange environment**.

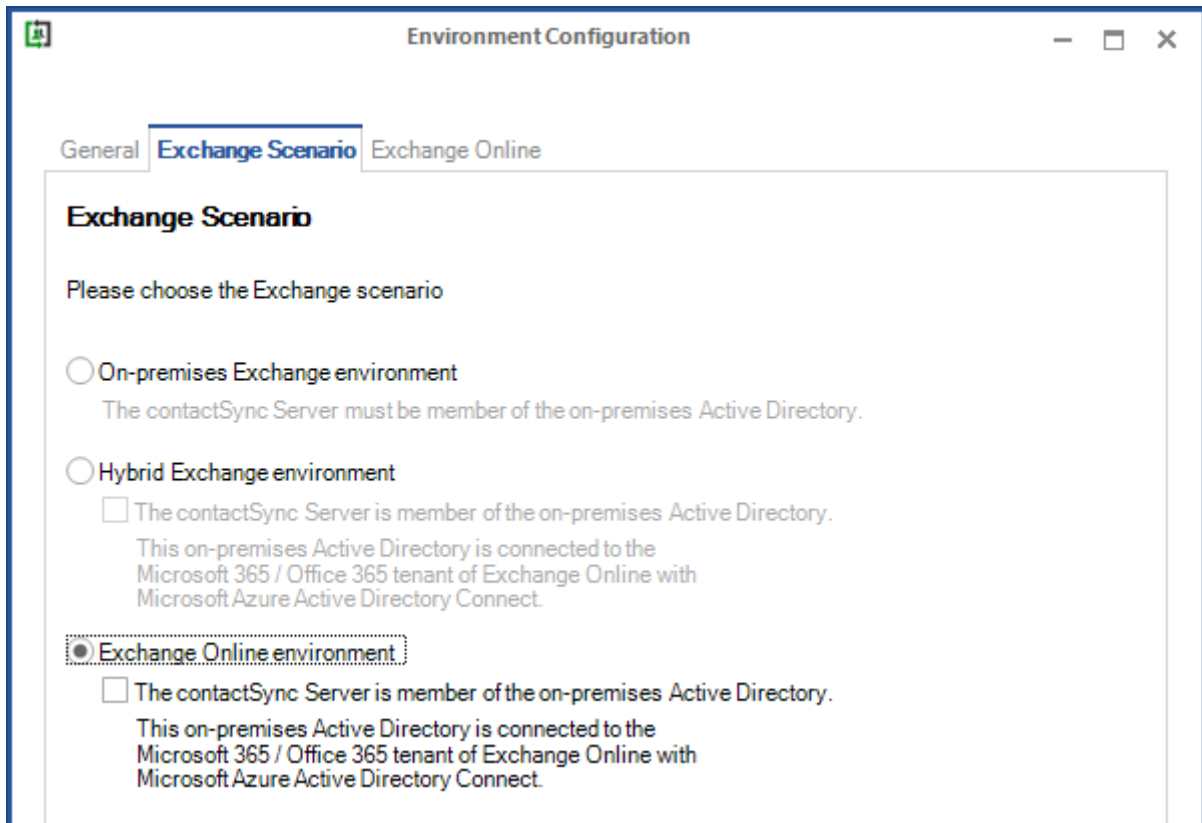
Please do not enable the option **The contactSync Server is member of on-premises Active Directory**, because contactSync is not part of the on-premise Active Directory of the Hybrid Exchange environment.

After selecting the Exchange scenario, switch to the **Exchange Online tab** of the Environment Configuration dialog.

Exchange Online environment
Synchronizing with Exchange Online



When the contactSync Server is not part of the on-premises Active Directory, and the Exchange scenario is an Exchange Online environment, contactSync will communicate with Exchange Online, and an on-premises Active Directory can be connected with the Microsoft 365 Exchange Online tenant via Microsoft Azure Active Directory Connect.

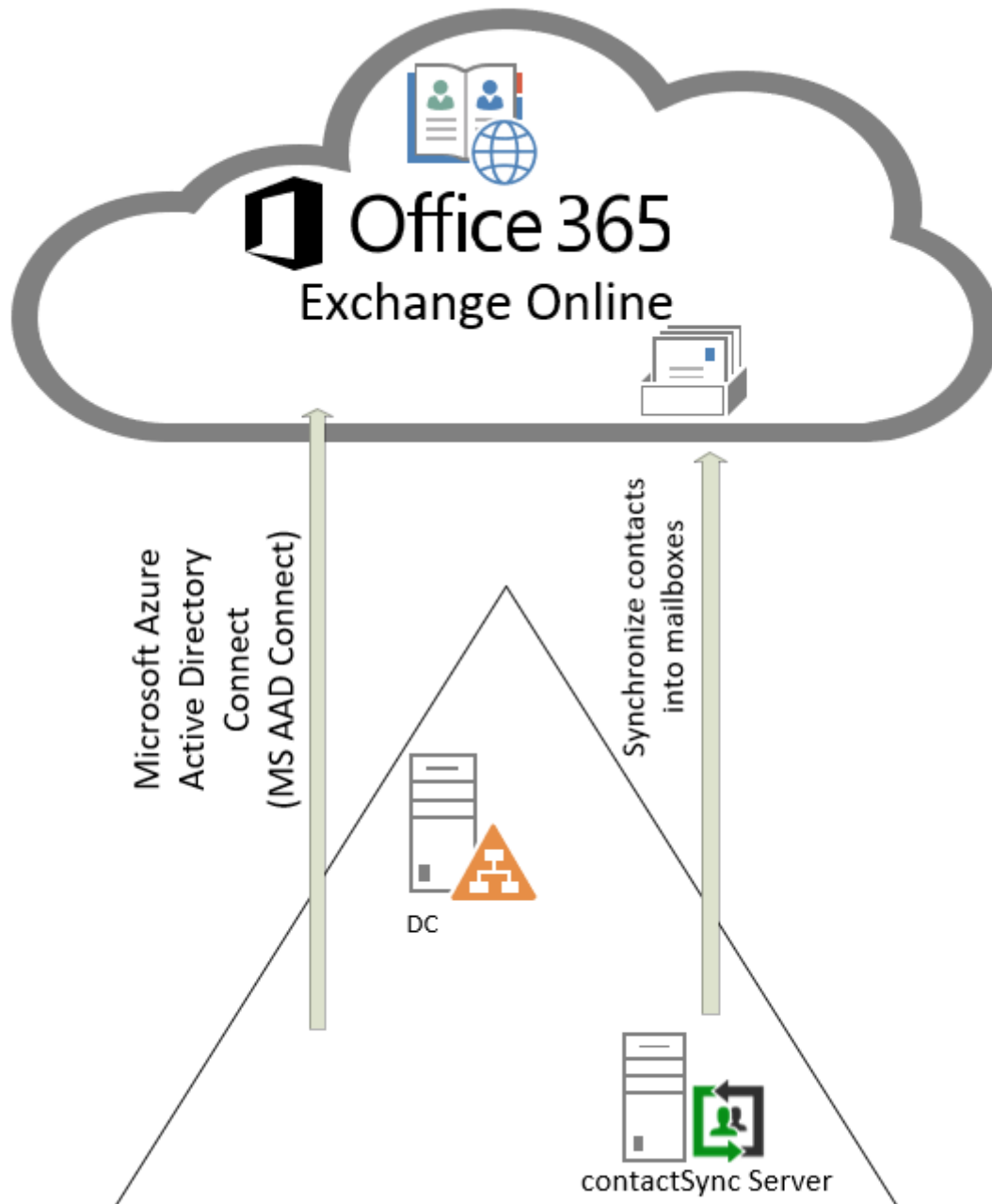


Select only the **Exchange Online environment**.

Please do not enable the option **The contactSync Server is member of on-premises Active Directory**, because contactSync is not part of the on-premise Active Directory of the Exchange Online environment.

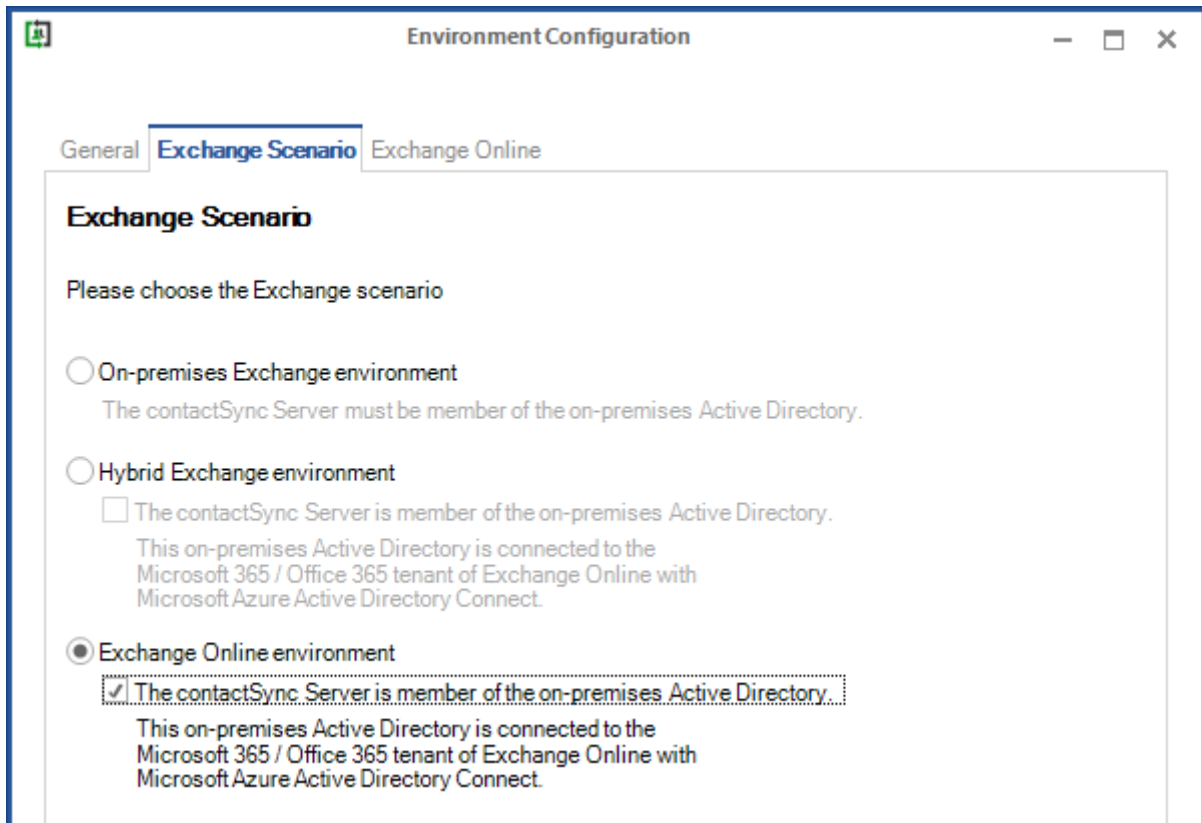
After selecting the Exchange scenario, switch to the **Exchange Online tab** of the Environment Configuration dialog.

Synchronizing with Exchange Online and contactSync is part of the corresponding on-premises Active Directory



contactSync is installed on a non-critical member server of the on-premises Active Directory

If the Exchange Scenario is an Exchange Online Environment, and an on-premises Active Directory connects to the Microsoft 365 Exchange Online tenant via Microsoft Azure Active Directory Connect, contactSync will only communicate with Exchange Online, even if the contactSync server is a member of on-premises Active Directory.



Select the **Exchange Online environment** and enable the option **The contactSync Server is member of on-premises Active Directory**.

Note: Only one Environment Configuration with an on-premises Active Directory part can be configured in each environment.

After selecting the Exchange scenario switch to the **Exchange Online tab** of the Environment Configuration dialog.

Exchange Server on-premises tab

On-premises Exchange environment

The screenshot shows the 'Environment Configuration' dialog box with the 'Exchange Server on-premises' tab selected. The dialog has three tabs: 'General', 'Exchange Scenario', and 'Exchange Server on-premises'. The 'Exchange Server on-premises' tab contains the following elements:

- Exchange Server on-premises**
Manage the settings for the on-premises Exchange environment.
- Two radio buttons for selecting the method to find the Exchange Web Services URL:
 - Use Autodiscover to find the Exchange Web Services URL (with an information icon)
 - Manual setting (with a search icon and a text input field). Below the field is the example URL: `e.g. https://casserver.domain.local/EWS/Exchange.asmx`
- A section titled 'Only for GALsync' containing:
 - A note: **Note: This setting is only for GALsync in a special synchronization scenario with a hub-spoke topology.** (with an information icon)
 - A radio button: No Exchange Server available. Only Active Directory Preparation. (with an information icon)
 - Two checkboxes:
 - Use Exchange Online mailbox of an external Microsoft 365 tenant for mailing
 - Use Exchange Online mailbox for mailing
 - Text: The Exchange Online mailbox must be hosted by Microsoft Azure public cloud
- A section titled 'Exchange Mailbox Test' containing:
 - Text: Send a test email to the recipient:
 - An 'Email address' label and a text input field.
 - A 'Send test email' button (with an information icon)
- At the bottom, three buttons: 'Ok' (with a green checkmark), 'Cancel' (with a red X), and 'Apply' (with a floppy disk icon).

Use Autodiscover to find the Exchange Web Services URL

If you work with on-premises Exchange Server, you can choose **Use Autodiscover to find the Exchange Web Services URL**.

Manual setting

If Autodiscover does not work you may set the value for Exchange Web Services URL manually. If you click the SEARCH icon then contactSync tries to discover the **Exchange Web Services URL** via **Autodiscover**.

For example:

```
https://casserver.domain.local/EWS/Exchange.asmx
```

No Exchange Server available. Only Active Directory Preparation (GALsync only)
This setting is only for GALsync in a special synchronization scenario with a hub-spoke topology.

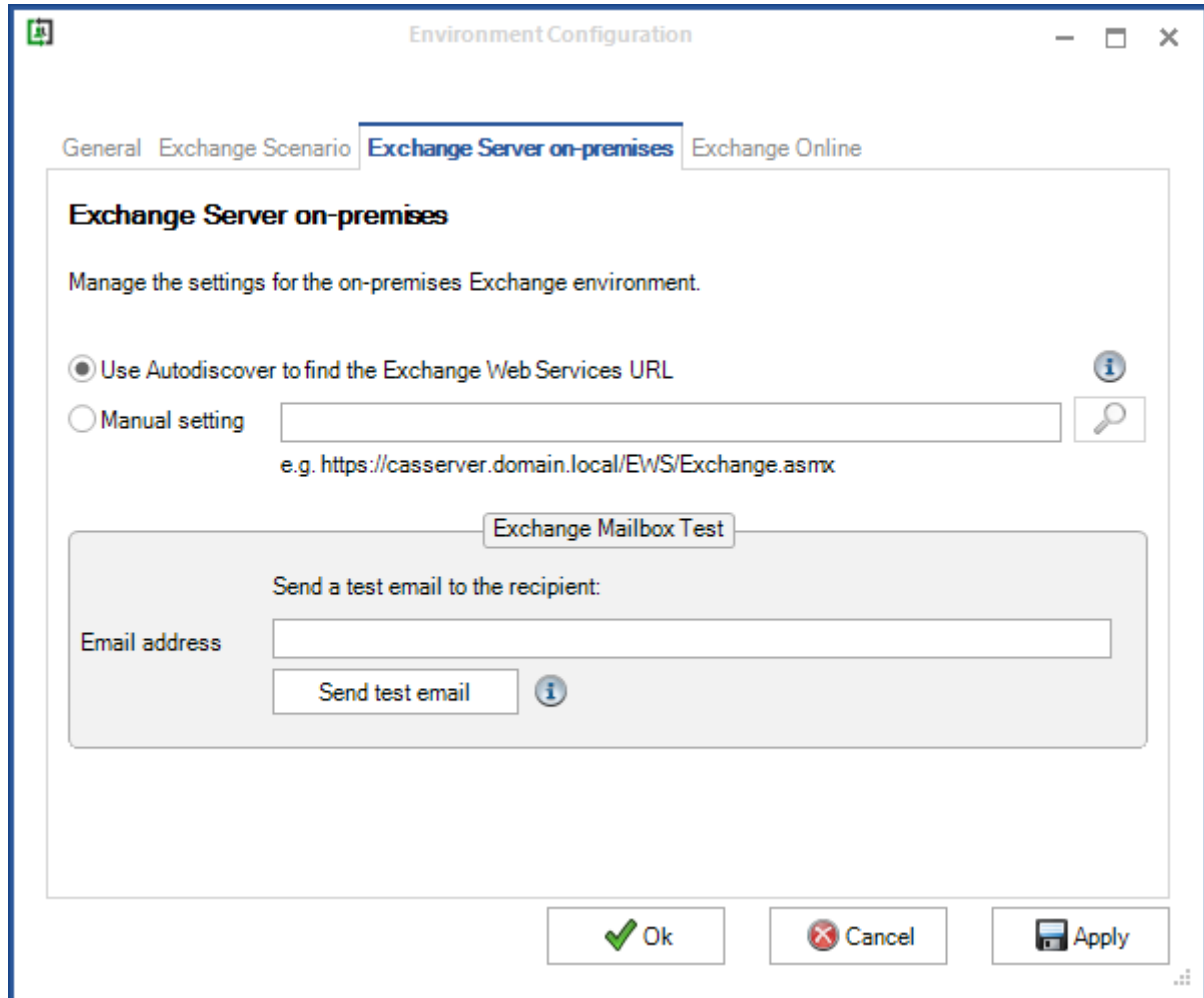
Note: This option is only for special scenarios.

Exchange Mailbox Test

To test whether an email can be sent, insert a recipient email address and click **Send test email**. A test email should be sent to the recipient.

Please note, that the e-mail address of the recipient for the test e-mail will not be saved.

On-premises Exchange part of a hybrid Exchange environment



Use Autodiscover to find the Exchange Web Services URL

If you work with on-premises Exchange Server, you can choose **Use Autodiscover to find the Exchange Web Services URL**.

Manual setting

If Autodiscover does not work you may set the value for Exchange Web Services URL manually. If you click the SEARCH icon then contactSync tries to discover the **Exchange Web Services URL** via **Autodiscover**.

For example:

```
https://casserver.domain.local/EWS/Exchange.asmx
```

Please note: If the mailbox of the contactSync on-premises service account is located in Exchange Online, it will be necessary to enter the Exchange Web Services URL for the on-premises Exchange Server.

Exchange Mailbox Test

To test whether an email can be sent, insert a recipient email address and click **Send test email**. A test email should be sent to the recipient.

Please note that the e-mail address of the recipient for the test e-mail will not be saved.

Exchange Online tab

The screenshot shows the 'Environment Configuration' dialog box with the 'Exchange Online' tab selected. The dialog has three sub-tabs: 'General', 'Exchange Scenario', and 'Exchange Online'. The 'Exchange Online' tab contains the following sections:

- Exchange Online**
Manage the settings for the Exchange Online tenant.
All accounts of the Office 365 tenant have Exchange Administrator role permission for Exchange Online.
- Credentials**
Buttons: Add, Modify, Remove.
Table:

Username	Max. Connection
- Organization Settings**
Instance hosted by: Microsoft 365 or Microsoft 365 GCC
Microsoft Azure public cloud
Exchange Web Services URL: https://outlook.office365.com/EWS/Exchange.asmx
- Remote PowerShell Connection Test**
Please test the Remote PowerShell connection to Exchange Online
Buttons: Test, Show log
- Exchange Mailbox Test**
Send a test email to the recipient:
Email address:
Button: Send test email

At the bottom of the dialog are buttons for 'Ok', 'Cancel', and 'Apply'.

Manage the Azure AD App Registration for Exchange Online

The **Add** button on the left, will open a dialog window in which to configure **certificate-based authentication** via **App registration** for the Exchange Online tenant.

General Exchange Scenario **Exchange Online**

Exchange Online

Manage the settings for the Exchange Online tenant.
All accounts of the Microsoft 365 tenant have Exchange Administrator role permission for Exchan

Credentials

+ Add ⓘ + Add ⓘ ✎ Modify ⓘ ✖ Remove ⓘ

Exchange Online App Registration

Corresponding settings for the Enterprise Application in the Microsoft Entra ID (formerly Azure AD) App registrations that enables access to Exchange Online.

Organization / Tenant ⓘ

Application Display Name ⓘ

Application ID ⓘ

Certificate

Friendly Name	FriendlyName
Not After	Not After
Subject	Subject
Thumbprint	Thumbprint
Has PrivateKey	Has PrivateKey
User	User

Choose Certificate Create Certificate ⓘ

Assigned API permissions

Detailed description is in chapter
Exchange Online certificate-based authentication via App Registration

Manage the user credentials of the service accounts for Exchange Online

The **Add** button on the right, will open a dialog window in which to configure **user-based authentication** via **Service Account** for the Exchange Online tenant.

Please note, that user-based authentication via OAuth 2.0 works only for the Microsoft Azure Public Cloud instance. If your Microsoft 365/Office 365 instance is hosted by a national cloud, please use Exchange Online certificate-based authentication via App Registration.

The screenshot shows a dialog box titled "Exchange Online Credential". It contains the following fields and controls:

- User-ID:** A text input field with an information icon.
- Password:** A text input field with an information icon.
- E-mail:** A text input field with an information icon.
- Maximum Connection:** A spinner box set to "2" with an information icon.
- Set as primary account:** A checked checkbox with an information icon.
- Authentication Method:** A section titled "The authentication method for Exchange Web Services of the Office 365 tenant" containing the text "Please login for the Modern Authentication OAuth 2.0". It features a radio button selected for "Modern Authentication OAuth 2.0" and a "Login" button with an information icon.
- Buttons:** "Apply" and "Cancel" buttons at the bottom.

Insert the **User-ID**, **Password** and **E-mail** address of an appropriate account in the Exchange Online.

We recommend to use 2 maximum connections per account for the Exchange Online PowerShell.

Please note, that Microsoft allows only 3 connections per account for the Exchange Online PowerShell by default.

Detailed description is in chapter
Exchange Online authentication via Service Account

Organization Settings

The default setting of **My Microsoft 365 organization is hosted by** is **Microsoft 365 or Microsoft 365 GCC** for the world-wide Microsoft cloud.

The settings for the Azure instance are also for the world-wide Microsoft 365 / Office 365 cloud by default. The **Azure Cloud Instance is hosted by** is set to the **Microsoft Azure public cloud** and the corresponding Exchange Web Services URL of Exchange Online.

Organization Settings

Microsoft 365 Exchange Online PowerShell V2 module

My Microsoft 365 organization is hosted by: i

Microsoft 365 or Microsoft 365 GCC

Using ExchangeEnvironmentName for Connect-ExchangeOnline.

Connect-ExchangeOnline parameter: ConnectionUri

Connect-ExchangeOnline parameter: AzureADAuthorizationEndpointUri

Exchange Web Services URL of Exchange Online

Use the default Exchange Web Services URL:
https://outlook.office365.com/EWS/Exchange.asmx

Use Autodiscover to find Exchange Web Services URL of Exchange Online

Manual setting e.g. https://outlook.office365.com/EWS/Exchange.asmx i

My Azure Cloud Instance is hosted by:

Microsoft Azure public cloud i https://login.microsoftonline.com

Apply Cancel

If your Exchange Online tenant is hosted by a national cloud, you can select it. Please note, that both settings must match to the Exchange Online environment.

For the Microsoft 365 organization:

- Microsoft 365 or Microsoft 365 GCC
- Office 365 Germany (Closed on 29 October 2021)
- Office 365 operated by 21Vianet
- Microsoft 365 GCC High
- Microsoft 365 DoD

For the Azure Instance:

- US Government cloud Azure Government
- Microsoft China national cloud Azure China 21Vianet
- Microsoft Germany national cloud Azure Germany (Closed on 29 October 2021)

For more information, please take a look at the Microsoft Docs article **National clouds**

<https://docs.microsoft.com/en-us/azure/active-directory/develop/authentication-national-cloud>

and the **-ConnectionUri** parameter of Connect-ExchangeOnline at the Microsoft Docs article **Connect-ExchangeOnline**

<https://docs.microsoft.com/de-de/powershell/module/exchange/connect-exchangeonline?view=exchange-ps>

Please note, that we do not have an Exchange Online tenant hosted by one of the national clouds, so we will be unable to test it and to support it at this point.

Remote PowerShell Connection Test

Click **Test** to start the Exchange Online PowerShell connection test. This test will check that a PowerShell connection can be established from your server to Exchange Online. The test will take a few minutes. Please wait until the test has completed before proceeding.

You can then click **Show log** to view the connection test log.

Exchange Mailbox Test

To test whether an email can be sent, insert a recipient email address and click **Send test email**. A test email should be sent to the recipient.

Please note, that the e-mail address of the recipient for the test e-mail will not be saved.

Policy Configuration

After you have created and configured an environment configuration, you can configure the corresponding policies.

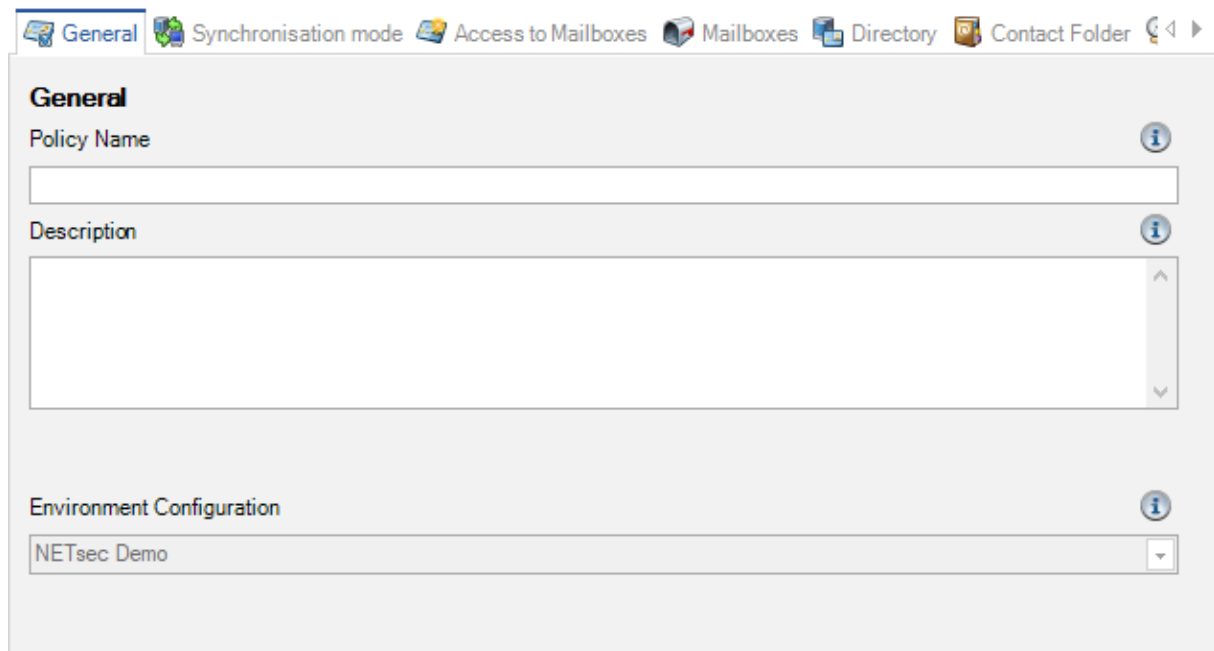
If you have not yet created and configured an Environment Configuration for your Exchange environment, please create and configure one first.

Please take a look at the **Environment Configuration** chapter.

The actual synchronization process is configured with the help of the policies. There are policies to synchronize mail-enabled objects as contacts into mailboxes and policies to synchronize Public Folder contacts into mailboxes.

General tab

The **General** tab contains the name of the policy, possibly a description and to which environment the policy belongs.



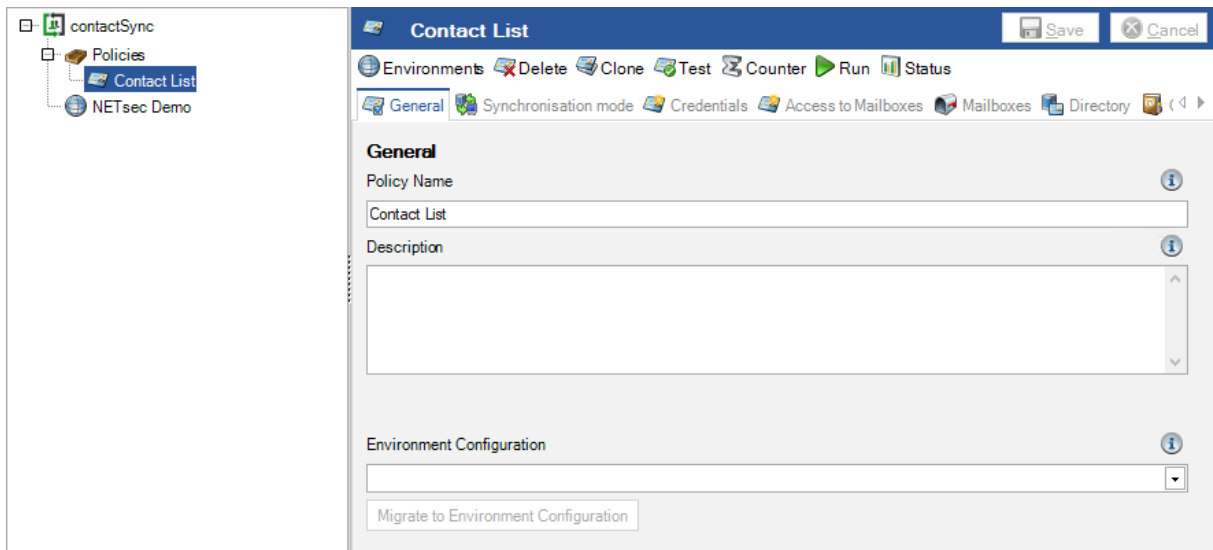
The screenshot shows a configuration window with a tabbed interface. The 'General' tab is active. It contains three main sections:

- Policy Name:** A text input field with an information icon (i) to its right.
- Description:** A large text area with a vertical scrollbar and an information icon (i) to its right.
- Environment Configuration:** A dropdown menu with 'NETsec Demo' selected and an information icon (i) to its right.

At the top of the window, there is a navigation bar with icons and labels for 'General', 'Synchronisation mode', 'Access to Mailboxes', 'Mailboxes', 'Directory', and 'Contact Folder'.

Migrate an existing policy

Policies which were created by contactSync Version 7 or earlier, are not part of an Environment Configuration.



You can migrate such a policy to a corresponding Environment Configuration.

Please note that a policy can only be migrated once.

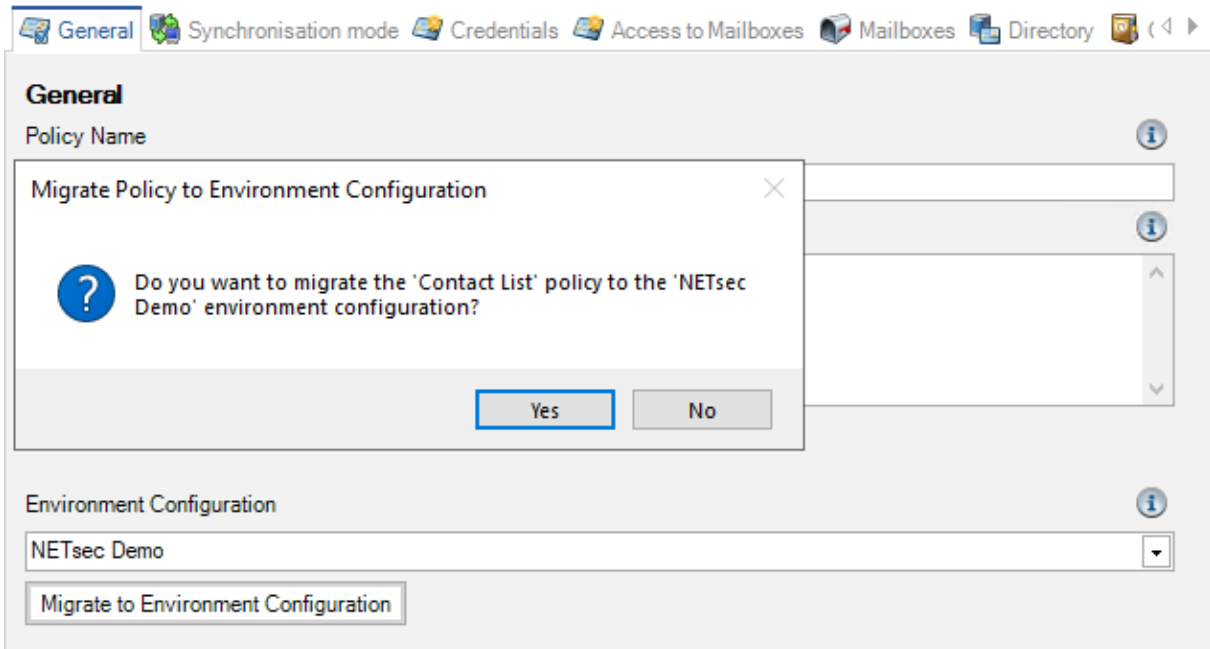
If you do not have an Environment Configuration for your Hybrid Exchange or Exchange Online environment, please read the chapter **How to create and configure an Environment Configuration and an migrate existing policy to it.**

Select the corresponding **Environment Configuration** on the **General** tab of the policy and click **Migrate to Environment Configuration**.



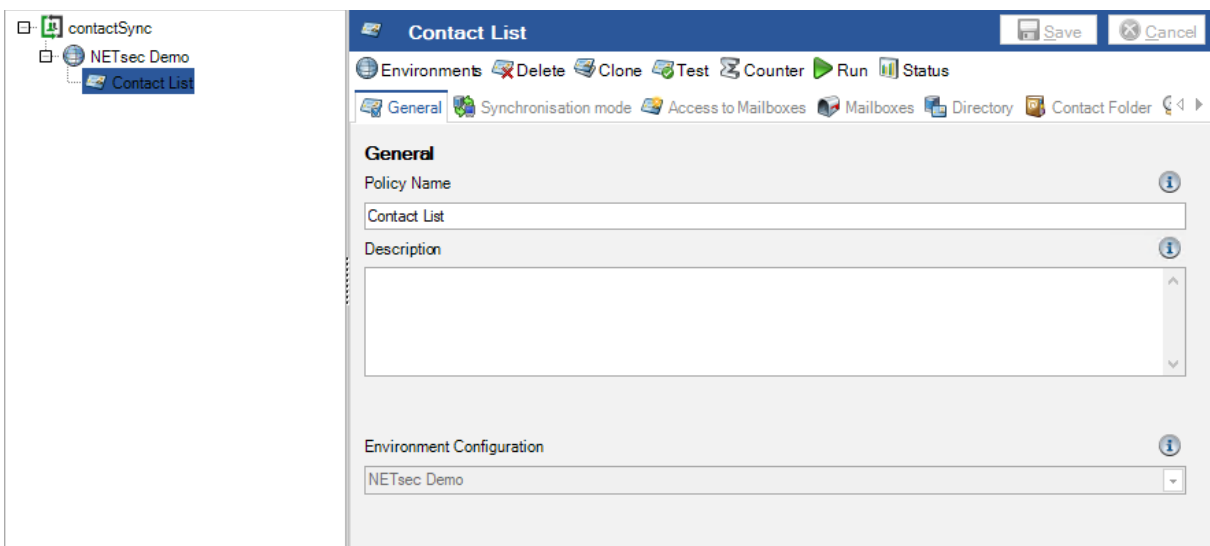
Once you are sure you have selected the correct **Environment Configuration** for the policy migration, click Yes to migrate the policy to the selected Environment Configuration.

Please note that a policy can only be migrated once.



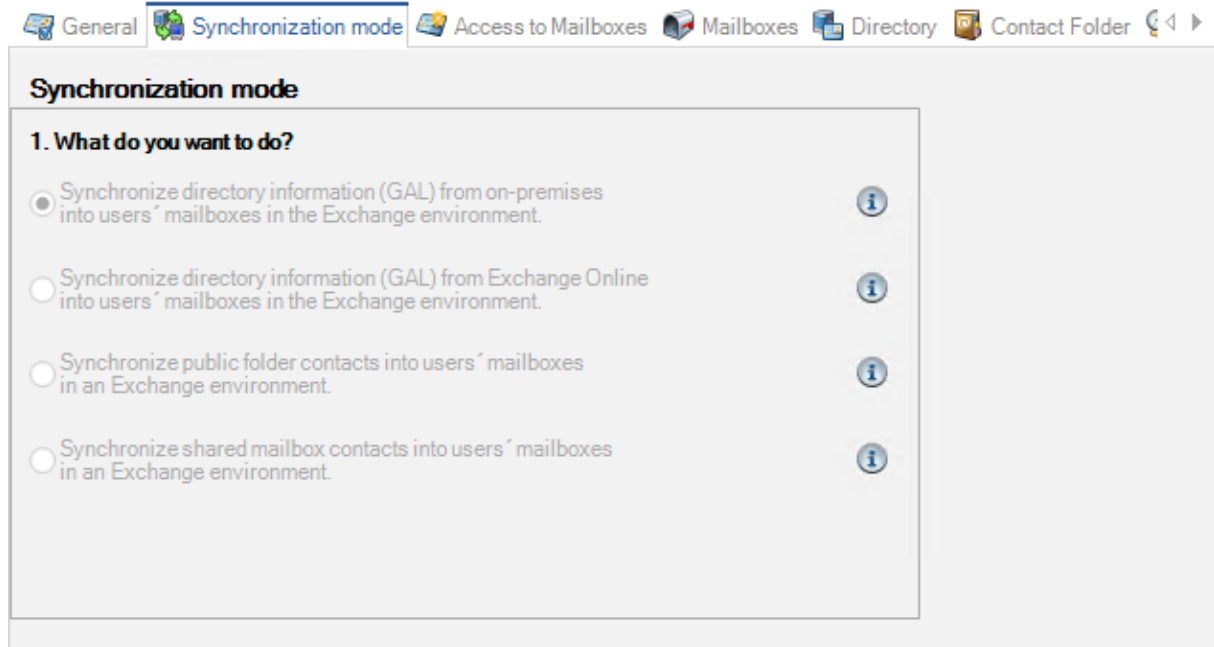
Next, please save the policy.

The policy now belongs to the corresponding Environment Configuration, and uses the settings of the Environment Configuration for the Exchange environment.

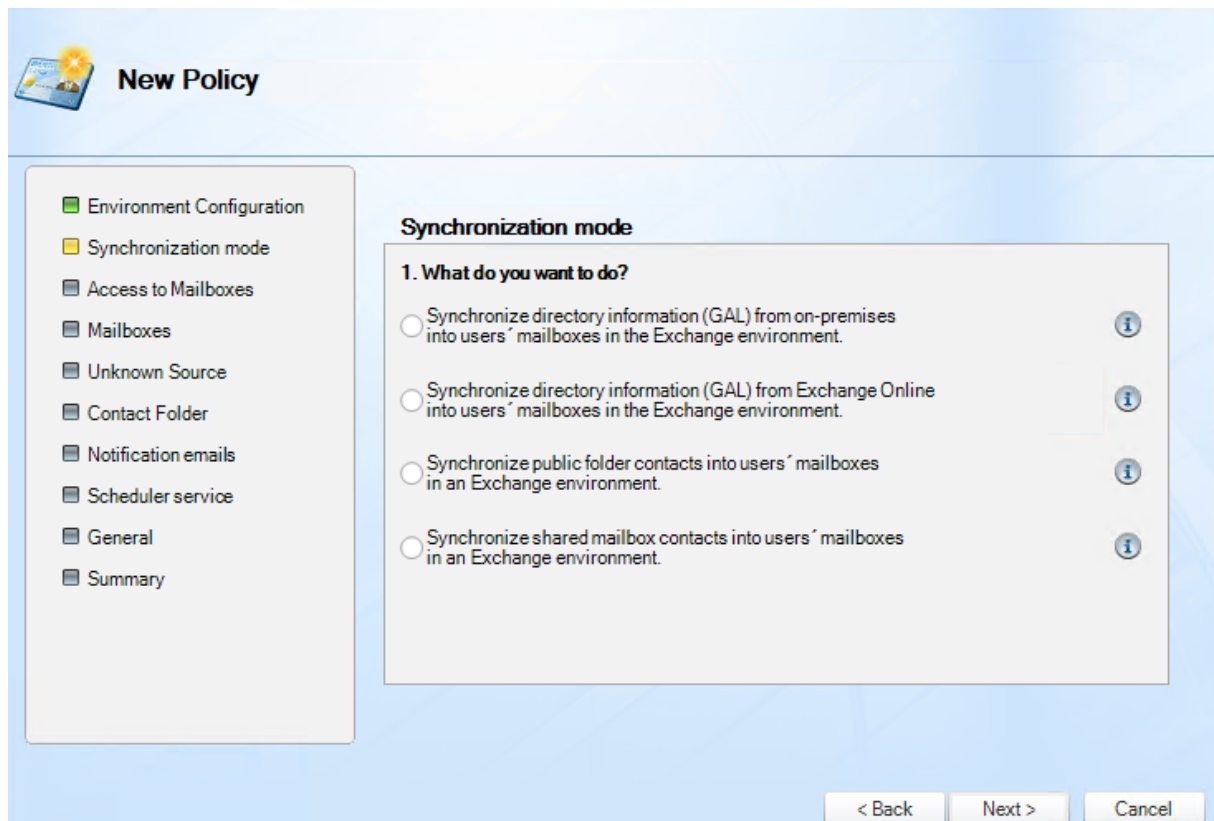


Synchronization mode

The **Synchronization mode** tab indicates whether the policy has been set to synchronize mail-enabled objects as contacts into mailboxes, to synchronize public folder contacts into mailboxes, or to synchronize shared mailbox contacts into mailboxes.

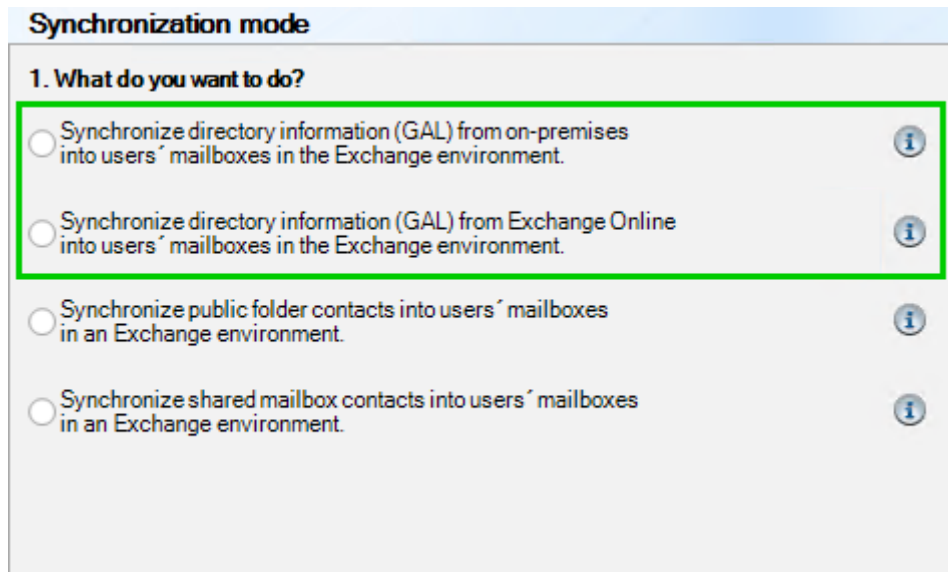


Once a policy has been created, the **Synchronization mode** cannot be changed. To modify the selection, a new policy must be created.



Synchronize directory information into mailboxes

contactSync synchronizes mail-enabled objects as contacts into mailboxes, if one of the first two options on the **Synchronization mode** is selected.

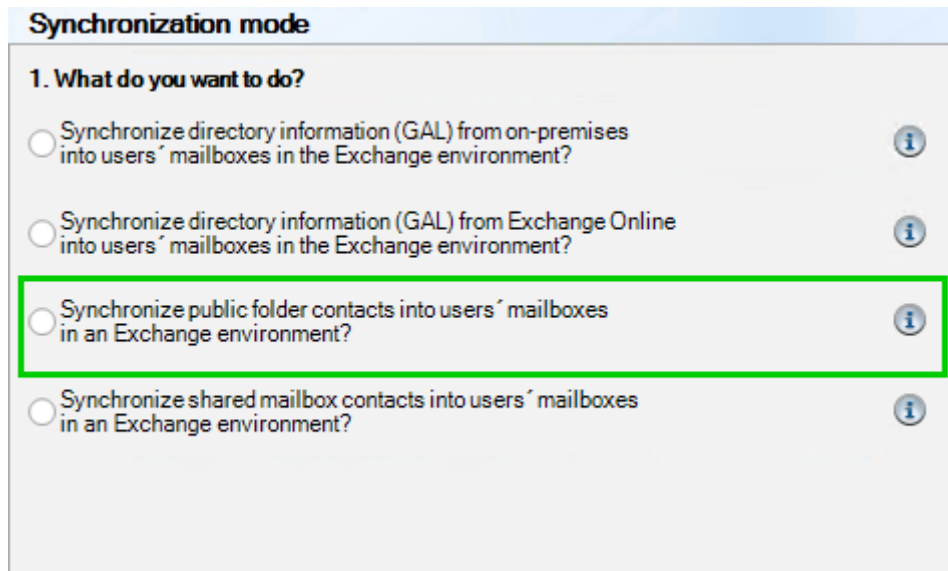


The screenshot shows a dialog box titled "Synchronization mode" with a section "1. What do you want to do?". It contains four radio button options, each with an information icon to its right. The first two options are highlighted with a green border:

- Synchronize directory information (GAL) from on-premises into users' mailboxes in the Exchange environment.
- Synchronize directory information (GAL) from Exchange Online into users' mailboxes in the Exchange environment.
- Synchronize public folder contacts into users' mailboxes in an Exchange environment.
- Synchronize shared mailbox contacts into users' mailboxes in an Exchange environment.

Synchronize Public Folder contacts into mailboxes

contactSync synchronizes contacts from a Public Folder into mailboxes, if the public folder contacts options on the **Synchronization mode** is selected.



The screenshot shows a dialog box titled "Synchronization mode" with a section "1. What do you want to do?". It contains four radio button options, each with an information icon to its right. The third option is highlighted with a green border:

- Synchronize directory information (GAL) from on-premises into users' mailboxes in the Exchange environment?
- Synchronize directory information (GAL) from Exchange Online into users' mailboxes in the Exchange environment?
- Synchronize public folder contacts into users' mailboxes in an Exchange environment?
- Synchronize shared mailbox contacts into users' mailboxes in an Exchange environment?

Please note, the Exchange Web Services URL is required to access Public Folders.

For on-premises Public Folder, the Exchange Web Services URL for the on-premises Exchange Server must be set manually in the configuration or the mailbox of the contactSync service account must be located on the on-premises Exchange Server. The policy is cancelled if Autodiscover cannot detect the Exchange Web Services URL for the on-premises Exchange Server.

Synchronize Shared Mailbox contacts into mailboxes

contactSync synchronizes contacts from a Shared Mailbox into mailboxes, if the last option on the **Synchronization mode** is selected.

Synchronization mode

1. What do you want to do?

- Synchronize directory information (GAL) from on-premises into users' mailboxes in the Exchange environment. i
- Synchronize directory information (GAL) from Exchange Online into users' mailboxes in the Exchange environment. i
- Synchronize public folder contacts into users' mailboxes in an Exchange environment. i
- Synchronize shared mailbox contacts into users' mailboxes in an Exchange environment. i

Access to Mailboxes

contactSync needs an account that has the permission to access the mailboxes, into which the contacts will be synchronized.

General Synchronization mode **Access to Mailboxes** Mailboxes Di

Access to Mailboxes

Account for access of on-premises Exchange mailboxes

5 count of concurrent mailboxes getting the contacts
e.g. 5 mailboxes concurrently

Credentials of the on-premises service account

Credentials of a dedicated mailbox user

User Name:

Password:

E-Mail Address:

Exchange Web Services URL of on-premises Exchange

Use Autodiscover to find Exchange Web Services URL

Manual setting e.g. https://casserver.domain.local/EWS/Exchange.asmx

Account for access of Exchange Online mailboxes

5 count of concurrent mailboxes getting the contacts
e.g. 5 mailboxes concurrently

Use the Environment Configuration settings

Credentials of a dedicated mailbox user

User Name:

E-Mail Address:

Modern authentication OAuth 2.0 for Exchange Online

My Azure Cloud Instance is hosted by:

Microsoft Azure public cloud

Exchange Web Services URL of Exchange Online

If only an on-premises Exchange or only Exchange Online is available in your environment, the **Access to Mailboxes** tab will only show the corresponding settings.

*Please note, the access method **Full Access** to on-premises Exchange mailboxes has been deprecated and will not be supported for new policies any longer.*

Access method for on-premises Exchange mailboxes

The local contactSync service account needs the **Exchange Application Impersonation** role to access the on-premises Exchange mailboxes where you want to synchronize the contacts into.

contactSync can also use a dedicated mailbox user, which is member of the **Exchange Application Impersonation** role to access the on-premises Exchange mailboxes.

Please take a look at the chapter
How to configure Exchange Application Impersonation

Count of concurrent mailboxes getting contacts

The contactSync service account can synchronize the contacts into multiple mailboxes concurrently.

This is possible, if the account has the **Application Impersonation** role at the on-premises Exchange.

Please note, that the count of concurrent mailboxes getting contacts depends on Exchange Web Services (EWS) Throttling Policy limits.

Access method for Exchange Online mailboxes

contactSync can also synchronize the contacts in Exchange Online mailboxes in a hybrid Exchange environment or Exchange Online environment.

contactSync uses the configuration on the Exchange Online tab of the Environment Configuration for the access of the Exchange Online mailboxes by default. Certificate-based authentication for Exchange Online is recommended so the contactSync service account does not require any additional authorizations.

The certificate-based authentication for Exchange Online is described in the chapter
Exchange Online certificate-based authentication via App Registration

contactSync can also use a dedicated Exchange Online mailbox user, which has the **Exchange Application Impersonation** role in Exchange Online to access Exchange Online mailboxes.

Please take a look at the chapter
How to configure Exchange Application Impersonation

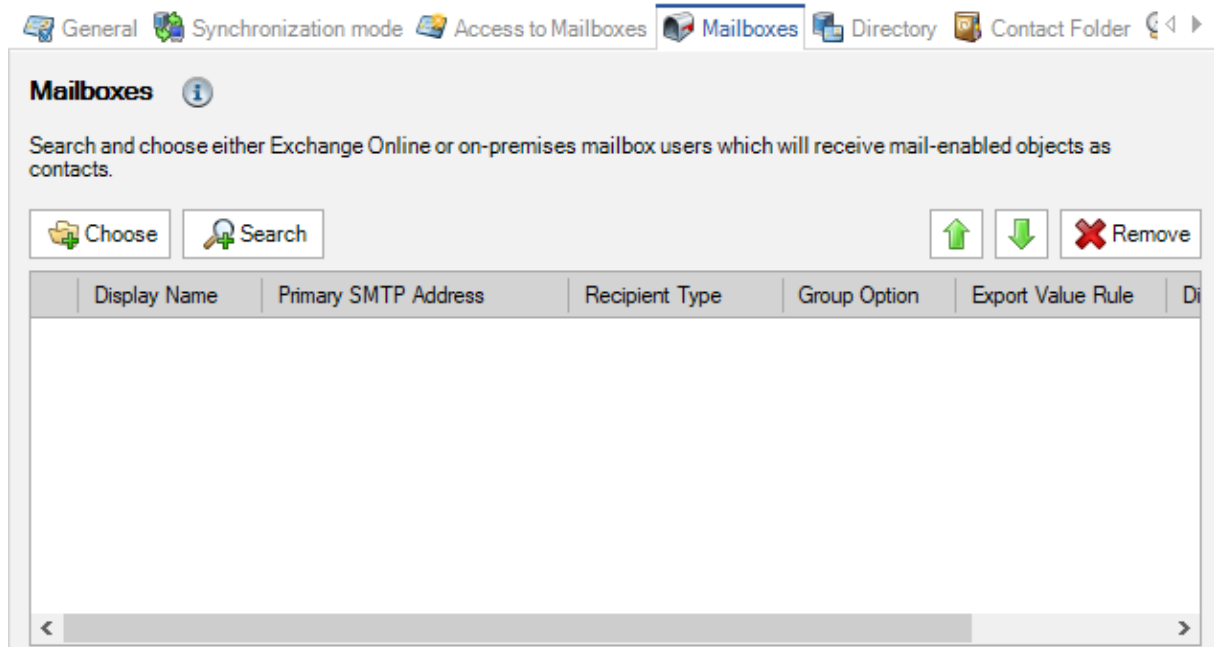
Count of concurrent mailboxes getting contacts

The contactSync service account can synchronize the contacts into multiple mailboxes concurrently.

Please note, that the count of concurrent mailboxes getting contacts depends on Exchange Web Services (EWS) Throttling Policy limits, which Microsoft allows for the Exchange Online mailboxes.

Mailboxes

Select the mailboxes to receive the contacts. In hybrid Exchange environments, mailboxes can be selected from Exchange on-premises and Exchange Online within the same policy if no **Recipient Type** has been selected in the **Mailboxes** tab.



If the mailboxes to get the contacts are members of a group, you can search for the group with the **Search** dialog. If the group is selected, contactSync will resolve the members of the group (which have mailboxes) during the policy run and these mailboxes will be used for the synchronization.

*Please note, if an existing policy has a selected **Recipient Type** on the **Mailboxes** tab, it is recommended to migrate the selected Recipient Type to a dynamic distribution group.*

Please take look at the [contactSync version 8.4 compared with contactSync 8.3.x](#) chapter in the [contactSync Upgrade Instructions](#) or the comparable description in the [Migrate](#) chapter for the Directory tab in this manual.

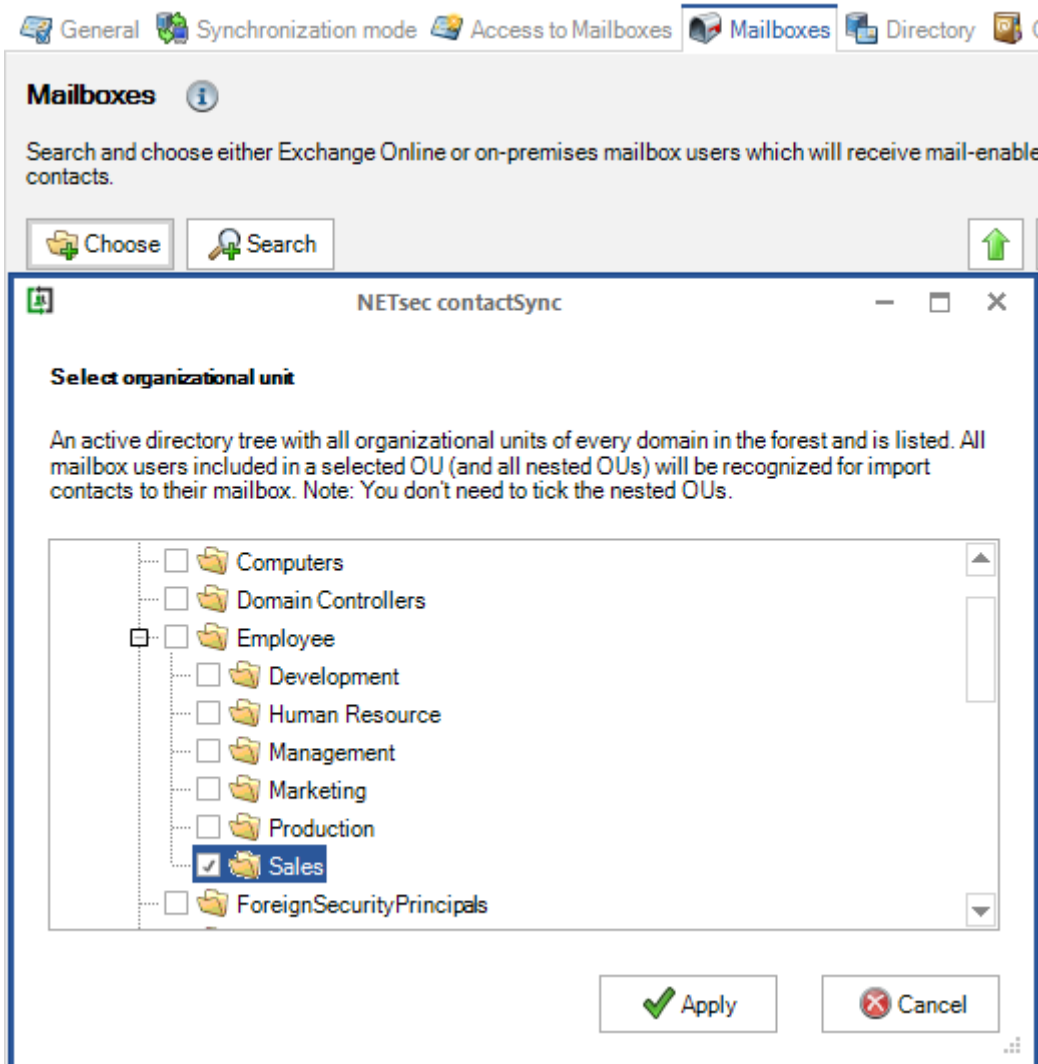
NoMailboxSync (internal mark)

If you do not want to import into a special mailbox, you may insert the value **NoMailboxSync** in any of the custom attributes (on-premises Exchange: **extensionattribute1** - **extensionattribute15** or Exchange Online: **customAttribute1** - **customAttribute15**). This prevents contactSync from adding this mailbox to the list of mailboxes, which get directory objects, Public Folder contacts or Shared Mailbox contacts into the contact folder.

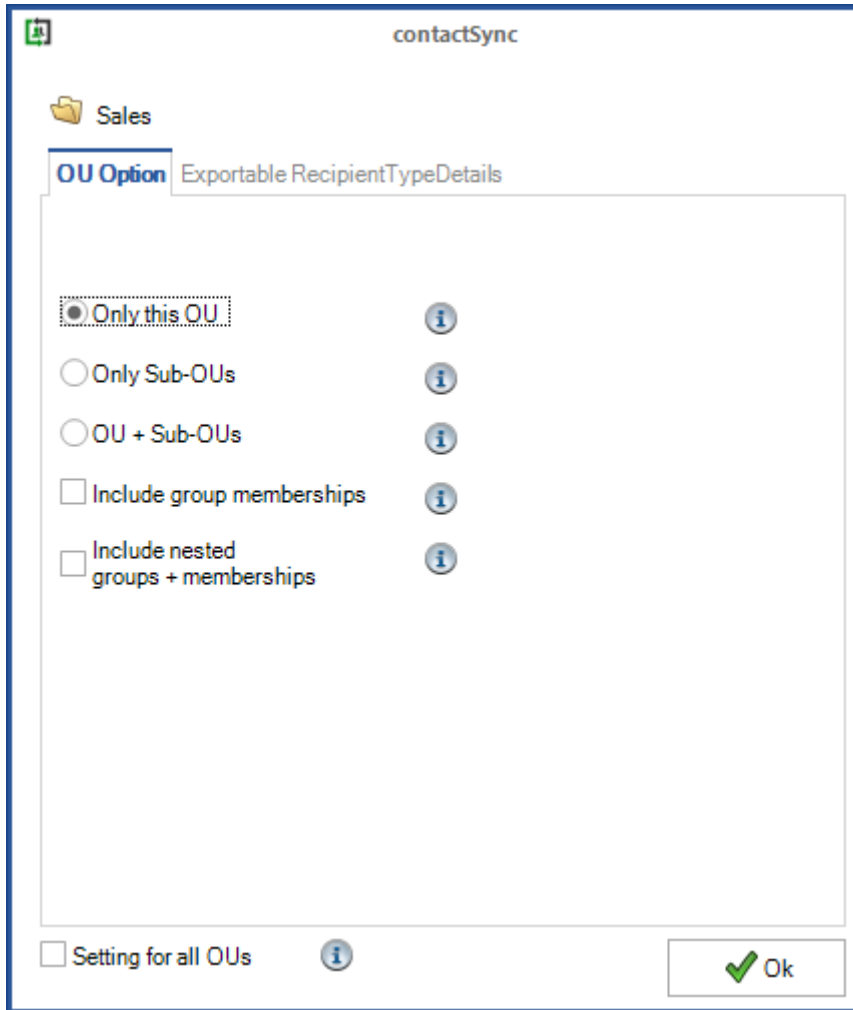
Choose mailboxes (on-premises Exchange or hybrid Exchange)

Here you may tick a dedicated Organizational Unit in the listed domains. An Active Directory tree with all domains and organizational units will be listed.

In forests with multiple domains all domains are displayed.



OU Option



Only this OU

All mailboxes included in the selected OU will be recognized for synchronization at runtime.

Only Sub-OUs

All mailboxes in each sub-OU, which are nested in the selected OU will be recognized for synchronization at runtime.

OU + Sub-OUs

All mailboxes included in a selected OU and all nested OUs will be recognized for synchronization at runtime.

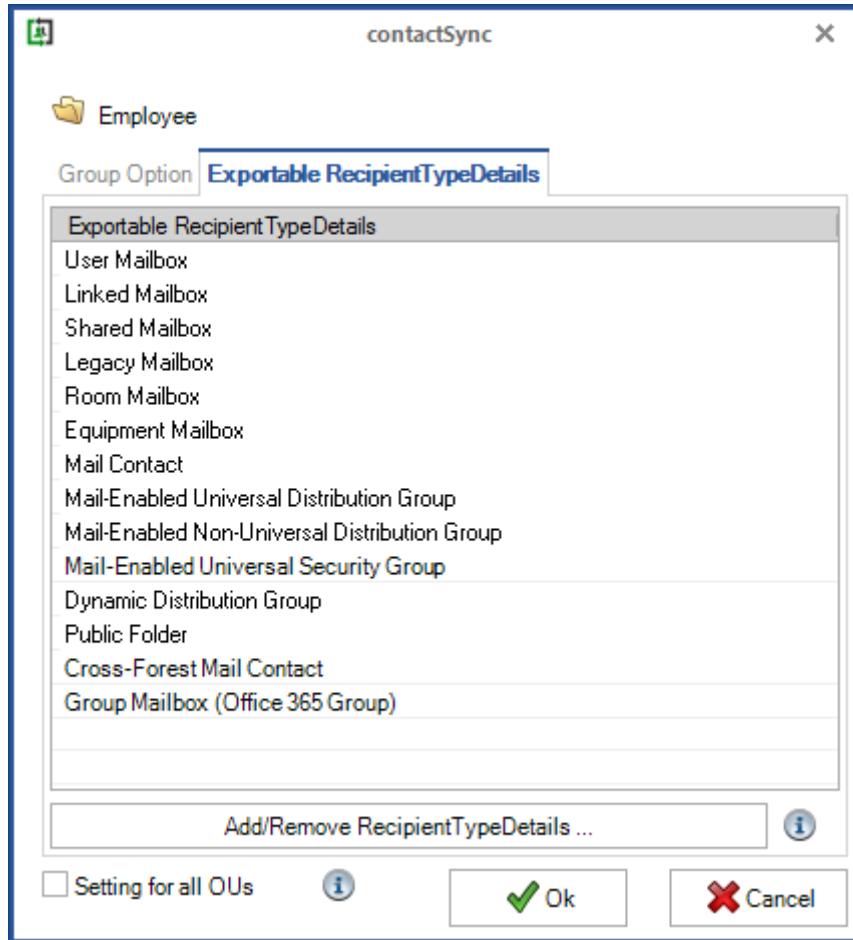
Include group memberships

All mailboxes, which are members of a group, will be recognized for synchronization at runtime, if the group is in a selected OU.

Include nested groups + memberships

Nested groups and their members will be also resolved for synchronization at runtime.

Exportable RecipientTypeDetails



contactSync synchronizes mailboxes which have one of the **RecipientTypeDetails** set in the **msExchRecipientTypeDetails / RecipientTypeDetails** property or the **msExchRecipientTypeDetails / RecipientTypeDetails** property has not been set.

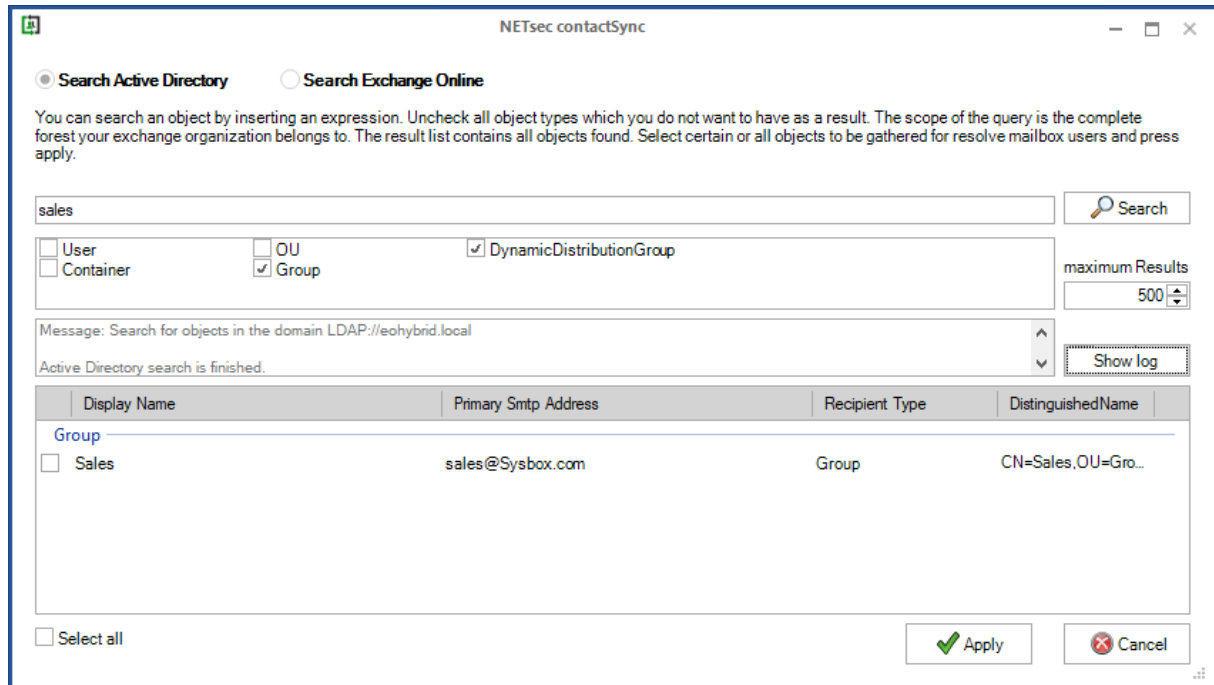
The list of **RecipientTypeDetails** can be modified with **Add/Remove RecipientTypeDetails**

Note: In the case of RecipientTypeDetails, that are not present in the Exportable RecipientTypeDetails list by default, contactSync does not check whether they are present or useful in your environment. We leave the verification to the responsible administrator to support as many scenarios as possible. A disadvantage is this can potentially be misconfigured and produce undesirable results.

Search mailboxes (on-premises Exchange)

You can search an object by inserting an expression. Uncheck all object types you do not want to have in the results.

Note: The scope of the query is the Active Directory Forest.



The screenshot shows the 'NETsec contactSync' application window. At the top, there are two radio buttons: 'Search Active Directory' (selected) and 'Search Exchange Online'. Below this is a text box containing 'sales' and a 'Search' button. Underneath, there are checkboxes for object types: 'User', 'Container', 'OU', 'Group', and 'DynamicDistributionGroup'. The 'Group' and 'DynamicDistributionGroup' checkboxes are checked. To the right, there is a 'maximum Results' dropdown set to '500' and a 'Show log' button. Below the search criteria, a message reads: 'Message: Search for objects in the domain LDAP://eohybrid.local' and 'Active Directory search is finished.' A table displays the search results:

Display Name	Primary Smtip Address	Recipient Type	DistinguishedName
Group			
<input type="checkbox"/> Sales	sales@Sysbox.com	Group	CN=Sales,OU=Gro...

At the bottom left, there is a 'Select all' checkbox. At the bottom right, there are 'Apply' and 'Cancel' buttons.

The search results contain a list of all objects found. Select specific or all objects to be gathered for import by checking the checkbox, then click **Apply**.

With a wildcard * you can widen your search criteria, and broaden the results.

User

You can search for user objects with a mailbox and select dedicated mailboxes for import matching the inserted expression.

Recommendation: Select dedicated mailbox users only if you are sure they will never be deleted from Active Directory. Consider searching for objects with 'dynamic' members, such as OUs, groups, etc.

Container

You can search for container objects to retrieve all objects with a mailbox in this container matching the inserted expression.

OU

You can search for Organizational Units to retrieve all objects with a mailbox in this OU matching the inserted expression.

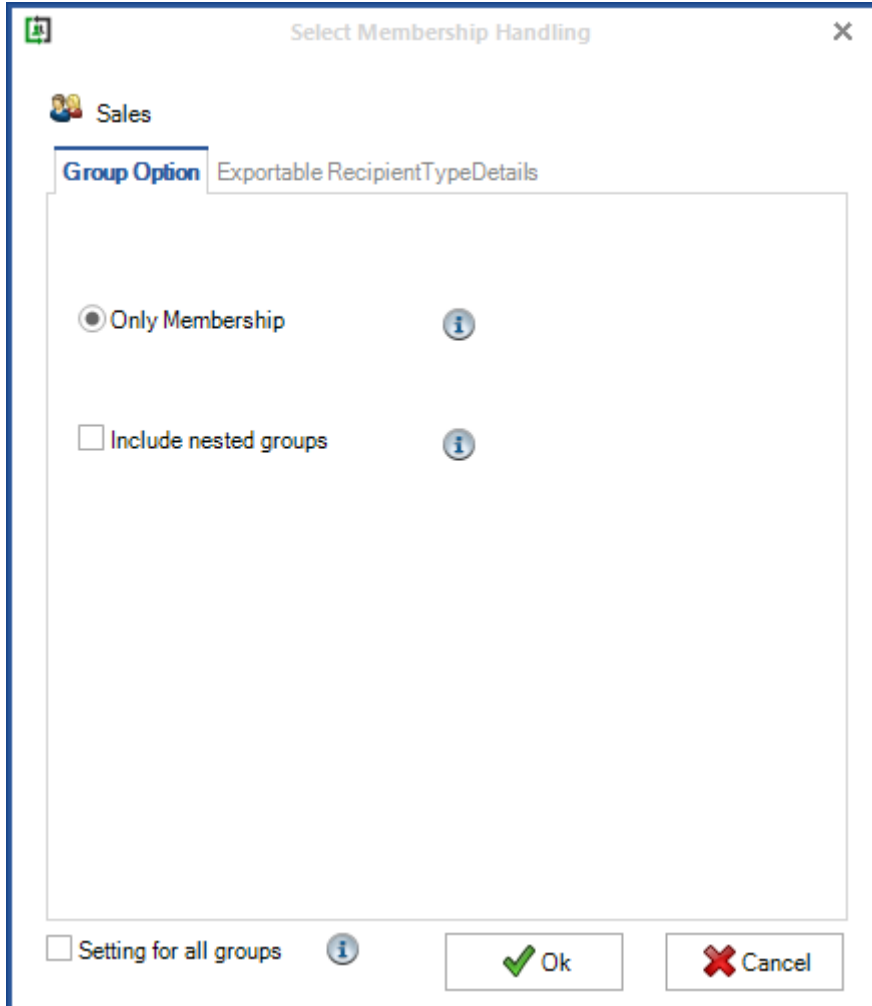
Dynamic Distribution Group

Dynamic Distribution Group (formerly Query-Based Group) provides 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 Dynamic Distribution Groups matching the inserted expression and select if you want to get all members with a mailbox of this group.

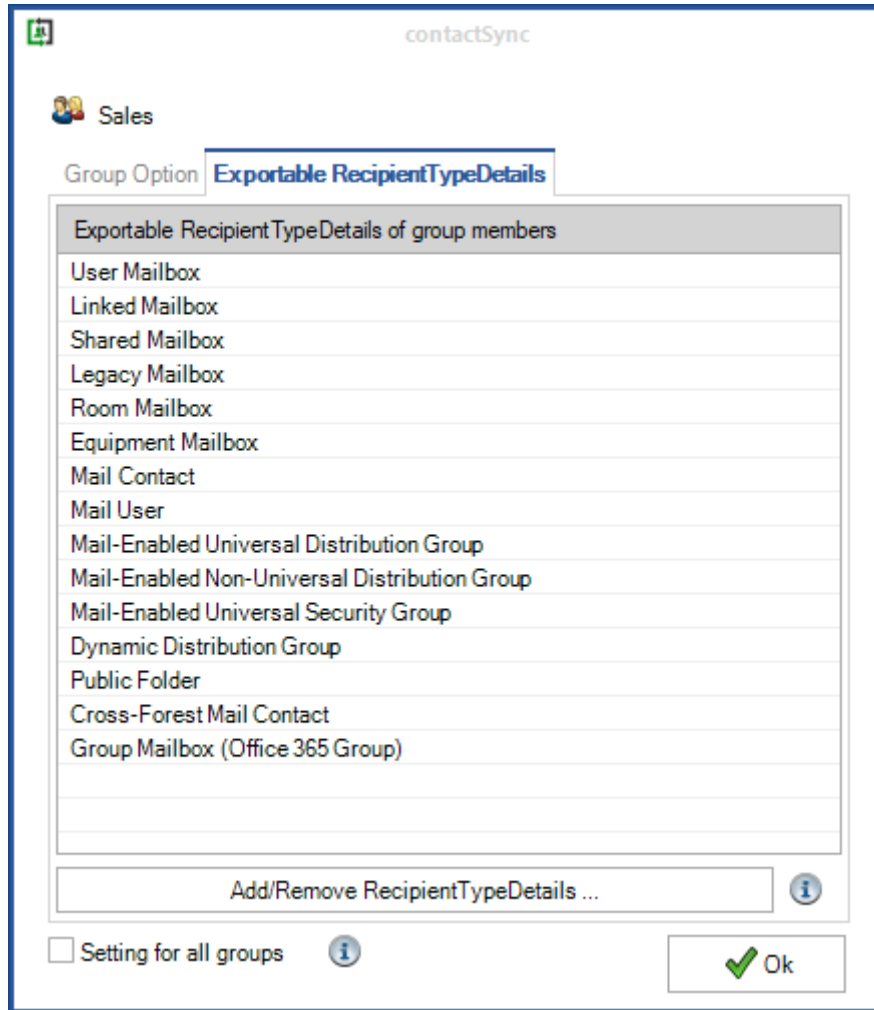
Groups

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



If you check **Setting for all groups** the configuration will be applied to all selected groups. Otherwise, you will be prompted to confirm this option for each selected group.

Exportable RecipientTypeDetails



contactSync synchronizes mailboxes which have one of the **RecipientTypeDetails** set in the **msExchRecipientTypeDetails / RecipientTypeDetails** property or the **msExchRecipientTypeDetails / RecipientTypeDetails** property has not been set.

The list of **RecipientTypeDetails** can be modified with **Add/Remove RecipientTypeDetails**

Note: In the case of RecipientTypeDetails, that are not present in the Exportable RecipientTypeDetails list by default, contactSync does not check whether they are present or useful in your environment. We leave the verification to the responsible administrator to support as many scenarios as possible. A disadvantage is this can potentially be misconfigured and produce undesirable results.

Search mailboxes (Exchange Online)

Here you may pick either all objects or specify a filter by ticking recipient types you want to choose. With a wildcard * you can widen your search criteria, and broaden the results. For example, if you tick only **MailUniversalDistributionGroup**, all MailUniversalDistributionGroups will be returned in the results.

The screenshot shows the 'NETsec contactSync' application window. At the top, there are two radio buttons: 'Search Active Directory' (unselected) and 'Search Exchange Online' (selected). Below this is a text box containing 'sales' and a 'Search' button. Underneath, there are four checkboxes for recipient types, all of which are checked: 'UserMailbox', 'MailUniversalSecurityGroup', 'Office365Group', and 'MailUniversalDistributionGroup'. To the right of these checkboxes is a 'maximum Results' dropdown menu set to '500'. Below the checkboxes is a log area with the following text: 'The ConnectionInfo method was called from: <ps_RemotePowershellDisconnected>b__0', 'Information | All connections are disconnected. Finishing...', and 'Warning | No remote PowerShell connections is available anymore.' To the right of the log is a 'Show log' button. The main area of the window is a table with the following columns: 'Display Name', 'Primary Sntp Address', 'Recipient Type', and 'DistinguishedName'. The table contains one row with the following data: 'MailUniversalDistributionGroup' (with a sub-row for 'Sales'), 'sales@Sysbox.com', 'MailUniversalDistributio...', and 'CN=Sales,OU=nets...'. At the bottom left of the window is a 'Select all' checkbox, and at the bottom right are 'Apply' and 'Cancel' buttons.

Display Name	Primary Sntp Address	Recipient Type	DistinguishedName
MailUniversalDistributionGroup			
Sales	sales@Sysbox.com	MailUniversalDistributio...	CN=Sales,OU=nets...

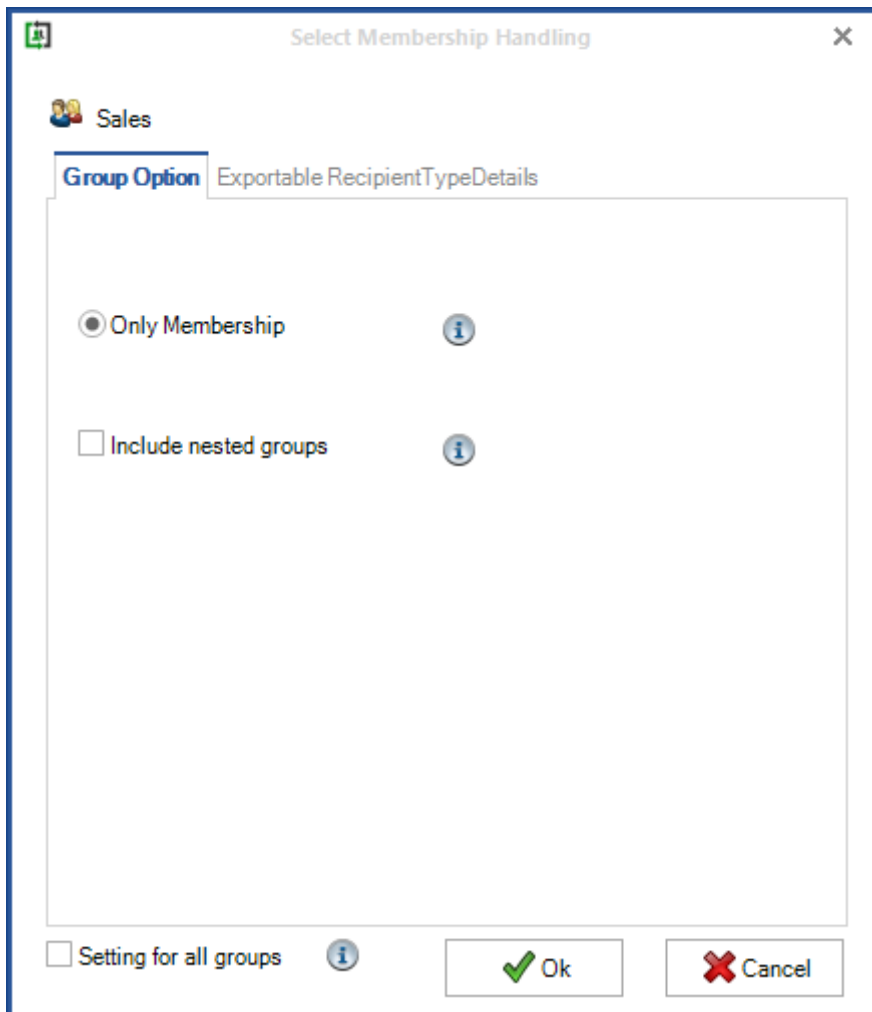
The listed results contain all objects found. Select specific, or all objects to be gathered for import and click **Apply**.

You can limit the results which you want to be get.

Note: The default 500 is set to prevent you from a long-time search. If your result is larger than the given value, the not listed objects are not included in the policy!

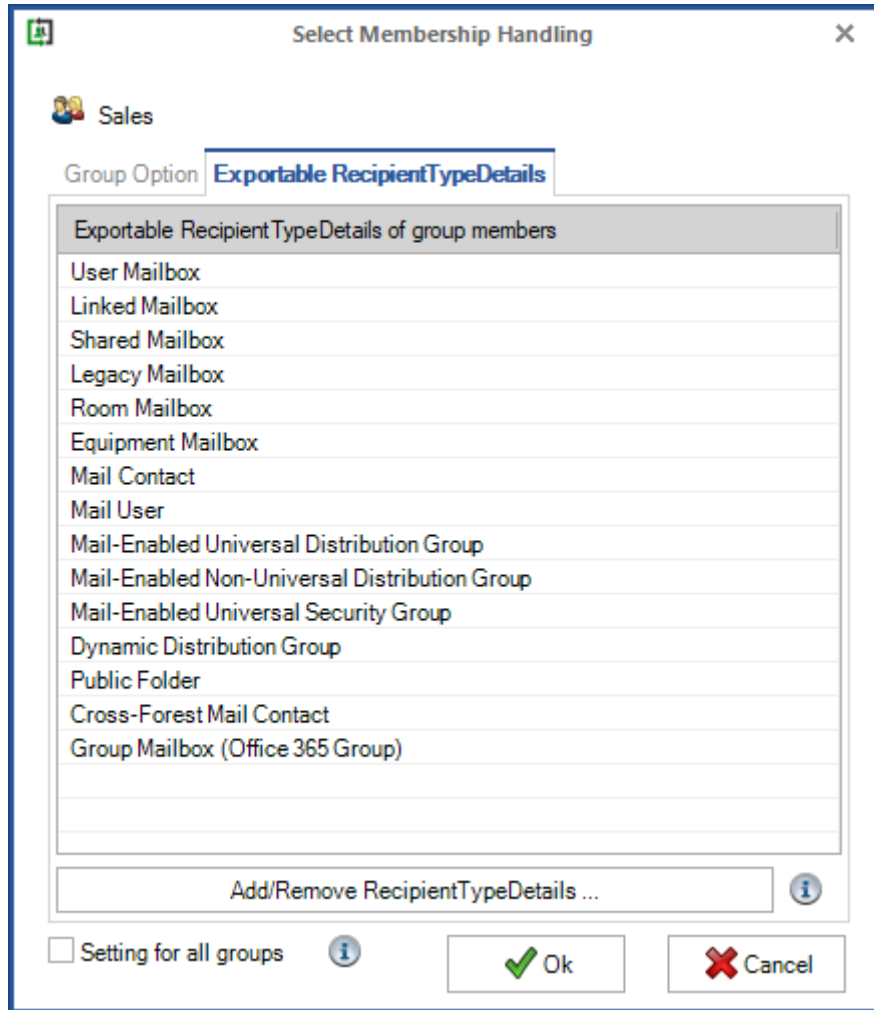
Groups

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



If you check **Setting for all groups** the configuration will be applied to all selected groups. Otherwise, you will be prompted to confirm this option for each selected group.

Exportable RecipientTypeDetails



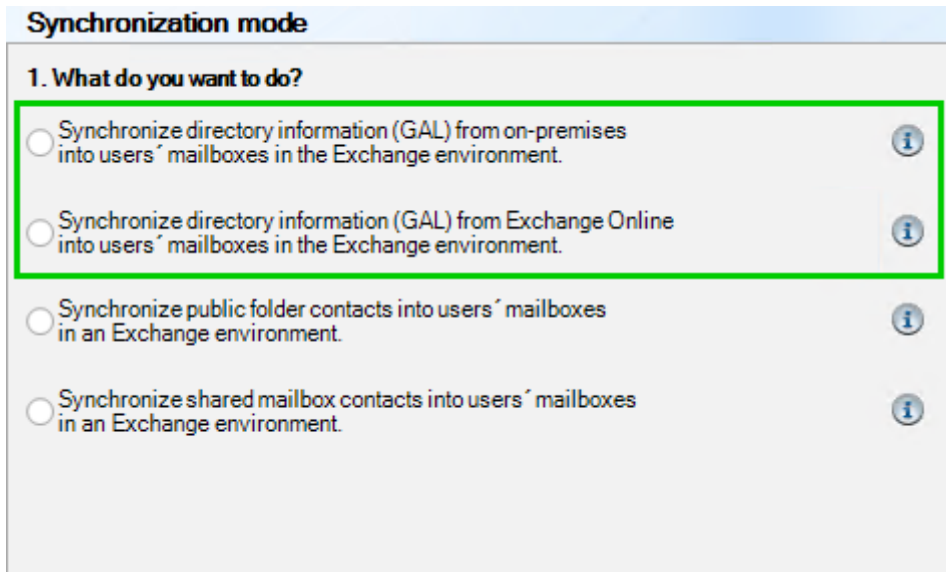
contactSync synchronizes mailboxes which have one of the **RecipientTypeDetails** set in the **msExchRecipientTypeDetails / RecipientTypeDetails** property or the **msExchRecipientTypeDetails / RecipientTypeDetails** property has not been set.

The list of **RecipientTypeDetails** can be modified with **Add/Remove RecipientTypeDetails**

Note: In the case of RecipientTypeDetails, that are not present in the Exportable RecipientTypeDetails list by default, contactSync does not check whether they are present or useful in your environment. We leave the verification to the responsible administrator to support as many scenarios as possible. A disadvantage is that the administrator can configure nonsense.

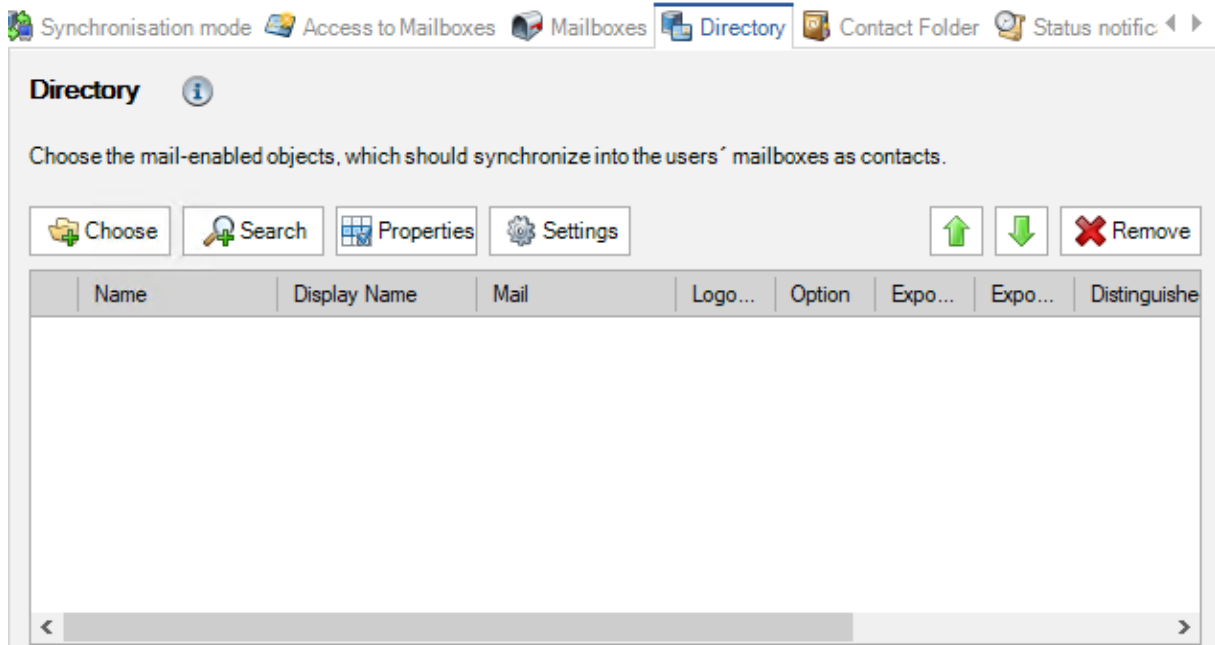
Synchronize mail-enabled objects as contacts into mailboxes

A contactSync policy synchronizes mail-enabled objects as contacts into mailboxes, if one of the first two options on the **Synchronization mode** is selected.



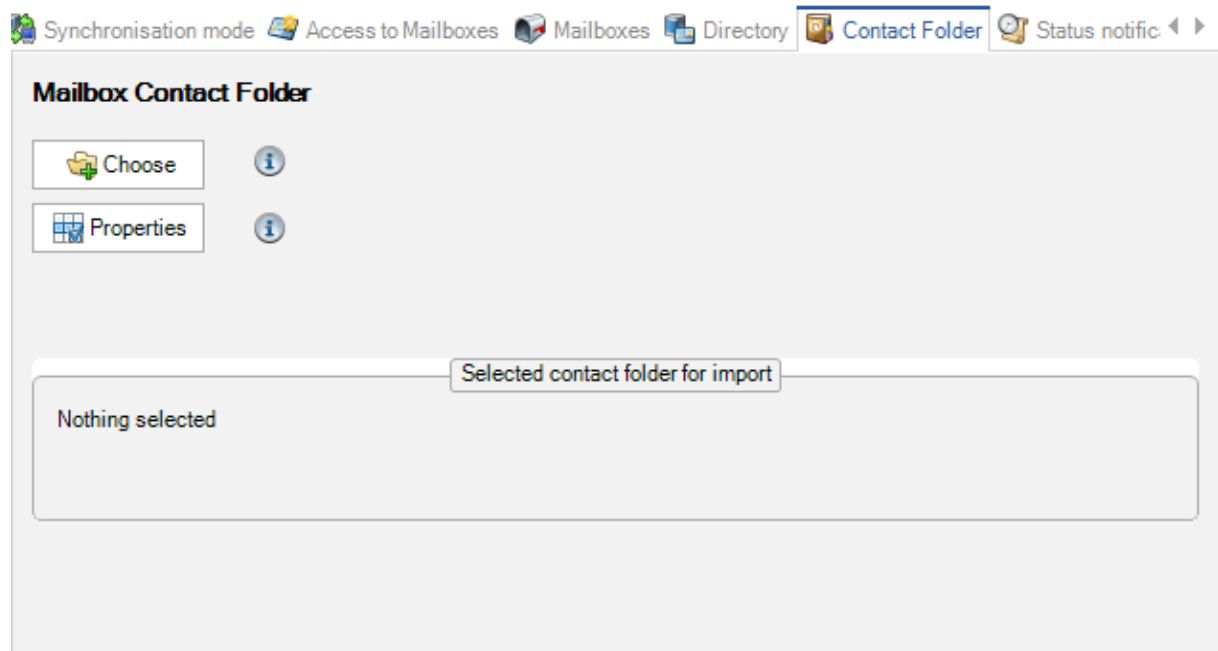
For such policies, the **Directory** and **Contact Folder** tabs are described in the chapter **Synchronize mail-enabled objects as contacts into mailboxes**.

Directory



Please see detailed information concerning the Directory tab in the **Directory** chapter.

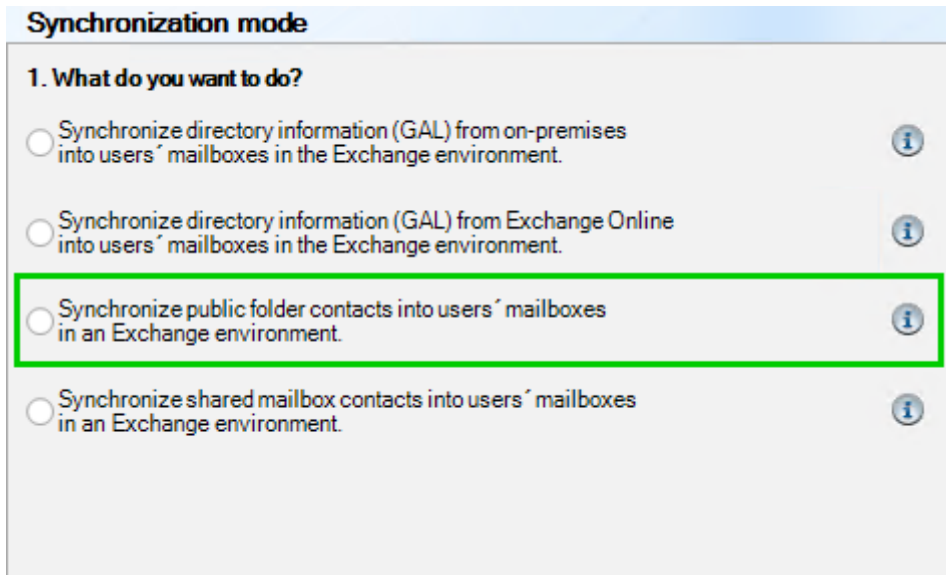
Contact Folder



Please see detailed information concerning the Contact Folder tab in the **Contact Folder** chapter.

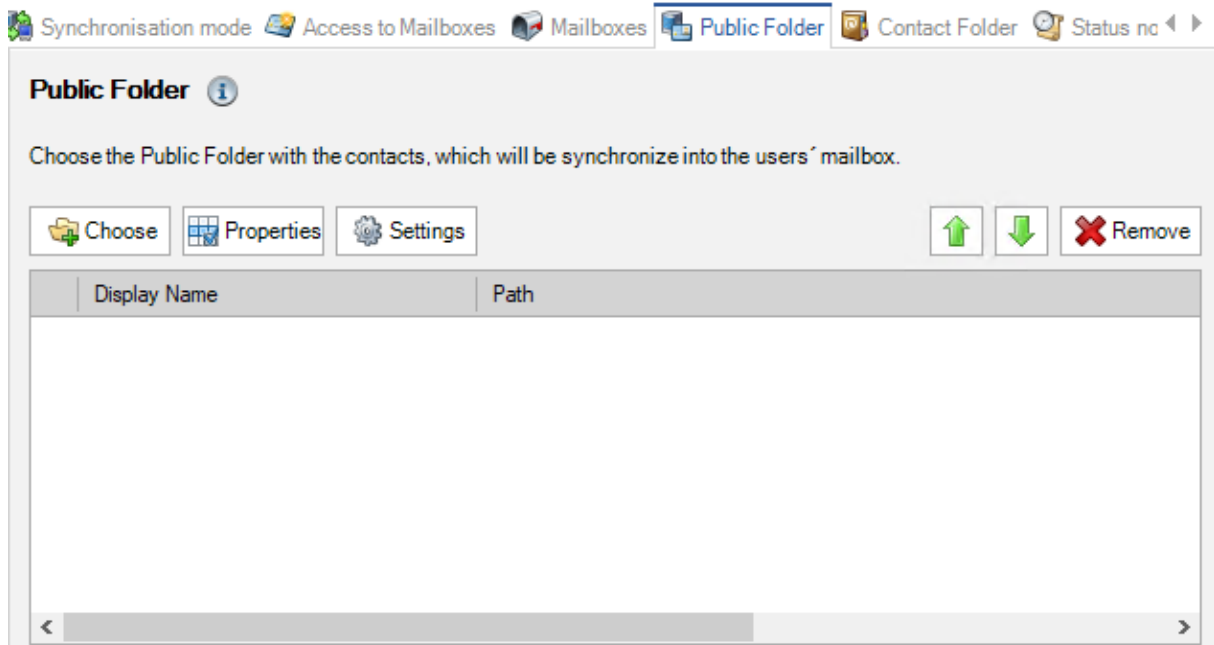
Synchronize Public Folder contacts into mailboxes

A contactSync policy synchronizes contacts from a Public Folder into mailboxes, if the public folder contacts options in the **Synchronization mode** is selected.



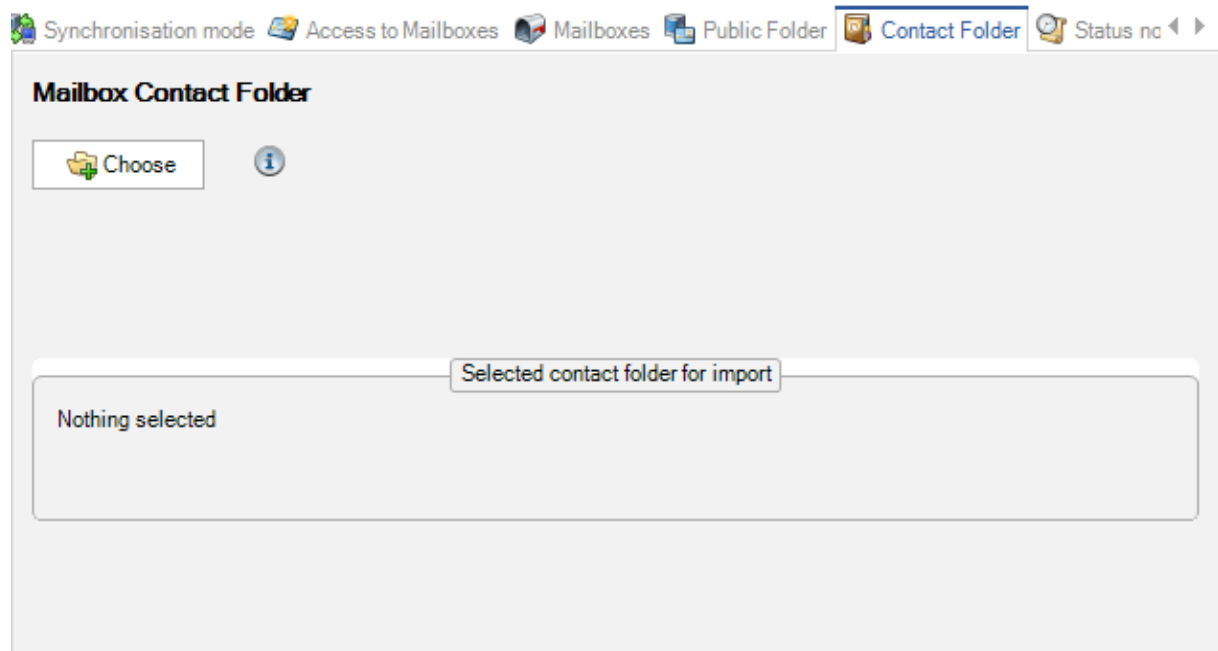
For such policies, the **Public Folder** and **Contact Folder** tabs are described in the chapter **Synchronize Public Folder contacts into mailboxes**.

Public Folder



For detailed information concerning the Public Folder tab, please see the **Public Folder** chapter.

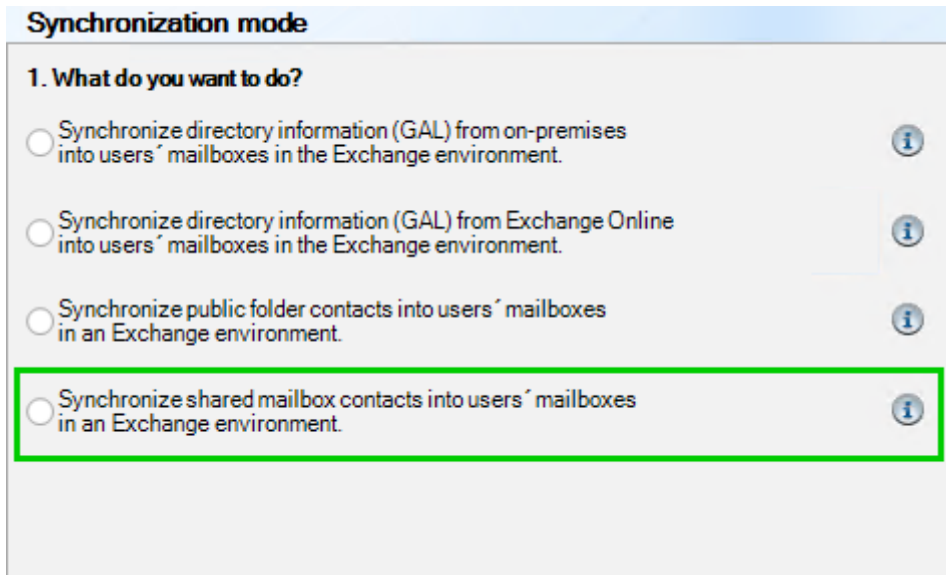
Contact Folder



For detailed information concerning the Contact Folder tab, please see the **Contact Folder** chapter.

Synchronize Shared Mailbox contacts into mailboxes

A contactSync policy synchronizes contacts from a Shared Mailbox into mailboxes, if the last option in the **Synchronization mode** is selected.



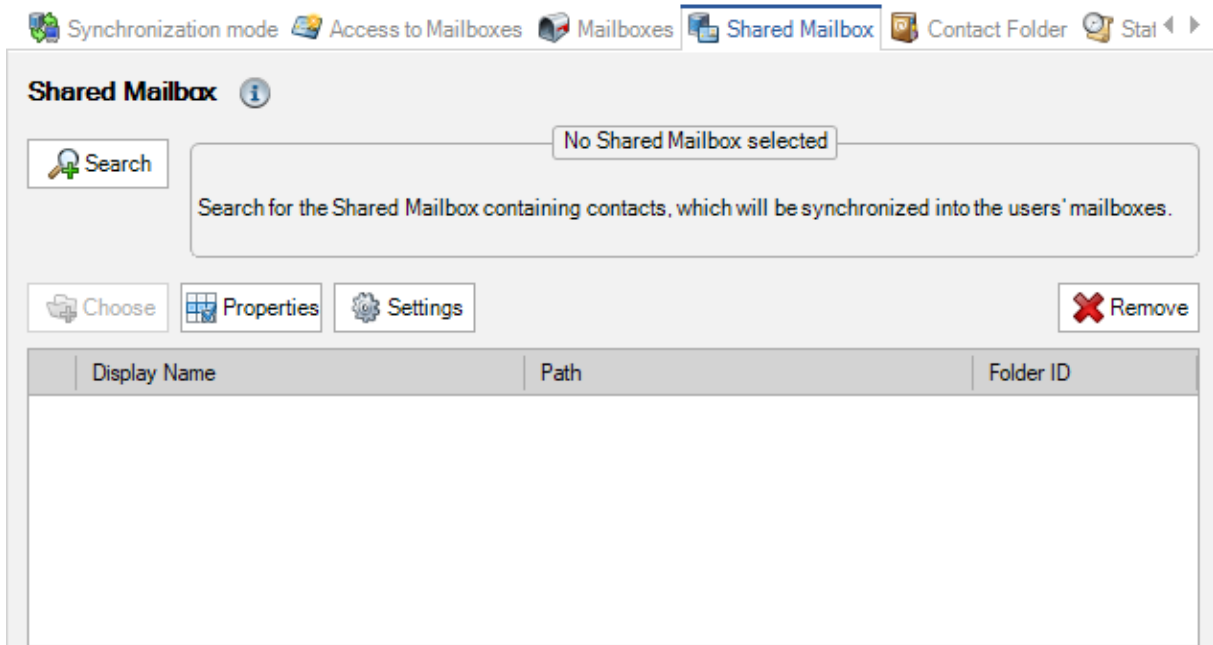
Synchronization mode

1. What do you want to do?

- Synchronize directory information (GAL) from on-premises into users' mailboxes in the Exchange environment. i
- Synchronize directory information (GAL) from Exchange Online into users' mailboxes in the Exchange environment. i
- Synchronize public folder contacts into users' mailboxes in an Exchange environment. i
- Synchronize shared mailbox contacts into users' mailboxes in an Exchange environment. i

For such policies, the **Shared Mailboxes** and **Contact Folder** tabs are described in the chapter **Synchronize Public Folder contacts into mailboxes**.

Shared Mailbox



Synchronization mode > Access to Mailboxes > Mailboxes > Shared Mailbox > Contact Folder > Stat

Shared Mailbox i

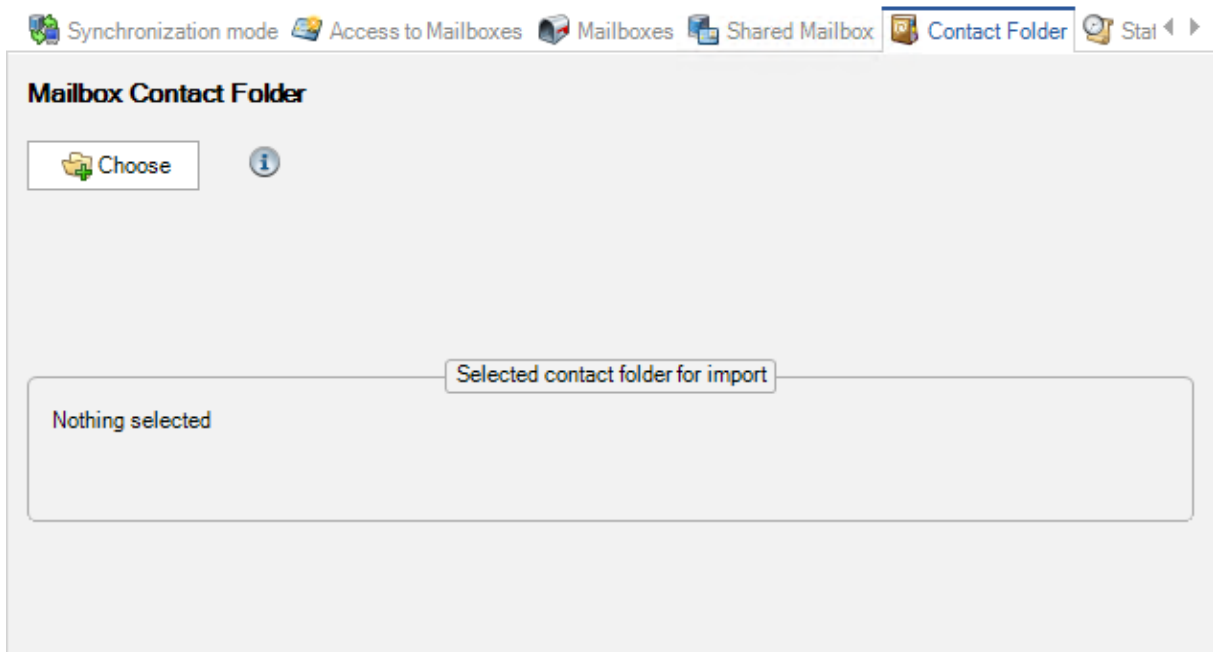
No Shared Mailbox selected

Search for the Shared Mailbox containing contacts, which will be synchronized into the users' mailboxes.

Display Name	Path	Folder ID
--------------	------	-----------

For detailed information concerning the Shared Mailbox tab, please see the **Shared Mailbox** chapter.

Contact Folder



For detailed information concerning the Contact Folder tab, please see the **Contact Folder** chapter.

Status notification emails

contactSync can send status notification emails to notify you of errors that may have occurred. Status notification is a component of each policy. If this option is left unchecked, no notification email will be sent.

The screenshot shows a configuration window titled "Status notification emails" with a breadcrumb trail: "isation mode > Access to Mailboxes > Mailboxes > Directory > Contact Folder > Status notification emails". The panel contains the following elements:

- Send Summary (with an information icon)
- Subject: (with an information icon)
- Send to:
- (with an information icon)
- Send only on error (with an information icon)

Subject: The email header

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

Test: contactSync will send an email to the specified email address.

Send only on error: contactSync will only send status notification email if at least one error occurred during a running policy.

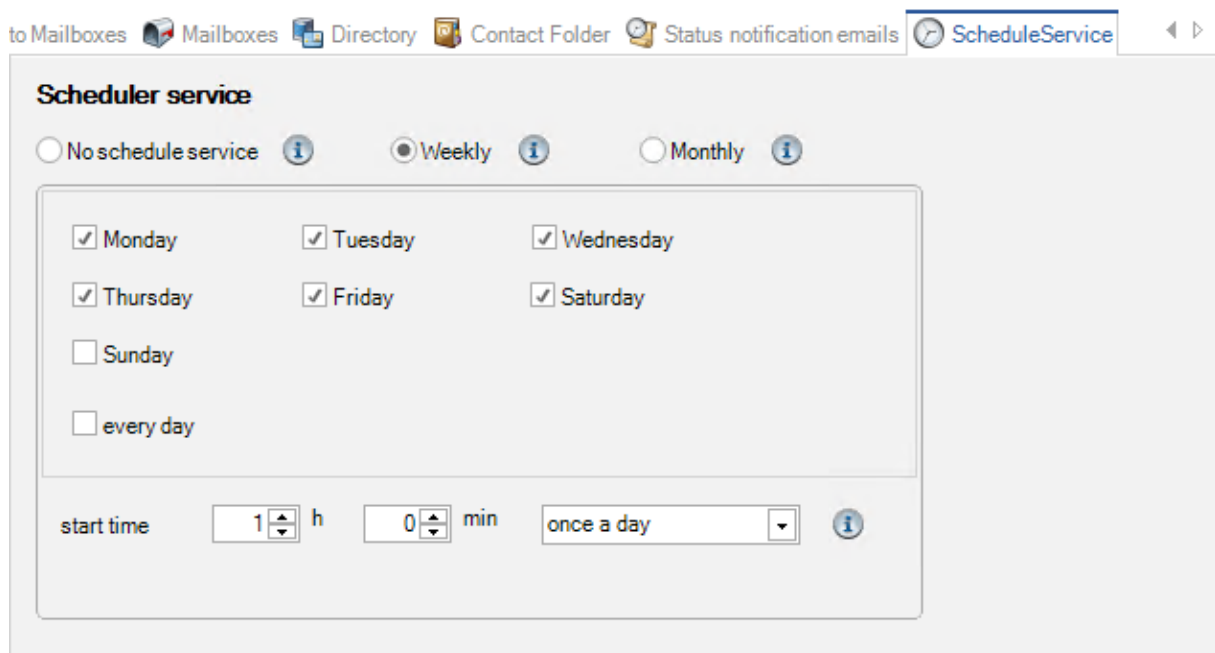
Note: contactSync will not send a status notification email if a policy has not been started due to an error.

Schedule Service

contactSync can be scheduled to run policies automatically, on a schedule of your choice. Synchronization policies can be scheduled to run on a weekly or monthly basis. You can also select the specific days of the week, or month it will run. A start time and frequency can also be configured (as often as every 15 minutes or as little as once a day).

We recommend scheduling the policies **once a day**.

Using start time and end time option contactSync starts only in the defined period. The synchronization itself can take a longer time than is set in this time slot.



The screenshot shows the 'Scheduler service' configuration window. At the top, there are tabs for 'to Mailboxes', 'Mailboxes', 'Directory', 'Contact Folder', 'Status notification emails', and 'ScheduleService'. The 'ScheduleService' tab is active. Below the tabs, the window title is 'Scheduler service'. There are three radio buttons for scheduling: 'No schedule service' (unselected), 'Weekly' (selected), and 'Monthly' (unselected). Each radio button has an information icon (i) next to it. Below the radio buttons is a list of days with checkboxes: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, and 'every day'. All days from Monday to Saturday are checked. Below the days list, there are three input fields for 'start time': '1' in a spinner box followed by 'h', '0' in a spinner box followed by 'min', and a dropdown menu set to 'once a day'. An information icon (i) is next to the dropdown menu.

Synchronize mail-enabled objects as contacts into mailboxes

A contactSync policy synchronizes mail-enabled objects as contacts into mailboxes, if one of the first two options on the Synchronization mode is selected.

Synchronization mode

1. What do you want to do?

- Synchronize directory information (GAL) from on-premises into users' mailboxes in the Exchange environment. i
- Synchronize directory information (GAL) from Exchange Online into users' mailboxes in the Exchange environment. i
- Synchronize public folder contacts into users' mailboxes in an Exchange environment. i
- Synchronize shared mailbox contacts into users' mailboxes in an Exchange environment. i

Directory

On the **Directory** tab of contactSync policies for mailbox contacts you can select mail-enabled objects, which will synchronize as contacts into users' mailboxes. You may also remove a selected entry from the list.

Synchronisation mode Access to Mailboxes Mailboxes **Directory** Contact Folder Status notific

Directory i

Choose the mail-enabled objects, which should synchronize into the users' mailboxes as contacts.

Choose Search Properties Settings ↑ ↓ Remove

Name	Display Name	Mail	Logo...	Option	Expo...	Expo...	Distinguishe
------	--------------	------	---------	--------	---------	---------	--------------

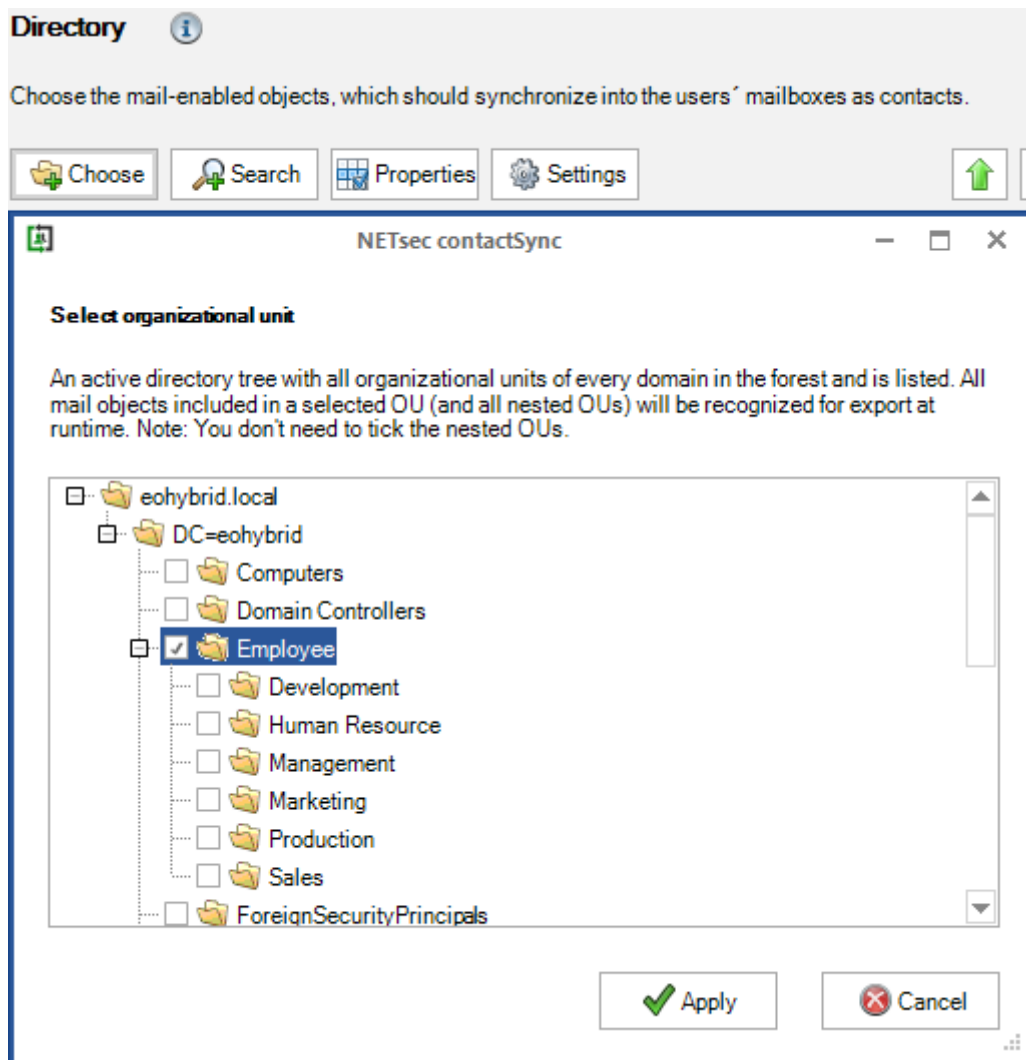
NoContactSync (internal mark)

If you do not want a specific object to be synchronized as a contact, you may insert the value **NoContactSync** in any of the custom attributes (on-premises: **extensionattribute1 - extensionattribute15** or Exchange Online: **customAttribute1 - customAttribute15**). This prevents contactSync from adding this object to the synchronization list.

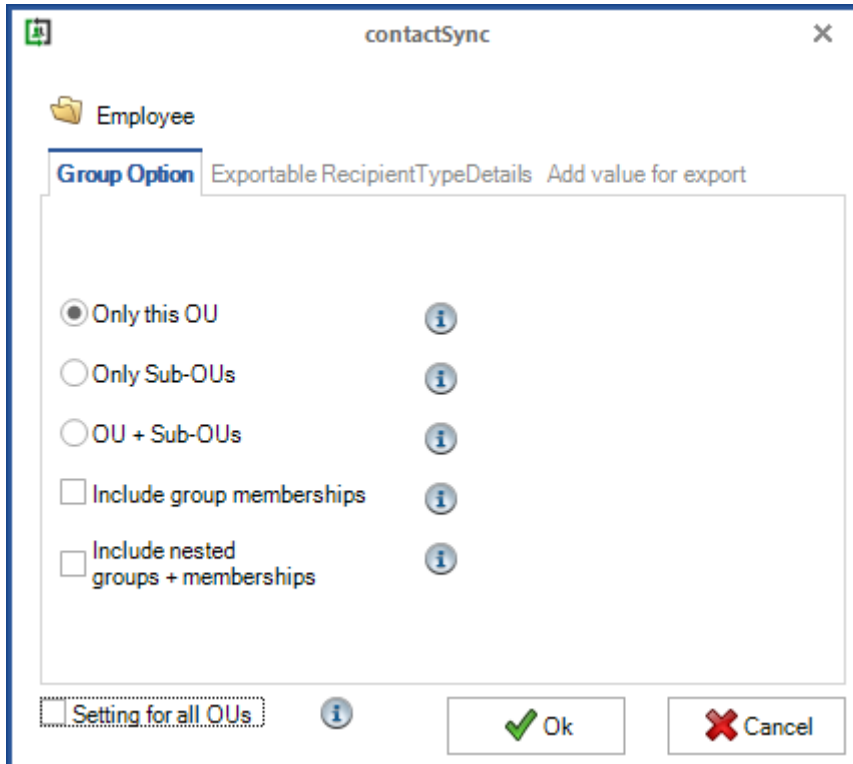
Choose (on-premises)

Here you may tick a dedicated Organizational Unit in the listed domains. An Active Directory tree with all domains and organizational units will be listed. All mail-enabled objects (users, contacts and groups) included in a selected OU (and all nested OUs) will be recognized for synchronization at runtime.

In forests with multiple domains, all domains are displayed.



Group Option



Only this OU

All mail-enabled objects, included in the selected OU will be recognized for synchronization at runtime.

Only Sub-OUs

All mail-enabled objects contained in each sub-OU in the selected OU will be recognized for synchronization at runtime.

OU + Sub-OUs

All mail-enabled objects included in a selected OU and all nested OUs will be recognized for synchronization at runtime.

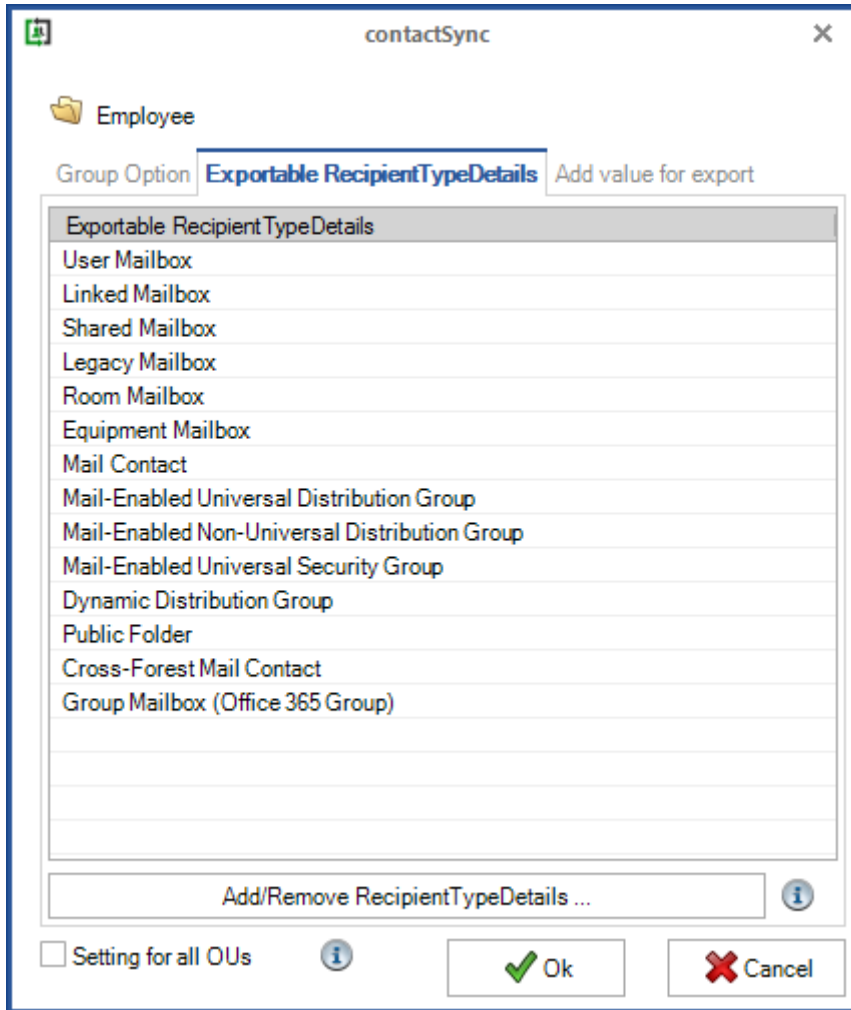
Include group memberships

All mail-enabled objects, which are members of a group, will be recognized for synchronization at runtime, if the group is in a selected OU.

Include nested groups + memberships

Nested groups and their members will be also resolved for synchronization at runtime.

Exportable RecipientTypeDetails



Please take a look at the **Exportable RecipientTypeDetails** chapter.

Add value for export

The screenshot shows a dialog box titled "contactSync" with a close button (X) in the top right corner. Below the title bar, there is a folder icon and the text "Employee". A tabbed interface is visible with four tabs: "Group Option", "Exportable", "RecipientTypeDetails", and "Add value for export". The "Add value for export" tab is active and highlighted. Inside this tab, there is a checkbox labeled "Add value to the property during export". Below this checkbox, there are two input fields: "Choose the property" with a dropdown arrow, and "Value of the property" with a text input area. At the bottom of the dialog, there is a checkbox labeled "Setting for all OUs" with an information icon (i) to its right. To the right of these are two buttons: "Ok" with a green checkmark and "Cancel" with a red X.

contactSync will add a value to an attribute of a synchronized object during the synchronization. This value is only added to the synchronized object, but not to the source object.

Choose (Exchange Online) [not recommended]

The selection by **Recipient Type** will be deprecated and is not recommended to use for configuration any longer. It is recommended to define the selection of objects to be synchronized by membership in a group. The group can be searched for in the **Search** dialog and only its members are synchronized as contacts with the group option **Only Membership**. This allows you to specify much more precisely which objects will actually be synchronized as contacts into the mailboxes.

Here you may tick either all objects or specify a filter by ticking recipient types you want to choose.

Directory ⓘ

Search and choose the Exchange Online objects, which should synchronize into the users' mailboxes as contacts.

Choose Search Properties Settings Up Down Remove

NETsec contactSync [NOT RECOMMENDED]

Select Recipient Types

Export all

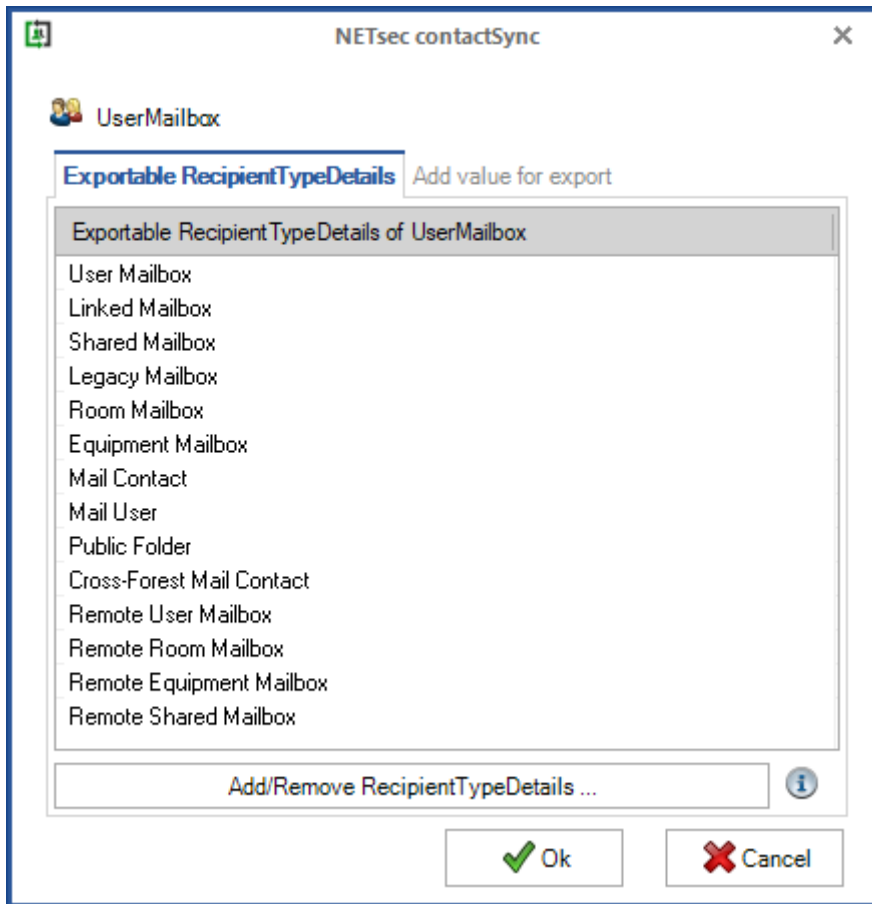
Export Selected

Recipient Type	Description
<input type="checkbox"/> UserMailbox	User with mailbox
<input type="checkbox"/> MailUser	Mail-enabled User
<input type="checkbox"/> MailContact	Contact pointing to external address
<input type="checkbox"/> MailUniversalDistributionGroup	Mail-enabled Distribution Group
<input type="checkbox"/> MailUniversalSecurityGroup	Mail-enabled Security Group
<input type="checkbox"/> DynamicDistributionGroup	Dynamic Distribution Group
<input type="checkbox"/> Office365Group	Office 365 Group

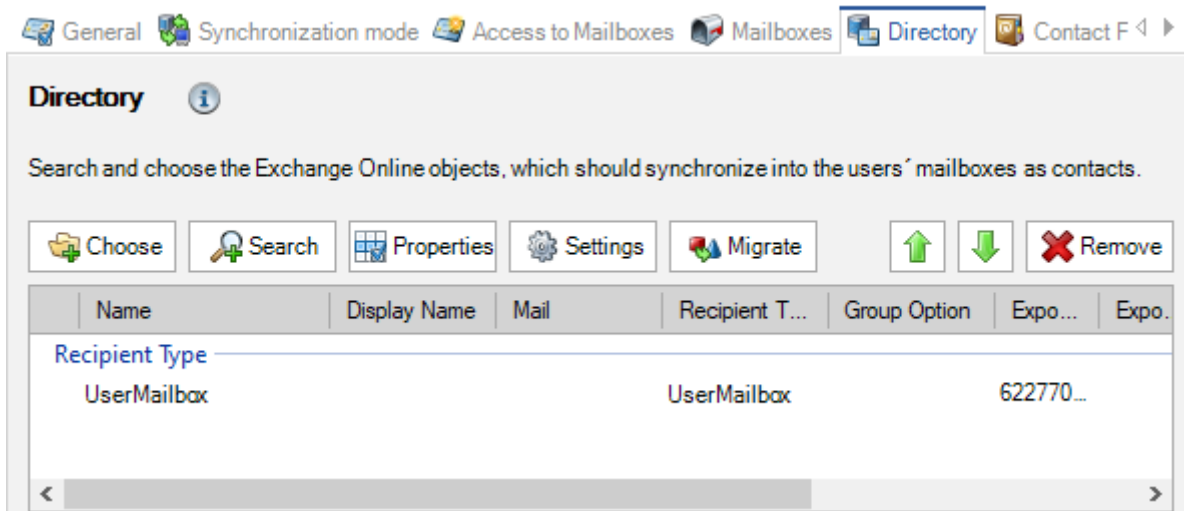
Note: Instead of using Recipient Types for the selection, create a group in Exchange Online, which has the objects as members, afterwards search for the group in the policy to select it. Use 'only memberships' in the group option for the selected group.

Apply Cancel

You can then define the list of **RecipientTypeDetails** for each **Recipient Type** to be recognized for synchronization at runtime.



The selected Recipient Type is listed on the Directory tab.



Search (on-premises)

You can search an object by inserting an expression. Uncheck all object types you do not want to have in the results.

Note: The scope of the query is the Active Directory forest.

NETsec contactSync

Search Active Directory

You can search an object by inserting an expression. Uncheck all object types which you do not want to have as a result. The scope of the query is the complete forest your exchange organization belongs to. The result list contains all objects found. Select certain or all objects to be gathered for export and press apply.

User Contact Group

Container OU Dynamic Distribution Group

Public Folder

Name	Display Name	Mail	Logo...	DistinguishedN

Select all

The search results contain a list of all objects found. Select specific or all objects to be gathered for import by checking the checkbox, then click **Apply**.

With a wildcard * you can widen your search criteria, and broaden the results.

Search (Exchange Online)

Here you may pick either all objects or specify a filter by ticking recipient types you want to choose. With a wildcard * you can widen your search criteria, and broaden the results. For example, if you tick only **MailUniversalDistributionGroup**, all **MailUniversalDistributionGroups** will be returned in the results.

Search for Exchange Online Objects

Search Exchange Online

You can search an object by inserting an expression. Uncheck all object types which you do not want to have as a result. The scope of the query is the complete forest your exchange organization belongs to. The result list contains all objects found. Select certain or all objects to be gathered for export and press apply.

•

UserMailbox MailUniversalDistributionGroup DynamicDistributionGroup
 MailContact MailUniversalSecurityGroup Office365Group

maximum Results: 500

The SessionState method was called from: ps_RemotePowershellDisconnected
ProcessData | 0805ea1f-33b4-4db8-9dbe-b4e6b157ef7a | StreamProgressDataAdded | 68 | parent = -1 id = 0 act = Sleeping stat = Processing cur = pct = -1 sec = -1 type = Completed

Display Name	Mail	Recipient Type	Distinguished Name
<input type="checkbox"/> Gruppe1	SMTP:rockme@netsectes...	MailUniversalDistribution...	CN=Gruppe1,OU=...
<input type="checkbox"/> AlphaEoGroup	SMTP:AlphaEo@netsecte...	MailUniversalDistribution...	CN=AlphaEoGr...
<input type="checkbox"/> BetaEoGroup	SMTP:BetaEo@netsectes...	MailUniversalDistribution...	CN=BetaEoGro...
<input type="checkbox"/> CharlieEoGroup	SMTP:CharlieEo@netsect...	MailUniversalDistribution...	CN=CharlieEoC...
<input type="checkbox"/> DeltaEoGroup	SMTP:DeltaEo@netsecte...	MailUniversalDistribution...	CN=DeltaEoGr...
<input checked="" type="checkbox"/> Sales	SMTP:sales@sysbox.net	MailUniversalDistribution...	CN=Sales,OU=...

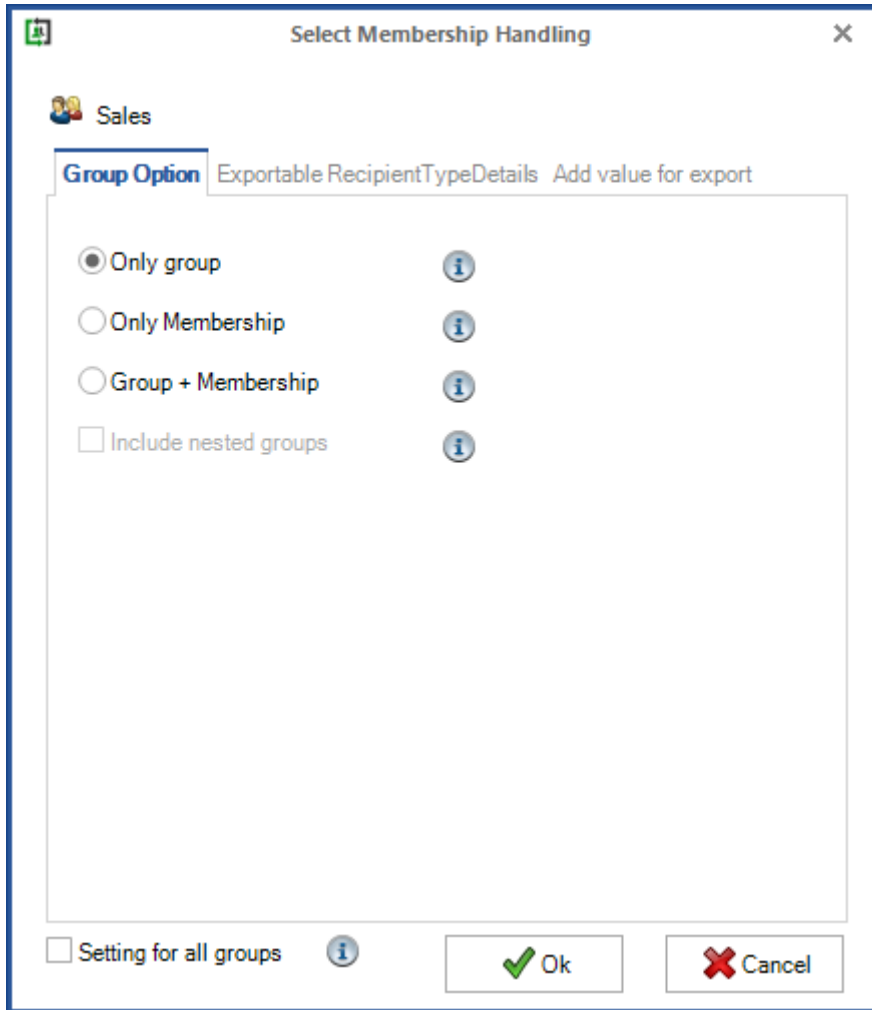
Select all

The listed results contain all objects found. Select specific, or all objects to be gathered for synchronization, and click **Apply**.

You can limit the results that are returned.

Note: The default 500 is set to prevent long search times. If your result is larger than the given value, the not listed objects are not included in the view.

Group Option



Only group

Synchronize the selected group object.

Only Membership

Synchronize the members of the selected group object

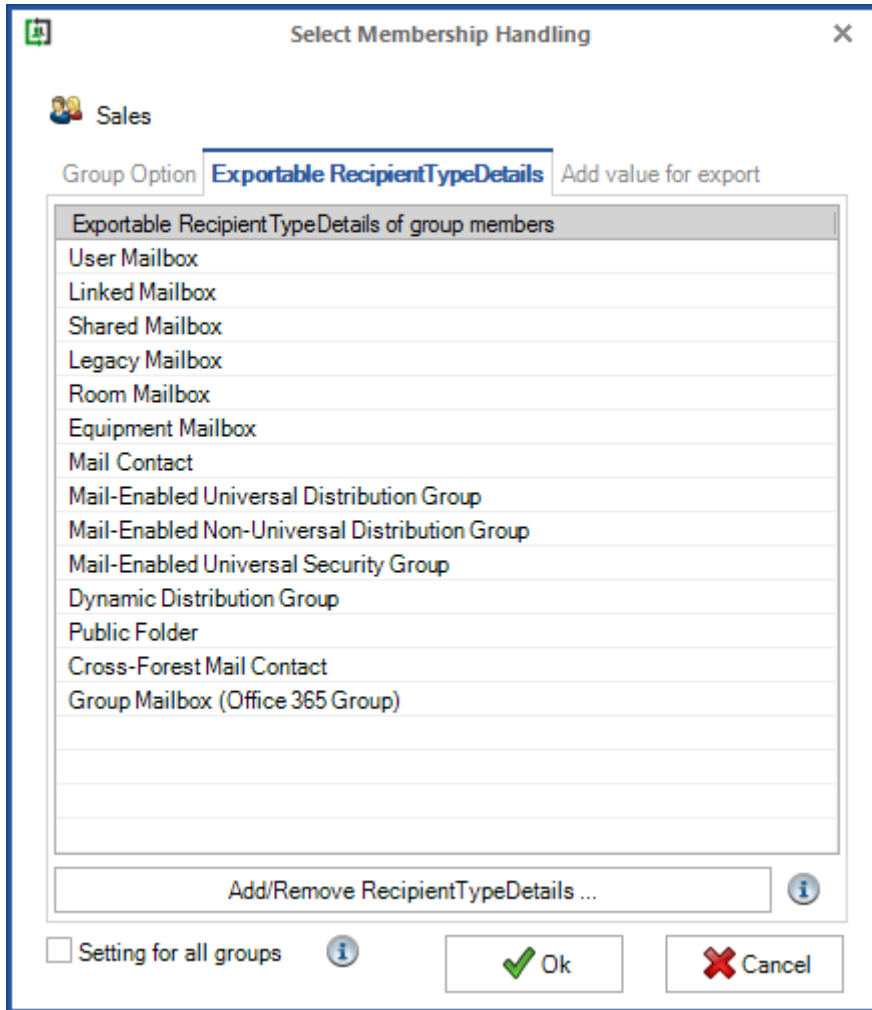
Group + Membership

Synchronize the group object and the members.

Include nested groups

Synchronize also the nested group objects and the members.

Exportable RecipientTypeDetails



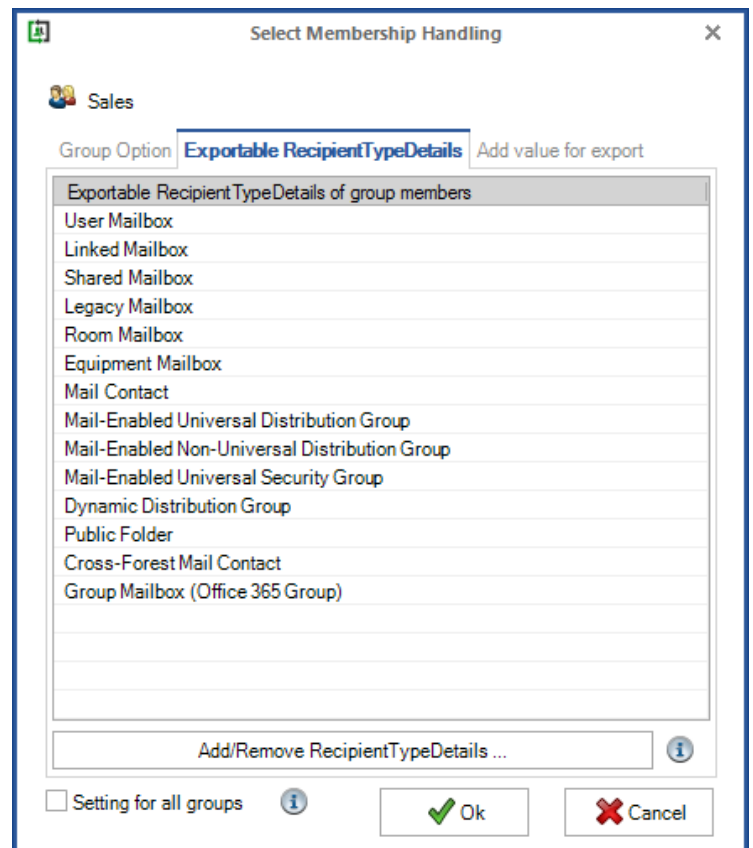
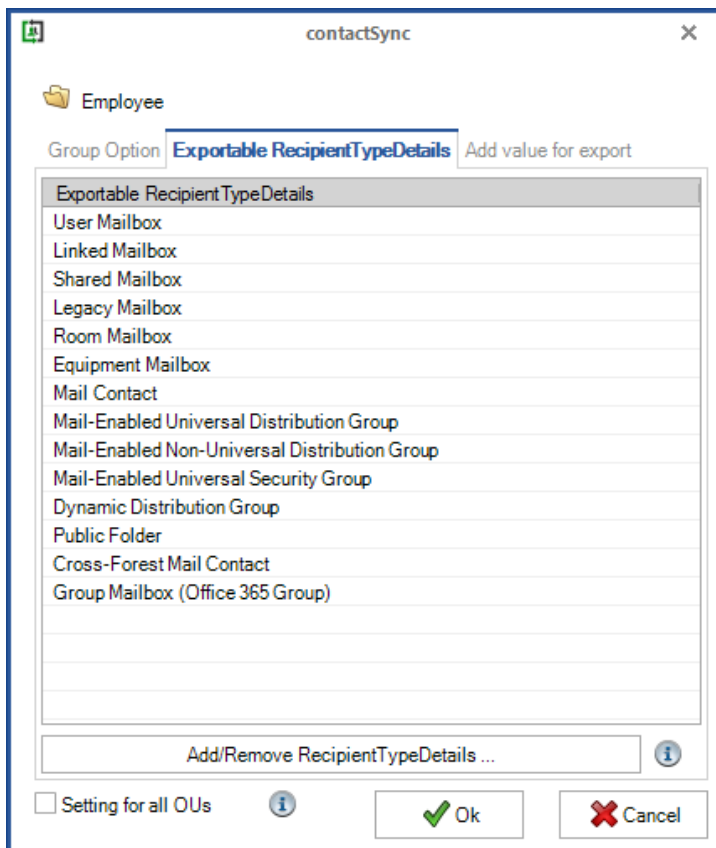
Please take a look at the **Exportable RecipientTypeDetails** chapter.

Add value for export

The screenshot shows a dialog box titled "Select Membership Handling" with a close button (X) in the top right corner. The dialog is for the "Sales" group, indicated by a group icon and the text "Sales". There are four tabs: "Group Option", "Exportable", "RecipientTypeDetails", and "Add value for export", with the last one being the active tab. Inside the dialog, there is a checkbox labeled "Add value to the property during export". Below this checkbox are two input fields: "Choose the property" (a dropdown menu) and "Value of the property" (a text box). At the bottom left, there is a checkbox labeled "Setting for all groups" next to an information icon (i). At the bottom right, there are two buttons: "Ok" with a green checkmark and "Cancel" with a red X.

contactSync adds the specified value to the selected property during synchronization.

Exportable RecipientTypeDetails



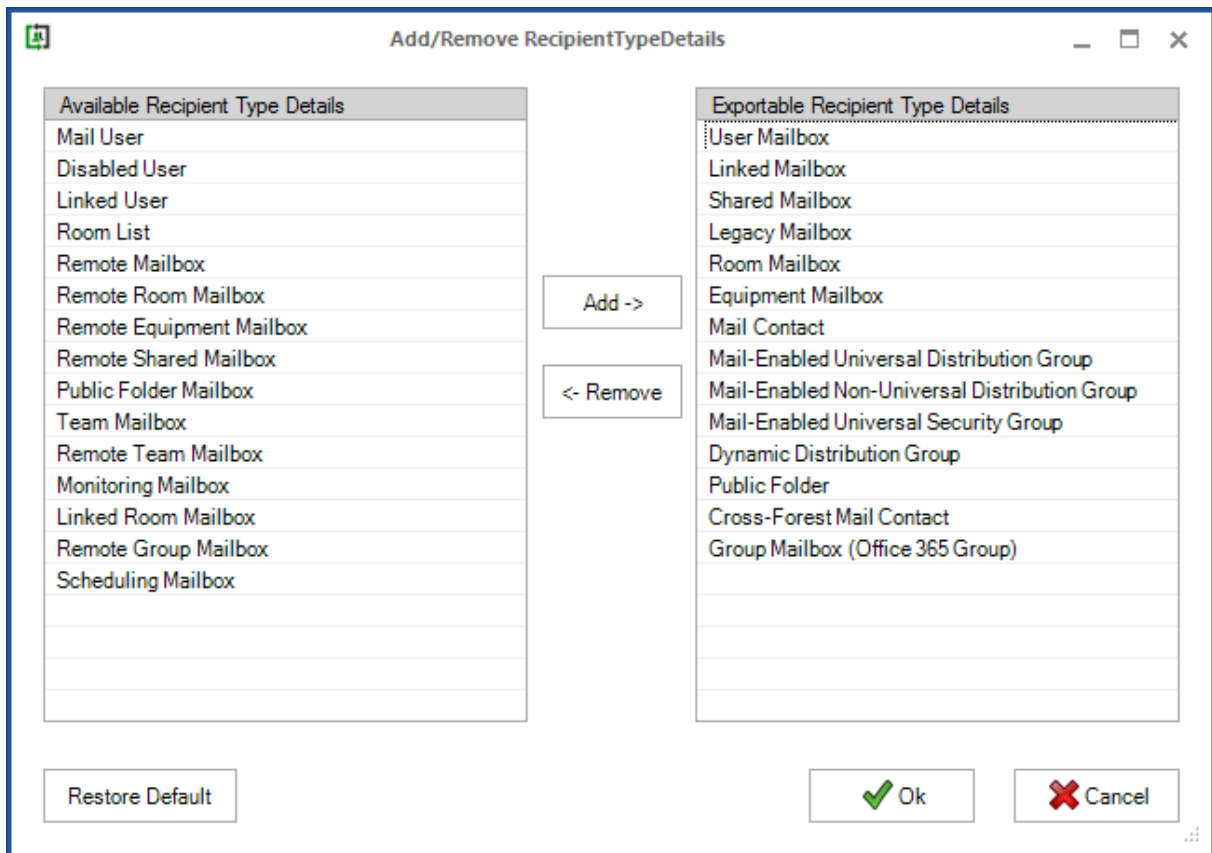
contactSync synchronizes objects which have one of the **RecipientTypeDetails** set in the **msExchRecipientTypeDetails / RecipientTypeDetails** property or the **msExchRecipientTypeDetails / RecipientTypeDetails** property has not been set.

The list of **RecipientTypeDetails** can be modified with **Add/Remove RecipientTypeDetails**

Note: In the case of RecipientTypeDetails, that are not present in the Exportable RecipientTypeDetails list by default, contactSync does not check whether they are present or useful in your environment. We leave the verification to the responsible administrator to support as many scenarios as possible. A disadvantage is that the administrator can configure nonsense.

Add/Remove RecipientTypeDetails...

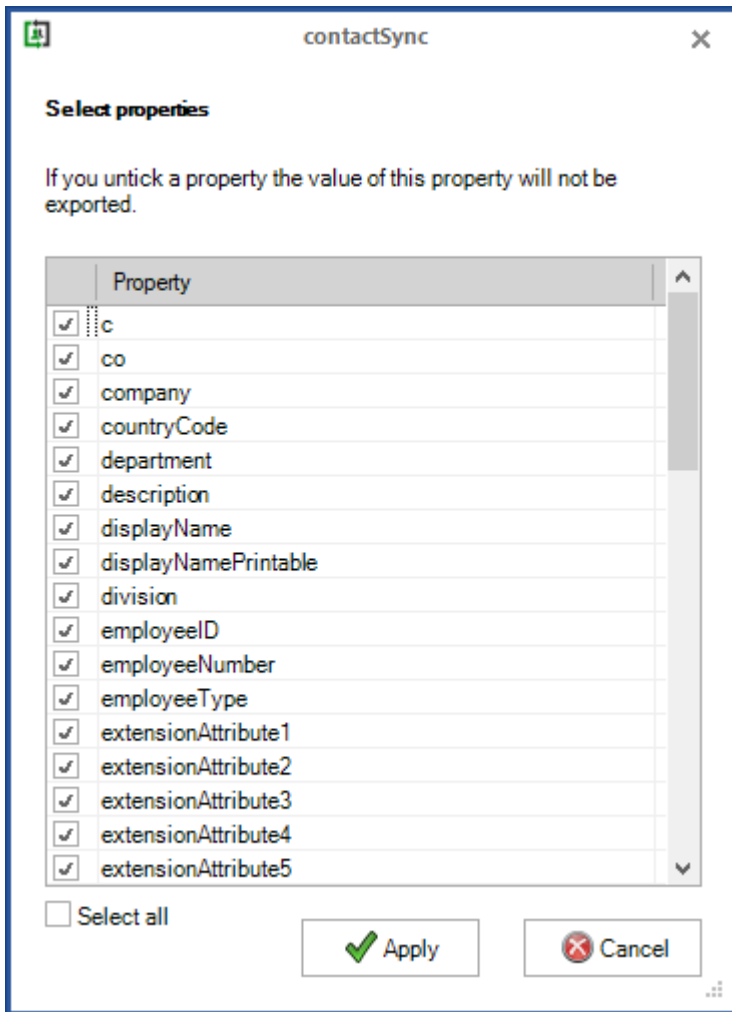
Opens a dialog, where you can modify the list of **RecipientTypeDetails**, which have been selected for synchronization.



Note: If the `msExchRecipientTypeDetails` / `RecipientTypeDetails` attribute is not set in the Active Directory object, the object will be synchronized.

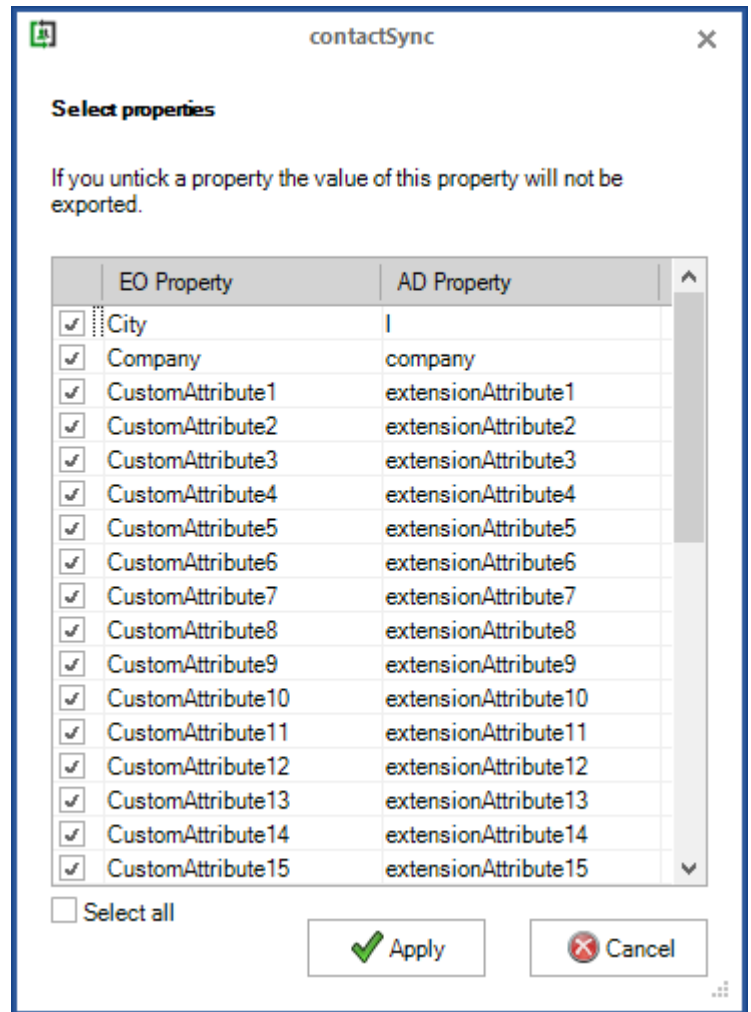
Properties

Select which properties are to be synchronized.



The screenshot shows a dialog box titled "contactSync" with a close button (X) in the top right corner. Below the title bar, the text "Select properties" is displayed. A note states: "If you untick a property the value of this property will not be exported." Below this is a table with a single column labeled "Property". The table contains 16 rows, each with a checked checkbox and a property name: c, co, company, countryCode, department, description, displayName, displayNamePrintable, division, employeeID, employeeNumber, employeeType, extensionAttribute1, extensionAttribute2, extensionAttribute3, extensionAttribute4, and extensionAttribute5. At the bottom left, there is a "Select all" checkbox which is currently unchecked. At the bottom right, there are two buttons: "Apply" (with a green checkmark icon) and "Cancel" (with a red X icon).

Property
<input checked="" type="checkbox"/> c
<input checked="" type="checkbox"/> co
<input checked="" type="checkbox"/> company
<input checked="" type="checkbox"/> countryCode
<input checked="" type="checkbox"/> department
<input checked="" type="checkbox"/> description
<input checked="" type="checkbox"/> displayName
<input checked="" type="checkbox"/> displayNamePrintable
<input checked="" type="checkbox"/> division
<input checked="" type="checkbox"/> employeeID
<input checked="" type="checkbox"/> employeeNumber
<input checked="" type="checkbox"/> employeeType
<input checked="" type="checkbox"/> extensionAttribute1
<input checked="" type="checkbox"/> extensionAttribute2
<input checked="" type="checkbox"/> extensionAttribute3
<input checked="" type="checkbox"/> extensionAttribute4
<input checked="" type="checkbox"/> extensionAttribute5



The screenshot shows a dialog box titled "contactSync" with a close button (X) in the top right corner. Below the title bar, the text "Select properties" is displayed. A note states: "If you untick a property the value of this property will not be exported." Below this is a table with two columns: "EO Property" and "AD Property". The table contains 16 rows, each with a checked checkbox and two property names: City | l, Company | company, CustomAttribute1 | extensionAttribute1, CustomAttribute2 | extensionAttribute2, CustomAttribute3 | extensionAttribute3, CustomAttribute4 | extensionAttribute4, CustomAttribute5 | extensionAttribute5, CustomAttribute6 | extensionAttribute6, CustomAttribute7 | extensionAttribute7, CustomAttribute8 | extensionAttribute8, CustomAttribute9 | extensionAttribute9, CustomAttribute10 | extensionAttribute10, CustomAttribute11 | extensionAttribute11, CustomAttribute12 | extensionAttribute12, CustomAttribute13 | extensionAttribute13, CustomAttribute14 | extensionAttribute14, and CustomAttribute15 | extensionAttribute15. At the bottom left, there is a "Select all" checkbox which is currently unchecked. At the bottom right, there are two buttons: "Apply" (with a green checkmark icon) and "Cancel" (with a red X icon).

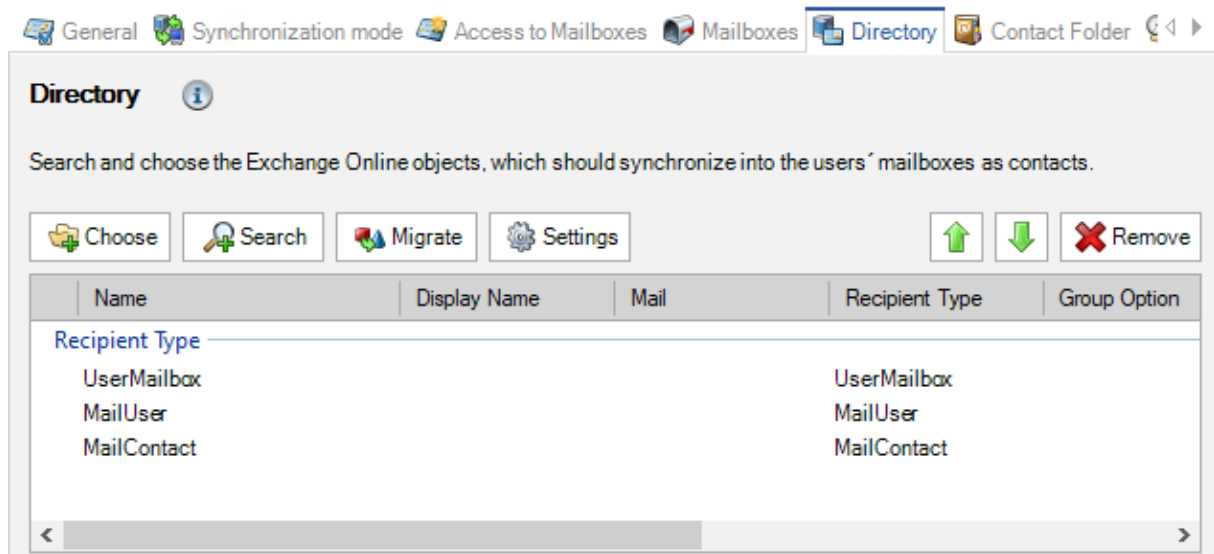
EO Property	AD Property
<input checked="" type="checkbox"/> City	l
<input checked="" type="checkbox"/> Company	company
<input checked="" type="checkbox"/> CustomAttribute1	extensionAttribute1
<input checked="" type="checkbox"/> CustomAttribute2	extensionAttribute2
<input checked="" type="checkbox"/> CustomAttribute3	extensionAttribute3
<input checked="" type="checkbox"/> CustomAttribute4	extensionAttribute4
<input checked="" type="checkbox"/> CustomAttribute5	extensionAttribute5
<input checked="" type="checkbox"/> CustomAttribute6	extensionAttribute6
<input checked="" type="checkbox"/> CustomAttribute7	extensionAttribute7
<input checked="" type="checkbox"/> CustomAttribute8	extensionAttribute8
<input checked="" type="checkbox"/> CustomAttribute9	extensionAttribute9
<input checked="" type="checkbox"/> CustomAttribute10	extensionAttribute10
<input checked="" type="checkbox"/> CustomAttribute11	extensionAttribute11
<input checked="" type="checkbox"/> CustomAttribute12	extensionAttribute12
<input checked="" type="checkbox"/> CustomAttribute13	extensionAttribute13
<input checked="" type="checkbox"/> CustomAttribute14	extensionAttribute14
<input checked="" type="checkbox"/> CustomAttribute15	extensionAttribute15

Please note: There are certain properties that are available in source objects which are not available in the Mailbox contacts folder.

Migrate

It is possible to migrate a selected **Recipient Type** on the **Directory** tab of a contactSync policy to a dynamic distribution group.

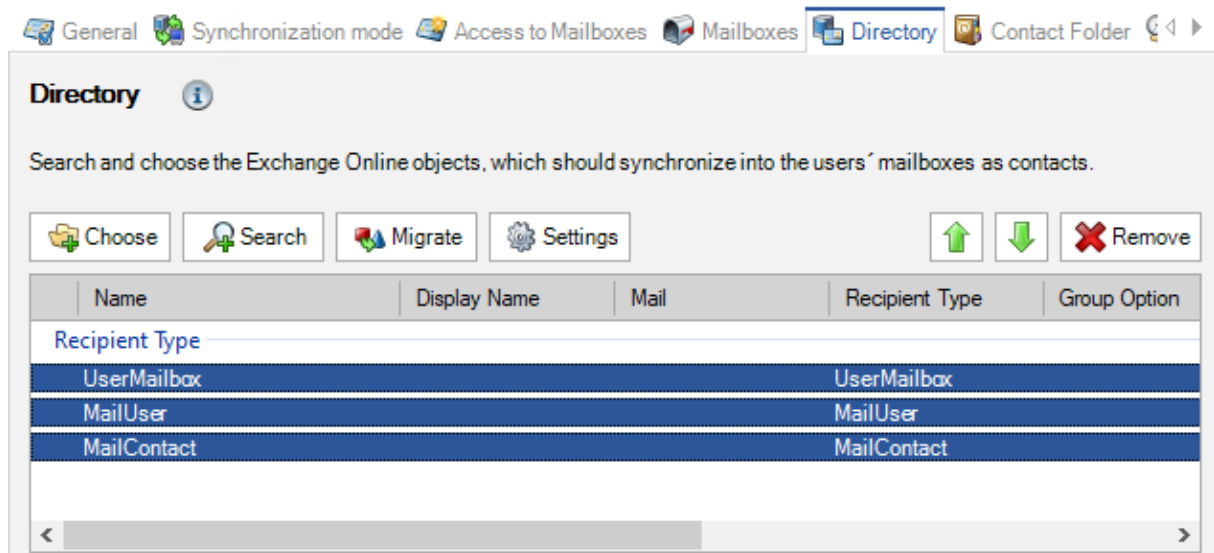
The selection by **Recipient Type** will be deprecated and not recommended to use for configuration any longer. It is recommended to define the selection of objects to be synchronized by membership in a group. The group can be searched for in the **Search** dialog and only its members are synchronized as contacts with the group option **Only Membership**. This allows you to specify much more precisely which objects should really be synchronized as contacts into the mailboxes.



The screenshot shows the 'Directory' tab of the contactSync interface. At the top, there are navigation tabs: General, Synchronization mode, Access to Mailboxes, Mailboxes, Directory (selected), and Contact Folder. Below the tabs, the 'Directory' section has an information icon and the text: 'Search and choose the Exchange Online objects, which should synchronize into the users' mailboxes as contacts.' Below this text are buttons for 'Choose', 'Search', 'Migrate', 'Settings', 'Up', 'Down', and 'Remove'. A table with the following columns is displayed: Name, Display Name, Mail, Recipient Type, and Group Option. The table contains three rows under the 'Recipient Type' header: 'UserMailbox', 'MailUser', and 'MailContact'. The 'Recipient Type' column for each row contains the same value as the 'Name' column.

Name	Display Name	Mail	Recipient Type	Group Option
Recipient Type				
UserMailbox			UserMailbox	
MailUser			MailUser	
MailContact			MailContact	

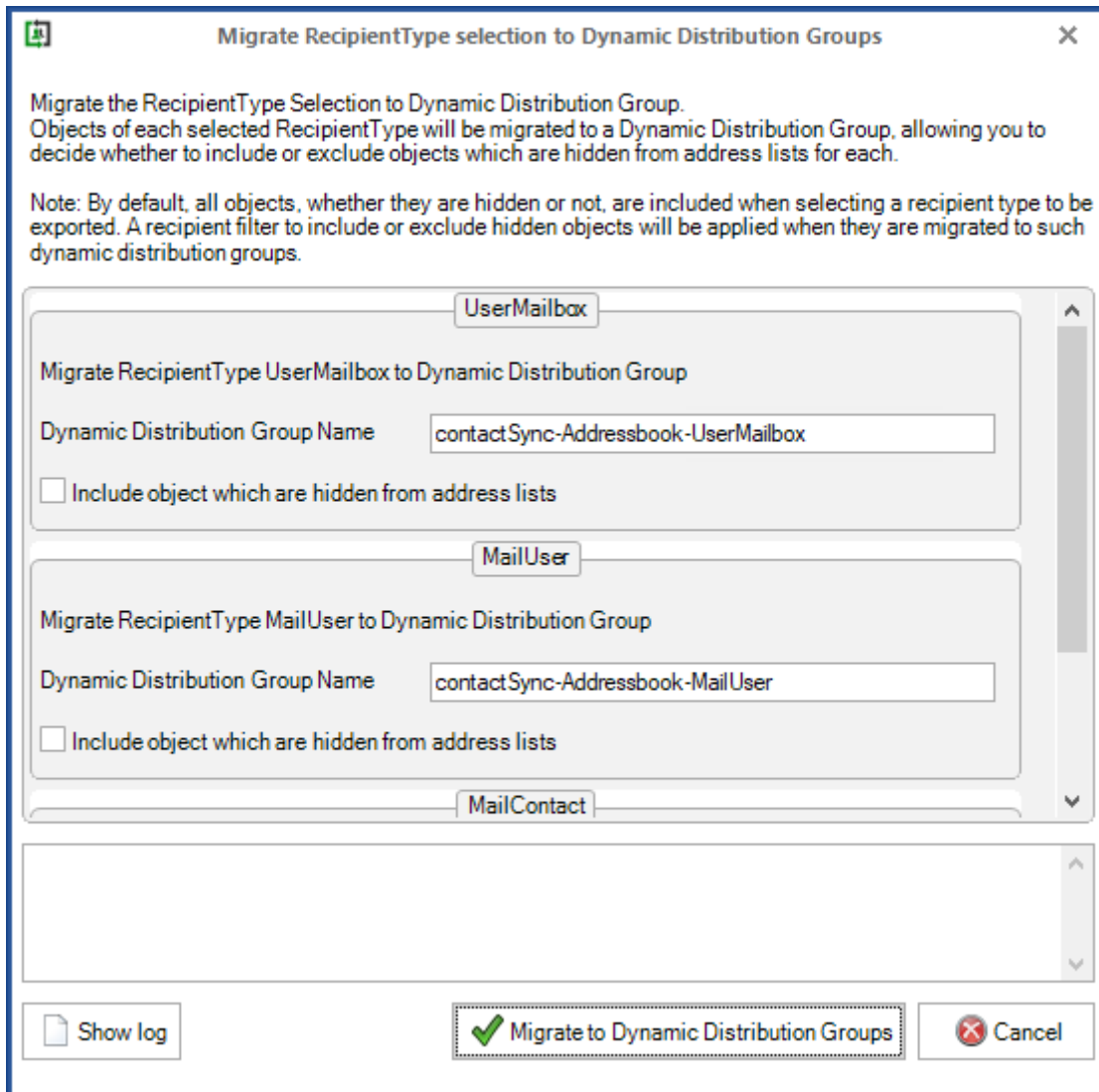
Select one or multiple **Recipient Type** entries in the list and click **Migrate**.



This screenshot is identical to the previous one, but the three rows in the table ('UserMailbox', 'MailUser', and 'MailContact') are highlighted in blue, indicating they are selected. The 'Migrate' button is also visible and ready to be clicked.

Name	Display Name	Mail	Recipient Type	Group Option
Recipient Type				
UserMailbox			UserMailbox	
MailUser			MailUser	
MailContact			MailContact	

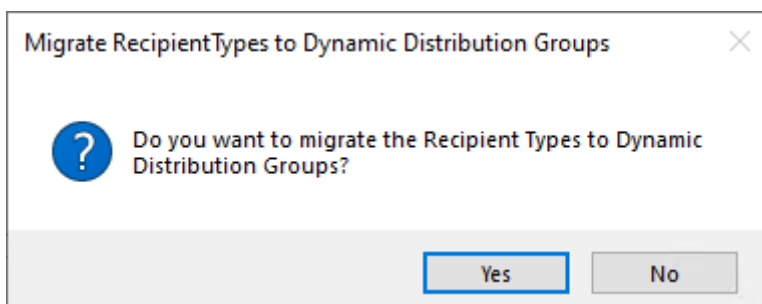
The **Migrate RecipientType selection to Dynamic Distribution Groups** dialog will open.

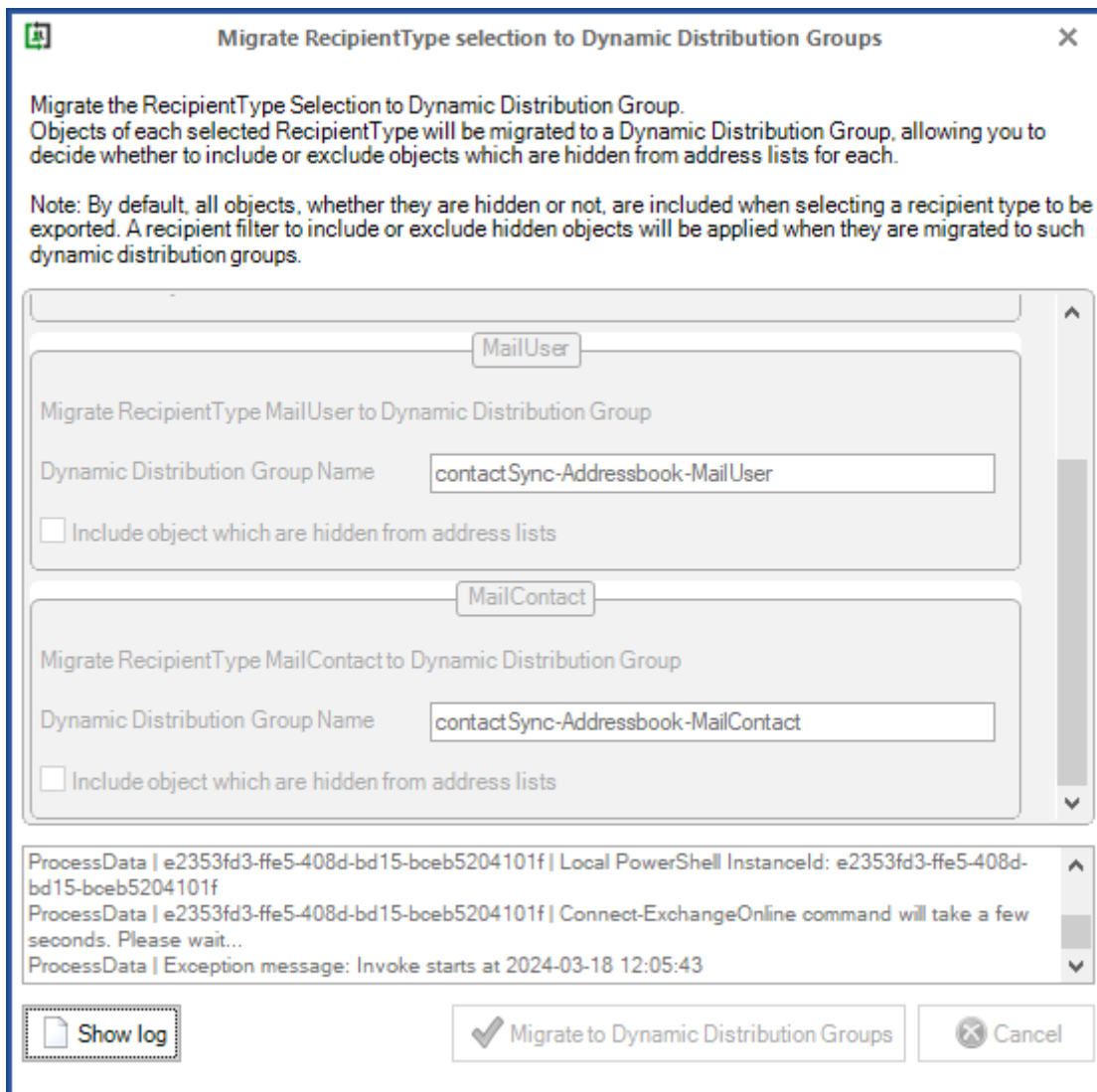


For each **Recipient Type** a dynamic distribution group will be created in Exchange Online.

The name of each dynamic distribution group must be unique in Exchange Online. The proposed name of the dynamic distribution group can be changed accordingly in the dialog before it is created in Exchange Online.

Click on **Migrate to Dynamic Distribution Groups**.



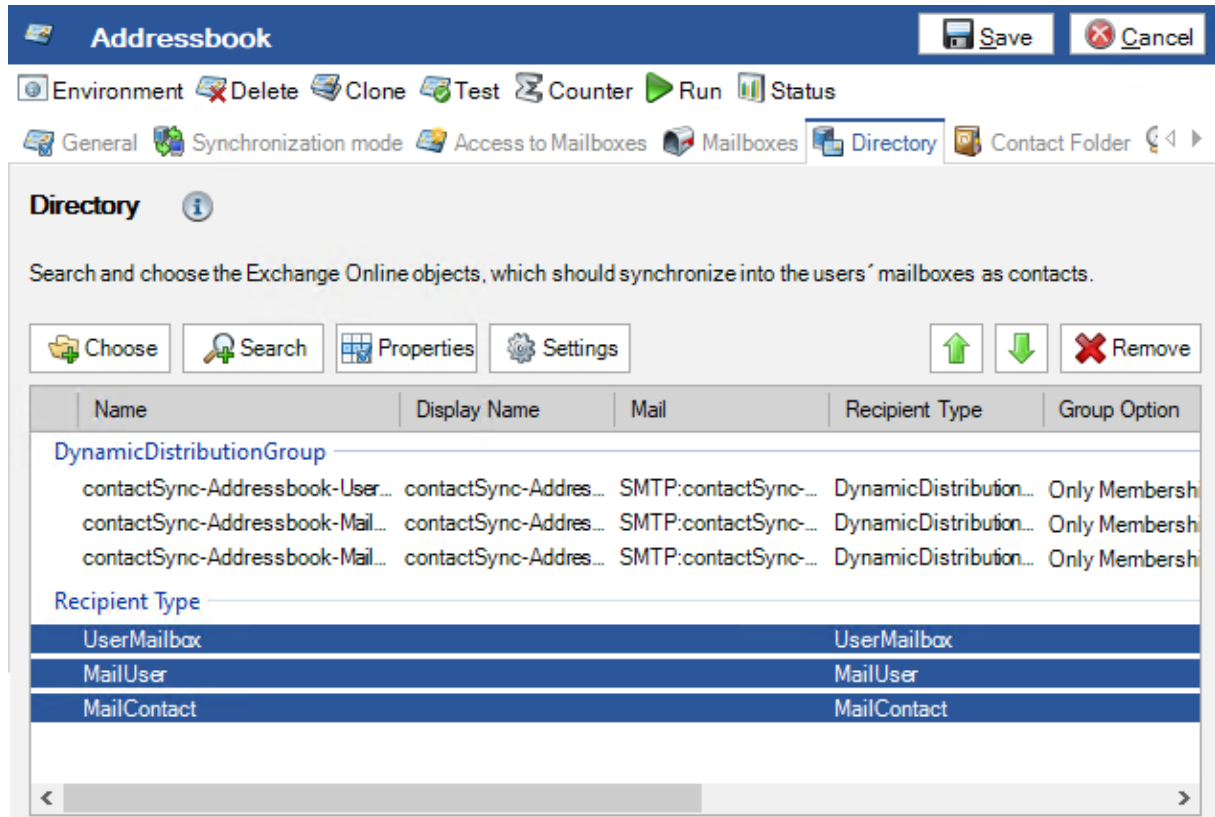


To create the dynamic distribution groups in Exchange Online, the **Exchange Online PowerShell** is used along with the settings from the **Environment Configuration**.

If the creation was successful, the dialog closes automatically.

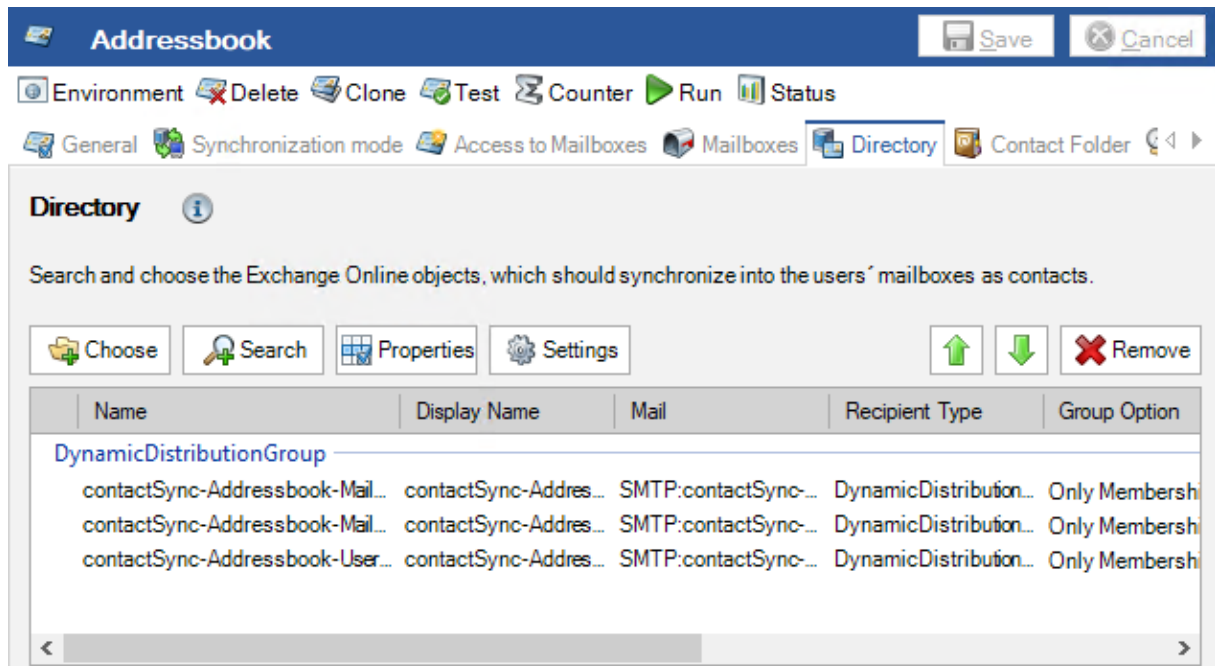
If an error occurs, the dialog remains open and the log file can be viewed by clicking on **Show log** in order to understand what did not work.

Once the dynamic distribution groups have been successfully created, the **Recipient Type** entries and the dynamic distribution group entries are displayed together until the policy is saved.



Please save the policy.

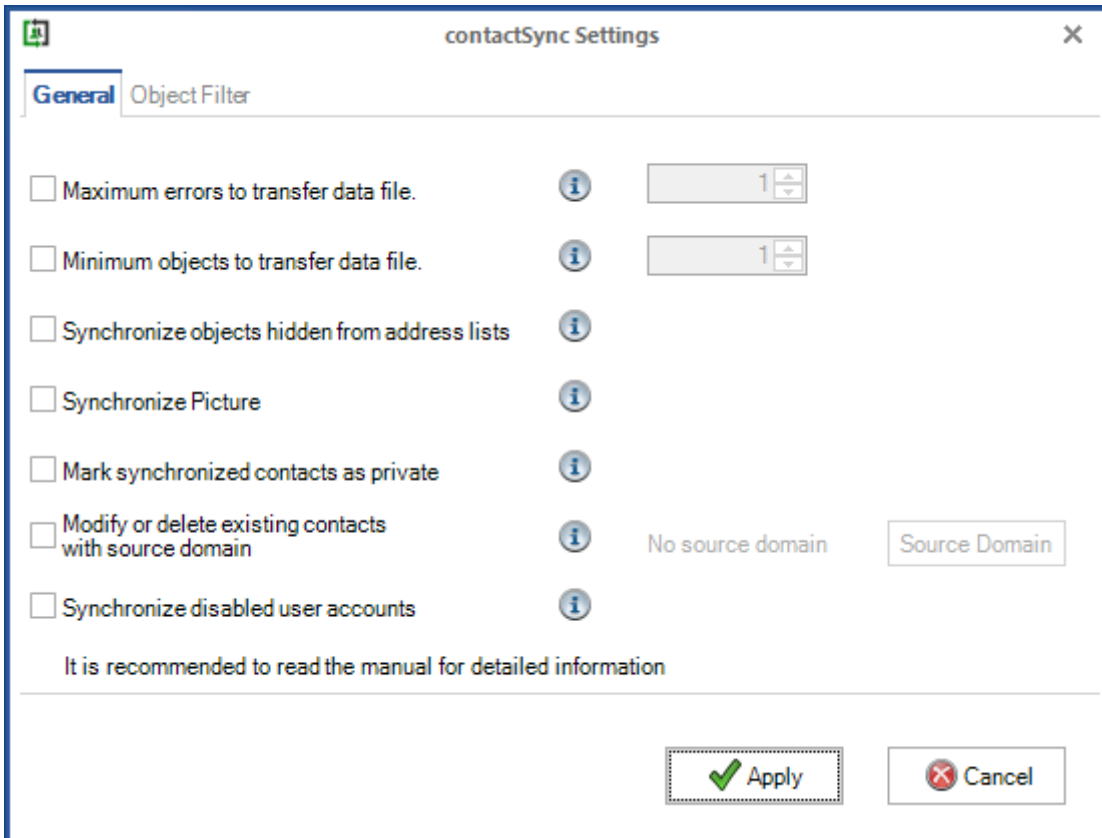
When the policy is saved, the migrated **Recipient Type** entries are removed from the list.



contactSync Settings on the Directory tab

You can configure some optional **Settings** on the **Directory** tab

Exchange on-premises

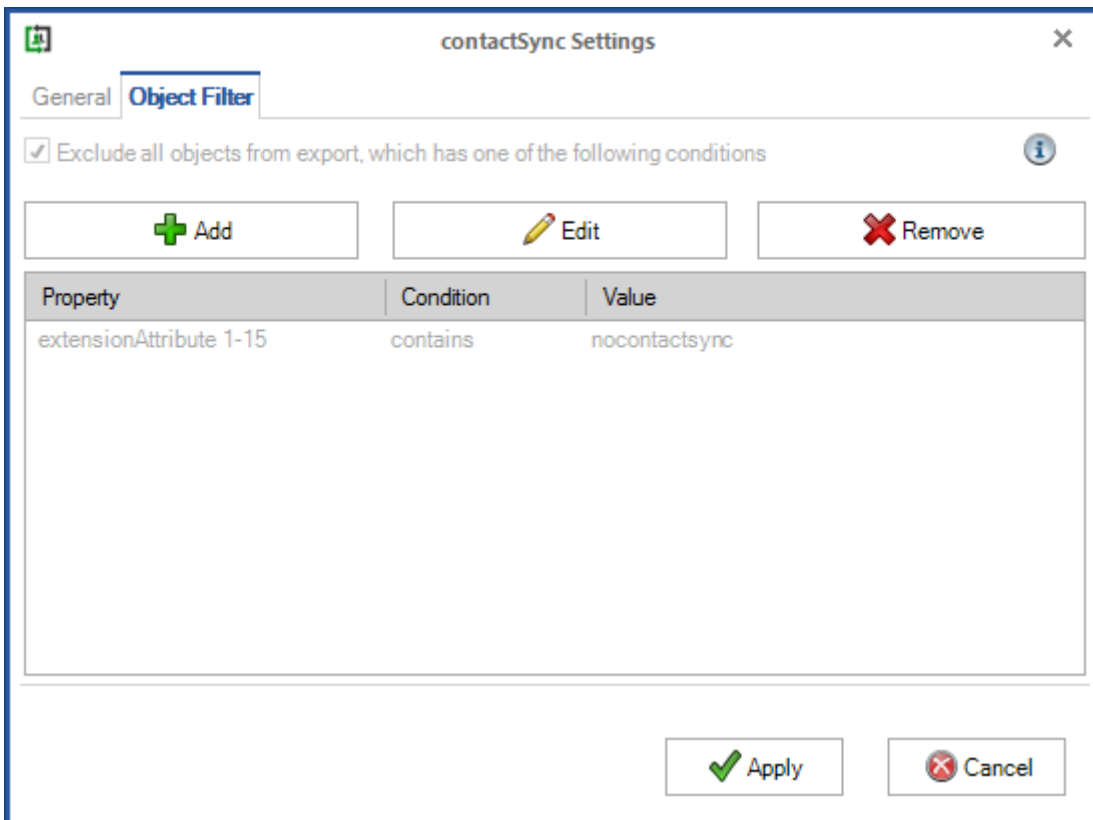


The screenshot shows the 'contactSync Settings' dialog box with the 'General' tab selected. The 'Object Filter' sub-tab is active. The following settings are visible:

- Maximum errors to transfer data file. (Info icon) [1]
- Minimum objects to transfer data file. (Info icon) [1]
- Synchronize objects hidden from address lists (Info icon)
- Synchronize Picture (Info icon)
- Mark synchronized contacts as private (Info icon)
- Modify or delete existing contacts with source domain (Info icon) [No source domain] [Source Domain]
- Synchronize disabled user accounts (Info icon)

It is recommended to read the manual for detailed information

[Apply] [Cancel]



The screenshot shows the 'contactSync Settings' dialog box with the 'Object Filter' tab selected. The 'General' sub-tab is active. The following settings are visible:

- Exclude all objects from export, which has one of the following conditions (Info icon)

[+ Add] [Edit] [X Remove]

Property	Condition	Value
extensionAttribute 1-15	contains	nocontactsync

[Apply] [Cancel]

Exchange Online

The screenshot shows the 'contactSync Settings' dialog box with the 'General' tab selected. The 'Object Filter' section contains several options:

- Maximum errors to transfer data file. (Info icon, spinner box with '1')
- Minimum objects to transfer data file. (Info icon, spinner box with '1')
- Synchronize objects hidden from address lists (Info icon)
- Export 'MasteredOnPremise' objects (Info icon)
- Mark synchronized contacts as private (Info icon)
- Modify or delete existing contacts with source domain (Info icon, 'No source domain' text, 'Source Domain' text box)

It is recommended to read the manual for detailed information

Buttons: Apply (green checkmark), Cancel (red X)

The screenshot shows the 'contactSync Settings' dialog box with the 'Object Filter' tab selected. The 'Exclude all objects from export, which has one of the following conditions' checkbox is checked.

Buttons: + Add, Edit (pencil icon), X Remove

Property	Condition	Value
CustomAttribute 1-15	contains	nocontactsync

Buttons: Apply (green checkmark), Cancel (red X)

Maximum errors to transfer data file

In the **contactSync Settings** you can set a limit how many errors may occur when creating a data file before importing. If this limit of errors is exceeded, the affected data file will not be imported into the mailboxes.

Minimum objects to transfer data file

In the **contactSync Settings** you can define a minimum number of objects to be written to the data file before synchronizing into the mailboxes. If the data file contains less than the specified number of objects, it will not be synchronized into the mailboxes.

For example, if you expect to synchronize over 1000 objects, you can set a minimum of number of objects to 1000. Assuming that a network error occurs at runtime and contactSync identifies only 600 objects for the synchronization (because of unavailability of your domain controller). The data file will not be synchronized into the mailboxes. Otherwise, the 400+ objects missing from the data file would be deleted from the user mailboxes, even though they still exist in the environment.

Synchronize objects hidden from address lists.

Formerly known as Include hidden objects.

If this option in the **contactSync Settings** is selected, the objects which are hidden from address lists, are also synchronized as contacts into the mailboxes.

Export 'MasteredOnPremise' objects (Exchange Online)

This allows you to export objects from Exchange Online (Microsoft 365), which are synchronized with Microsoft Directory Synchronization tool. Microsoft Directory synchronization allows identities to be mastered on-premises and all updates to that identity are synchronized to Microsoft 365.

Mark synchronized contacts as private

This allows you to mark the synchronized contacts as **private** in the mailboxes. Private contacts are not visible to other people, if the Microsoft Exchange account contacts are shared.

Note: A person with delegate access or permission to read your shared folders could view the contents of your private contacts and events by using other applications.

Synchronize Picture (on-premises)

If this option in the **contactSync Settings** is selected the user's photos stored in the source directory are exported as well. Photos usually are stored in attribute **thumbnailPhoto**. This option is only available in an on-premises environment.

Note: Importing thumbnailPhoto into mailboxes is very slow.

The Exchange environment needs a few days to update the thumbnailPhoto of the imported contacts in the mailboxes, before the thumbnailPhoto is visible in Outlook clients.

Modify or delete existing contacts with source domain

Please be careful with this option.

You can add an additional source domain, which is not contained in the synchronization.

This means that contacts in mailboxes which have previously been synchronized with contactSync, whose source domain is no longer included in the synchronization, can now be synchronized.

To do this, the old source domain, as it is in the log file, must be added to the list on the **Old Source Domains** dialog.

For example, the source domain is

```
DC=forestB,DC=com
```

Modify or delete existing contacts with source domain

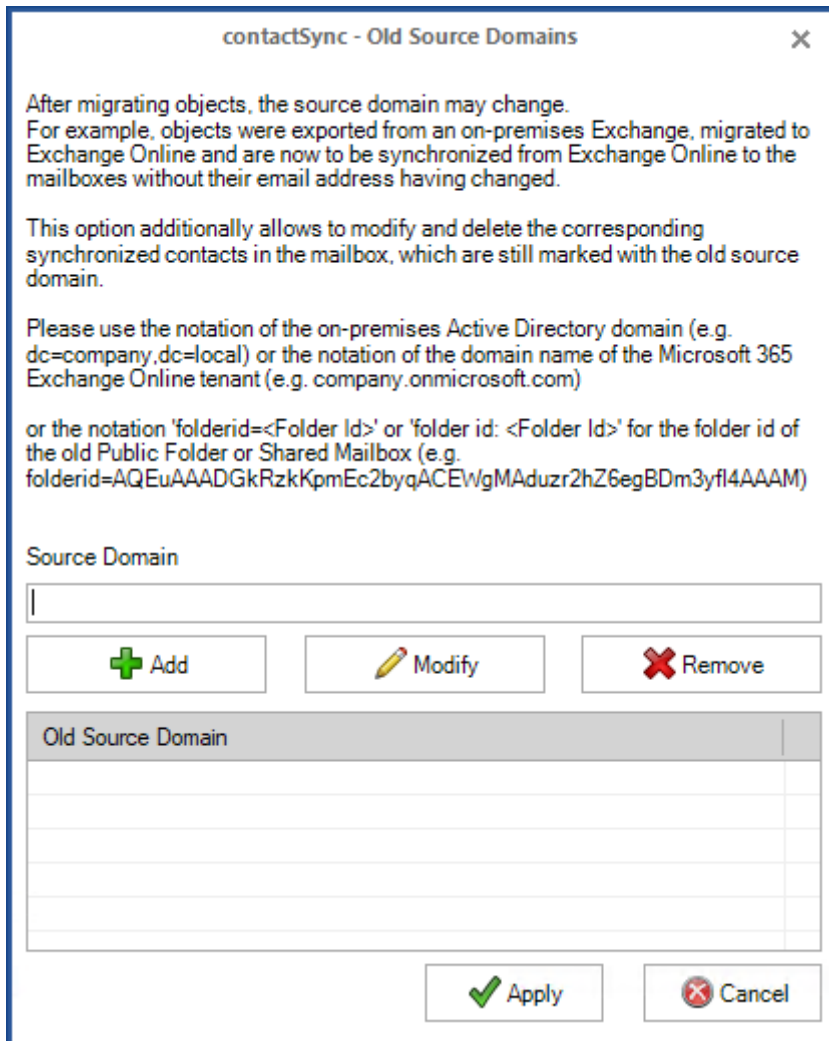


No source domain

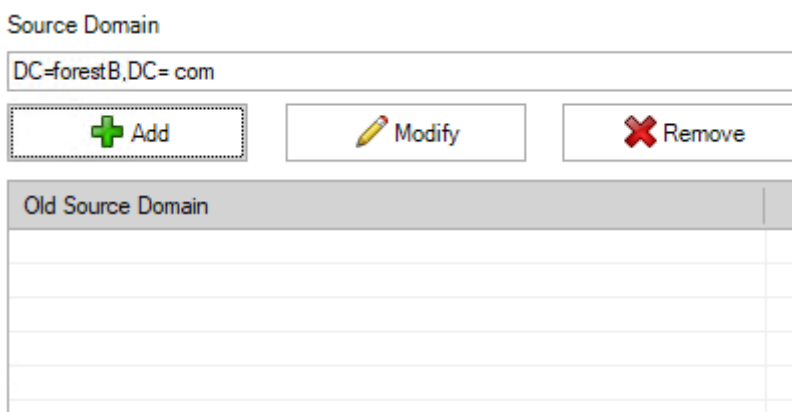
Source Domain

Enable the **Modify or delete existing contacts with source domain** option and click the **Source Domain** button to open the dialog to manage the old source domains.




The **Old Source Domains** dialog to manage the old source domain values.



Insert the old source domain value and add it to the **Old Source Domain** List.






Source Domain




 Add	 Modify	 Remove
Old Source Domain		
DC=forestB,DC=com		

Please note, the source domain syntax `company.onmicrosoft.com` will be added as `DC=company,DC=onmicrosoft,DC=com` to the **Old Source Domain List**.

Source Domain

company.onmicrosoft.com		
 Add	 Modify	 Remove
Old Source Domain		

Source Domain

 Add	 Modify	 Remove
Old Source Domain		
DC=company,DC=onmicrosoft,DC=com		

Click **Apply** to close the dialog.

<input checked="" type="checkbox"/> Modify or delete existing contacts with source domain		1 source domain	
---	---	-----------------	---

Now, all existing contacts with the source domain will be modified or deleted.

This can be helpful e.g., after a migration.

Synchronize disabled user accounts (on-premises)

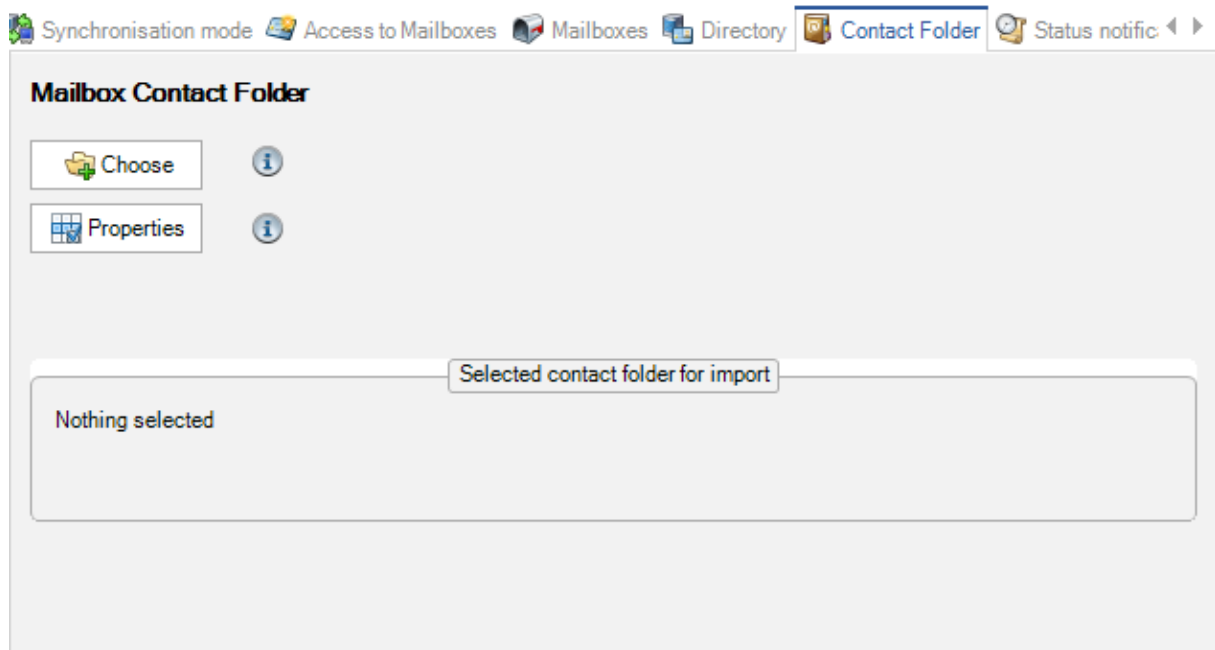
If this option in the **contactSync Settings** is selected, the user account objects that are disabled in the on-premises Active Directory, are also synchronized as contacts into the mailboxes.

Object Filter

This excludes all objects from the synchronization, which has one of the conditions. This feature allows you to exclude objects from the synchronize process. If you enable this feature inside your policy configuration dialog, you may add conditions containing a name of the property of which value is compared to the given value using your chosen comparison operator. During an export every object will be analyzed, if one or more properties matches these conditions. If at least one condition is fulfilled, the object will not be synchronized.

Contact Folder

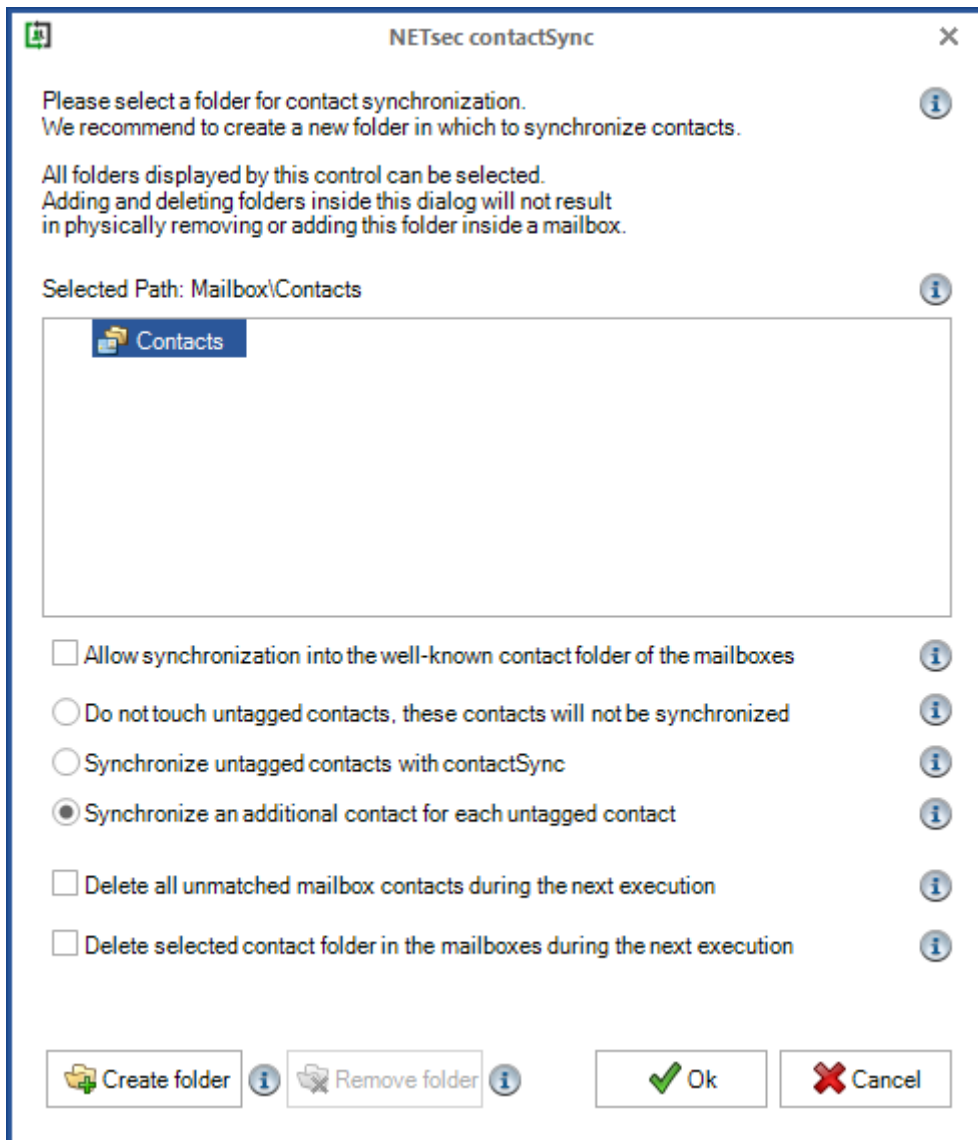
Configure all mailbox contact folder settings.



Choose the folder into which contactSync will synchronize the contacts. contactSync will synchronize the contacts into this specific folder in each mailbox.

Choose (Mailbox contacts)

Add a new folder, where you want to store the imported directory information in and select it.



Please select a folder for contact synchronization.

All folders displayed by this control are for selecting purpose.

Adding and deleting folders inside this dialog will only add and remove them within the dialog itself, and not within the user mailbox.

The selected folder will be used in target mailboxes as the folder to be filled with contacts. If the chosen folder does not exist in a target mailbox, it will be created during the next synchronization.

Selected Folder

The selected folder will be used as the target folder inside mailboxes during synchronization, so contacts will only be created inside this folder.

Allow synchronization into the well-known contact folder of the mailboxes.

This option allows contactSync to create and synchronize the contacts into the well-known contact folder of the mailboxes called **Contacts**. Please be careful with this option because it allows you to directly change and delete contacts that your employees have created. This could also confuse some of your employees.

We recommend to create and synchronize an additional contact for each existing contact which was not created by contactSync.

Do not touch untagged contacts, these contacts will not be synchronized

All existing contacts will remain untouched, unless they were created by contactSync.

With this option, contactSync will not create or synchronize a contact if there is already an existing contact which was not created by contactSync.

Synchronize untagged contacts with contactSync

Please be very careful with this option.

All existing contacts are synchronized, even if they were not created by contactSync. This means that if contacts have been created by your employees below the selected contact folder, contactSync will also synchronize and possibly delete them, which could cause your employees to lose information.

Synchronize an additional contact for each untagged contact

contactSync creates and synchronizes an additional contact for each existing contact which was not created by contactSync.

Delete all unmatched mailbox contacts during the next execution

This option is only valid for the next policy execution.

After the policy has been executed, the option is automatically deactivated.

All contacts in the selected folder and sub-folders of mailboxes that are not synchronized by this policy will be deleted once.

Please note this will automatically delete the mailbox owner's contacts in the selected folder and sub-folders which the individual user might still need, as they may contain important information.

Delete selected contact folder in the mailboxes during the next execution

This option is only valid for the next policy execution.

After the policy has been executed, the option is automatically deactivated.

The selected folder will be deleted in the synchronized users' mailboxes, including all contacts and sub-folders of the selected folder.

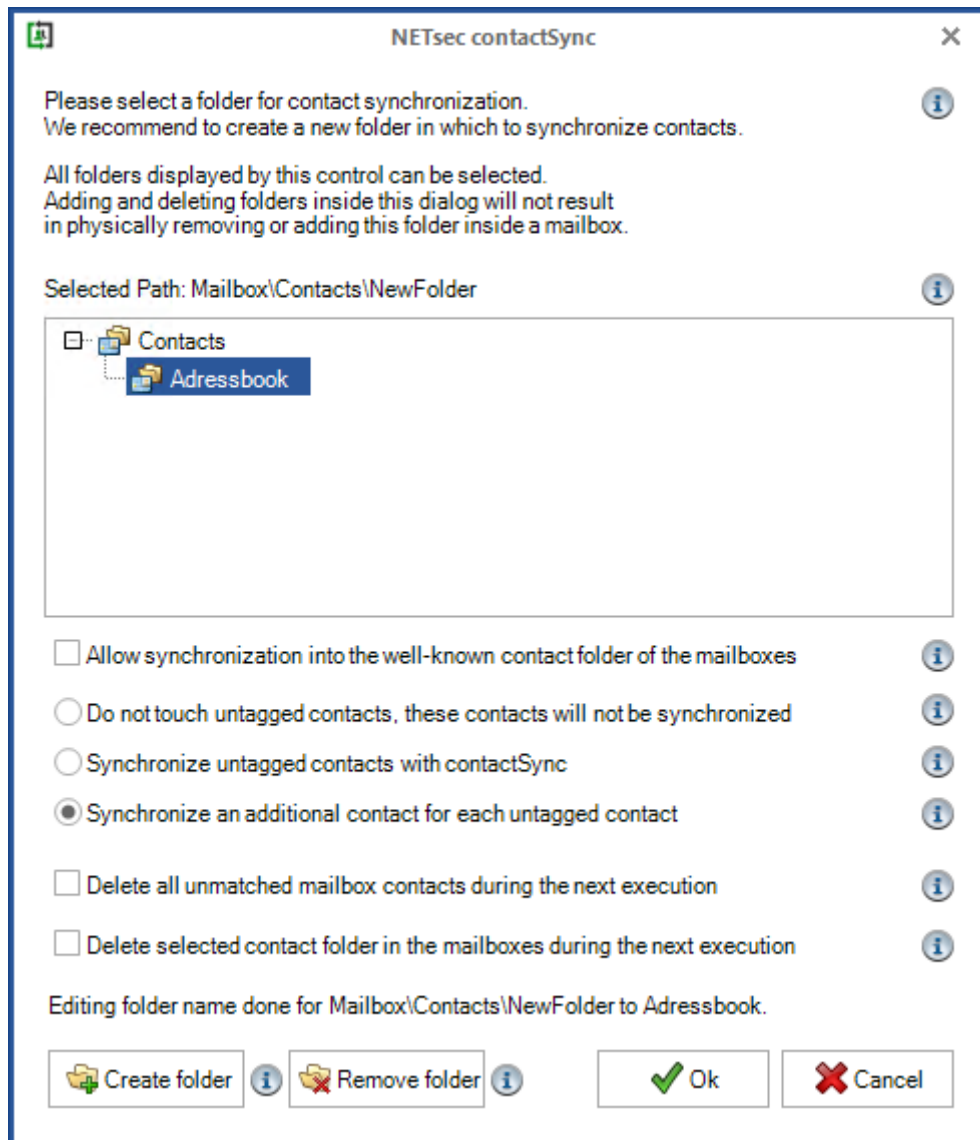
Please note this will automatically delete the mailbox owner's contacts in the selected folder and sub-folders which the individual user might still need, as they may contain important information.

Create folder

You can create a new folder, into which contactSync creates and synchronizes the contacts. This option gives you the possibility to separate the contacts, which have been created by your employees, from the contacts, which have been created by contactSync.

Please keep in mind that the name of the folder should be unique and should not exist in the mailbox of your employees. Otherwise contactSync will use the existing folder with the same name below the well-known contact folder of the mailbox for the synchronization.

For example:



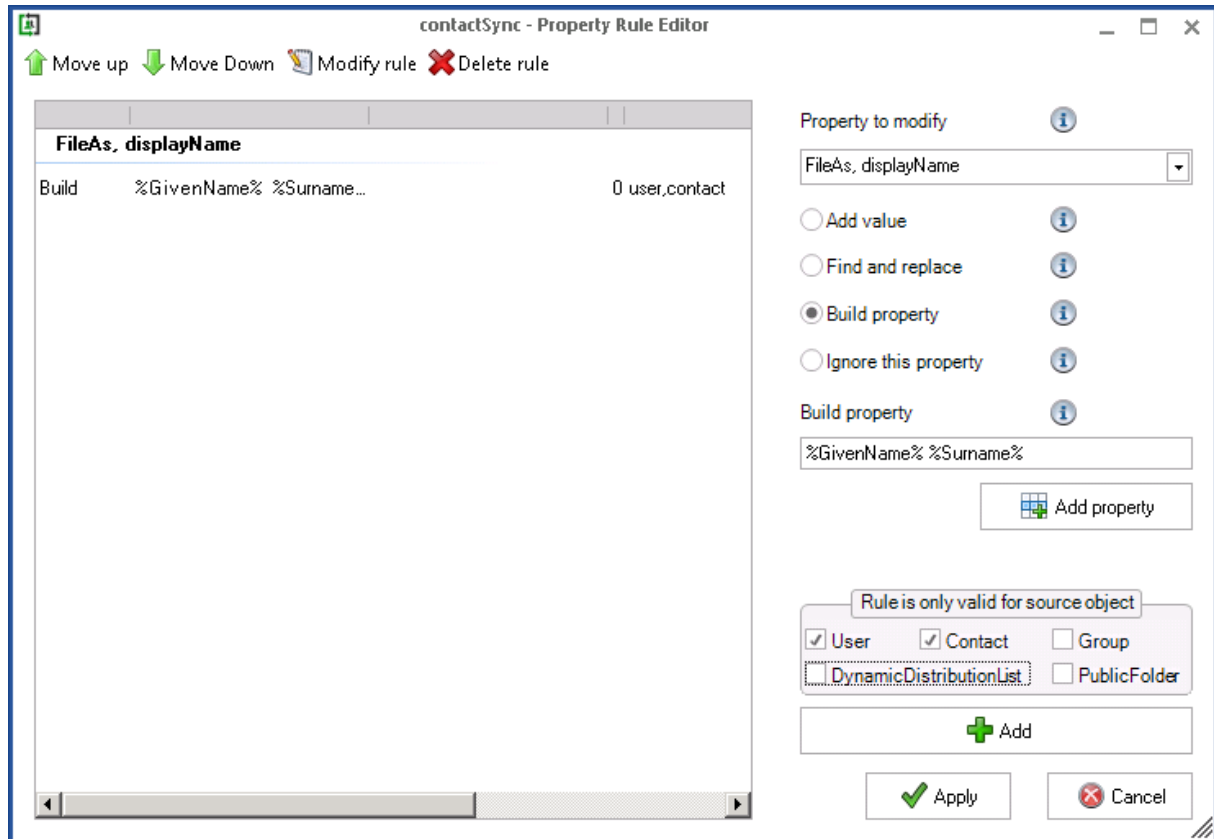
Remove folder

This option removes a folder inside this dialog but will not remove a folder inside a mailbox. Please select the folder, which you want to remove.

Properties (Mailbox contacts)

Modify the values for the contactSync policy.

Usually in your synchronization list, there are different classes of objects (e.g., **User**, **contact** and **group**). Because these classes have different attributes, rules are applied in relation to the object class. For example, the attribute **FileAs, displayName** the first rule displayed in the screenshot will be apply only to users and contacts, because a group does not have an attribute **givenName**.



Please note that Public Folder means the old object class of Exchange 2003 technology and not the current Public Folder mailbox technology.

The property **initials** can be ignored for all object classes, because you cannot see the imported value in the Outlook clients.

Property to modify

These attributes can be modified before import:

CompanyName, Department, Body, FileAs, BusinessFAX, GivenName, HomePhone, Initials, BusinessPhone, BusinessAddressCity, MobilePhone, Pager, OfficeLocation, BusinessAddressPostalCode, Surname, BusinessAddressState, BusinessAddressStreet, PrimaryPhone, JobTitle, BusinessHomePage, NickName, CarPhone, OtherFAX, OtherTelephone

Note: Some properties are not shown in Outlook, e.g., Initials.

We support this matrix to transform the property between on-premises Exchange, Exchange Online and the Exchange Mailbox Contact:

Active Directory (on-premises Exchange)	Exchange Online	Exchange Mailbox Contact
C / Co / CountryCode	**	BusinessAddressCountryOrRegion
Company	Company	CompanyName
Department	Department	Department
Description		Body
DisplayName	DisplayName	FileAs
FacsimileTelephoneNumber	Fax	BusinessFax
GivenName	FirstName	GivenName
HomePhone	HomePhone	HomePhone
Initials		Initials *
L	City	BusinessAddressCity
Mail		EmailAddress2
Mobile	MobilePhone	MobilePhone
OtherFacsimileTelephoneNumber	OtherFax	OtherFax
IpPhone		BusinessPhone2
OtherMobile		CarPhone
OtherTelephone	OtherTelephone	OtherTelephone
Pager	Pager	Pager
PersonalTitle		Title
PhysicalDeliveryOfficeName	Office	OfficeLocation
PostalCode	PostalCode	BusinessAddressPostalCode
ProxyAddresses (primary SMTP)	EmailAddresses (primary SMTP)	EmailAddress1
Sn	LastName	Surname
St	StateOrProvince	BusinessAddressState
StreetAddress	StreetAddress	BusinessAddressStreet
TelephoneNumber	Phone	BusinessPhone
ThumbnailPhoto		Photo
Title	Title	JobTitle
WWWHomePage	WebPage	BusinessHomePage

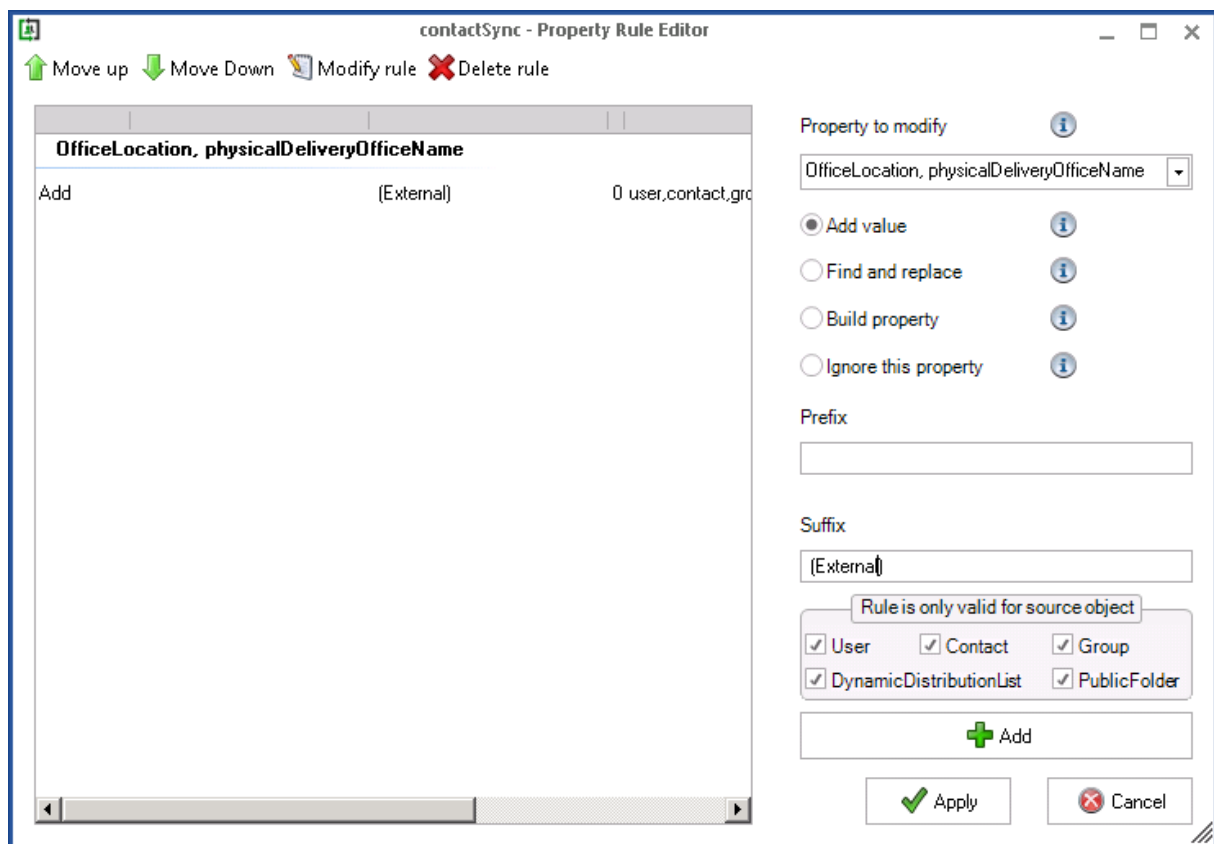
**Outlook will not show the synchronized property value, Outlook generates its own value, which is displayed.*

***The Exchange Online Property CountryOrRegion returns only a localized user-friendly name, which does not translate unambiguously into the ISO 3166 international standard Country Codes Alpha-2.*

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**.

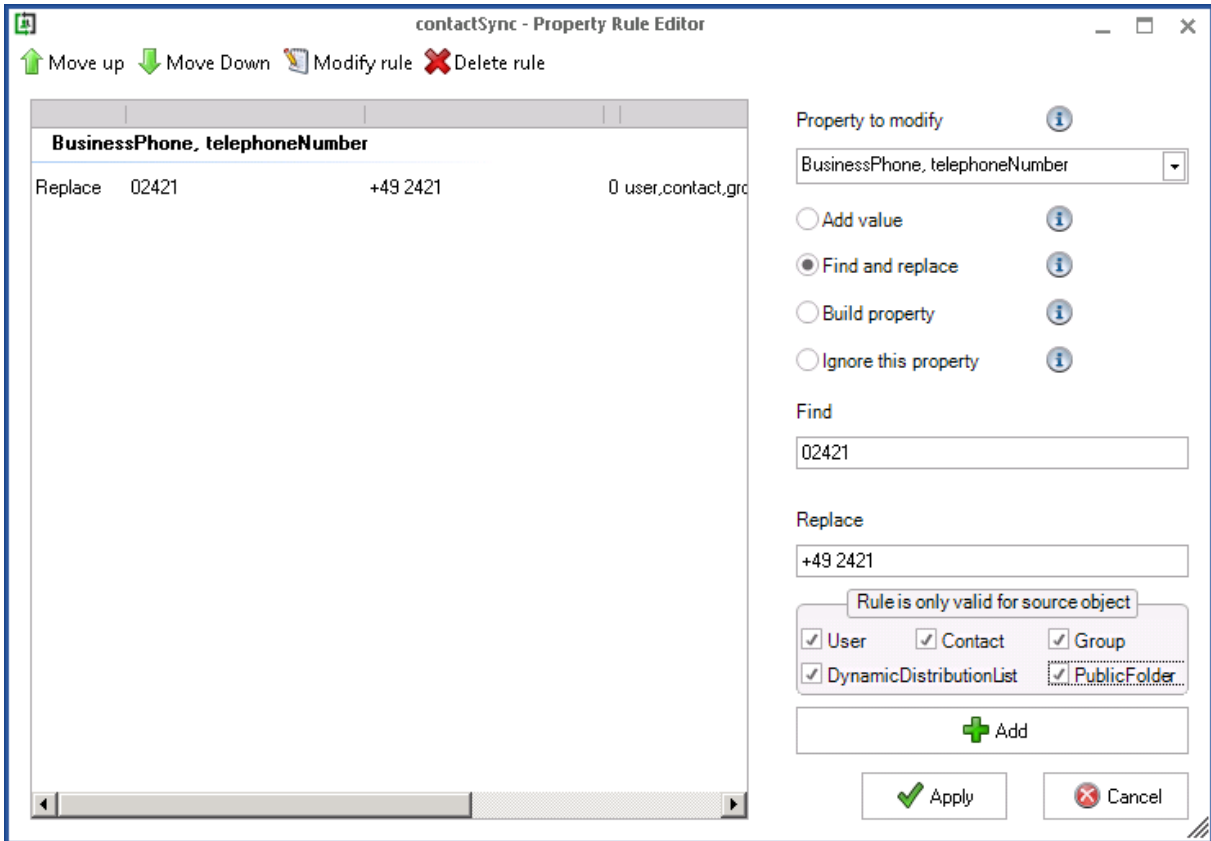
You then have the option to add your value before the property (Prefix) or after it (Suffix).



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.



Build Property

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

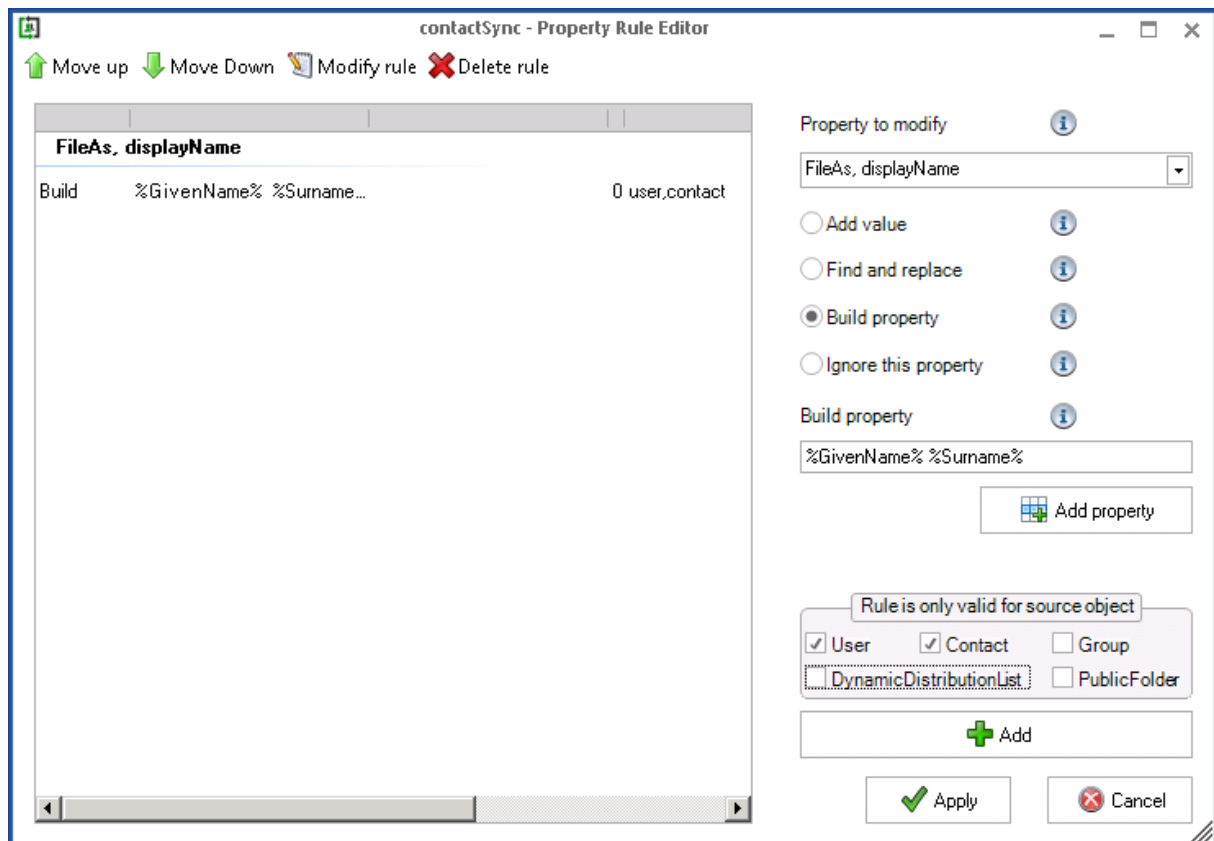
In the **Build property** textbox, add the string which defines how the property is to be built. With the aid of the **Add property** button, you can choose which properties are used.

For Example, you want to generate the property, **FileAs** from the last name, and first name comma separated. Choose the property **Surname** and the property **GivenName** and insert a comma and space between them in the textbox Build Property.

Thereafter, all values in property **FileAs** will be created from a comma separated **Surname** and **GivenName**.

Please keep in mind, that only users and contacts have a given name and surname, so the rule should be only valid for objects, which are users or contacts in the on-premises environment or Microsoft 365 tenant.

Note: This is a simplified example, because it does not take into account that the GivenName and Surname properties could also be empty, as with Groups, in which these properties are always empty.



Ignore this Property

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

Note: Values which are already assigned to the object's property will not be modified by contactSync.

Remove property

You can remove the value of a property which was previously synchronized.

Select the property to modify and select the option **Find and replace**.

The value for the **Find and replace** rule:

Enter the following Regular Expression at **Find**

```
^.*$
```

Leave **Replace** empty.

This rule should apply to all source objects and is added to the rule list with **Add**.

Add value i

Find and replace i

Build property i

Ignore this property i

Find

Replace

Rule is only valid for source object

<input checked="" type="checkbox"/> User	<input checked="" type="checkbox"/> Contact	<input checked="" type="checkbox"/> Group
<input checked="" type="checkbox"/> DynamicDistributionList	<input checked="" type="checkbox"/> PublicFolder	

+ Add

After the next synchronization the value of the attribute will be removed.

Copy Property

To copy a property, choose the end property and select the option **Build property**. Then choose the property you wish to copy via the **Add property** dialog. Add the rule with the **Add** button.

Move Property

You can move a property by doing the following:

1. Choose the end property and selecting the option **Build property**. Then choose the property you wish to copy via the **Add property** dialog. Add the rule with the **Add** button.
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.

Synchronize Public Folder contacts into mailboxes

A contactSync policy synchronizes contacts from a Public Folder into mailboxes, if the public folder contacts options in the **Synchronization mode** is selected.

Synchronization mode

1. What do you want to do?

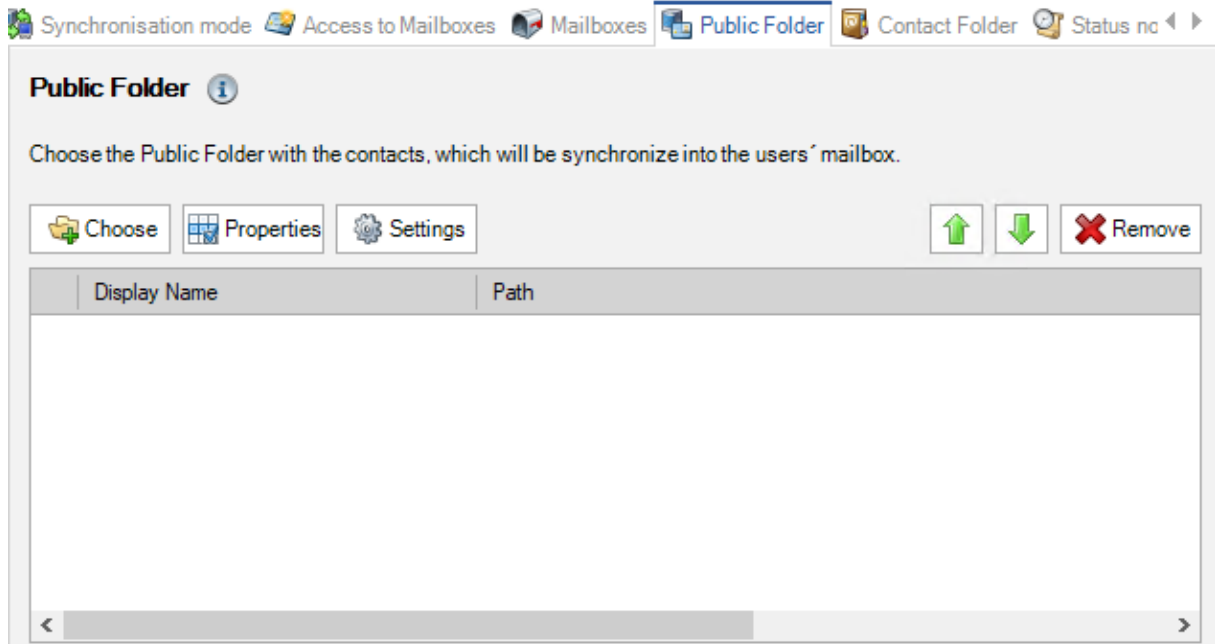
- Synchronize directory information (GAL) from on-premises into users' mailboxes in the Exchange environment. i
- Synchronize directory information (GAL) from Exchange Online into users' mailboxes in the Exchange environment. i
- Synchronize public folder contacts into users' mailboxes in an Exchange environment. i
- Synchronize shared mailbox contacts into users' mailboxes in an Exchange environment. i

Please note, the Exchange Web Services URL is required to access Public Folders.

For on-premises Public Folder, the Exchange Web Services URL for the on-premises Exchange Server must be set manually in the configuration or the mailbox of the contactSync service account must be located on the on-premises Exchange Server. The policy is cancelled if Autodiscover cannot detect the Exchange Web Services URL for the on-premises Exchange Server.

Public Folder

On the **Public Folder** tab of contactSync policies for mailbox contacts, you select a Public Folder, which contains the contacts you want to synchronize into the mailboxes. You may also remove a selected entry from the list.



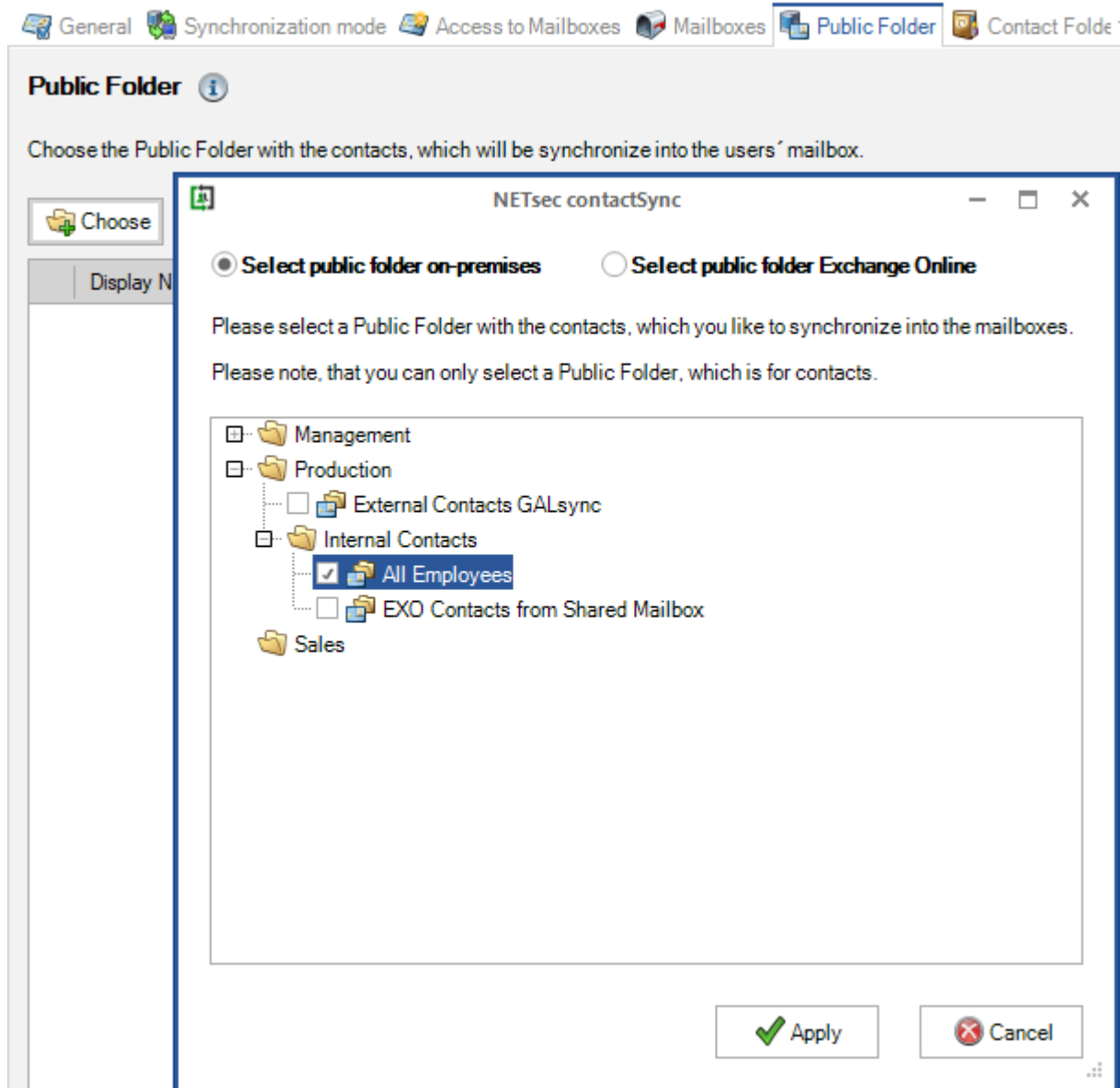
Please note, the Exchange Web Services URL is required to access Public Folders.

For on-premises Public Folder, the Exchange Web Services URL for the on-premises Exchange Server must be set manually in the configuration or the mailbox of the contactSync service account must be located on the on-premises Exchange Server. The policy is cancelled if Autodiscover cannot detect the Exchange Web Services URL for the on-premises Exchange Server.

Choose

The selection of the Public Folder, that contains the contacts, can be selected on-premises or Exchange Online for hybrid Exchange environments within the same policy.

Here, a Public Folder tree with all Public Folders will be displayed. You may tick a Public Folder in the tree, but only a Public Folder dedicated for contacts can be selected.



Next click on **Apply** and the **Public Folder Settings** dialog opens.

Please note, the Exchange Web Services URL is required to access Public Folders.

For on-premises Public Folder, the Exchange Web Services URL for the on-premises Exchange Server must be set manually in the configuration or the mailbox of the contactSync service account must be located on the on-premises Exchange Server. The policy is cancelled if Autodiscover cannot detect the Exchange Web Services URL for the on-premises Exchange Server.

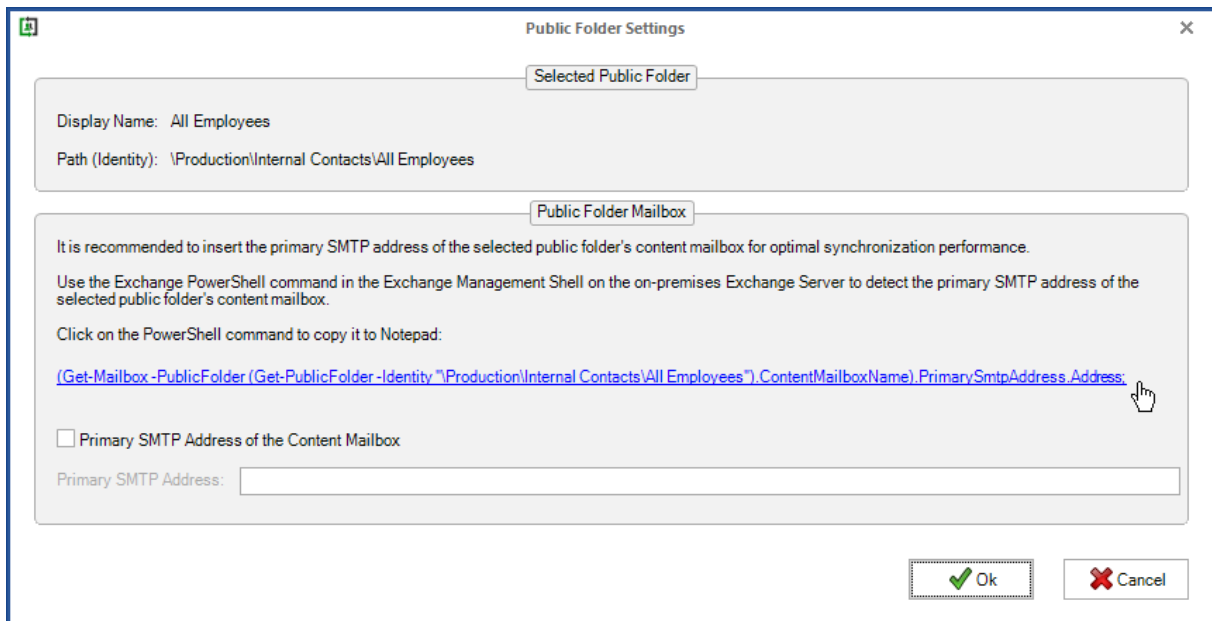
The **Public Folder Settings** dialog will help to determine the primary SMTP address of the public folder. The determination procedure differs between a public folder that is located on-premises and a public folder that is located in Exchange Online.

Determine the primary SMTP address of the public folder located on-premises

Determine the primary SMTP address of the public folder located Exchange Online

*Please do not confuse the **Public Folder Settings** dialog with the **contactSync Settings** dialog, which opens by clicking on the **Settings** button.*

Determine the primary SMTP address of the public folder located on-premises
The **Public Folder Settings** dialog opens.



contactSync needs the primary SMTP address of the selected public folder's content mailbox for optimal synchronization performance.

Click on the generated PowerShell command to copy it to Notepad.



Run the PowerShell command in the **Exchange Management Shell** on the on-premises Exchange Server to retrieve the primary SMTP address of the selected public folder's content mailbox.

```

Machine: DemoEx2019.NETsecDemo.Local
Welcome to the Exchange Management Shell!
Full list of cmdlets: Get-Command
Only Exchange cmdlets: Get-ExCommand
Cmdlets that match a specific string: Help *<string*>
Get general help: Help
Get help for a cmdlet: Help <cmdlet name> or <cmdlet name> -?
Exchange team blog: Get-ExBlog
Show full output for a command: <command> | Format-List
Show quick reference guide: QuickRef
VERBOSE: Connecting to DemoEx2019.NETsecDemo.Local.
VERBOSE: Connected to DemoEx2019.NETsecDemo.Local.

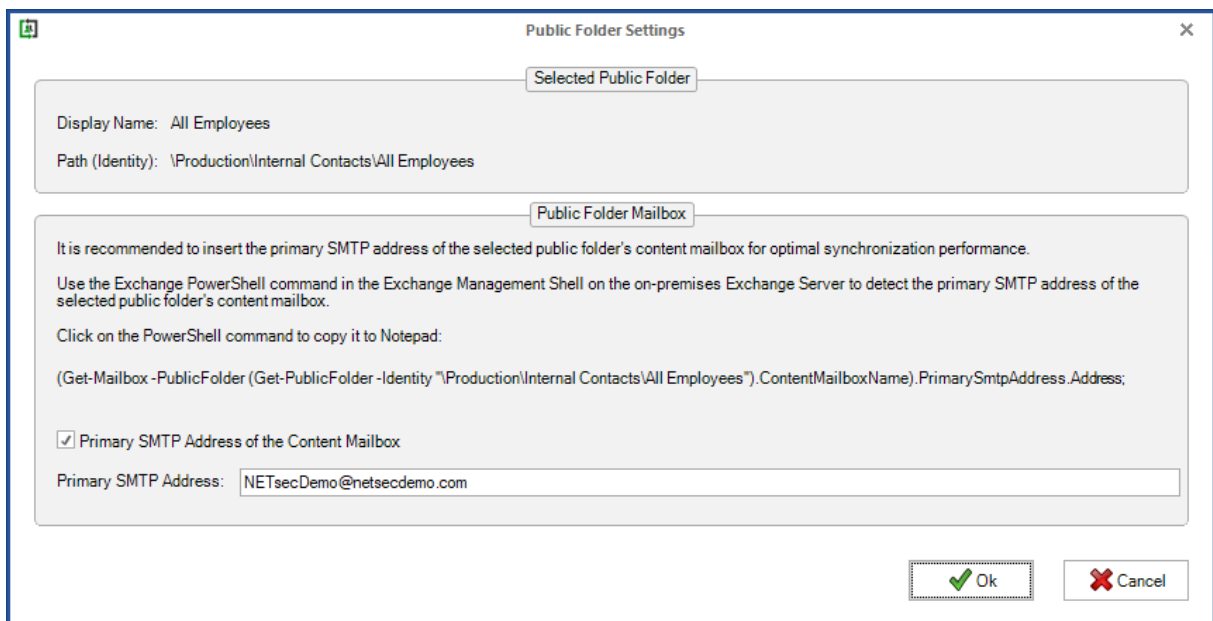
[PS] C:\Windows\system32>(Get-Mailbox -PublicFolder (Get-PublicFolder -Identity "\Production\Internal Contacts\All Employees").ContentMailboxName).PrimarySmtpAddress.Address;
NETsecDemo@netsecdemo.com
[PS] C:\Windows\system32>

```

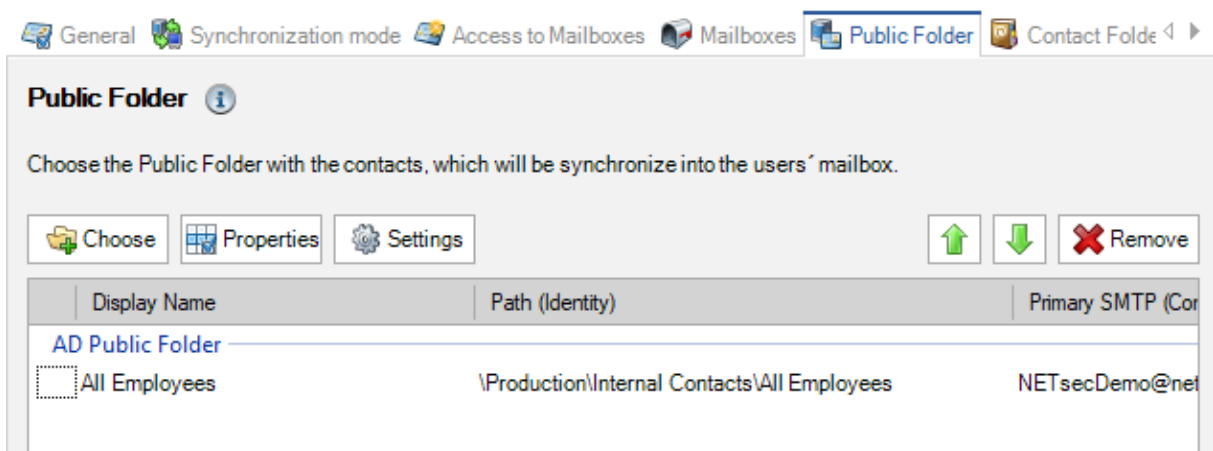
The result will be the primary SMTP address of the Public Folder mailbox.

Copy the primary SMTP address to insert it in the **Public Folder Settings** dialog.

Enable the option **Primary SMTP Address of the Content Mailbox** and insert the detected primary SMTP address of the selected public folder's content mailbox.



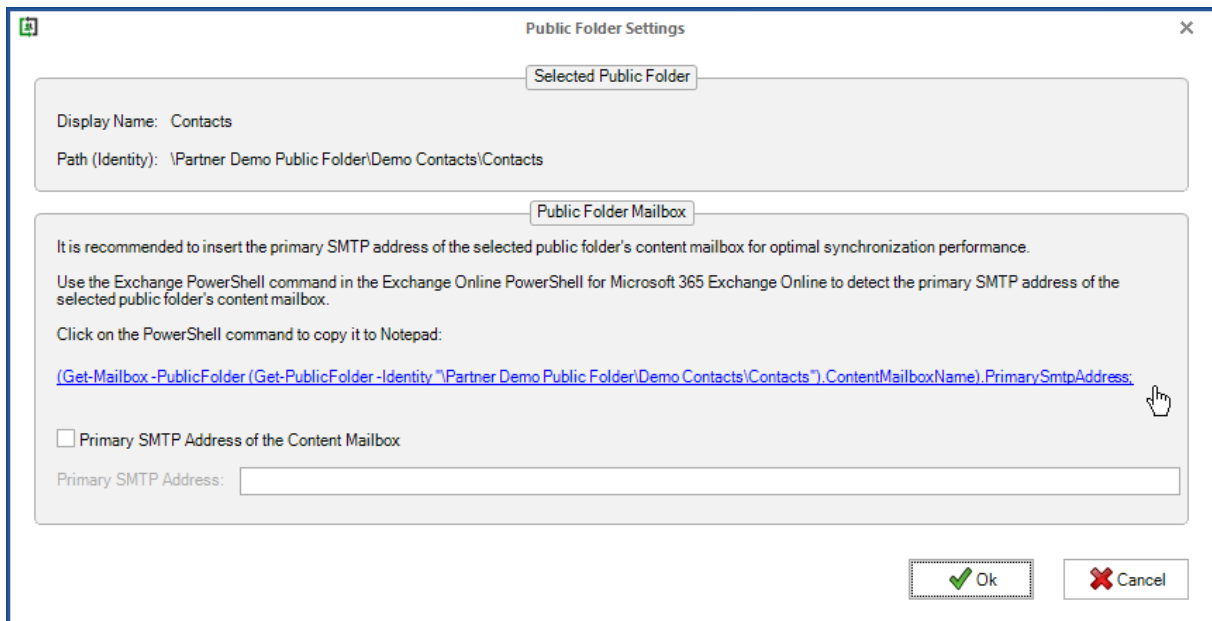
Click **Ok**.



Verify the selected public folder is displayed.

Determine the primary SMTP address of the public folder located Exchange Online

The **Public Folder Settings** dialog opens.



contactSync needs the primary SMTP address of the selected public folder's content mailbox for optimal synchronization performance.

Click on the generated PowerShell command to copy it to Notepad.



Run the PowerShell command in **Exchange Online PowerShell for Microsoft 365 Exchange Online** to retrieve the primary SMTP address of the selected public folder's content mailbox.


```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\svc_contactSync> Connect-ExchangeOnline

-----
This V3 EXO PowerShell module contains new REST API backed Exchange Online cmdlets which doesn't require WinRM for Client-Server communication. You can now run these cmdlets after turning off WinRM Basic Auth in your client machine thus making it more secure.

Unlike the EXO* prefixed cmdlets, the cmdlets in this module support full functional parity with the RPS (V1) cmdlets.

V3 cmdlets in the downloaded module are resilient to transient failures, handling retries and throttling errors inherently.

REST backed EOP and SCC cmdlets are also available in the V3 module. Similar to EXO, the cmdlets can be run without WinRM basic auth enabled.

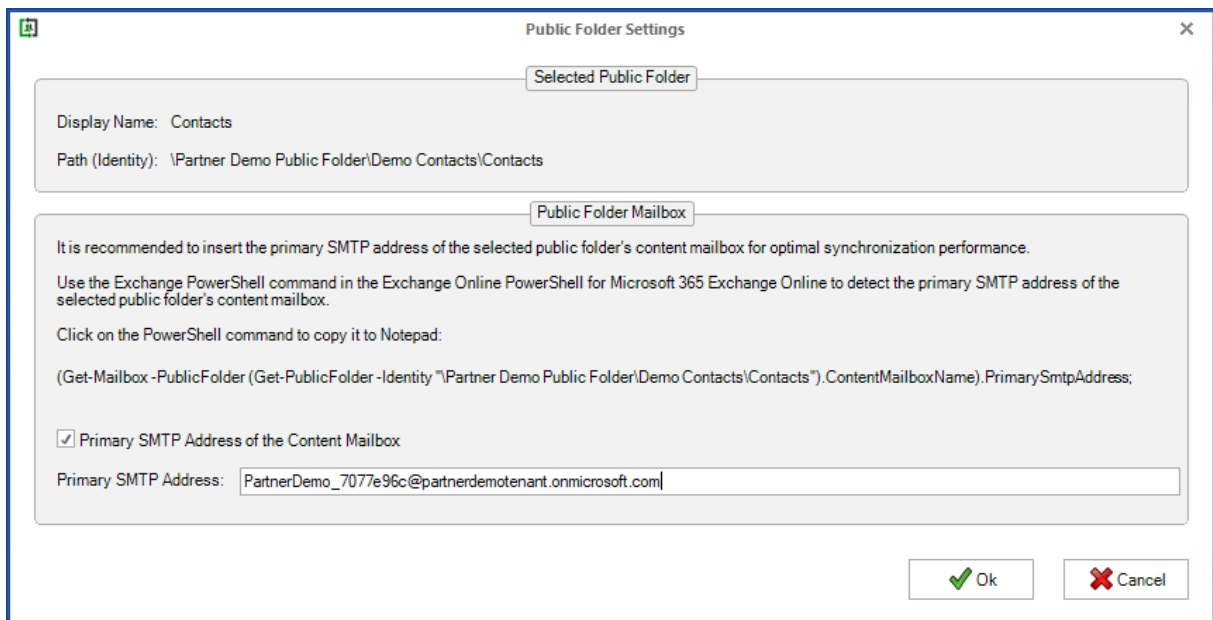
For more information check https://aka.ms/exov3-module
-----

PS C:\Users\svc_contactSync> (Get-Mailbox -PublicFolder (Get-PublicFolder -Identity "\Partner Demo Public Folder\Demo Contacts\Contacts").ContentMailboxName).PrimarySmtpAddress;
PartnerDemo_7077e96c@partnerdemotenant.onmicrosoft.com
PS C:\Users\svc_contactSync>
```

The result will be the primary SMTP address of the Public Folder mailbox.

Copy the primary SMTP address to insert it in the **Public Folder Settings** dialog.

Enable the option **Primary SMTP Address of the Content Mailbox** and insert the detected primary SMTP address of the selected public folder's content mailbox.

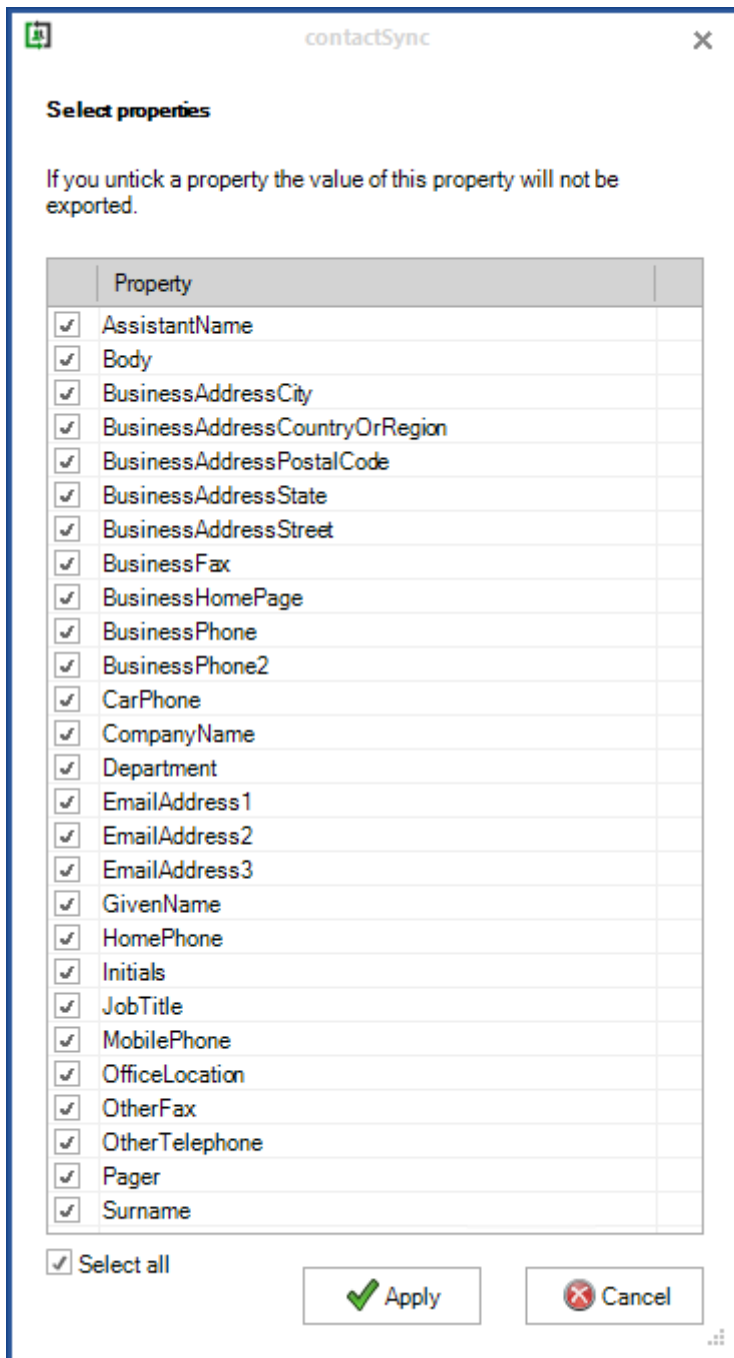


Click **OK**

Verify the selected public folder is displayed.

Properties

Select which properties are to be synchronized.



Select properties

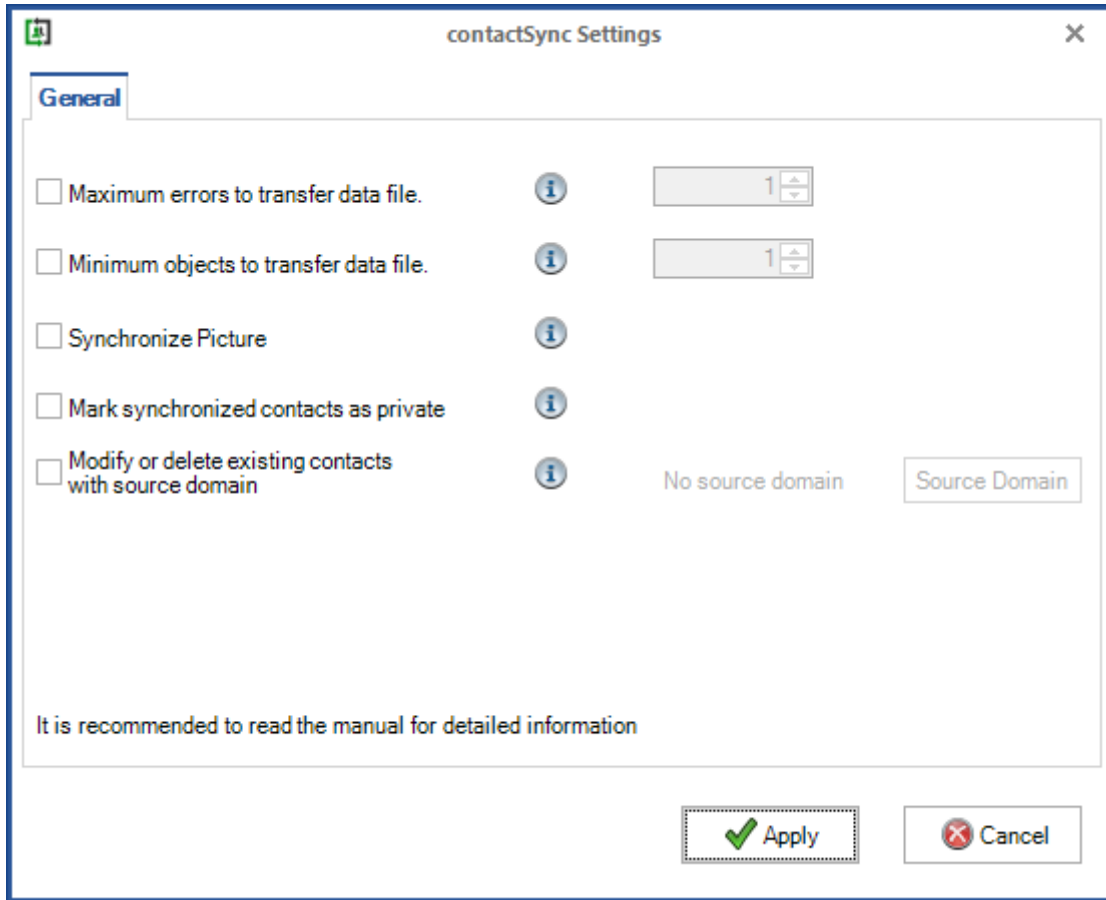
If you untick a property the value of this property will not be exported.

	Property	
<input checked="" type="checkbox"/>	AssistantName	
<input checked="" type="checkbox"/>	Body	
<input checked="" type="checkbox"/>	BusinessAddressCity	
<input checked="" type="checkbox"/>	BusinessAddressCountryOrRegion	
<input checked="" type="checkbox"/>	BusinessAddressPostalCode	
<input checked="" type="checkbox"/>	BusinessAddressState	
<input checked="" type="checkbox"/>	BusinessAddressStreet	
<input checked="" type="checkbox"/>	BusinessFax	
<input checked="" type="checkbox"/>	BusinessHomePage	
<input checked="" type="checkbox"/>	BusinessPhone	
<input checked="" type="checkbox"/>	BusinessPhone2	
<input checked="" type="checkbox"/>	CarPhone	
<input checked="" type="checkbox"/>	CompanyName	
<input checked="" type="checkbox"/>	Department	
<input checked="" type="checkbox"/>	EmailAddress1	
<input checked="" type="checkbox"/>	EmailAddress2	
<input checked="" type="checkbox"/>	EmailAddress3	
<input checked="" type="checkbox"/>	GivenName	
<input checked="" type="checkbox"/>	HomePhone	
<input checked="" type="checkbox"/>	Initials	
<input checked="" type="checkbox"/>	JobTitle	
<input checked="" type="checkbox"/>	MobilePhone	
<input checked="" type="checkbox"/>	OfficeLocation	
<input checked="" type="checkbox"/>	OtherFax	
<input checked="" type="checkbox"/>	OtherTelephone	
<input checked="" type="checkbox"/>	Pager	
<input checked="" type="checkbox"/>	Surname	

Select all

contactSync Settings on the Public Folder tab

You can configure some optional **Settings** on the **Public Folder** tab



Maximum errors to transfer data file

In the **contactSync Settings** you can set a limit how many errors may occur when creating a data file before synchronizing. If this limit of errors is exceeded, the affected data file will not be synchronized into the mailboxes.

Minimum objects to transfer data file

In the **contactSync Settings** you can define a minimum number of objects to be written to the data file before synchronizing into the mailboxes. As long as the data file contains less objects it will not be synchronized into the mailboxes.

Synchronize Picture

If this option in the **contactSync Settings** is selected the photos of the Public Folder contacts will be synchronized as well.

Mark synchronized contacts as private

This allows you to mark the synchronized contacts as **private** in the mailboxes. Private contacts are not visible to other people unless the Microsoft Exchange account contacts are shared.

Note: A person with delegate access or permission to read your shared folders could view the contents of your private contacts and events by using other applications.

Modify or delete existing contacts with source domain

Please be careful with this option.

You can add an additional source domain, which is not contained in the synchronization.

This means that contacts in mailboxes which have previously been synchronized with contactSync, whose source domain is no longer included in the synchronization, can now be synchronized.

To do this, the old source domain, as it is in the log file, must be added to the list on the **Old Source Domains** dialog.

For example, the source domain is

```
DC=forestB,DC=com
```

Modify or delete existing contacts with source domain

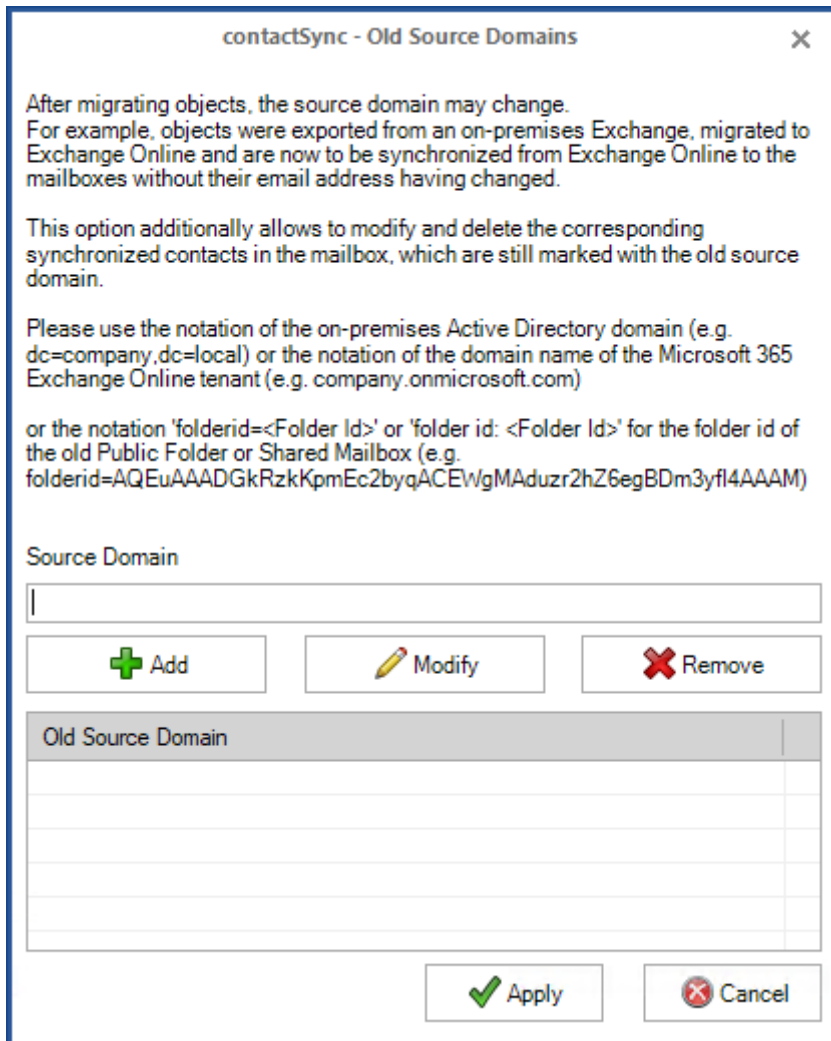


No source domain

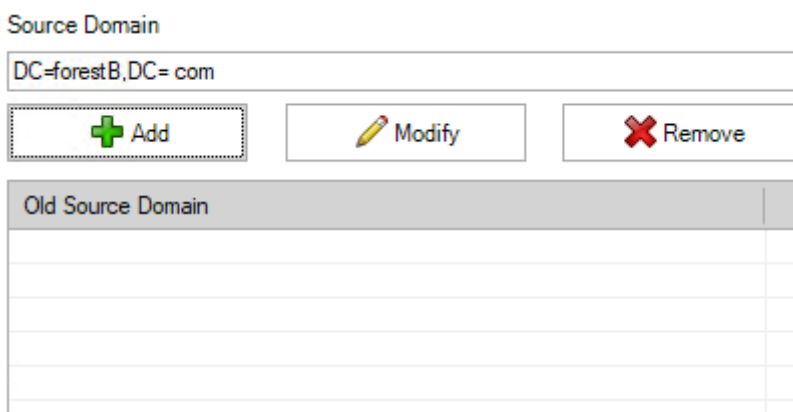
Source Domain

Enable the **Modify or delete existing contacts with source domain** option and click the **Source Domain** button to open the dialog to manage the old source domains.

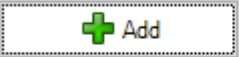

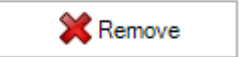
The **Old Source Domains** dialog to manage the old source domain values.



Insert the old source domain value and add it to the **Old Source Domain** list.






Source Domain

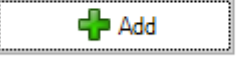
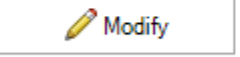
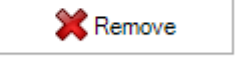
  
Old Source Domain
DC=forestB,DC=com

Please note, the source domain syntax `company.onmicrosoft.com` will be added as `DC=company,DC=onmicrosoft,DC=com` to the **Old Source Domain** list.

Source Domain

company.onmicrosoft.com
  
Old Source Domain

Source Domain

  
Old Source Domain
DC=company,DC=onmicrosoft,DC=com

Click **Apply** to close the dialog.

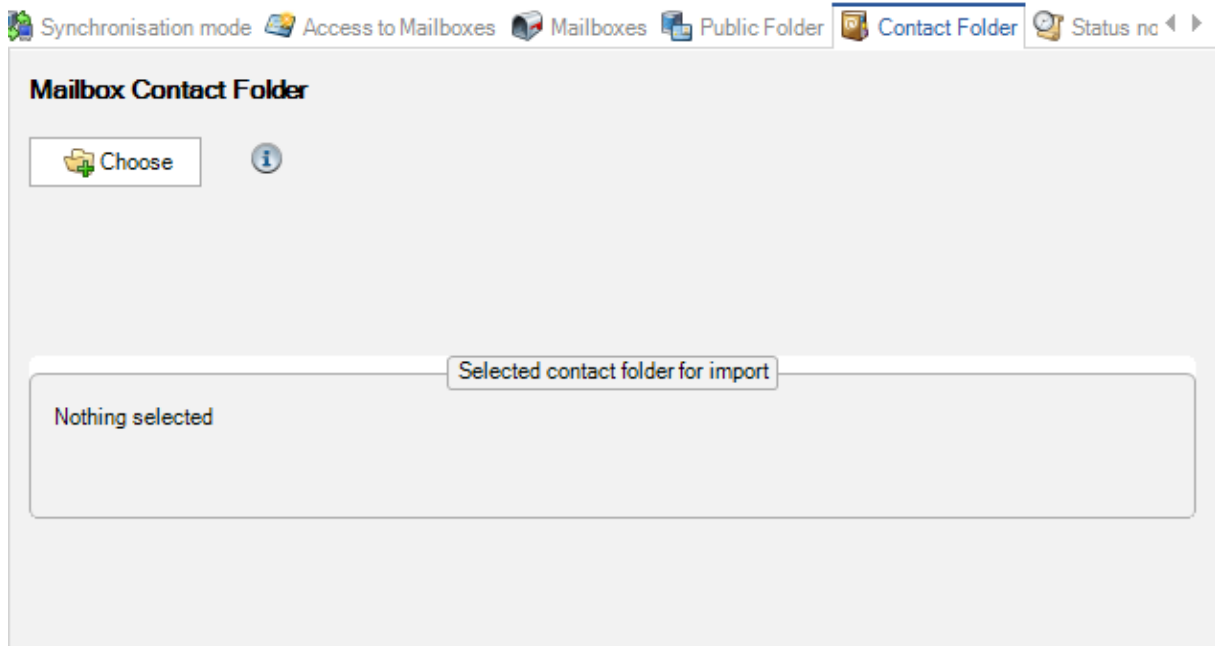
<input checked="" type="checkbox"/> Modify or delete existing contacts with source domain		1 source domain	
---	---	-----------------	---

Now, all existing contacts with the source domain will be modified or deleted.

This can be helpful e.g., after a migration.

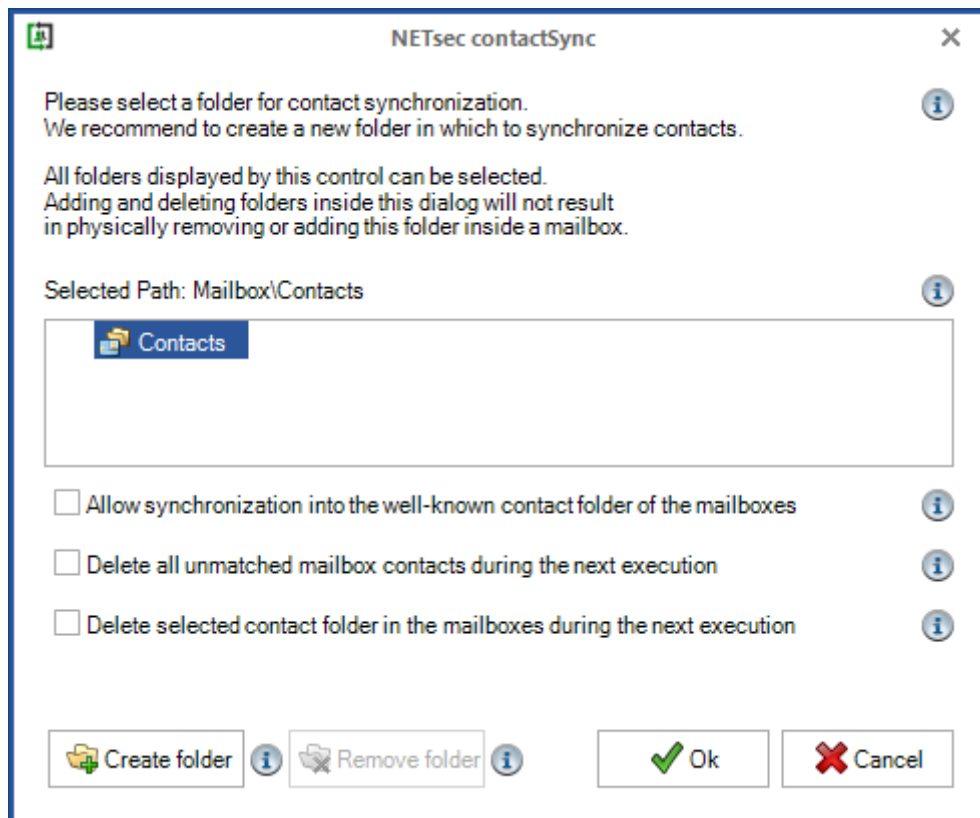
Contact Folder

Choose the folder into which contactSync will synchronize the contacts. contactSync will synchronize the contacts into this specific folder in each mailbox.



Choose (Mailbox contacts)

Add a new folder where you want to store the Public Folder contacts in and select it.



Please select a folder for contact synchronization.

All folders displayed by this control are for selecting purpose.

Adding and deleting folders inside this dialog will only add and remove them within the dialog itself, and not within the user mailbox.

The selected folder will be used in target mailboxes as the folder to be filled with contacts. If the chosen folder does not exist in a target mailbox, it will be created during the next synchronization.

Selected Folder

The selected folder will be used as target folder inside mailboxes during synchronization so that contacts will only be created inside this folder.

Allow synchronization into the well-known contact folder of the mailboxes.

This option allows contactSync to create and synchronize the contacts into the well-known contact folder of the mailboxes called **Contacts**. Please be careful with this option because it allows you to directly change and delete contacts that your employees have created. This could also confuse some of your employees.

We recommend to create and synchronize an additional contact for each existing contact which was not created by contactSync.

Delete all unmatched mailbox contacts during the next execution

This option is only valid for the next policy execution.

After the policy has been executed, the option is automatically deactivated.

All contacts in the selected folder and sub-folders of mailboxes that are not synchronized by this policy will be deleted once.

Please note this will automatically delete the mailbox owner's contacts in the selected folder and sub-folders which the individual user might still need, as they may contain important information.

Delete selected contact folder in the mailboxes during the next execution

This option is only valid for the next policy execution.

After the policy has been executed, the option is automatically deactivated.

The selected folder will be deleted in the synchronized users' mailboxes, including all contacts and sub-folders of the selected folder.

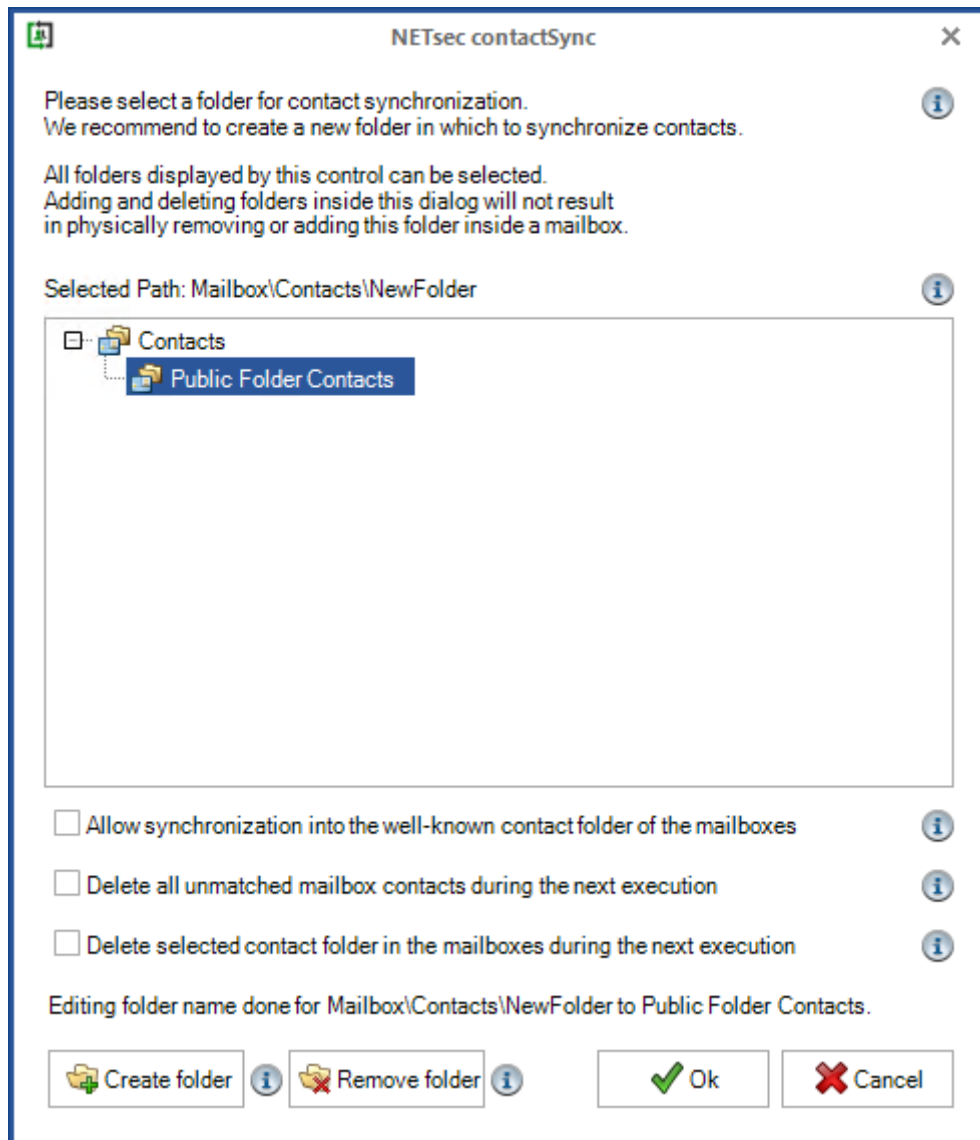
Please note this will automatically delete the mailbox owner's contacts in the selected folder and sub-folders which the individual user might still need, as they may contain important information.

Create folder

You can create a new folder, into which contactSync creates and synchronizes the contacts. This option gives you the possibility to separate the contacts, which have been created by your employees, from the contacts, which have been created by contactSync.

Please keep in mind that the name of the folder should be unique and should not exist in the mailbox of your employees. Otherwise contactSync will use the existing folder with the same name below the well-known contact folder of the mailbox for the synchronization.

For example:



Remove folder

This option removes a folder inside this dialog but will not remove a folder inside a mailbox. Please select the desired folder to remove.

Synchronize Shared Mailbox contacts into mailboxes

A contactSync policy synchronizes contacts from a Shared Mailbox into mailboxes, if the last option in the **Synchronization mode** is selected.

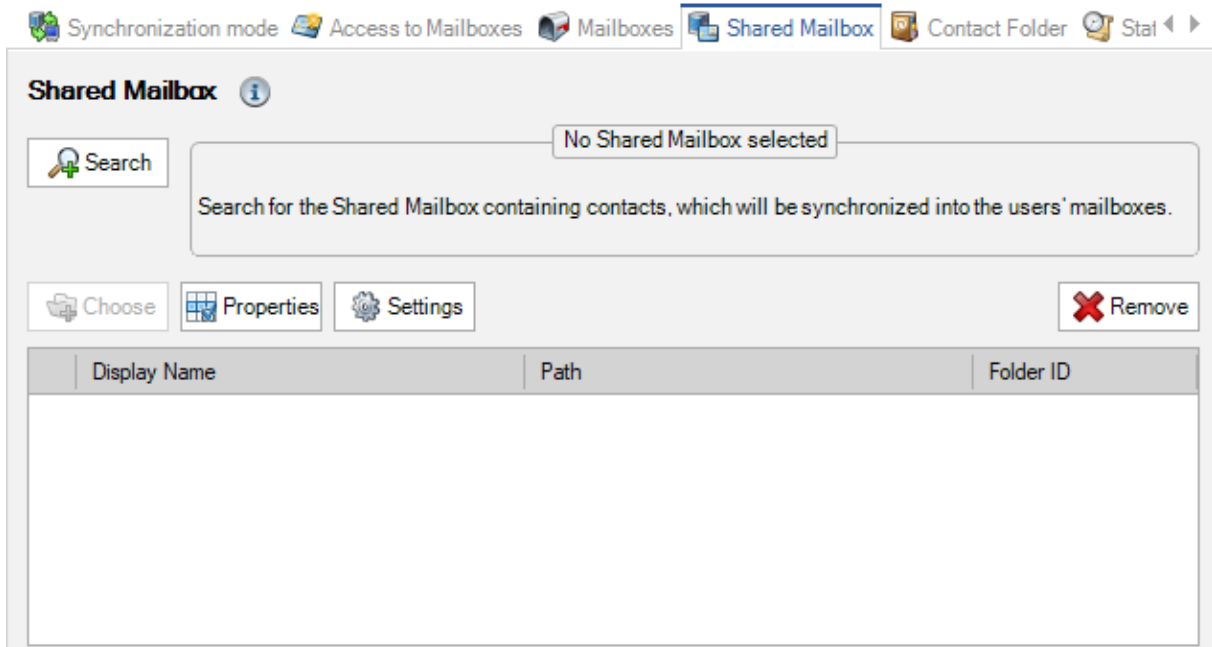
Synchronization mode

1. What do you want to do?

- Synchronize directory information (GAL) from on-premises into users' mailboxes in the Exchange environment. i
- Synchronize directory information (GAL) from Exchange Online into users' mailboxes in the Exchange environment. i
- Synchronize public folder contacts into users' mailboxes in an Exchange environment. i
- Synchronize shared mailbox contacts into users' mailboxes in an Exchange environment. i

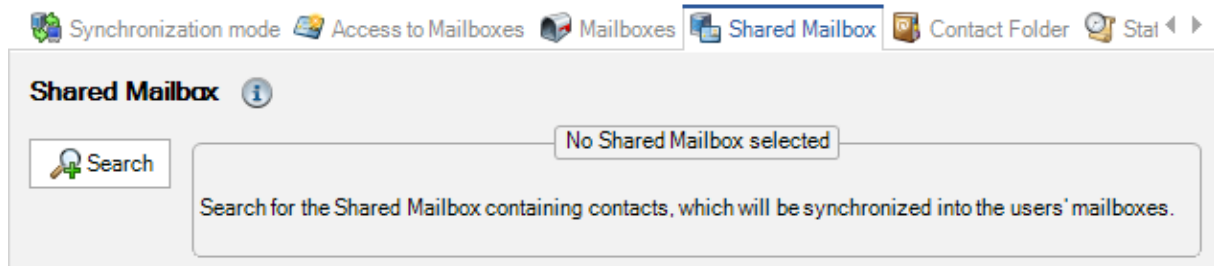
Shared Mailbox

On the **Shared Mailbox** tab of contactSync policies for mailbox contacts, search for a Shared Mailbox and choose its contact folder, which contains the contacts you want to synchronize into the mailboxes. You may also re-search a Shared Mailbox or remove a selected contact folder from the list.

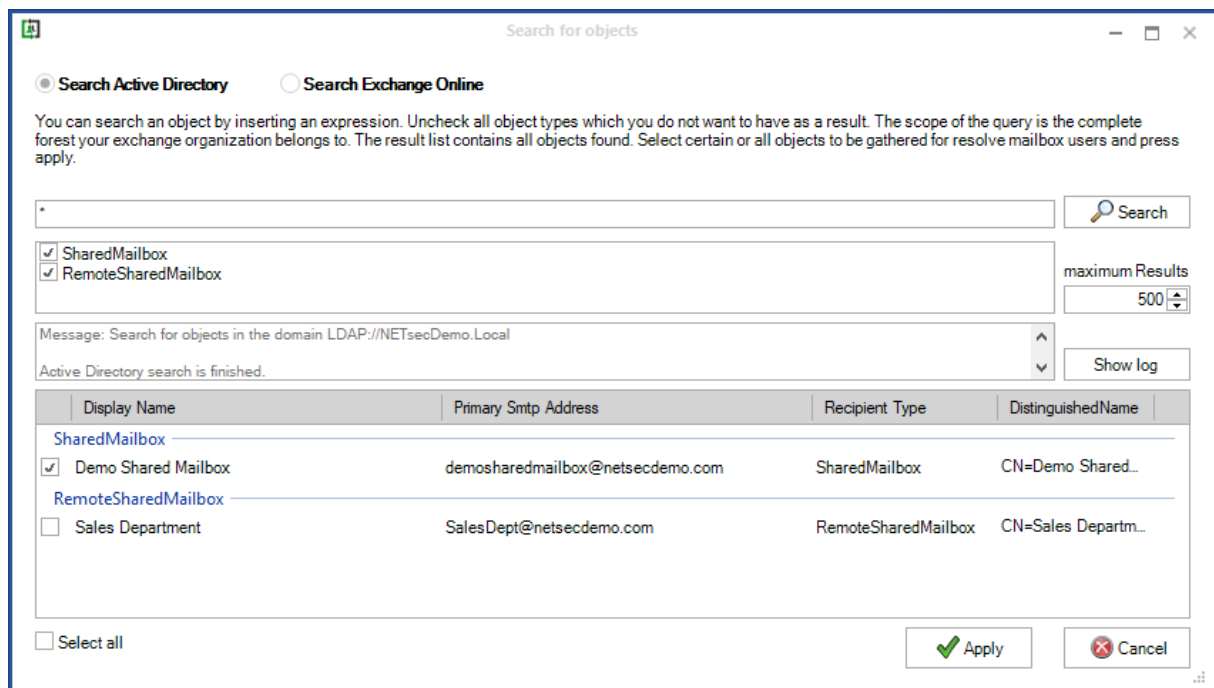


Step 1: Search shared mailbox

Search for a Shared Mailbox, which contains a contact folder with the contacts you want to synchronize into the mailboxes.



Click **Search** to open the **Search for objects** dialog.

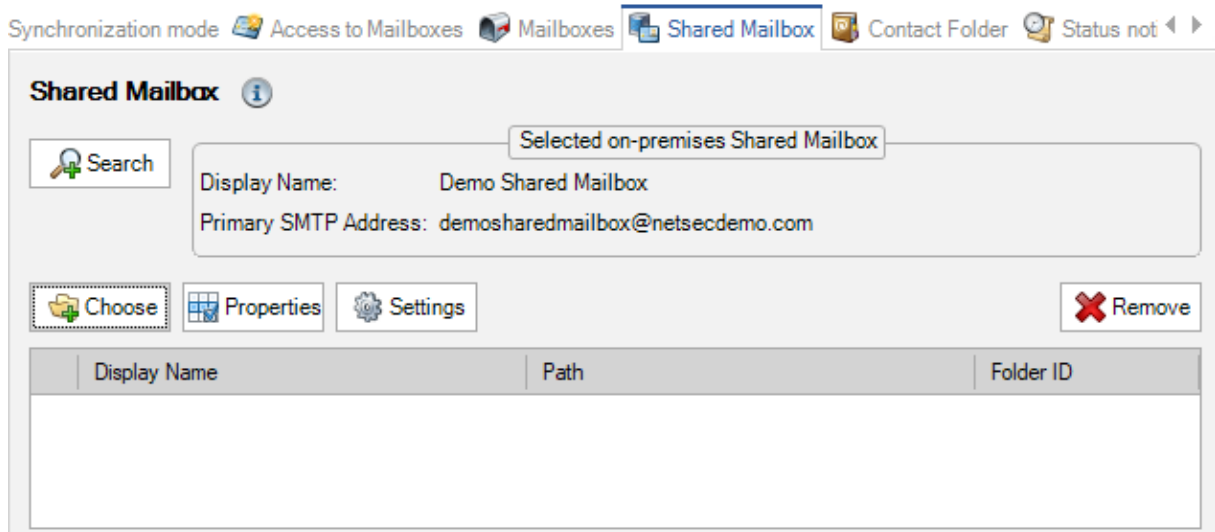


Select where you want to search in a hybrid Exchange environment. Search in the on-premises **Active Directory** or search in **Exchange Online** for a Shared Mailbox.

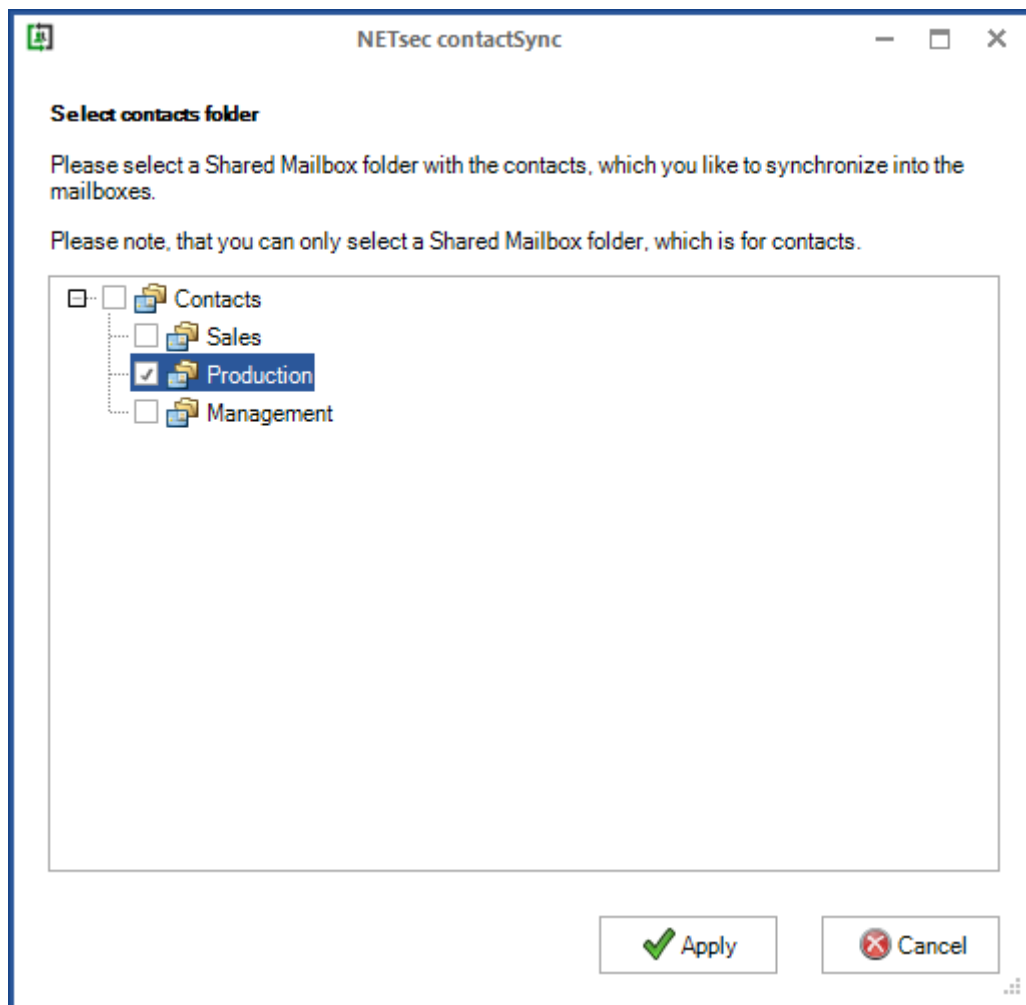
Here you may pick either all objects or specify a filter by ticking recipient types you want to choose. With a wildcard * you can widen your search criteria, and broaden the results.

Afterwards select the shared mailbox and click **Apply**.

Step 2: Choose contact folder



After a shared mailbox is selected, click **Choose** to select the contact folder with the contacts you want to synchronize into the mailboxes.



Here, a shared mailbox with all contact folders will be displayed. You may tick a contact folder in the tree, but only a contact folder dedicated for contacts can be selected.

Afterwards click **Apply**, the selected contact folder is listed on the **Shared Mailbox** tab.

In this example the **Production** folder contacts in the **Demo Shared Mailbox** will be synchronized into the selected user mailboxes of the policy.

Synchronization mode Access to Mailboxes Mailboxes **Shared Mailbox** Contact Folder Status not

Shared Mailbox

Selected on-premises Shared Mailbox

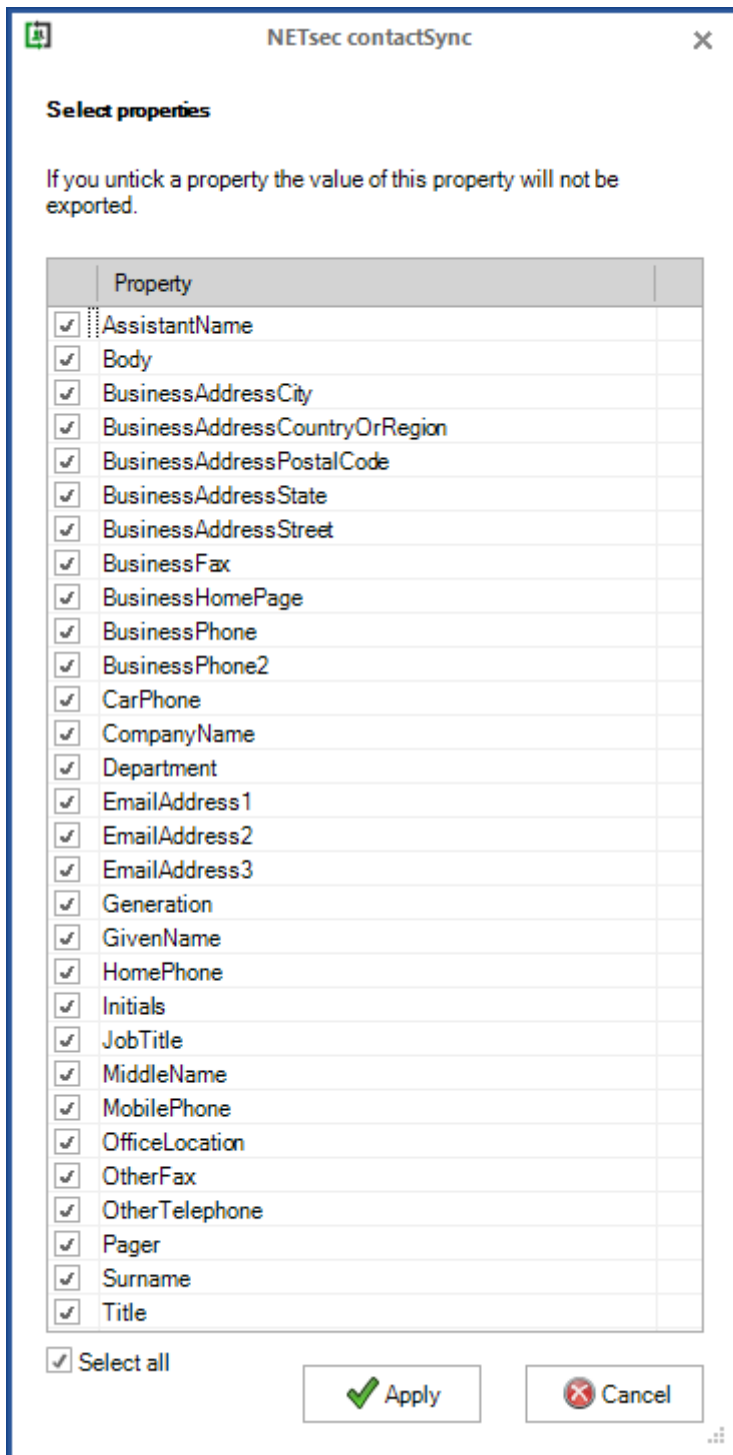
Display Name: Demo Shared Mailbox
Primary SMTP Address: demosharedmailbox@netsecdemo.com

Choose Properties Settings Remove

Display Name	Path	Folder ID
Shared Mailbox Folder		
Production	Contacts\Production	AAMkADY2YjVkJA3...

Properties

Select which properties are to be synchronized.



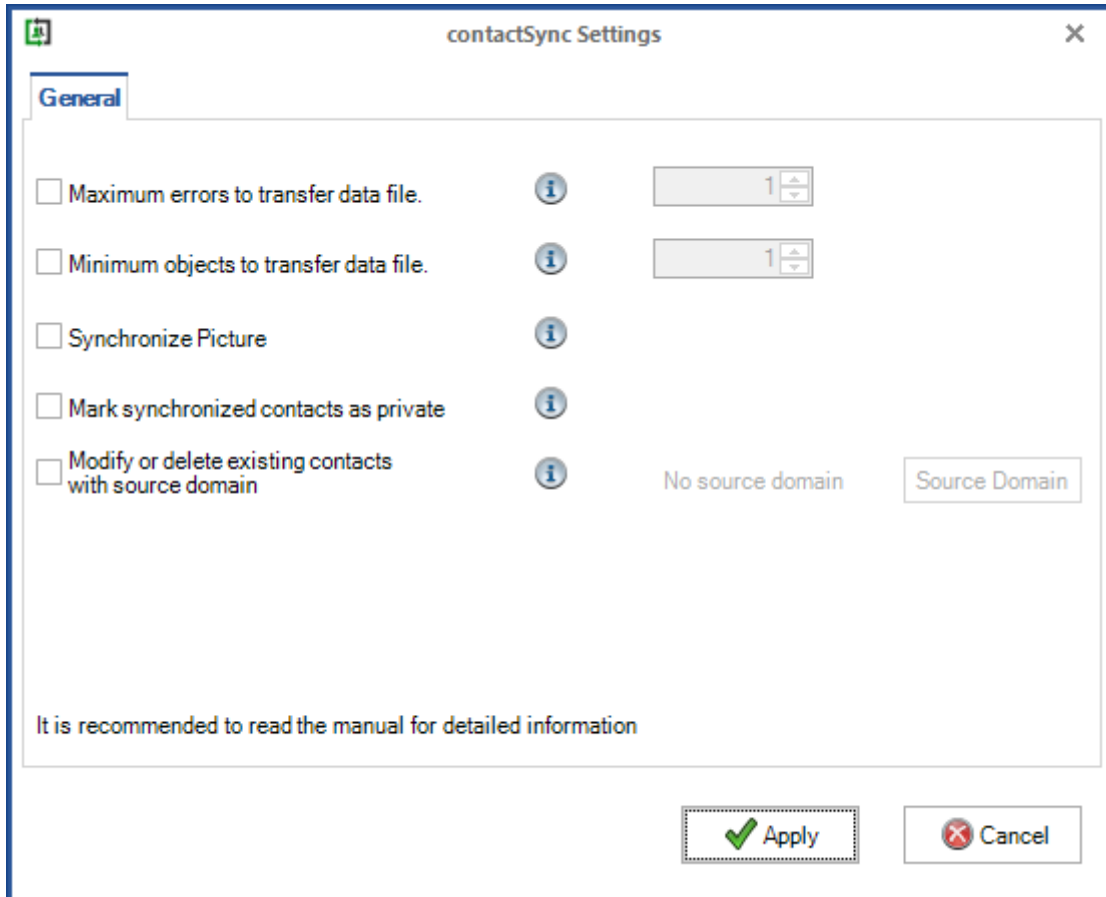
The screenshot shows a dialog box titled "NETsec contactSync" with a close button (X) in the top right corner. Below the title bar, the text "Select properties" is displayed. A note states: "If you untick a property the value of this property will not be exported." Below this is a table with a "Property" column and a checkbox column. All checkboxes are checked. At the bottom left, there is a "Select all" checkbox, which is also checked. At the bottom right, there are two buttons: "Apply" (with a green checkmark icon) and "Cancel" (with a red X icon).

Property	
<input checked="" type="checkbox"/> AssistantName	
<input checked="" type="checkbox"/> Body	
<input checked="" type="checkbox"/> BusinessAddressCity	
<input checked="" type="checkbox"/> BusinessAddressCountryOrRegion	
<input checked="" type="checkbox"/> BusinessAddressPostalCode	
<input checked="" type="checkbox"/> BusinessAddressState	
<input checked="" type="checkbox"/> BusinessAddressStreet	
<input checked="" type="checkbox"/> BusinessFax	
<input checked="" type="checkbox"/> BusinessHomePage	
<input checked="" type="checkbox"/> BusinessPhone	
<input checked="" type="checkbox"/> BusinessPhone2	
<input checked="" type="checkbox"/> CarPhone	
<input checked="" type="checkbox"/> CompanyName	
<input checked="" type="checkbox"/> Department	
<input checked="" type="checkbox"/> EmailAddress1	
<input checked="" type="checkbox"/> EmailAddress2	
<input checked="" type="checkbox"/> EmailAddress3	
<input checked="" type="checkbox"/> Generation	
<input checked="" type="checkbox"/> GivenName	
<input checked="" type="checkbox"/> HomePhone	
<input checked="" type="checkbox"/> Initials	
<input checked="" type="checkbox"/> JobTitle	
<input checked="" type="checkbox"/> MiddleName	
<input checked="" type="checkbox"/> MobilePhone	
<input checked="" type="checkbox"/> OfficeLocation	
<input checked="" type="checkbox"/> OtherFax	
<input checked="" type="checkbox"/> OtherTelephone	
<input checked="" type="checkbox"/> Pager	
<input checked="" type="checkbox"/> Surname	
<input checked="" type="checkbox"/> Title	

Select all

contactSync Settings on the Shared Mailbox tab

You can configure some optional **Settings** on the **Shared Mailbox** tab



Maximum errors to transfer data file

In the **contactSync Settings** you can set a limit how many errors may occur when creating a data file before synchronizing. If this limit is exceeded, the affected data file will not be synchronized into the mailboxes.

Minimum objects to transfer data file

In the **contactSync Settings** you can define a minimum number of objects to be written to the data file before synchronizing into mailboxes. As long as the data file contains fewer objects than specified, synchronization will not occur.

Synchronize Picture

If this option in the **contactSync Settings** is selected the photos of the Shared Mailbox contacts will be synchronized as well.

Mark synchronized contacts as private

This allows you to mark the synchronized contacts as **private** in the mailboxes. Private contacts are not visible to other people unless the Microsoft Exchange account contacts are shared.

Note: A person with delegate access or permission to read your shared folders could view the contents of your private contacts and events by using other applications.

Modify or delete existing contacts with source domain

Please be careful with this option.

You can add an additional source domain, which is not contained in the synchronization.

This means that contacts in mailboxes which have previously been synchronized with contactSync, whose source domain is no longer included in the synchronization, can now be synchronized.

To do this, the old source domain, as it is in the log file, must be added to the list on the **Old Source Domains** dialog.

For example, the source domain is

```
DC=forestB,DC=com
```

Modify or delete existing contacts with source domain

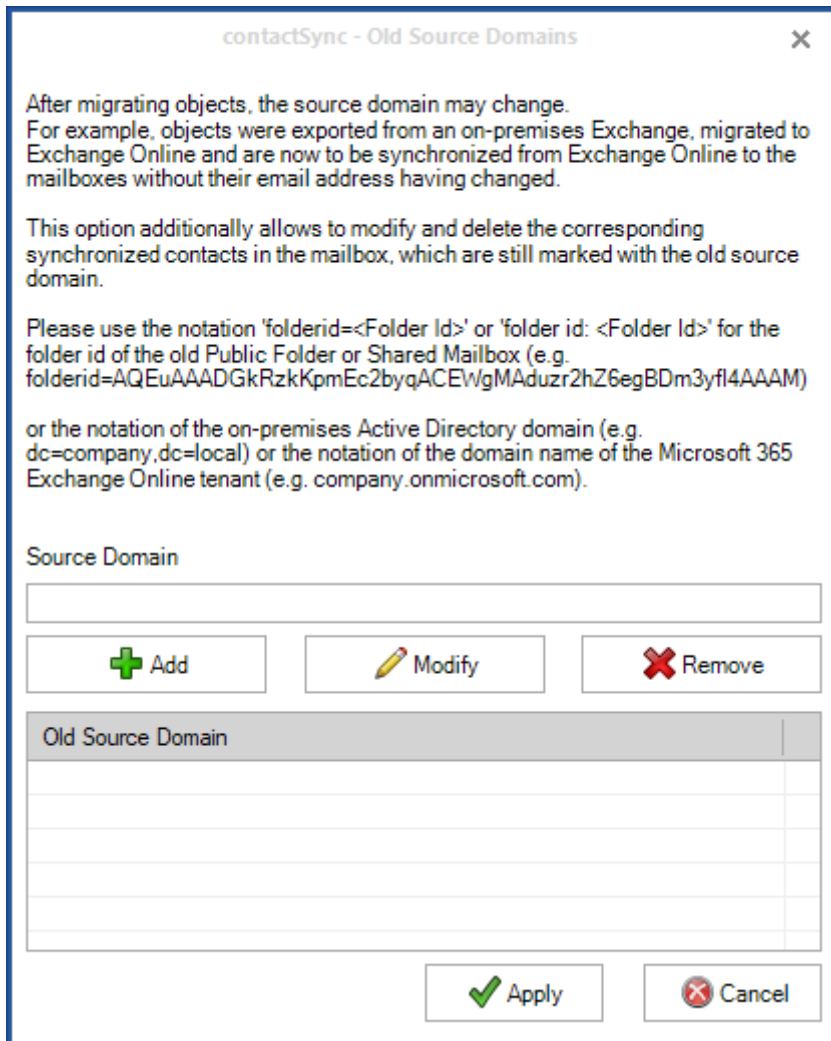


No source domain

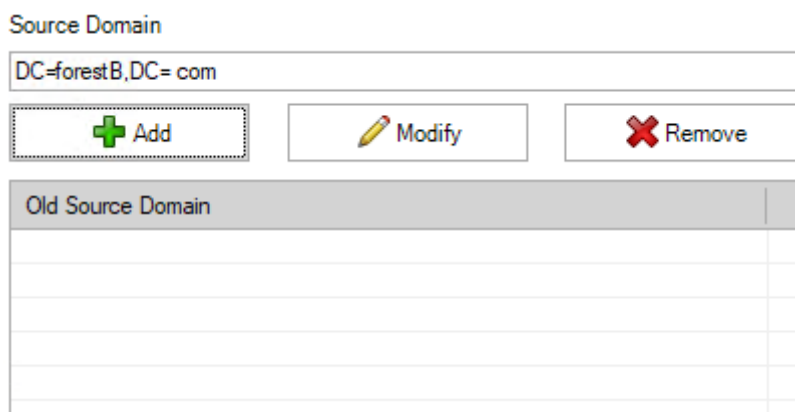
Source Domain

Enable the **Modify or delete existing contacts with source domain** option and click the **Source Domain** button to open the dialog to manage the old source domains.

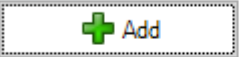

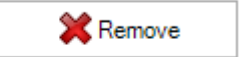
The **Old Source Domains** dialog to manage the old source domain values.



Insert the old source domain value and add it to the **Old Source Domain** list.

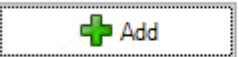
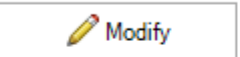



Source Domain

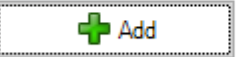

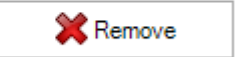
 Add	 Modify	 Remove
Old Source Domain		
DC=forestB,DC=com		

Please note, the source domain syntax `company.onmicrosoft.com` will be added as `DC=company,DC=onmicrosoft,DC=com` to the **Old Source Domain** list.

Source Domain

company.onmicrosoft.com		
 Add	 Modify	 Remove
Old Source Domain		

Source Domain

 Add	 Modify	 Remove
Old Source Domain		
DC=company,DC=onmicrosoft,DC=com		

Click **Apply** to close the dialog.

Modify or delete existing contacts with source domain  1 source domain 

Now, all existing contacts with the source domain will be modified or deleted.

This can be helpful e.g., after a migration.

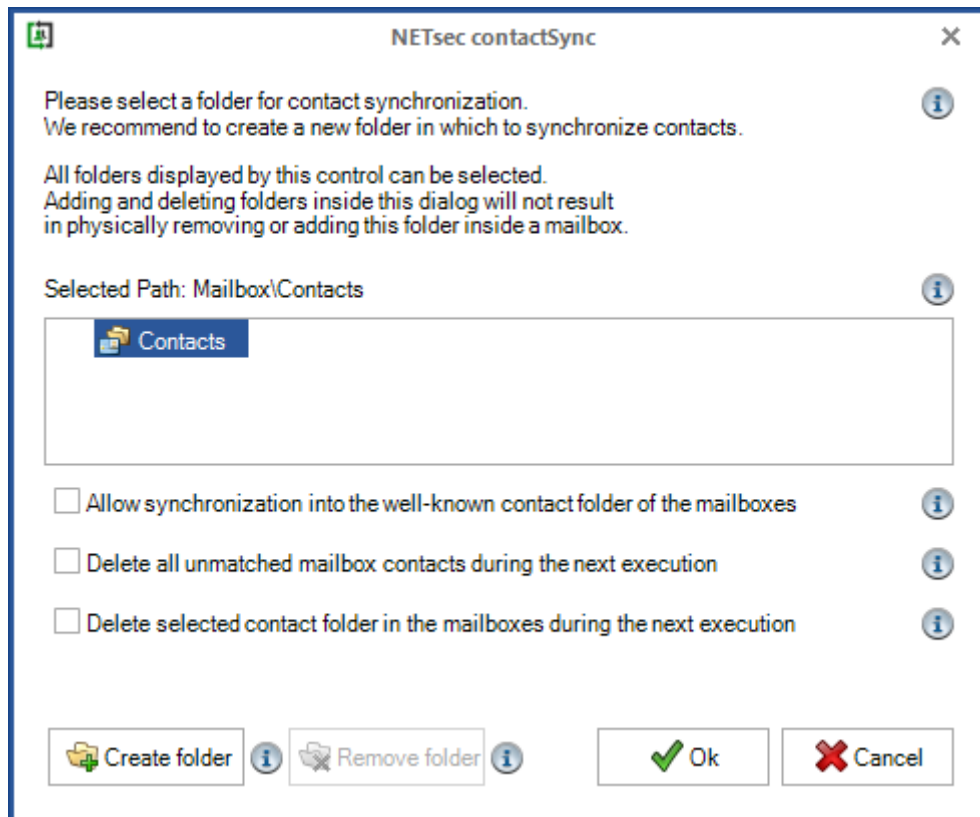
Contact Folder

Choose the folder into which contactSync will synchronize the contacts. contactSync will synchronize the contacts into this specific folder in each mailbox.



Choose (Mailbox contacts)

Add a new folder where you want to store the Shared Mailbox contacts in, and select it.



Please select a folder for contact synchronization.

All folders displayed by this control are for selecting purpose.

Adding and deleting folders inside this dialog will only add and remove them within the dialog itself, and not within the user mailbox.

The selected folder will be used in target mailboxes as the folder to be filled with contacts. If the chosen folder does not exist in a target mailbox, it will be created during the next synchronization.

Selected Folder

The selected folder will be used as the target folder inside mailboxes during synchronization so contacts will only be created inside this folder.

Allow synchronization into the well-known contact folder of the mailboxes.

This option allows contactSync to create and synchronize the contacts into the well-known contact folder of the mailboxes called **Contacts**. Please be careful with this option because it allows you to directly change and delete contacts that your employees have created. This could also confuse some of your employees.

We recommend to create and synchronize an additional contact for each existing contact which was not created by contactSync.

Delete all unmatched mailbox contacts during the next execution

This option is only valid for the next policy execution.

After the policy has been executed, the option is automatically deactivated.

All contacts in the selected folder and sub-folders of mailboxes that are not synchronized by this policy will be deleted once.

Please note this will automatically delete the mailbox owner's contacts in the selected folder and sub-folders which the individual user might still need, as they may contain important information.

Delete selected contact folder in the mailboxes during the next execution

This option is only valid for the next policy execution.

After the policy has been executed, the option is automatically deactivated.

The selected folder will be deleted in the synchronized users' mailboxes, including all contacts and sub-folders of the selected folder.

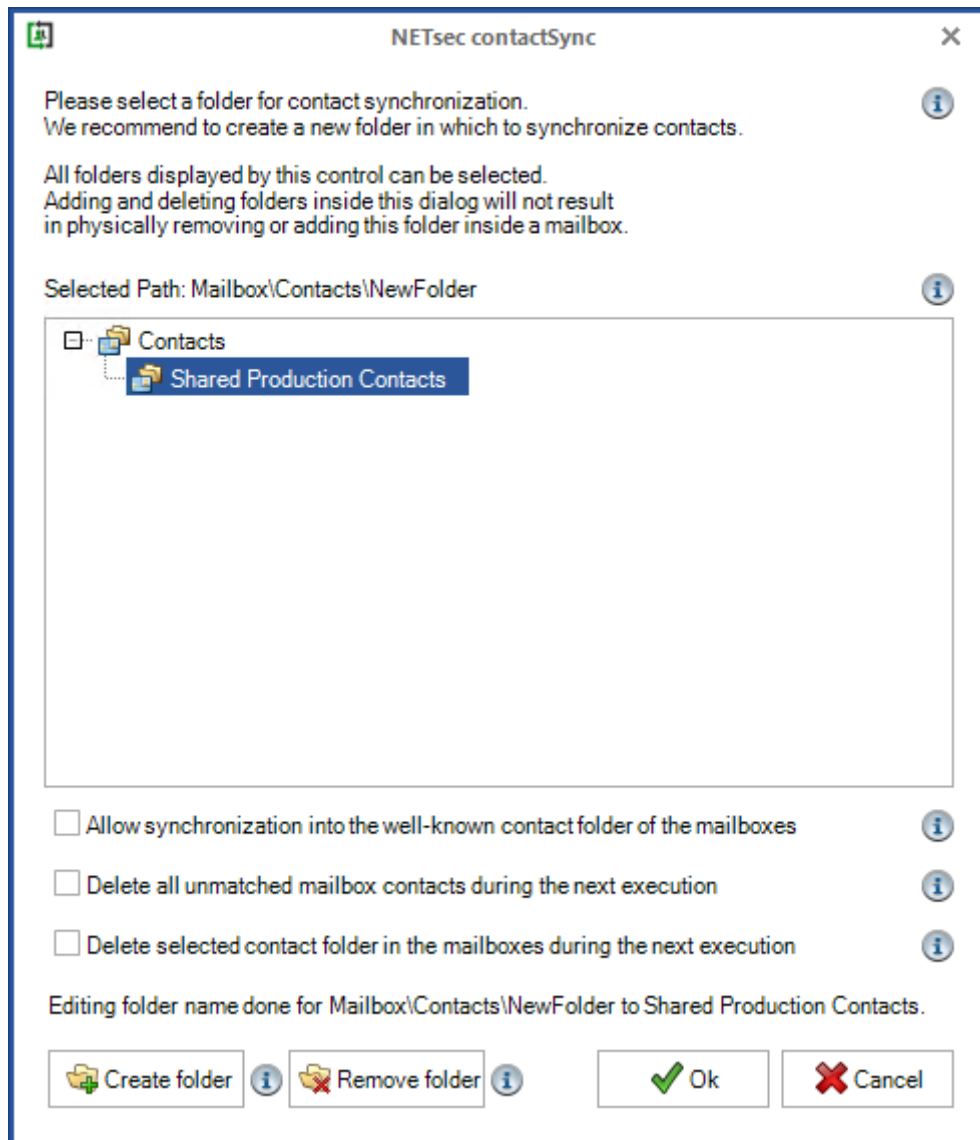
Please note this will automatically delete the mailbox owner's contacts in the selected folder and sub-folders which the individual user might still need, as they may contain important information.

Create folder

You can create a new folder, into which contactSync creates and synchronizes the contacts. This option gives you the possibility to separate the contacts, which have been created by your employees, from the contacts, which have been created by contactSync.

Please keep in mind that the name of the folder should be unique and should not exist in the mailbox of your employees. Otherwise contactSync will use the existing folder with the same name below the well-known contact folder of the mailbox for the synchronization.

For example:



Remove folder

This option removes a folder inside this dialog but will not remove a folder inside a mailbox. Please select the desired folder to remove.

How to

How to configure Exchange Application Impersonation

contactSync requires a service account with the Exchange Application Impersonation role on the on-premises Exchange Server to access on-premises Exchange mailboxes.

If the user credentials of a service account are used for Exchange Online, contactSync requires the Exchange Application Impersonation role on Exchange Online for this service account to access Exchange Online mailboxes.

Exchange Application Impersonation enables a caller to impersonate a given user account. This enables the caller to perform operations by using the permissions that are associated with the impersonated account, instead of the permissions that are associated with the caller's account.

For more information, please have look at the following Microsoft Docs:

Impersonation and EWS in Exchange

<https://docs.microsoft.com/en-us/exchange/client-developer/exchange-web-services/impersonation-and-ews-in-exchange>

MSDN Library - Configuring Exchange Impersonation

[https://docs.microsoft.com/en-us/previous-versions/office/developer/exchange-server-2010/bb204095\(v=exchg.140\)?redirectedfrom=MSDN](https://docs.microsoft.com/en-us/previous-versions/office/developer/exchange-server-2010/bb204095(v=exchg.140)?redirectedfrom=MSDN)

Exchange Impersonation in Exchange 2013, 2016, 2019 and Exchange Online

How can you check existing management role for Exchange Application Impersonation and how you can create a management role for Exchange Application Impersonation?

For on-premises Exchange:

Please log in on the on-premises Exchange Server with an Exchange Administrator account and open the Exchange Management Shell.

For Microsoft 365 Exchange Online:

Please connect via Exchange Online PowerShell to the Microsoft 365 tenant with an Exchange Administrator account.

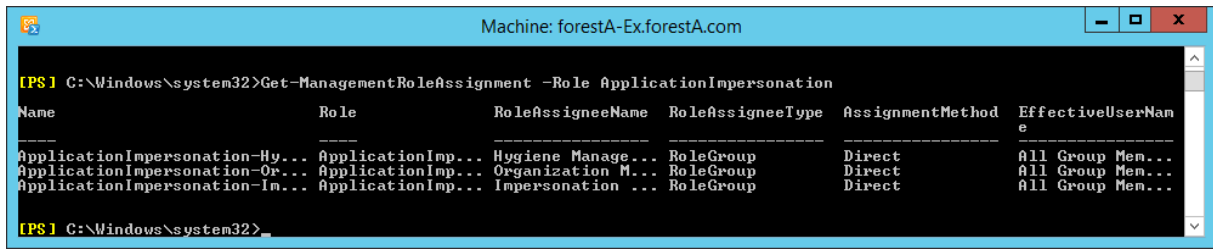
Check existing Exchange Impersonation:

Please verify whether a **Role Group** for **ApplicationImpersonation** exists.

You can check the existing Exchange Impersonation via PowerShell:

```
Get-ManagementRoleAssignment -Role ApplicationImpersonation
```

```
[PS] C:\Windows\system32>Get-ManagementRoleAssignment -Role ApplicationImpersonation
```



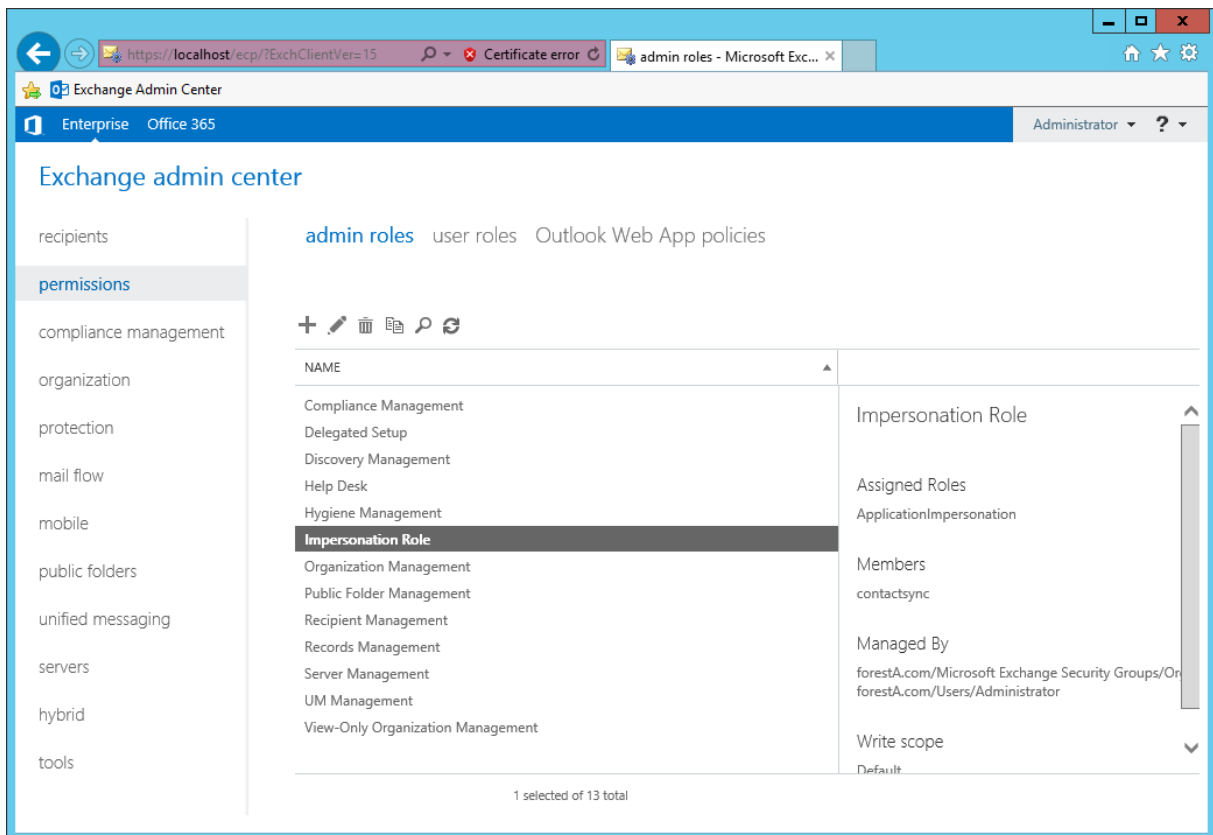
```
Machine: forestA-Ex.forestA.com

[PS] C:\Windows\system32>Get-ManagementRoleAssignment -Role ApplicationImpersonation

Name                                     Role                                     RoleAssigneeName  RoleAssigneeType  AssignmentMethod  EffectiveUserNan
-----                                     -
ApplicationImpersonation-Hygiene Manage... RoleGroup          Direct
ApplicationImpersonation-Organization M... RoleGroup          Direct
ApplicationImpersonation-Impersonation ... RoleGroup          Direct
EffectiveUserName: All Group Men...
```

You can find an existing **Role Group** in the **Exchange Admin Center** under **Permissions as Admin Roles**.

E.g., the Impersonation Role to manage the **ApplicationImpersonation**

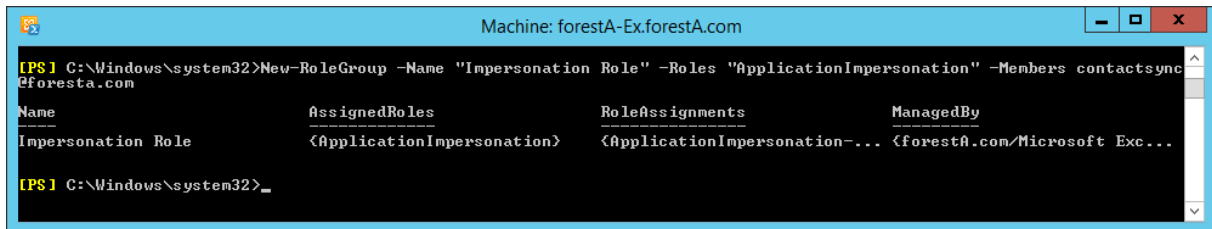


Create an Impersonation Role Group for ApplicationImpersonation via PowerShell

You can create a new Role Group to manage the **ApplicationImpersonation** and add your contactSync service account as member of the **Role Group**.

This example creates a **Role Group** called **Impersonation Role**:

```
New-RoleGroup -Name "Impersonation Role" -Roles "ApplicationImpersonation" -Members contactsync@foresta.com
```



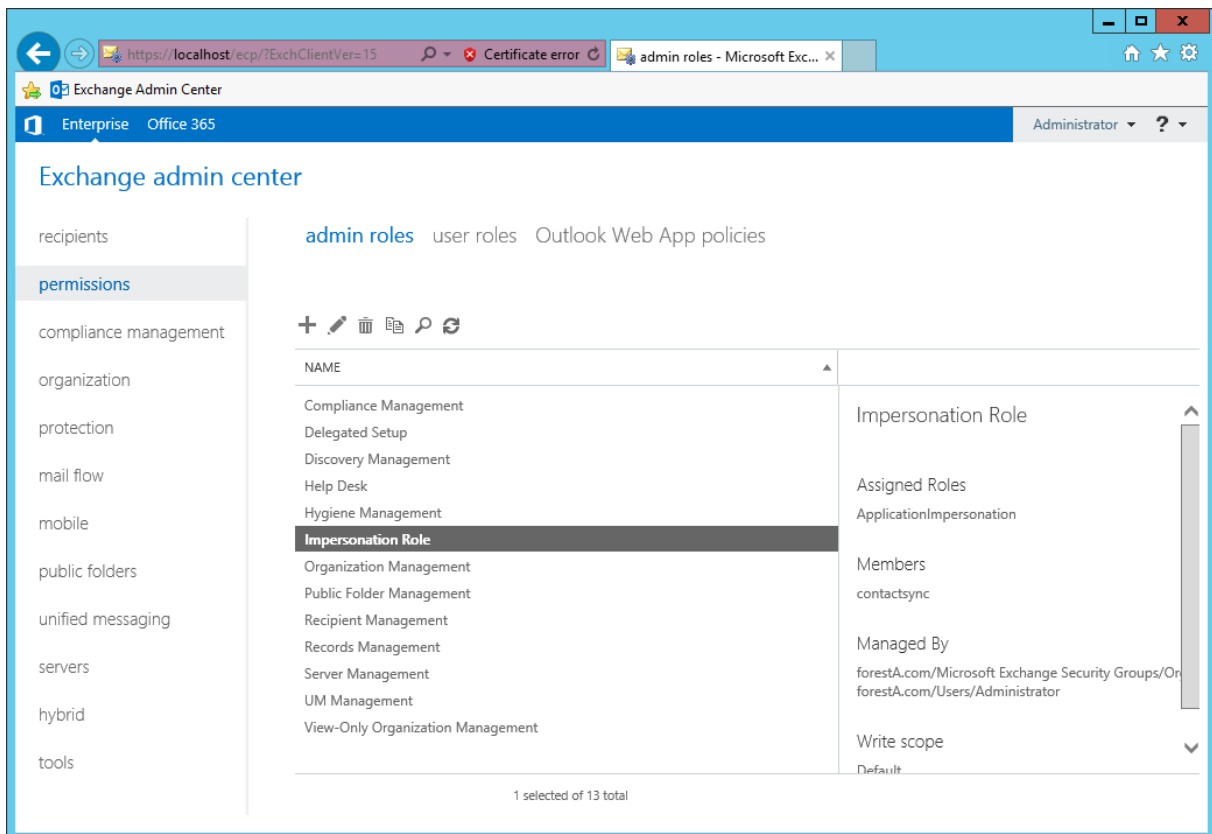
```
Machine: forestA-Ex.forestA.com

[PS] C:\Windows\system32>New-RoleGroup -Name "Impersonation Role" -Roles "ApplicationImpersonation" -Members contactsync@foresta.com

Name                AssignedRoles      RoleAssignments    ManagedBy
-----                -
Impersonation Role  <ApplicationImpersonation> <ApplicationImpersonation-... <forestA.com/Microsoft Exc...

[PS] C:\Windows\system32>_
```

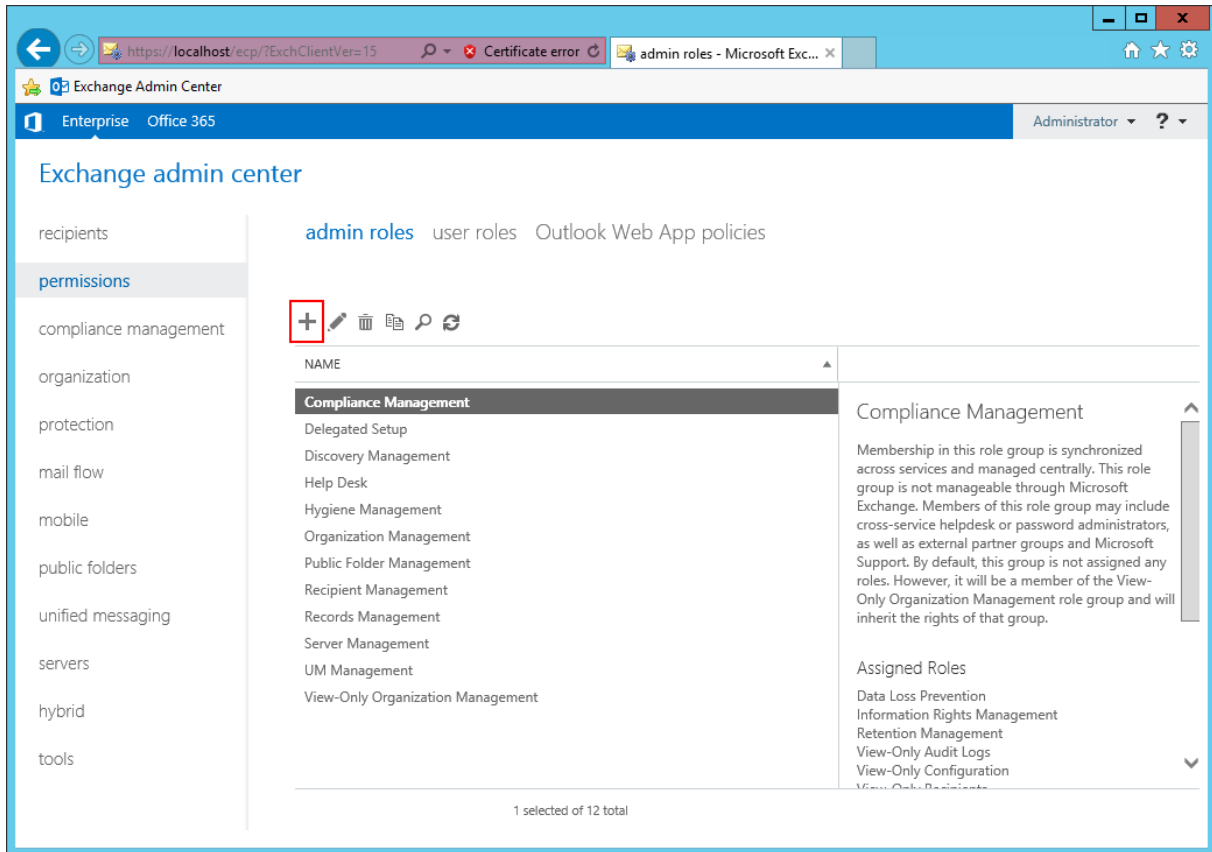
The **Impersonation Role** is also available in the **Exchange Admin Center** under **Permissions as Admin Roles**.



Create an Impersonation Role for ApplicationImpersonation via Exchange Admin Center

You can create a new **Role Group** in the **Exchange Admin Center** under **Permissions** as **Admin Roles**.

Add new admin role:



The **new role group** dialog:

Add the name **Impersonation Role**

Add **ApplicationImpersonation** to the **Roles**

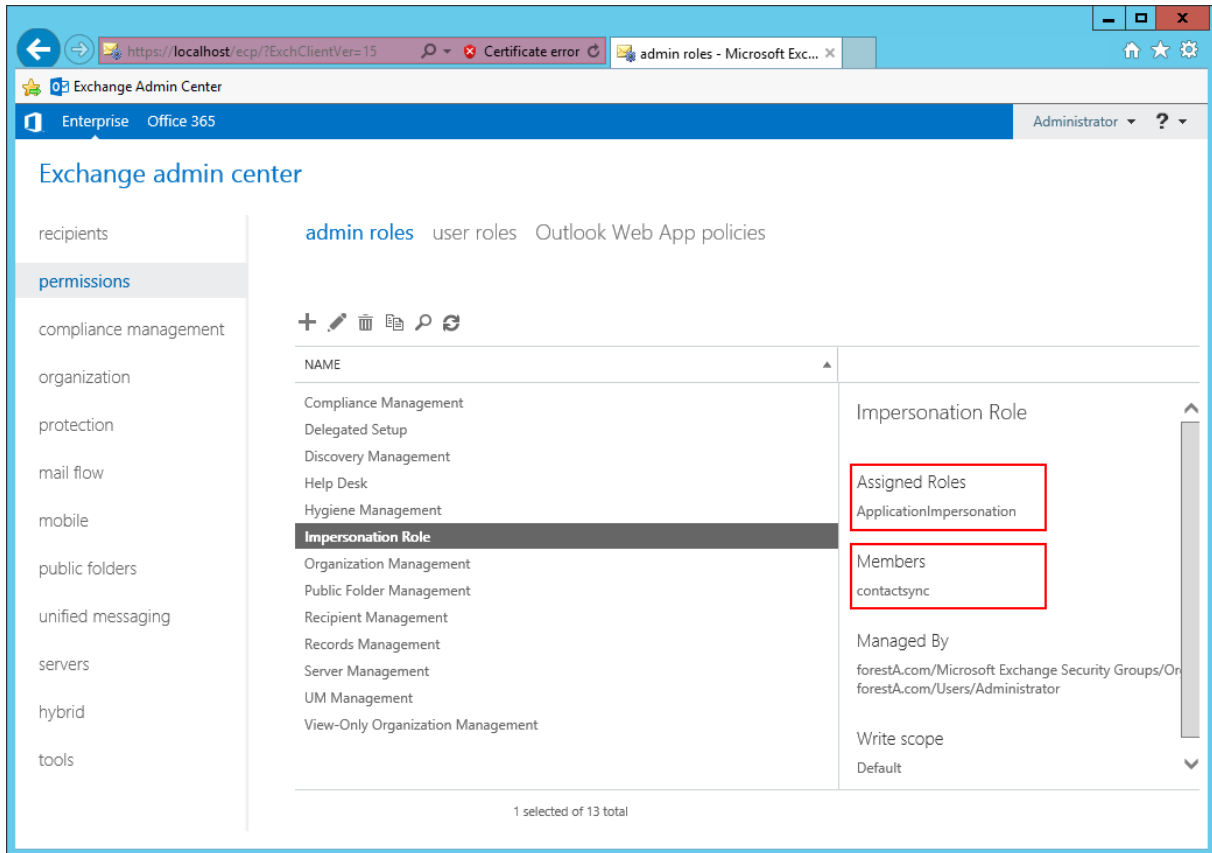
Add your **contactSync service account** to the **Members**

The screenshot shows a web browser window titled "Role Group - Internet Explorer" displaying a "new role group" dialog. The dialog includes the following elements:

- Name:** A text input field containing "Impersonation Role".
- Description:** An empty text area.
- Write scope:** A radio button selected next to a dropdown menu showing "Default".
- Organizational unit:** A radio button next to an empty text input field.
- Roles:** A list with a "+" and "-" icon. The list contains one item: "ApplicationImpersonation".
- Members:** A list with a "+" and "-" icon. The list contains one item: "contactsync" with a "DISPLAY NAME" column also showing "contactsync".
- Buttons:** "save" and "cancel" buttons at the bottom right.
- UI Elements:** A "Help" link in the top right, a scrollbar on the right side, and a zoom level of "100%" at the bottom right.

Afterwards the new **Impersonation Role** is available as **Admin Role**.

You can check the **Assigned Roles** and the **Members** of the **Impersonation Role**.



How to disable EWS Throttling for the contactSync account?

Exchange 2013, Exchange 2016 and Exchange 2019

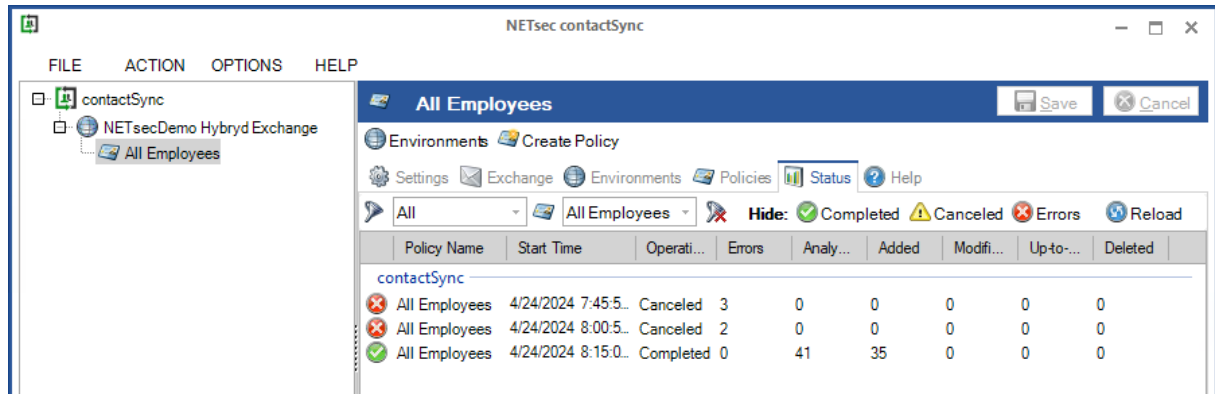
Open the Microsoft Exchange Management Shell (EMS) or connect via remote PowerShell.

```
New-ThrottlingPolicy ContactSyncPolicy;  
  
Set-ThrottlingPolicy ContactSyncPolicy -RCAMaxConcurrency Unlimited -  
EWSMaxConcurrency Unlimited -EWSMaxSubscriptions Unlimited -CPAMaxConcurrency  
Unlimited -EwsCutoffBalance Unlimited -EwsMaxBurst Unlimited -EwsRechargeRate  
Unlimited;  
  
Set-Mailbox "contactSyncAccount" -ThrottlingPolicy ContactSyncPolicy;
```

How to re-configure certificate-based authentication in the Environment Configuration

Someone has configured the certificate-based authentication via App Registration in the Environment Configuration with a different account other than the local service account.

You also notice contactSync fails to complete successfully when it runs on a schedule. But it completes successfully when you run it manually.



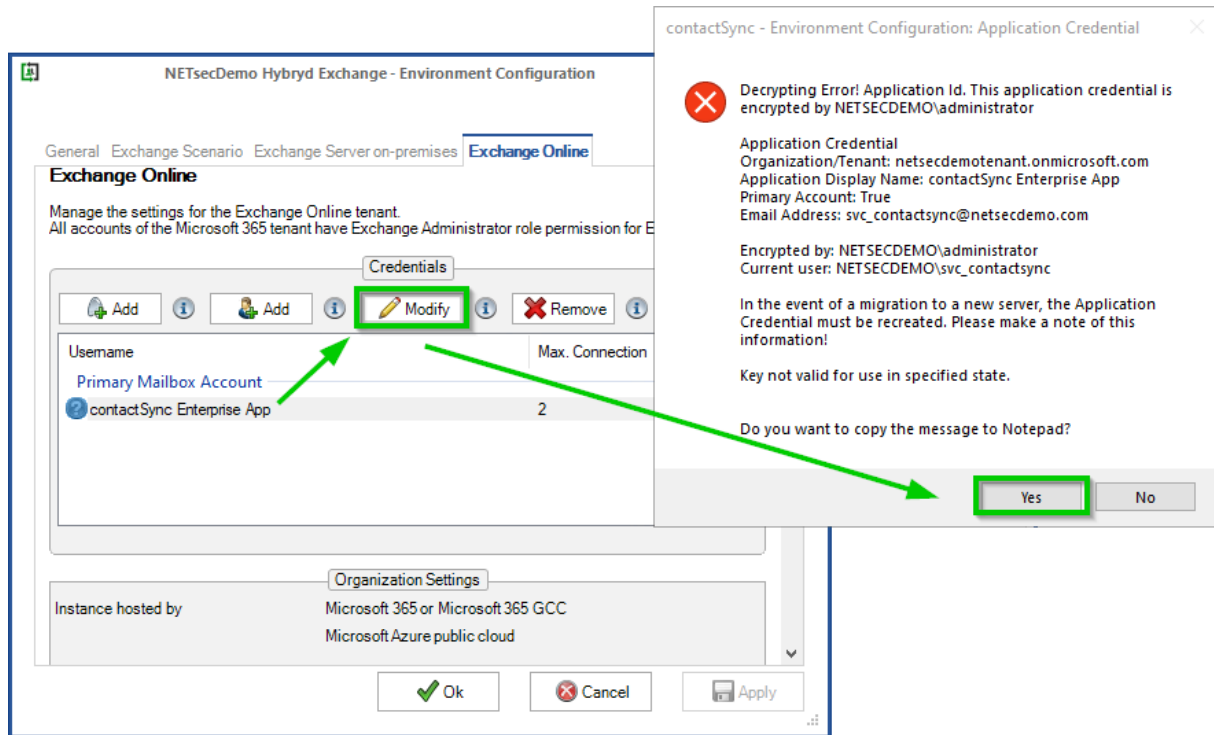
The bottom of the GUI displays the logged-on user on the left and the user of the contactSync Service on the right. When creating a certificate, it must always be created under the context of the contactSync Service account. It is apparent in this example; the certificate was created under the context of the Administrator account.



To resolve the issue, logon to the contactSync Server as the contactSync service account.

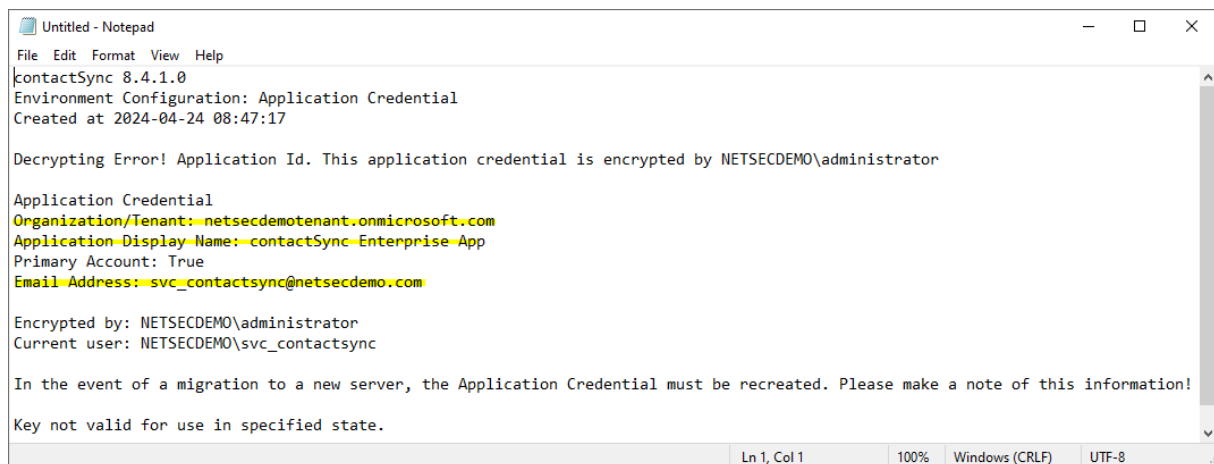
Open the Environment Configuration, and from Exchange Online tab, select the contactSync application then click **Modify**.

A new window opens which provides details that will be needed to create a new certificate. The private key for self-signed certificate created by contactSync is saved in the current logged on user's certificate store. In this example, this makes it impossible for contactSync to decrypt and authenticate as shown in the error message below.

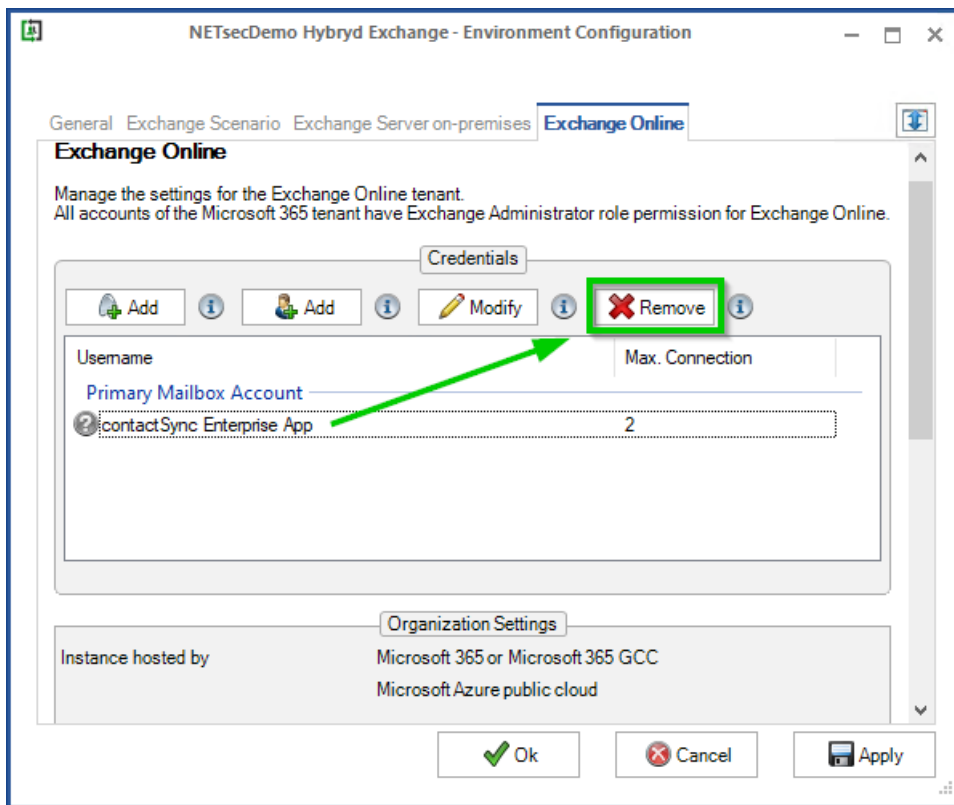


Click **Yes** to copy the message to Notepad.

The details highlighted below will need to be used to create a new credential account for the contactSync application on the Exchange Online tab of the Environment Configuration.



Select the credential account of the contactSync application and click **Remove**.

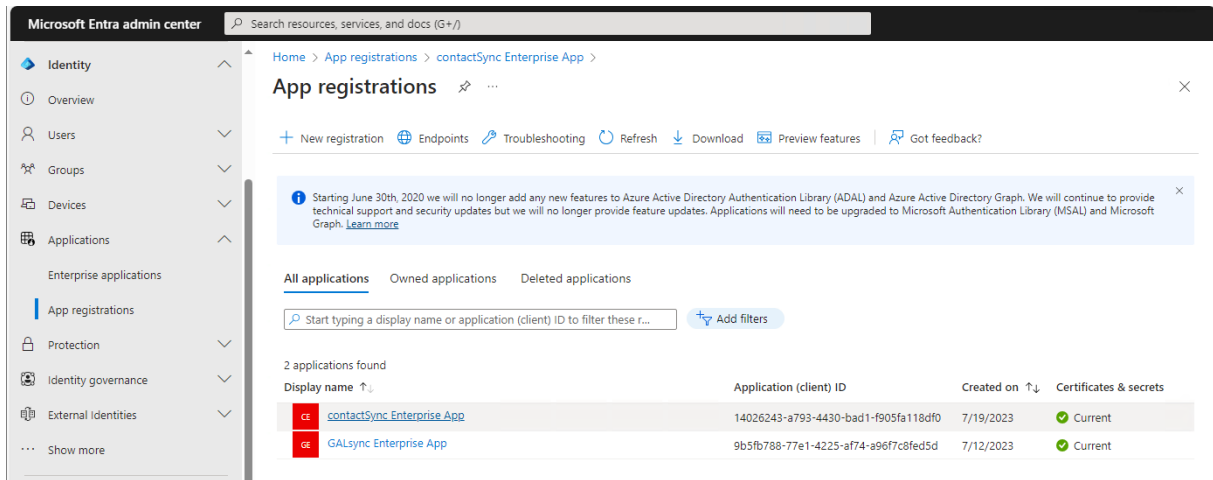


Next click the **Add** button on the left to create a new credential account for the contactSync application.

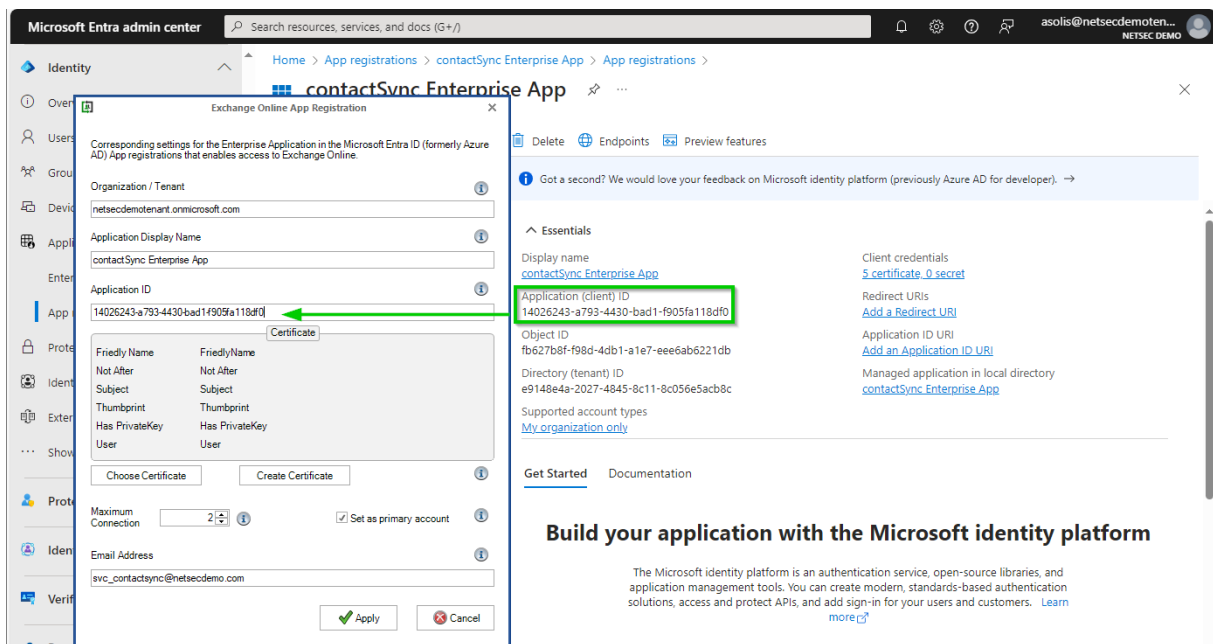
The Exchange Online App Registration dialog window opens.

Copy and paste the highlighted details from notepad to the relevant fields shown below

To obtain the **Application ID**, Logon to **Microsoft Entra ID**, and go to **Applications > App Registrations > All Applications** then select the **contactSync** application.



Copy the **Application ID** into clipboard, then paste it in the relevant field in the **Exchange Online App Registration** dialog window.



After all details have been inserted into their relevant fields, click **Create Certificate**

The screenshot shows the 'Exchange Online App Registration' dialog box. It contains the following fields and options:

- Organization / Tenant: netsecdemotenant.onmicrosoft.com
- Application Display Name: contactSync Enterprise App
- Application ID: 14026243-a793-4430-bad1f905fa118df0
- Certificate section with a table:

Friendly Name	FriendlyName
Not After	Not After
Subject	Subject
Thumbprint	Thumbprint
Has PrivateKey	Has PrivateKey
User	User
- Buttons: Choose Certificate, **Create Certificate** (highlighted), and Set as primary account (checked).
- Maximum Connection: 2
- Email Address: svc_contactsync@netsecdemo.com
- Bottom buttons: Apply and Cancel.

A self-signed certificate will be created and saved in the current user’s certificate store.

We suggest the subject field contains the Exchange Organization and the server where the connection is to be established.

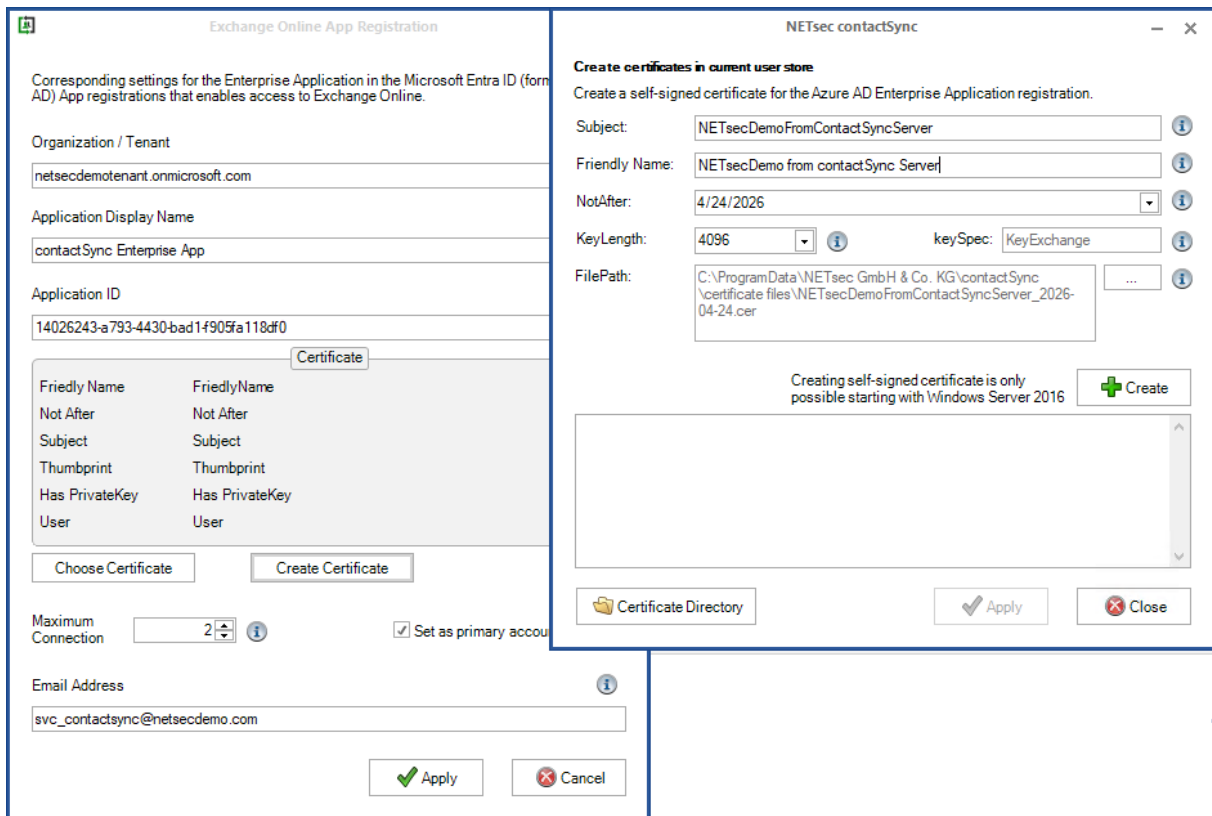
For example: The Exchange Organization is **NETsecDemo** and the name of the contactSync Server is **contactSyncServer**.

Subject: **NETsecDemoFromContactSyncServer**

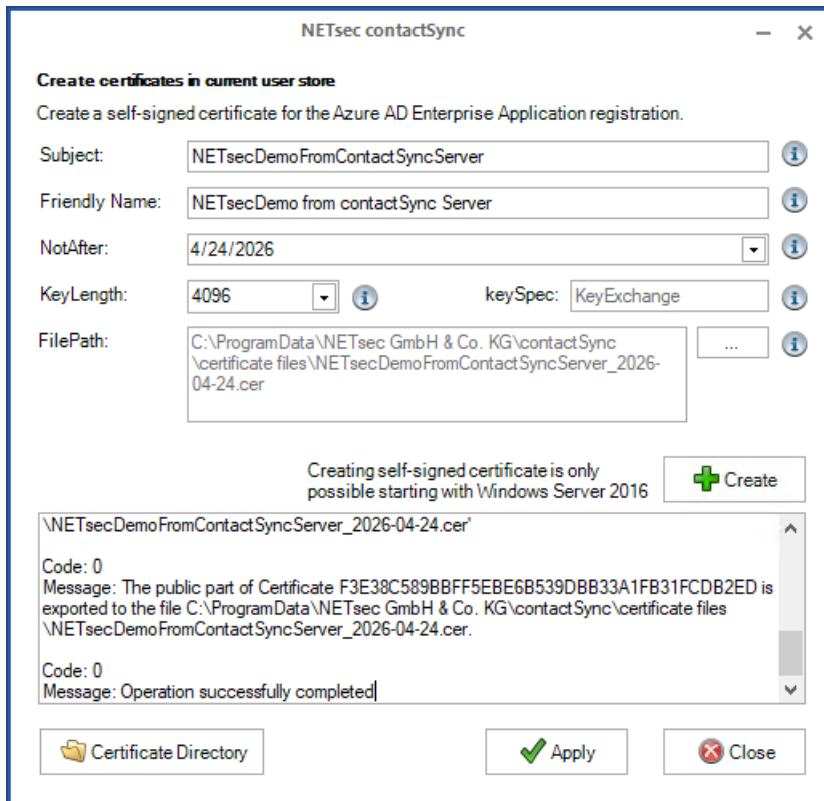
The friendly name can be expanded by adding spaces.

Friendly Name: **NETsecDemoTenant From contactSyncServer**

Click the **Create** button.



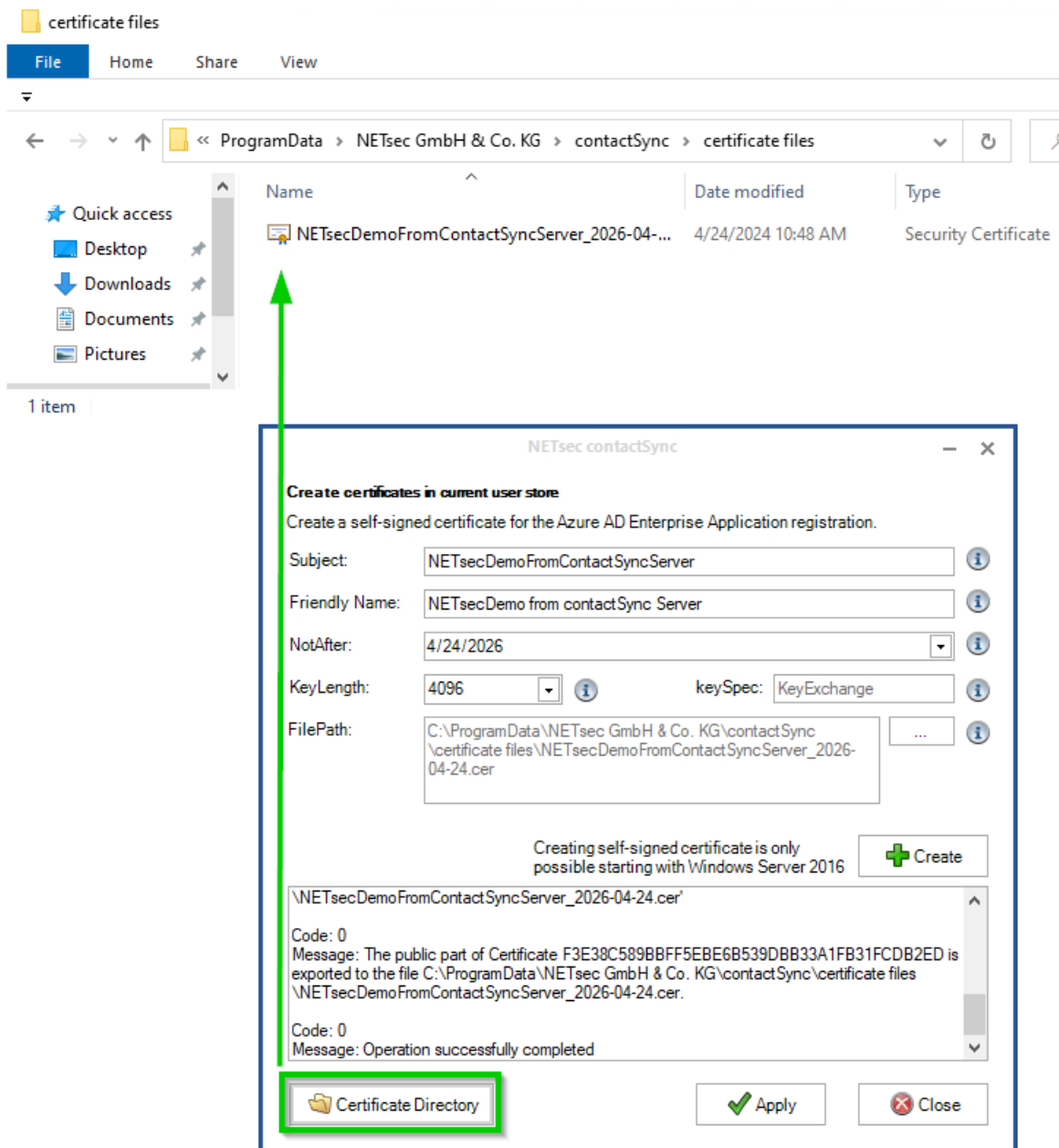
The certificate has been created.



Click the **Certificate Directory** button to open the directory where the certificate was saved.

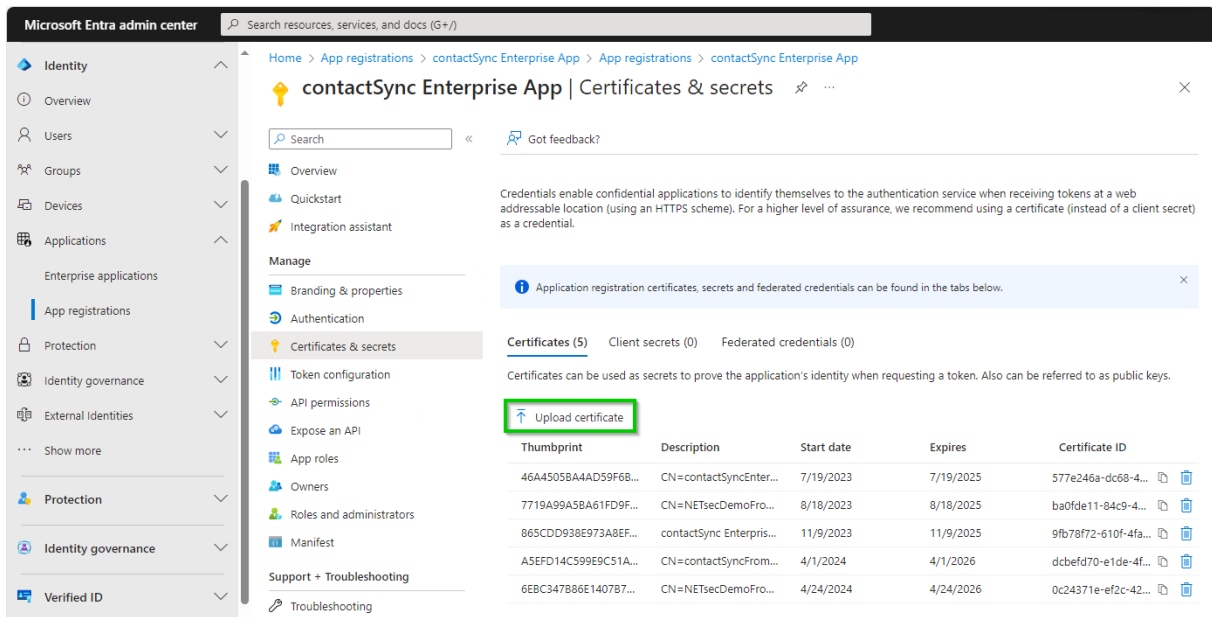
The default path is:

```
C:\ProgramData\NETsec GmbH & Co. KG\contactSync\certificate files
```



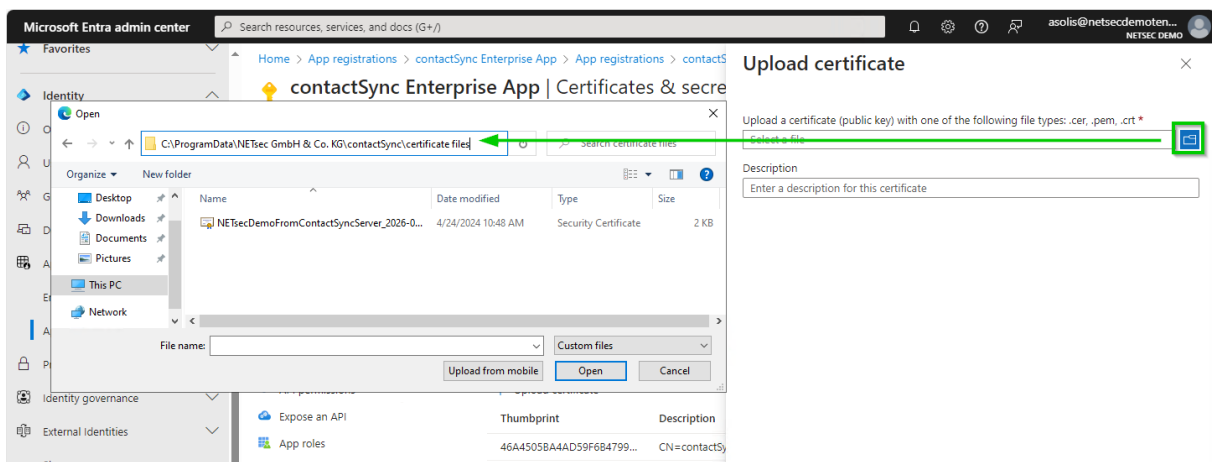
Copy the certificate directory path into clipboard

In Microsoft Entra ID, go to **Certificates and Secrets** and click **Upload certificate**.

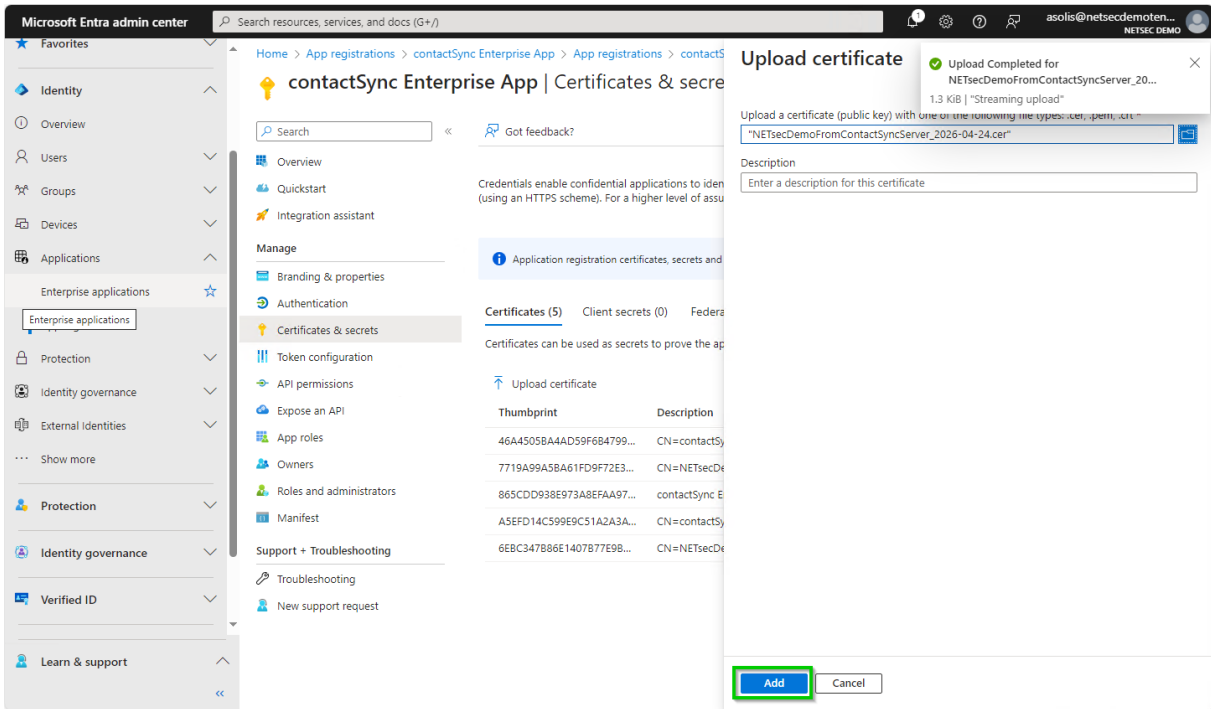


Paste the copied path from clipboard into the directory field in the search window.

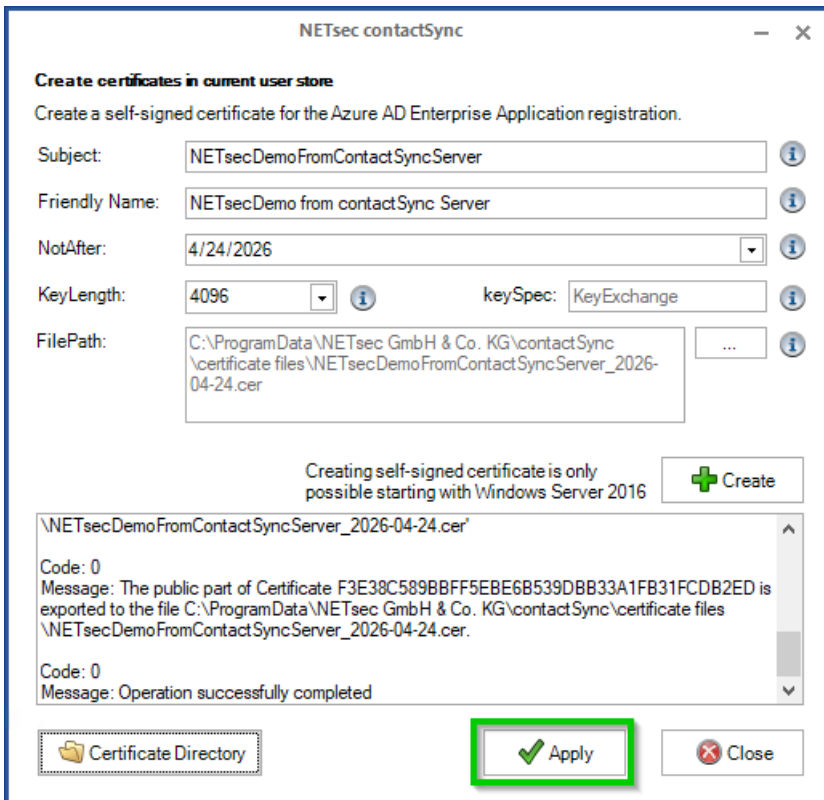
Select the certificate file, then click **Open**.



Click **Add** to save the certificate.



In the **Create certificates in current user store** window, click **Apply**



In the Exchange Online App Registration window, click **Apply**

Exchange Online App Registration

Corresponding settings for the Enterprise Application in the Microsoft Entra ID (formerly Azure AD) App registrations that enables access to Exchange Online.

Organization / Tenant i
netsecdemotenant.onmicrosoft.com

Application Display Name i
contactSync Enterprise App

Application ID i
14026243-a793-4430-bad1f905fa118df0


Certificate

Friendly Name	NETsecDemo from contactSync Server
Not After	2026-04-24
Subject	CN=NETsecDemoFromContactSyncServer
Thumbprint	F3E38C589BBFF5EBE6B539DBB33A1FB31FCDB2ED
Has PrivateKey	True
User	NETSECDEMO\svc_contactsync

Choose Certificate Create Certificate i

Maximum Connection i Set as primary account i

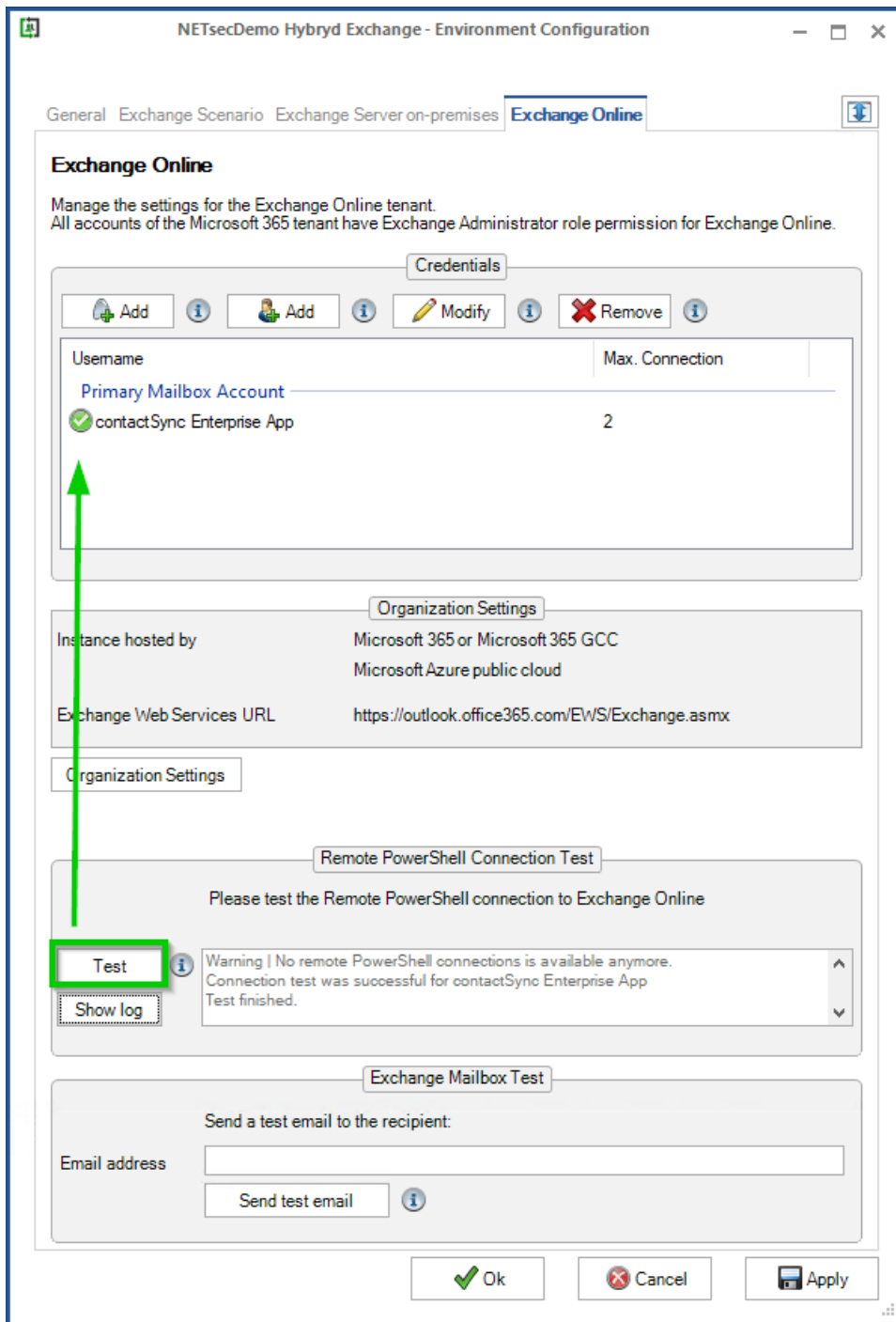
Email Address i
svc_contactsync@netsecdemo.com

To expand the Exchange Online tab, click the  icon, marked below.

Click the **Test** button to test the PowerShell connection to Exchange Online.

A green circle with a check mark indicates a successful connection has been established.

If the connection fails, please click the **Show log** button to locate and identify any errors which have occurred.



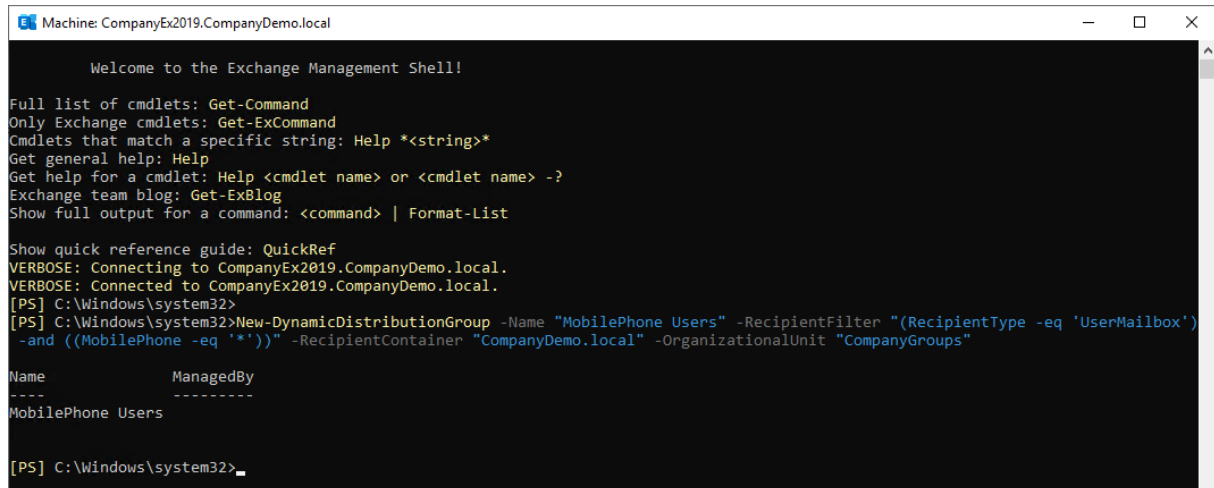
To save the changes, click **Apply** then **OK**

After applying the above changes, all contactSync policies should now run successfully.

How to create a Dynamic Distribution Group with mobile phone users by using the Exchange PowerShell

On-premises Exchange

Use the Exchange Management Shell of the on-premises Exchange to create the Dynamic Distribution Group



```
Machine: CompanyEx2019.CompanyDemo.local

Welcome to the Exchange Management Shell!

Full list of cmdlets: Get-Command
Only Exchange cmdlets: Get-ExCommand
Cmdlets that match a specific string: Help *<string>*
Get general help: Help
Get help for a cmdlet: Help <cmdlet name> or <cmdlet name> -?
Exchange team blog: Get-ExBlog
Show full output for a command: <command> | Format-List

Show quick reference guide: QuickRef
VERBOSE: Connecting to CompanyEx2019.CompanyDemo.local.
VERBOSE: Connected to CompanyEx2019.CompanyDemo.local.
[PS] C:\Windows\system32>
[PS] C:\Windows\system32>New-DynamicDistributionGroup -Name "MobilePhone Users" -RecipientFilter "(RecipientType -eq 'UserMailbox')
-and ((MobilePhone -eq '*'))" -RecipientContainer "CompanyDemo.local" -OrganizationalUnit "CompanyGroups"

Name                ManagedBy
----                -
MobilePhone Users

[PS] C:\Windows\system32>
```

Create Dynamic Distribution Group for mailbox users with a mobile phone number

Mailbox users with a mobile phone number is created in the **CompanyGroups** OU, and will search the entire Active Directory.

Please adjust the Active Directory domain name and the OU name to your environment.

```
New-DynamicDistributionGroup -Name "MobilePhone Users" -RecipientFilter
"(RecipientType -eq 'UserMailbox') -and (MobilePhone -eq '*')" -RecipientContainer
"CompanyDemo.local" -OrganizationalUnit "CompanyGroups"
```

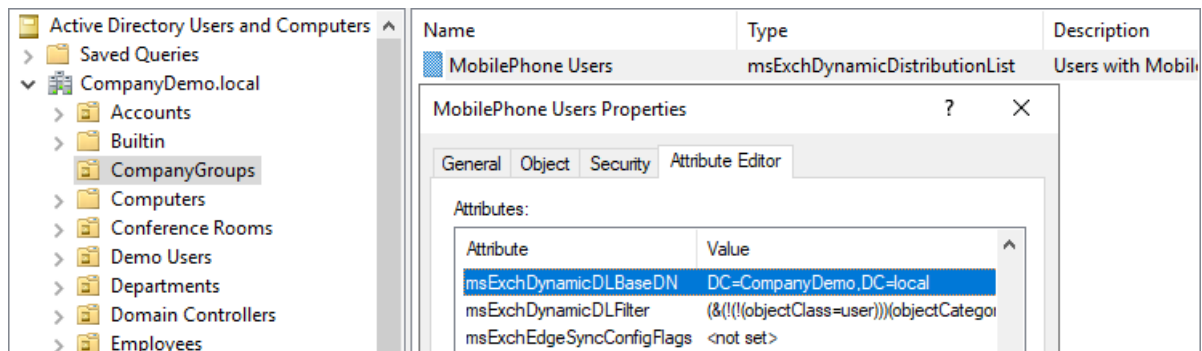
Create Dynamic Distribution Group for mailbox users and mail users with a mobile phone number

Mailbox users and mail users with a mobile phone number is created in the **CompanyGroups** OU, and will search the entire Active Directory.

Please adjust the Active Directory domain name and the OU name to your environment.

```
New-DynamicDistributionGroup -Name "MobilePhone Users" -RecipientFilter
"((RecipientType -eq 'UserMailbox') -or (RecipientType -eq 'MailUser')) -and
(MobilePhone -eq '*')" -RecipientContainer "CompanyDemo.local" -OrganizationalUnit
"CompanyGroups"
```

Check it in the on-premises Active Directory:



msExchDynamicDLBaseDN start searching at this point of the Active Directory

msExchDynamicDLFilter corresponding LDAP-Filter for the AD search

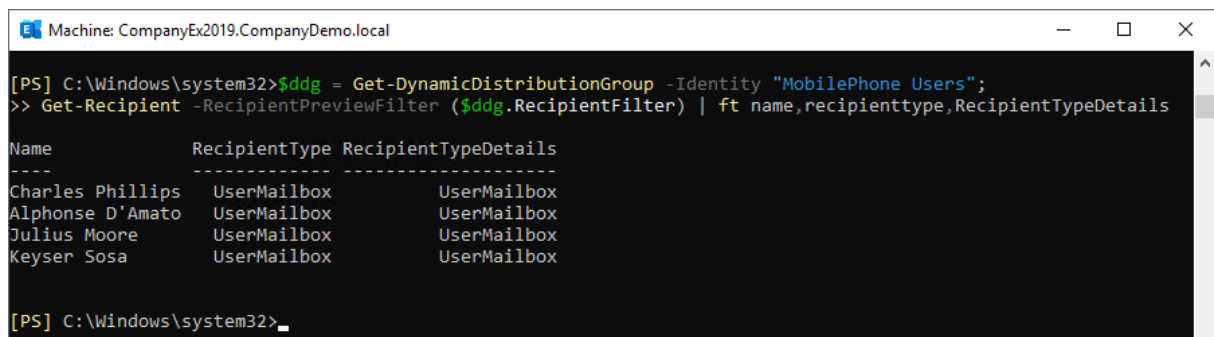
For example: mailbox users with a mobile phone number

```
(&(!(objectClass=user))(objectCategory=person)(mailNickname=*)(msExchHomeServerName=*)(mobile=\2a)(!(name=SystemMailbox{*)})(!(name=CAS_{*}))(!(msExchRecipientTypeDetails=16777216))(!(msExchRecipientTypeDetails=536870912))(!(msExchRecipientTypeDetails=68719476736))(!(msExchRecipientTypeDetails=8388608))(!(msExchRecipientTypeDetails=4398046511104))(!(msExchRecipientTypeDetails=70368744177664))(!(msExchRecipientTypeDetails=140737488355328)))
```

To verify membership of the group, please run the following script:

```
$ddg = Get-DynamicDistributionGroup -Identity "MobilePhone Users";
Get-Recipient -RecipientPreviewFilter ($ddg.RecipientFilter) | ft
name,recipienttype,recipienttypedetails
```

Output displayed below:



Modify Dynamic Distribution Group for mailbox users and mail users with a mobile phone number which are shown in the address list

The recipient filter is modified to only mobile phone users which are not hidden from the Address List by running the **Set-DynamicDistributionGroup** cmdlet

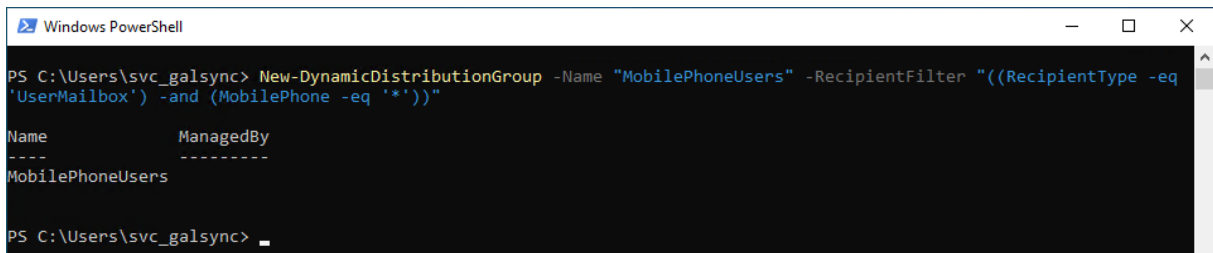
```
Set-DynamicDistributionGroup -Identity "MobilePhone Users" -RecipientFilter
{(((RecipientType -eq 'UserMailbox') -or (RecipientType -eq 'MailUser')) -and
(MobilePhone -eq '*') -and (HiddenFromAddressListsEnabled -eq $false))} -
RecipientContainer "CompanyDemo.local"
```

Exchange Online

Use the Exchange Online PowerShell to create the Dynamic Distribution Group in Exchange Online

Windows PowerShell 5.1 with the Exchange Online PowerShell module:

```
Connect-ExchangeOnline
```



```
Windows PowerShell
PS C:\Users\svc_galsync> New-DynamicDistributionGroup -Name "MobilePhoneUsers" -RecipientFilter "((RecipientType -eq
'UserMailbox') -and (MobilePhone -eq '*'))"
Name           ManagedBy
----           -
MobilePhoneUsers
PS C:\Users\svc_galsync> _
```

Create Dynamic Distribution Group for mailbox users with a mobile phone number

Mailbox users with a mobile phone number

```
New-DynamicDistributionGroup -Name "MobilePhone Users" -RecipientFilter
"((RecipientType -eq 'UserMailbox') -and (MobilePhone -eq '*'))"
```

Create Dynamic Distribution Group for mailbox users and mail users with a mobile phone number

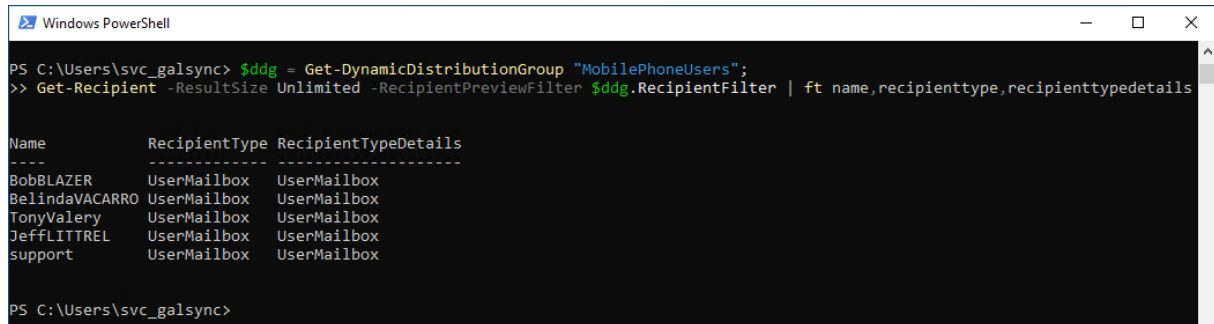
Mailbox users with a mobile phone number

```
New-DynamicDistributionGroup -Name "MobilePhone Users" -RecipientFilter
"((RecipientType -eq 'UserMailbox') -or (RecipientType -eq 'MailUser')) -and
(MobilePhone -eq '*")"
```

To verify membership of the group, please run the following script:

```
$ddg = Get-DynamicDistributionGroup "MobilePhone Users";  
Get-Recipient -ResultSize Unlimited -RecipientPreviewFilter $ddg.RecipientFilter |  
ft name,recipienttype,recipienttypedetails
```

Output displayed below:



```
Windows PowerShell  
PS C:\Users\svc_galsync> $ddg = Get-DynamicDistributionGroup "MobilePhoneUsers";  
>> Get-Recipient -ResultSize Unlimited -RecipientPreviewFilter $ddg.RecipientFilter | ft name,recipienttype,recipienttypedetails  
  
Name            RecipientType RecipientTypeDetails  
-----  
BobBLAZER       UserMailbox   UserMailbox  
BelindaVACARRO  UserMailbox   UserMailbox  
TonyValery      UserMailbox   UserMailbox  
JeffLITTREL     UserMailbox   UserMailbox  
support         UserMailbox   UserMailbox  
  
PS C:\Users\svc_galsync>
```

Modify Dynamic Distribution Group for mailbox users and mail users with a mobile phone number which are shown in the address list

The recipient filter is modified to only mobile phone users which are not hidden from the Address List by running the **Set-DynamicDistributionGroup** cmdlet

```
Set-DynamicDistributionGroup -Identity "MobilePhone Users" -RecipientFilter  
{(((RecipientType -eq 'UserMailbox') -or (RecipientType -eq 'MailUser')) -and  
(MobilePhone -eq '*') -and (HiddenFromAddressListsEnabled -ne $true))}
```

How to switch to Microsoft Graph to access mailboxes in Exchange Online

As of version 8.5, contactSync supports **Microsoft Graph** to access mailboxes in Exchange Online.

The following changes in the assigned API permissions of the App Registration in the **Microsoft Entra ID** are necessary to use Microsoft Graph to access mailboxes in Exchange Online.

The registered Application in App registrations

In the Microsoft Entra admin center menu, go to **Identity**, expand **Applications** and select **App registrations**.

The screenshot shows the Microsoft Entra admin center interface. The left sidebar contains the navigation menu with 'App registrations' highlighted. The main content area displays the 'App registrations' page for the 'contactSync Enterprise App'. A table lists the application with the following details:

Display name	Application (client) ID	Created on	Certificates & secrets
contactSync Enterprise App	2653598a-4b3e-4ad4-a59f-2f504bf2ba52	8/18/2023	Current

Select the registered Application to see the **API permissions**.

The screenshot shows the 'API permissions' page for the 'contactSync Enterprise App'. The left sidebar has 'API permissions' highlighted. The main content area displays the 'API permissions' page with the following table:

API / Permissions na...	Type	Description	Admin consent req...	Status
Office 365 Exchange C				
Exchange.Manage!	Application	Manage Exchange As Application	Yes	Granted for NETSec Demo
full_access_as_app	Application	Use Exchange Web Services with full ...	Yes	Granted for NETSec Demo

The **Exchange.ManageAsApp** permission is also required to access Exchange Online mailboxes via **Microsoft Graph**.

API / Permissions name	Type	Description	Admin consent requ...	Status
Office 365 Exchange Online (2)				
Exchange.ManageAsApp	Application	Manage Exchange As Application	Yes	Granted for NETsec Demo
full_access_as_app	Application	Use Exchange Web Services with full access to all mailboxes	Yes	Granted for NETsec Demo

The **full_access_as_app** permission allows to access Exchange Online mailboxes via **Exchange Web Services** and is not needed to access Exchange Online mailboxes via **Microsoft Graph**.

Remove API permission for Exchange Web Services, if applicable

The **full_access_as_app** permission can be removed, except you use contactSync policies, which are **synchronizing contacts from a Public Folder**, that are located in Exchange Online, which at the moment need the **full_access_as_app** permission for Exchange Web Services.

If the **full_access_as_app** permission is not be needed anymore, it is necessary to **Revoke admin consent** first and then to **Remove permission** at the context menu of the permission entry.

API / Permissions name	Type	Description	Admin consent requ...	Status
Office 365 Exchange Online (2)				
Exchange.ManageAsApp	Application	Manage Exchange As Application	Yes	Granted for NETsec Demo
full_access_as_app	Application	Use Exchange Web Services with full access to all mailboxes	Yes	Granted for NETsec Demo

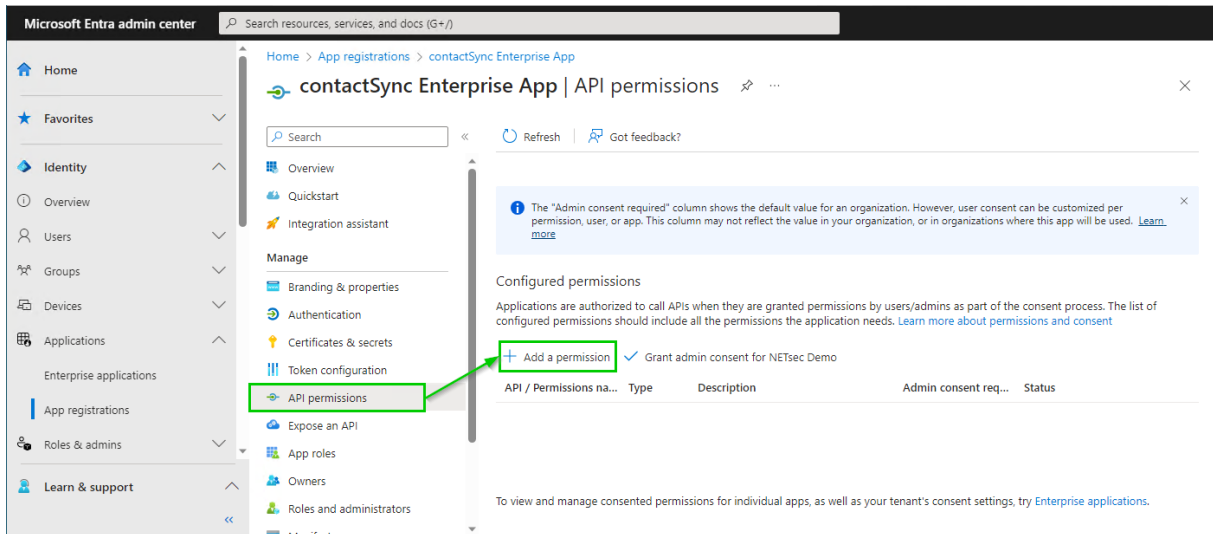
Remove permission

Revoke admin consent

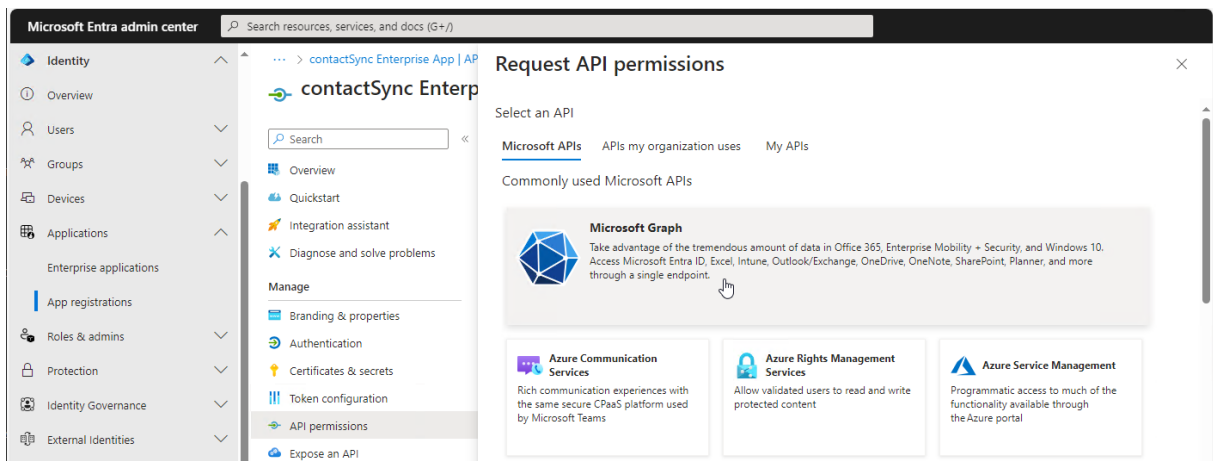
To view and manage consented permissions for individual apps, as well as your tenant's consent settings, try [Enterprise applications](#).

API permissions for Microsoft Graph

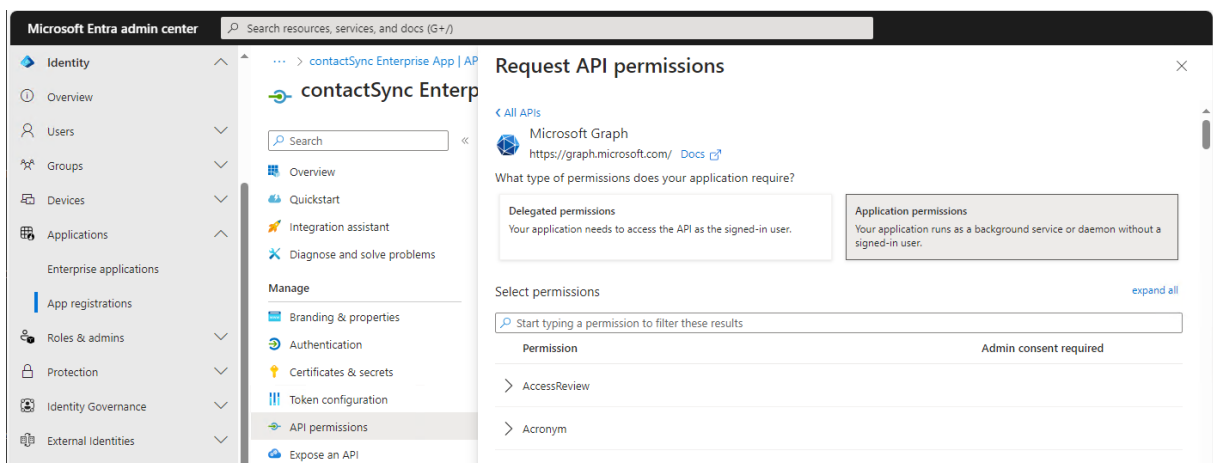
Go to **API permissions**, then select **Add a permission**



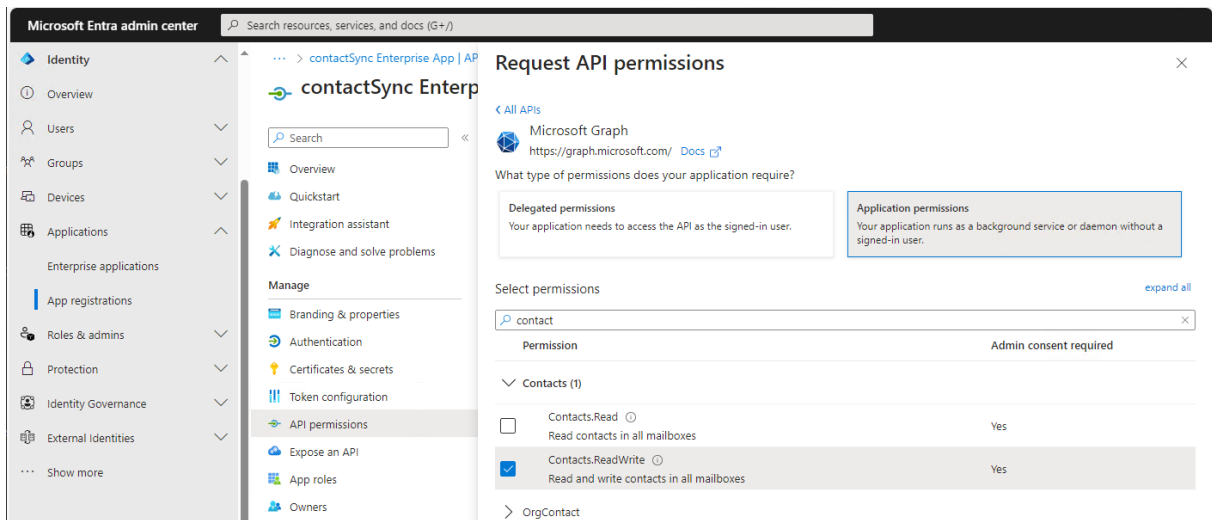
Select the **Microsoft APIs** and click on **Microsoft Graph**



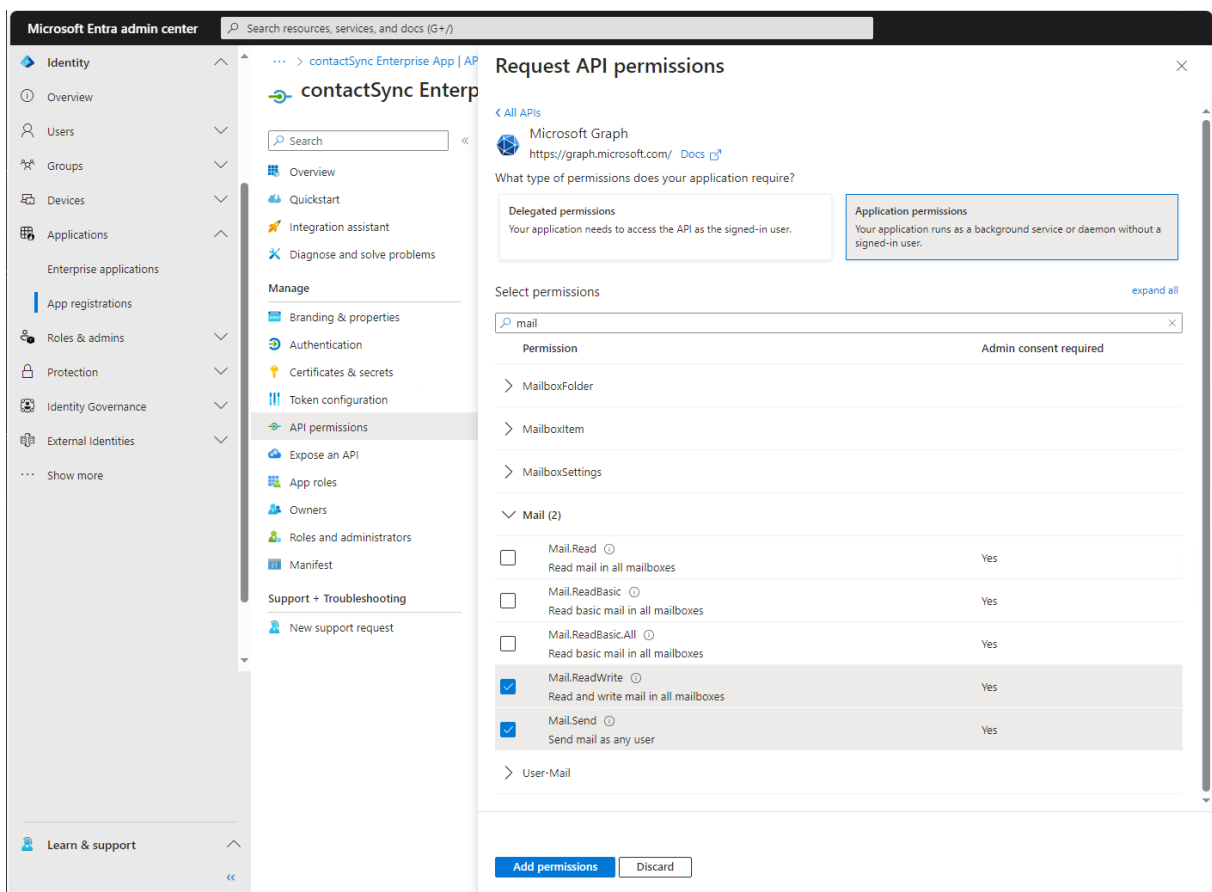
Select **Application permissions**



Search for **contact** and expand the **Contacts** in the result list.
Select
Contacts.ReadWrite



Search for **mail** and expand the **Mail** in the result list.
Select
Mail.ReadWrite
and
Mail.Send



Click **Add permissions**

Click **Grant admin consent** for your tenant.

The screenshot shows the Microsoft Entra admin center interface. The left-hand navigation pane is open to 'API permissions' under 'App registrations'. The main content area displays the 'contactSync Enterprise App | API permissions' page. At the top, there is a search bar and a 'Grant admin consent for NETSec Demo' button. Below this, a table lists configured permissions:

API / Permissions name	Type	Description	Admin consent required	Status
Microsoft Graph (3)				
Contacts.ReadWrite	Application	Read and write contacts in a...	Yes	Not granted for NETSec ...
Mail.ReadWrite	Application	Read and write mail in all ma...	Yes	Not granted for NETSec ...
Mail.Send	Application	Send mail as any user	Yes	Not granted for NETSec ...
Office 365 Exchange Online (2)				
Exchange.ManageAsApp	Application	Manage Exchange As Applic...	Yes	Granted for NETSec Demo ...

At the bottom of the page, there is a link to 'Enterprise applications' for managing consented permissions.

Click **Yes** to confirm the consent.

The screenshot shows the same Microsoft Entra admin center interface as above, but with a 'Grant admin consent confirmation' dialog box overlaid. The dialog box contains the following text:

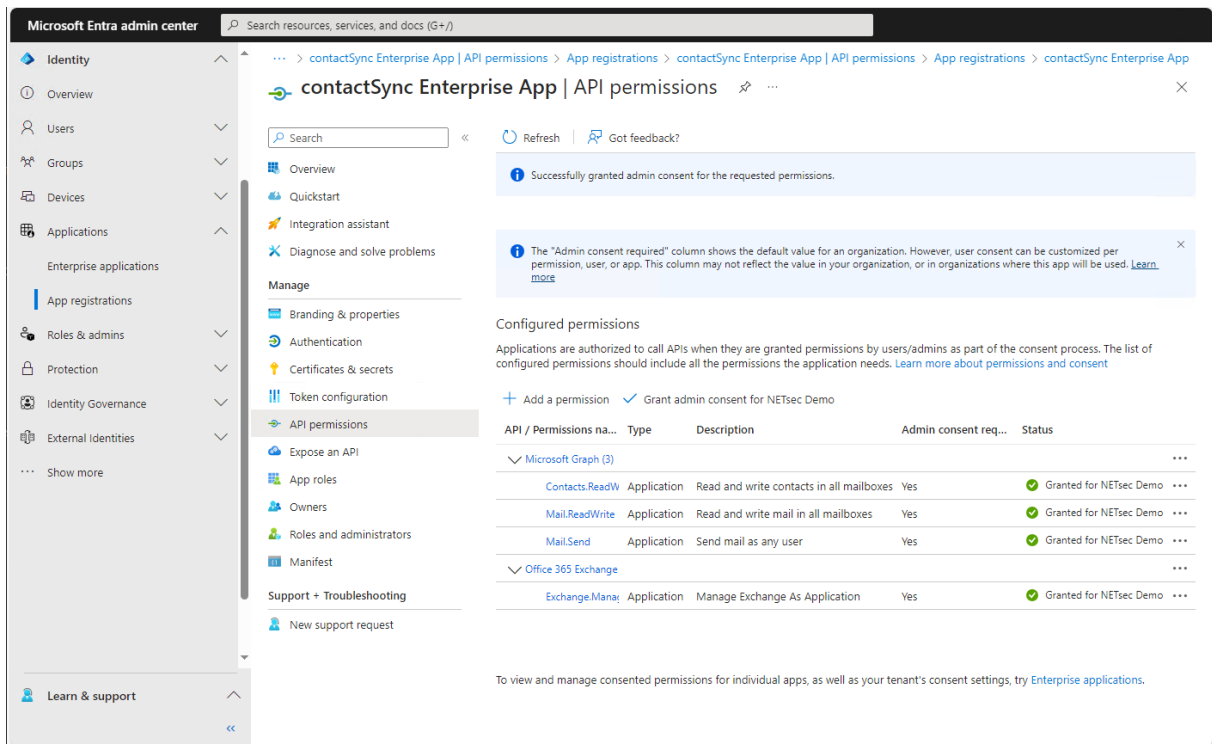
Grant admin consent confirmation.
Do you want to grant consent for the requested permissions for all accounts in NETSec Demo? This will update any existing admin consent records this application already has to match what is listed below.

There are 'Yes' and 'No' buttons. The 'Yes' button is highlighted, indicating it is the intended action.

The background content, including the 'API permissions' table, is visible but slightly dimmed behind the dialog box.

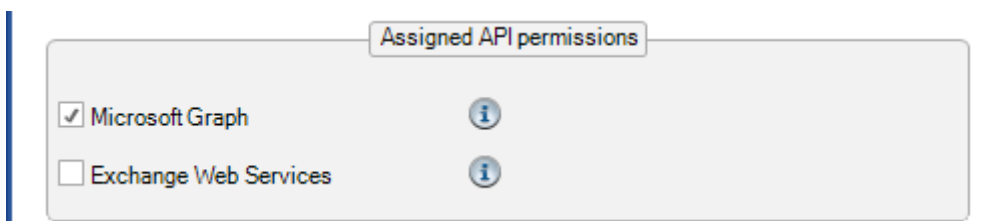
API permissions are assigned to the registered Application.

Policies synchronizing contacts from Exchange Online and from Shared Mailboxes, which are located in Exchange Online, need these API permissions.



Update the Environment Configuration in contactSync

Accordingly, select **Microsoft Graph** at the **Assigned API permissions** group box in the **Exchange Online App Registration** dialog and uncheck the **Exchange Web Services**, if you have removed the **full_access_as_app** permission.





General Exchange Scenario Exchange Server on-premises **Exchange Online**

Exchange Online

Manage the settings for the Exchange Online tenant.
All accounts of the Microsoft 365 tenant have Exchange Administrator role permission for Exchan

Credentials

Username	Max. Connection
Primary Mailbox Account	
contactSync Enterprise App	2



Exchange Online App Registration



Corresponding settings for the Enterprise Application in the Microsoft Entra ID (formerly Azure AD) App registrations that enables access to Exchange Online.

Organization / Tenant

Application Display Name

Application ID

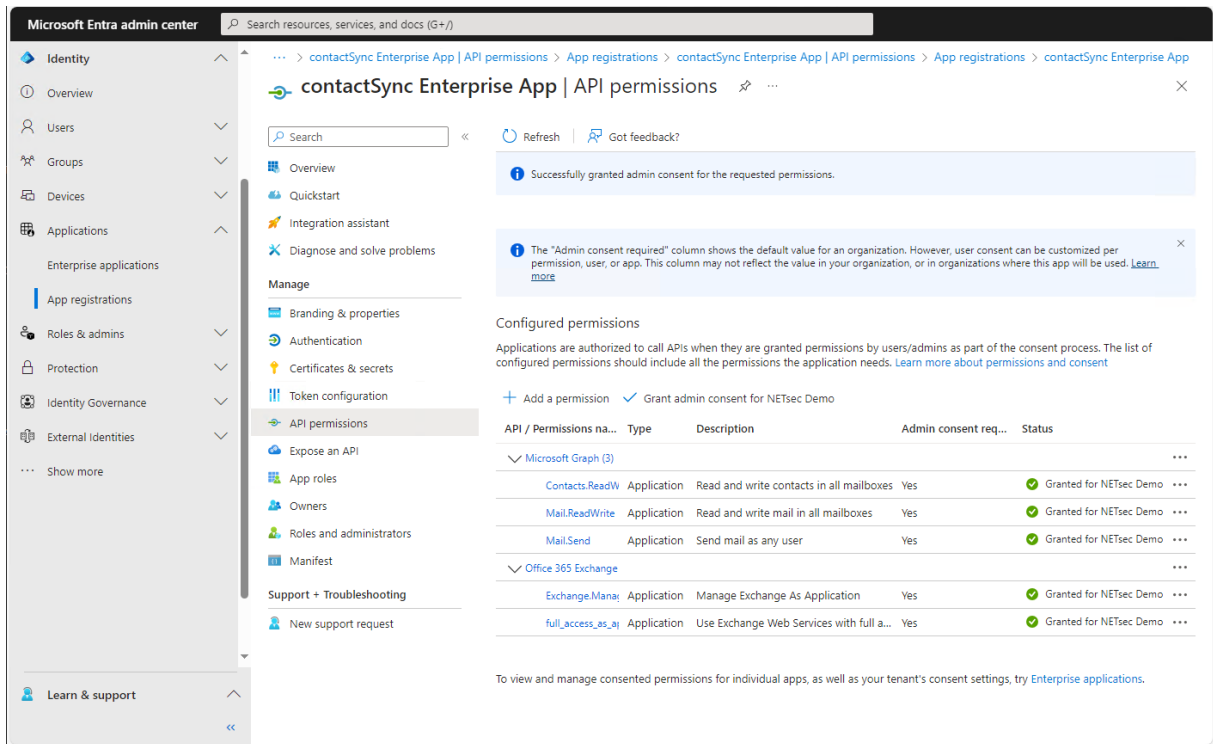
Certificate

Friendly Name	NETsecDemo from contactSync03
Not After	2026-04-25
Subject	CN=NETsecDemoFromContactSync03
Thumbprint	321613DED9AB176F724BB5D38B2A428E8FB2208
Has PrivateKey	True
User	NETSECDEMO\svc_contactsync

Assigned API permissions

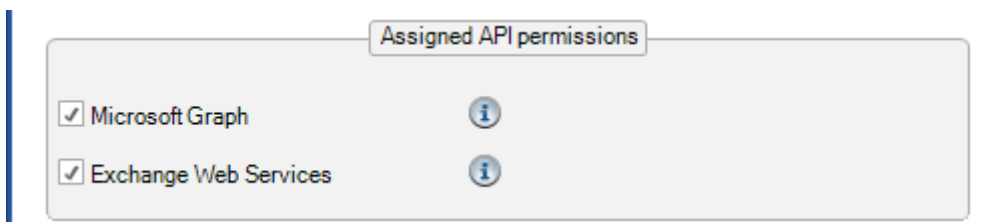
- Microsoft Graph
- Exchange Web Services

Policies synchronizing contacts from Public Folder, which are located in Exchange Online, which at the moment need the permission for Exchange Web Services.



Update the Environment Configuration in contactSync

Accordingly, select **Microsoft Graph** and **Exchange Web Services** at the **Assigned API permissions** group box in the **Exchange Online App Registration** dialog.





General Exchange Scenario Exchange Server on-premises **Exchange Online**

Exchange Online

Manage the settings for the Exchange Online tenant.
All accounts of the Microsoft 365 tenant have Exchange Administrator role permission for Exchan

Credentials

Username	Max. Connection
Primary Mailbox Account	
contactSync Enterprise App	2



Exchange Online App Registration



Corresponding settings for the Enterprise Application in the Microsoft Entra ID (formerly Azure AD) App registrations that enables access to Exchange Online.

Organization / Tenant

netsecdemotenant.onmicrosoft.com

Application Display Name

contactSync Enterprise App

Application ID

14026243-a793-4430-bad1f905fa118df0

Certificate

Friendly Name	NETsecDemo from contactSync03
Not After	2026-04-25
Subject	CN=NETsecDemoFromContactSync03
Thumbprint	321613DED9AB176F724BB5D38B2A428E8FB2208
Has PrivateKey	True
User	NETSECDEMO\svc_contactsync

Choose Certificate

Create Certificate

Assigned API permissions

- Microsoft Graph
- Exchange Web Services

How to switch from user-based authentication to certificate-based authentication

As of February, 2025 Microsoft has mandated MFA to authenticate to Microsoft 365.

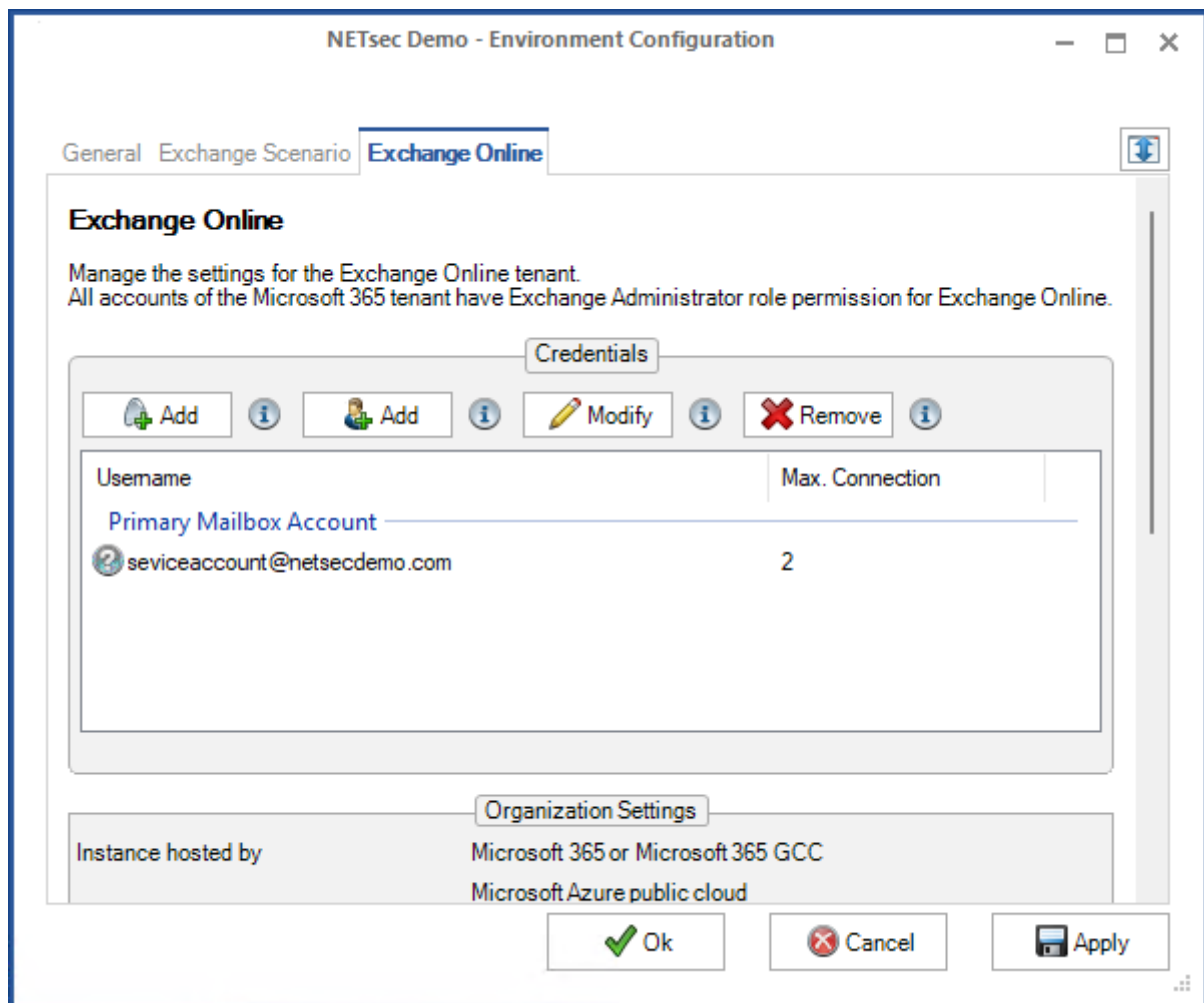
Microsoft 365 Blog - Announcing mandatory multifactor authentication for the Microsoft 365 admin

https://techcommunity.microsoft.com/blog/microsoft_365blog/announcing-mandatory-multifactor-authentication-for-the-microsoft-365-admin-cent/4232568

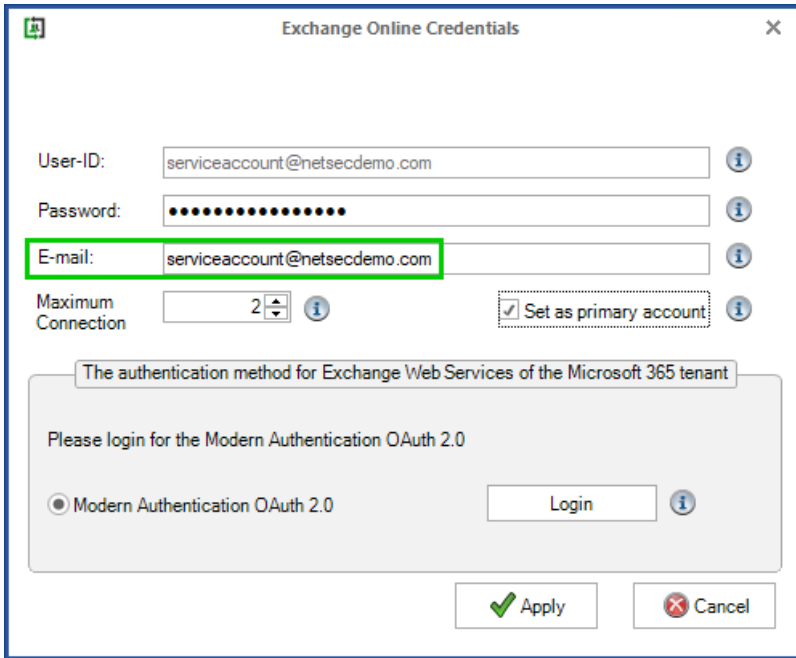
Due to this requirement, user credentials will need to be removed from the contactSync **Environment Configuration**, and replaced with certificate authentication via App Registration.

Note the e-mail address of the service account used and delete the user-based credential

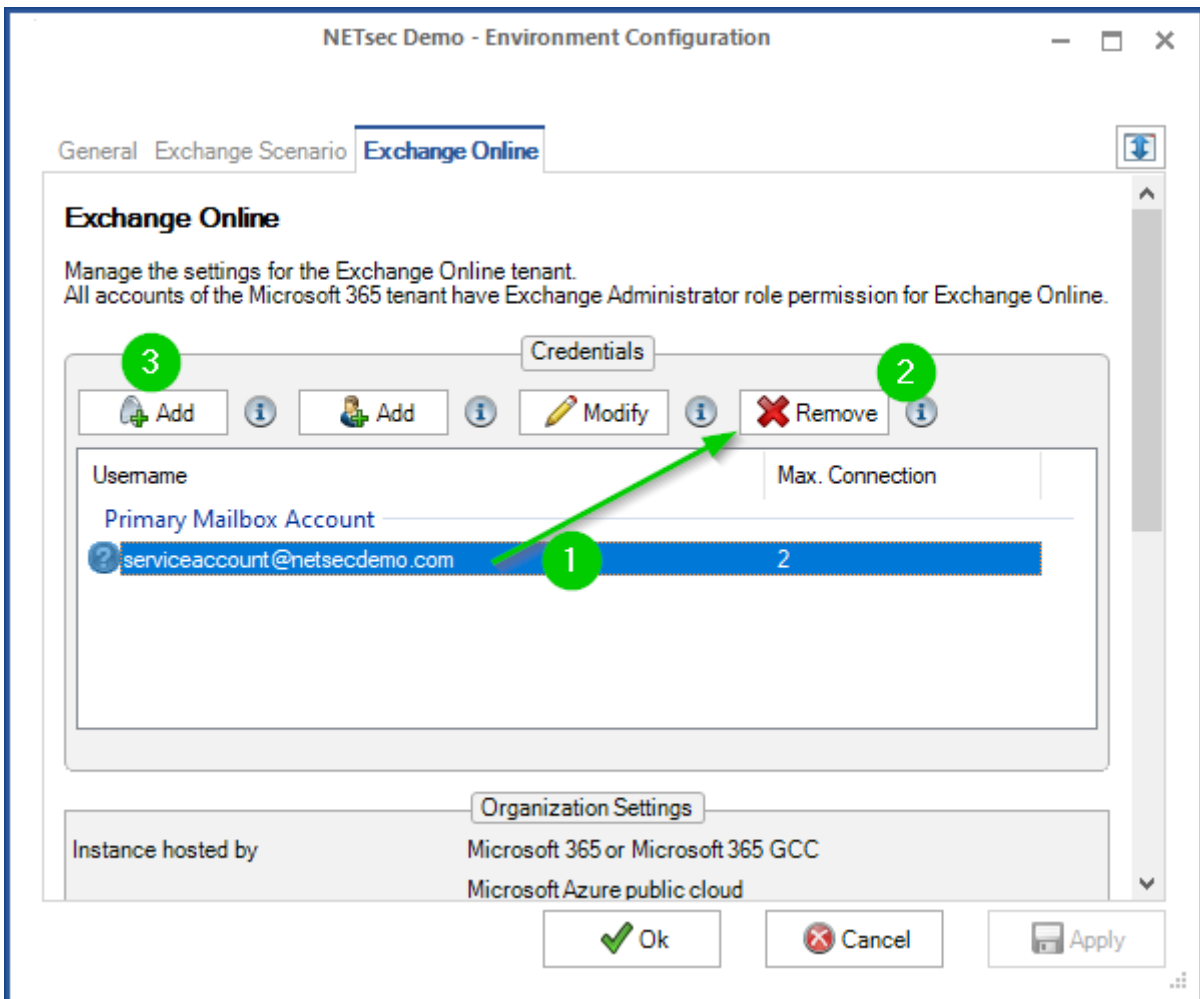
To make this switch, please open the **Environment Configuration** and select the **Exchange Online** tab.



Then double-click the **Primary Mailbox Account** to open the **Exchange Online Credentials** dialog window, and note the primary E-mail address which has been used.



After noting this, please close the dialog window and select the primary mailbox account, then click the remove button



Create a certificate-based credential and use the mailbox of the service account

Next, click the **Add** button on the left to open the **Exchange Online App Registration** dialog window, shown below. Check the **Set as Primary account** in the checkbox and insert the previously noted email address into the **Email Address** field.

For further instructions, please see the section titled **Exchange Online certificate-based authentication via App Registration**.

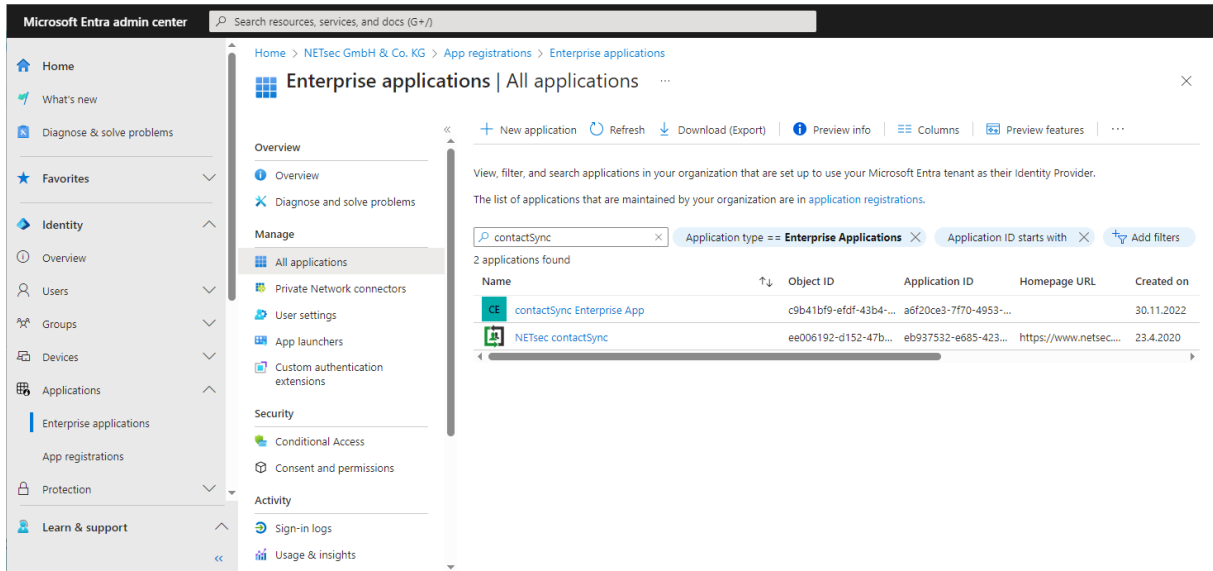
The screenshot shows the 'Exchange Online App Registration' dialog box. It contains the following fields and options:

- Organization / Tenant**: Text input field.
- Application Display Name**: Text input field.
- Application ID**: Text input field.
- Certificate** section:
 - Fields: Friendly Name, Not After, Subject, Thumbprint, Has PrivateKey, User.
 - Buttons: **Choose Certificate** and **Create Certificate**.
- Assigned API permissions** section:
 - Microsoft Graph**
 - Exchange Web Services**
- Maximum Connection**: Spinner box set to 2.
- Set as primary account**
- Email Address**: Text input field containing 'serviceaccount@netsecdemo.com'.
- Buttons: **Apply** and **Cancel**.

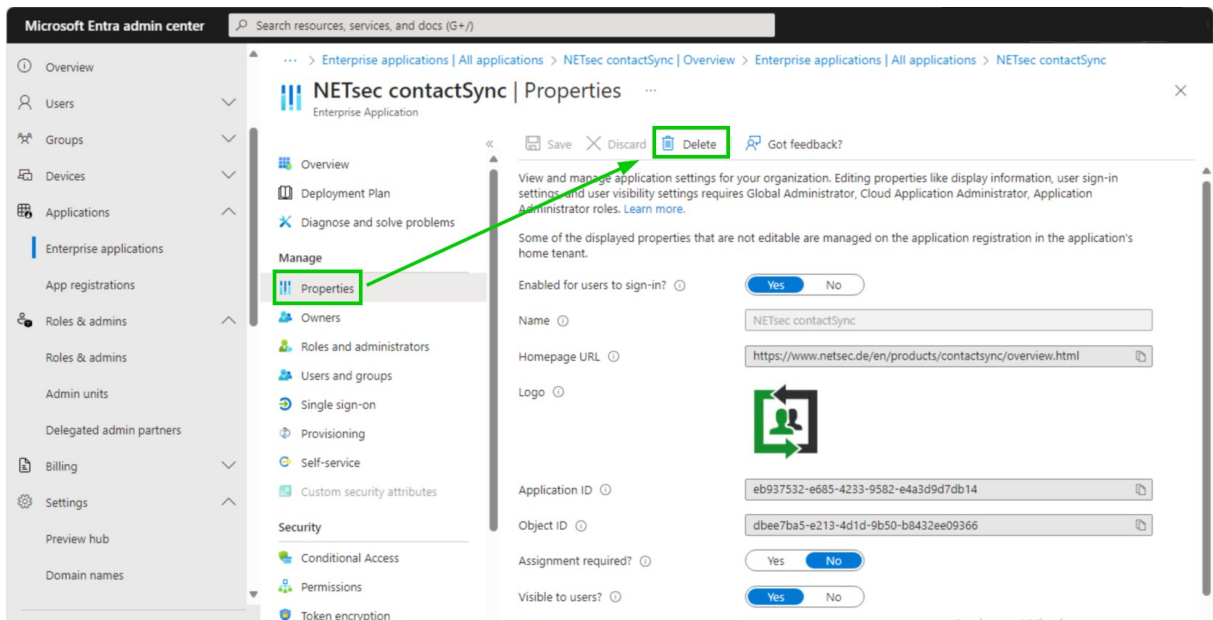
After switching to certificate-based authentication, remove the permission of the user-based authentication in Microsoft Entra ID

Remove Enterprise Application **NETsec contactSync**, which was created by Modern Authentication OAuth 2.0.

To accomplish this, in the **Microsoft Entra Admin Center**, go to **Applications > Enterprise Applications > All applications**, and search for **contactSync**.

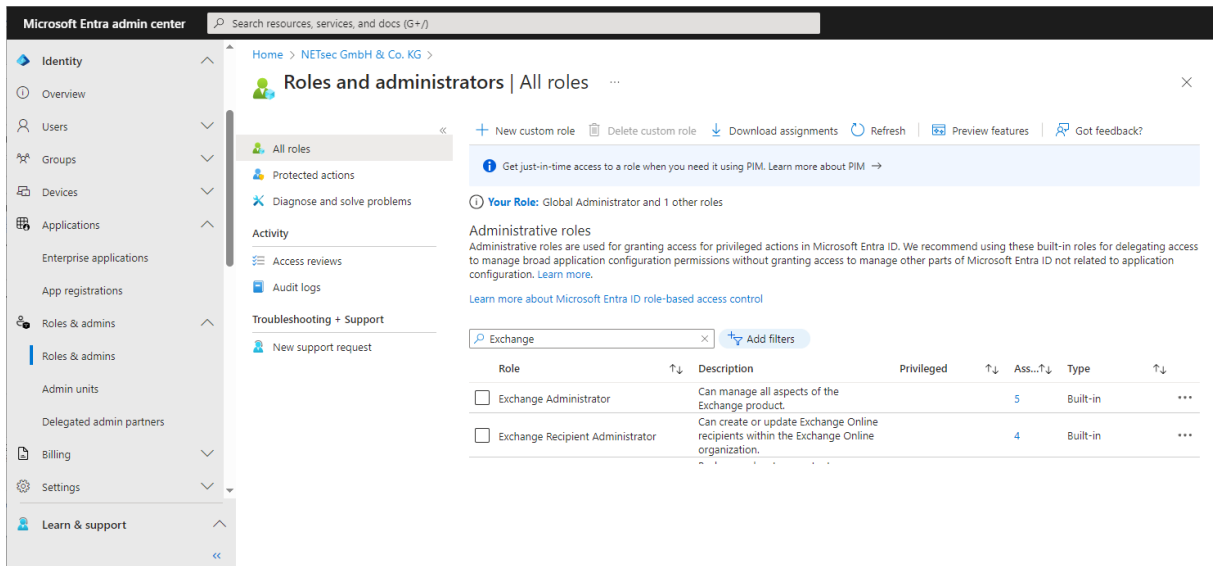


Select **NETsec contactSync**, then go to **Properties**, and click **Delete**.

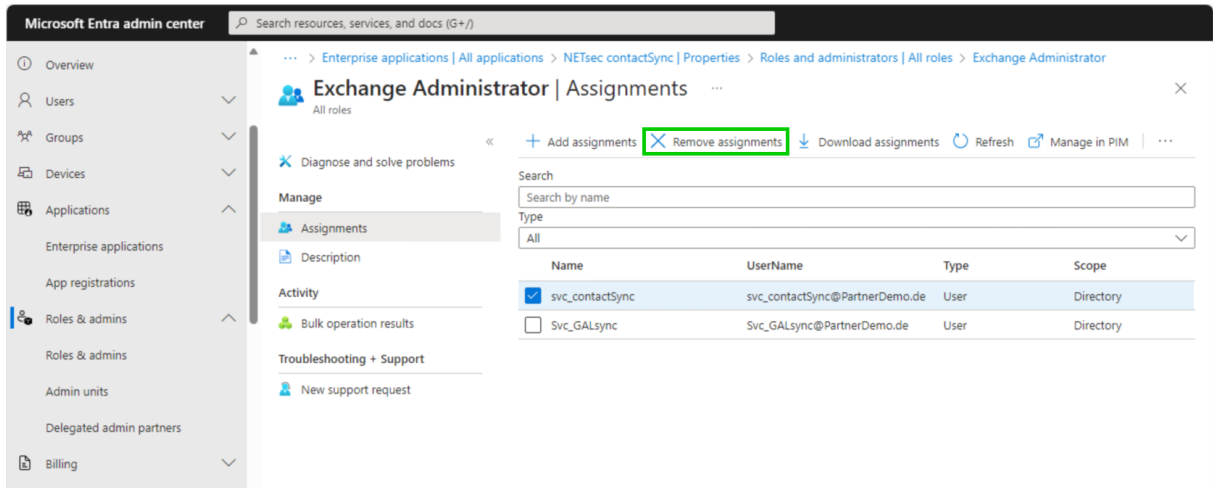


Next, remove the service account from the **Exchange Administrator** role and/or **Exchange Recipient Administrator**.

To accomplish this, go to **Roles and Admins > Roles and Admins > All Roles**, then search for **Exchange** and select the relevant role (**Exchange Administrator** or **Exchange Recipient Administrator**).



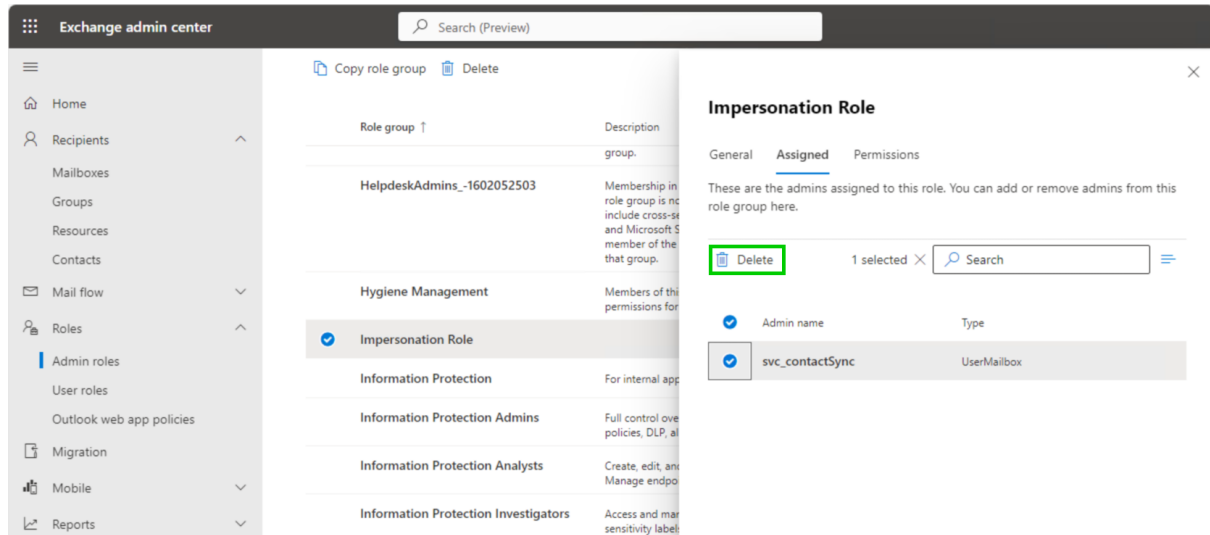
On the **Assignments** page, check the checkbox which corresponds to the contactSync account then click **Remove assignments**.



Remove the service account from the **Application Impersonation Role** in the **Exchange Admin Center** of Exchange Online.

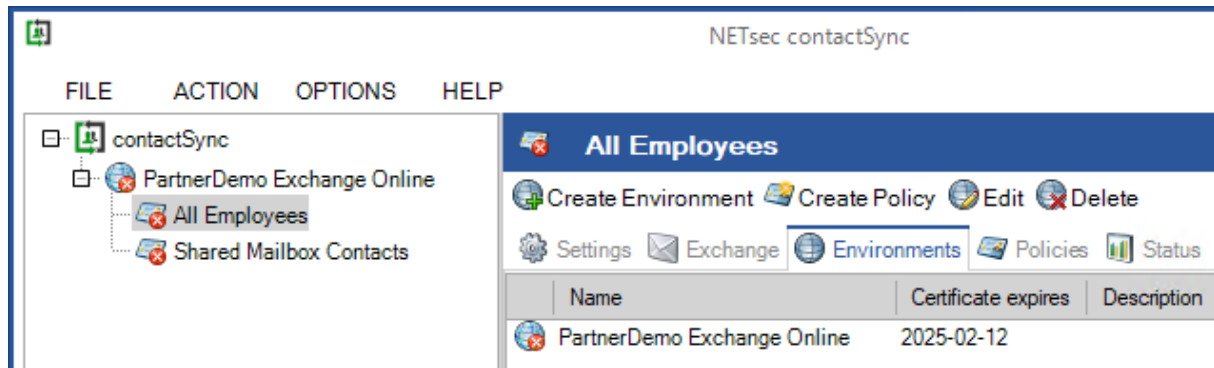
Important: *the Application Impersonation Role in the Exchange Admin Center of the on-premises Exchange Server are still necessary for the service account to synchronize contacts into mailboxes with contactSync.*

In the **Exchange Admin Center**, navigate to **Roles > Admin Roles** and click onto the **Impersonation Role**. Go to the **Assigned** tab and select the account, then click **Delete**.

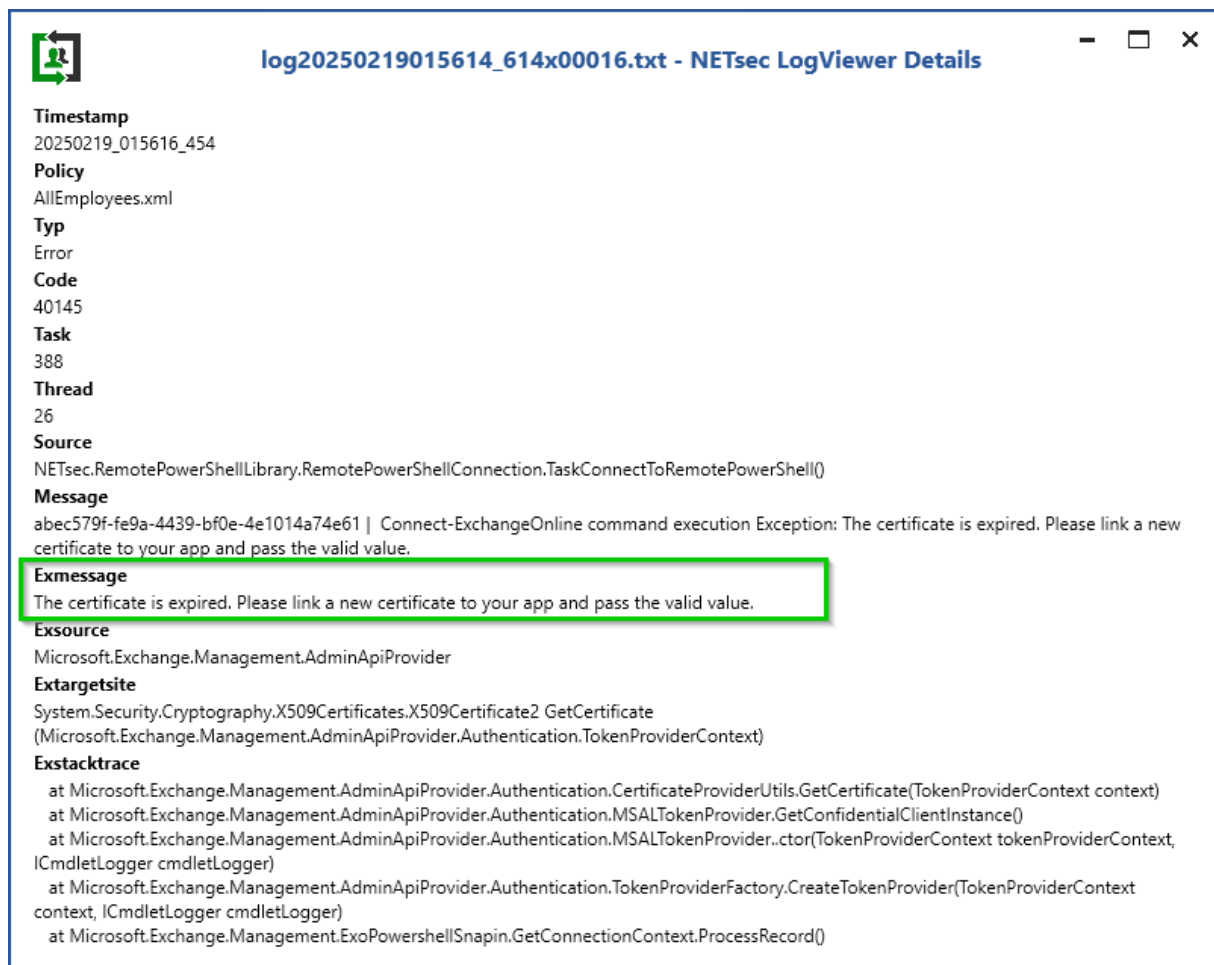


How to recreate an expired App registrations Certificate

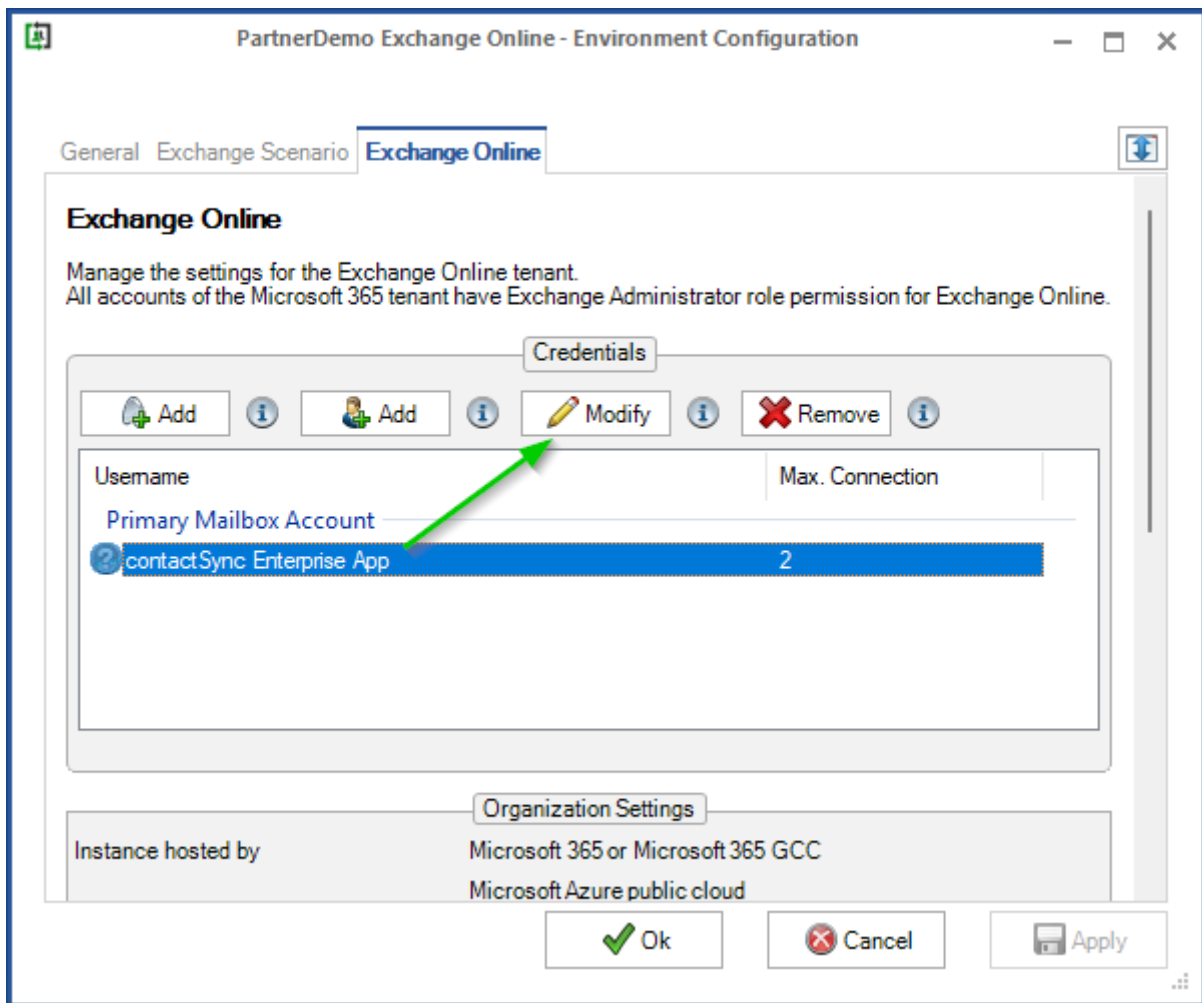
If the **App Registrations certificate** has expired, the associated Environment Configuration and policies will be tagged with a red X, and it will be necessary to generate a new certificate to be uploaded to the **App Registration** in **Microsoft Entra ID**.



The log entry below confirms the certificate has expired and a new one will need to be linked to the application.



To create a new certificate, go to the **Environment Configuration** and select the **Account** used for **App registration** (*contactSync Enterprise App*), then click **Modify**.



In the **Exchange Online App Registration** window, click **Create Certificate**.

The screenshot shows the 'Exchange Online App Registration' window. At the top, it states: 'Corresponding settings for the Enterprise Application in the Microsoft Entra ID (formerly Azure AD) App registrations that enables access to Exchange Online.'

Fields and values:

- Organization / Tenant: partnerdemotenant.onmicrosoft.com
- Application Display Name: contactSync Enterprise App
- Application ID: aefb5e6d-7de6-4cbb-90df-93dcc5a9205f

Certificate section:

Friendly Name	ParnterDemo Tenant From PartnerContactsync05
Not After	2025-02-12
Subject	CN=ParnterDemoTenantFromPartnerContactsync05
Thumbprint	0794EB68D293205A246717A97C3963E0F7428FD9
Has PrivateKey	True
User	PARTNERDEMO\svc_contactsync

Buttons: 'Choose Certificate' and 'Create Certificate' (highlighted with a green box).

Assigned API permissions section:

- Microsoft Graph
- Exchange Web Services

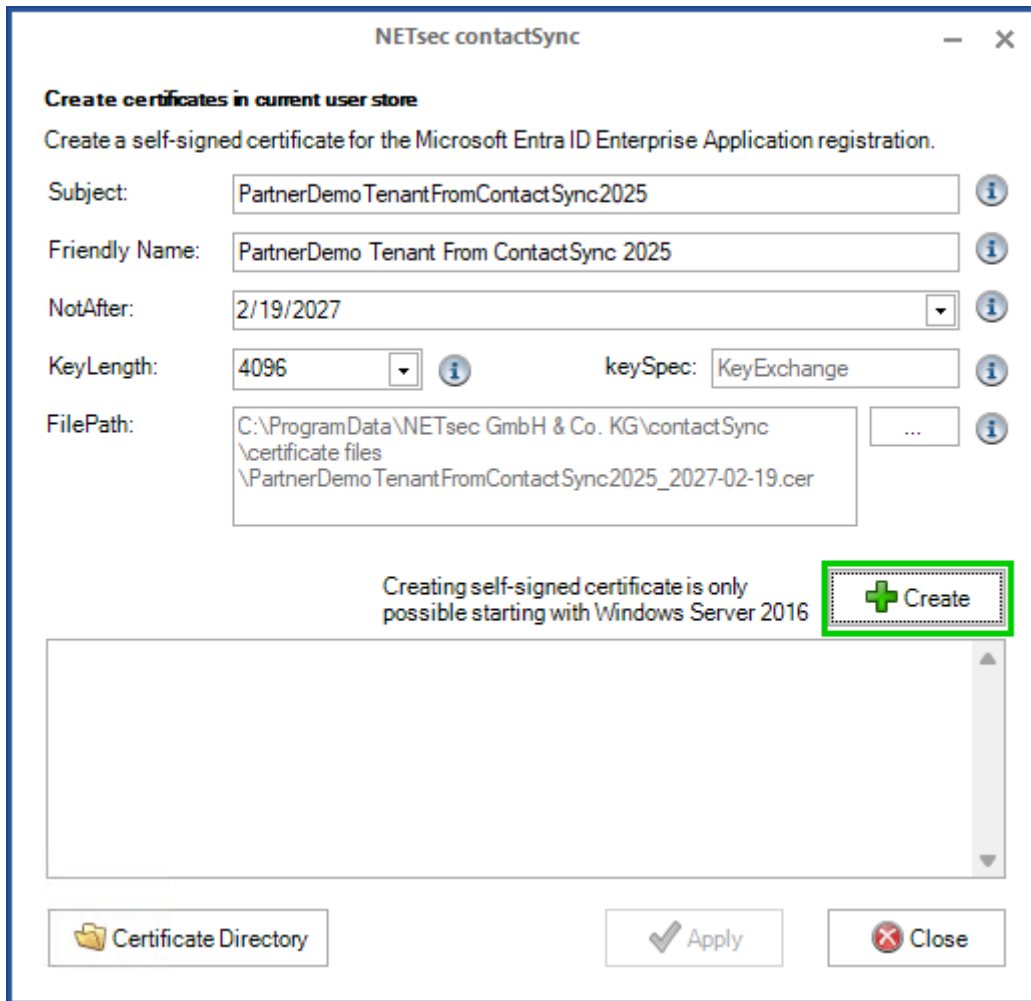
Maximum Connection: 2 (dropdown menu)

Set as primary account

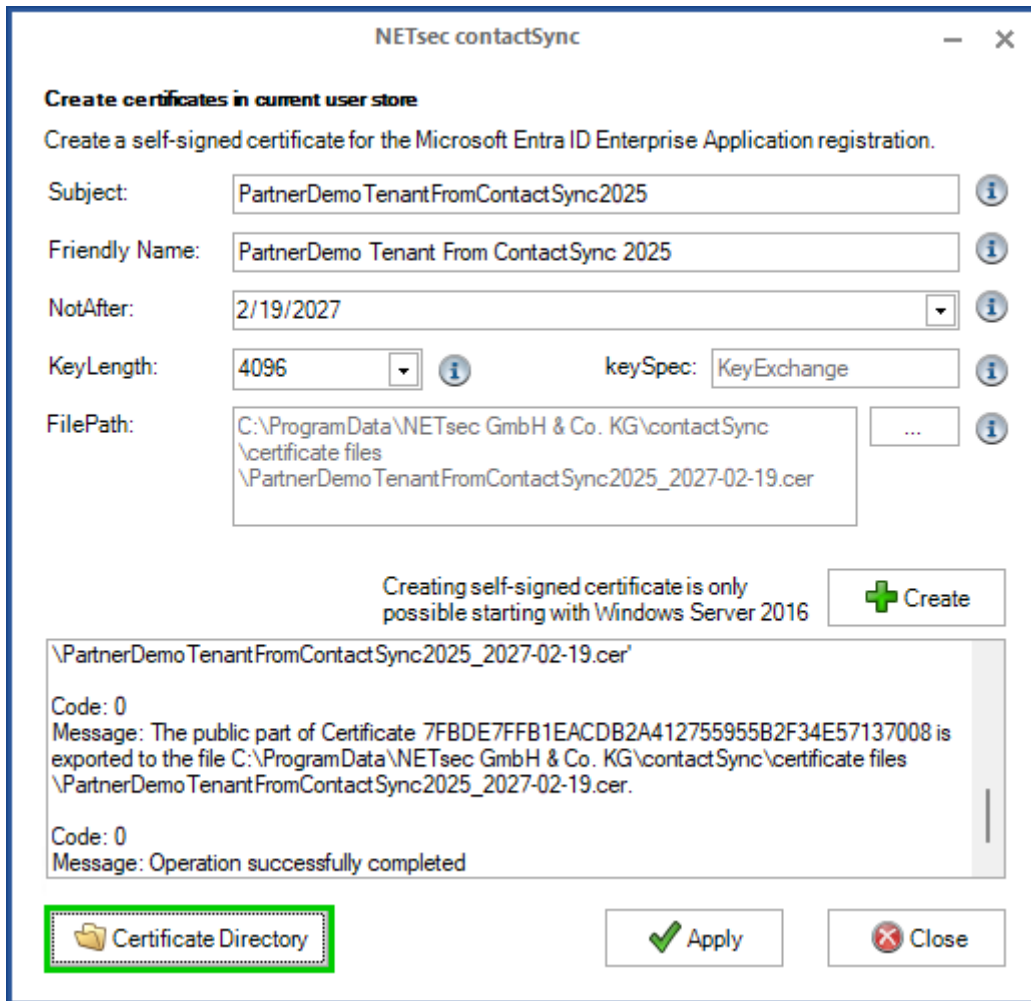
Email Address: svc_contactsync@partnerdemo.de

Buttons: 'Apply' and 'Cancel'

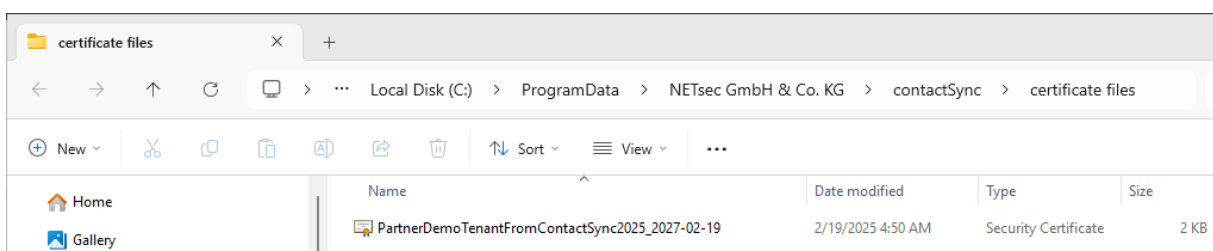
In the **Create certificates in current user store** dialog, insert **Subject** and **Friendly Name**, afterwards click the **Create** button.



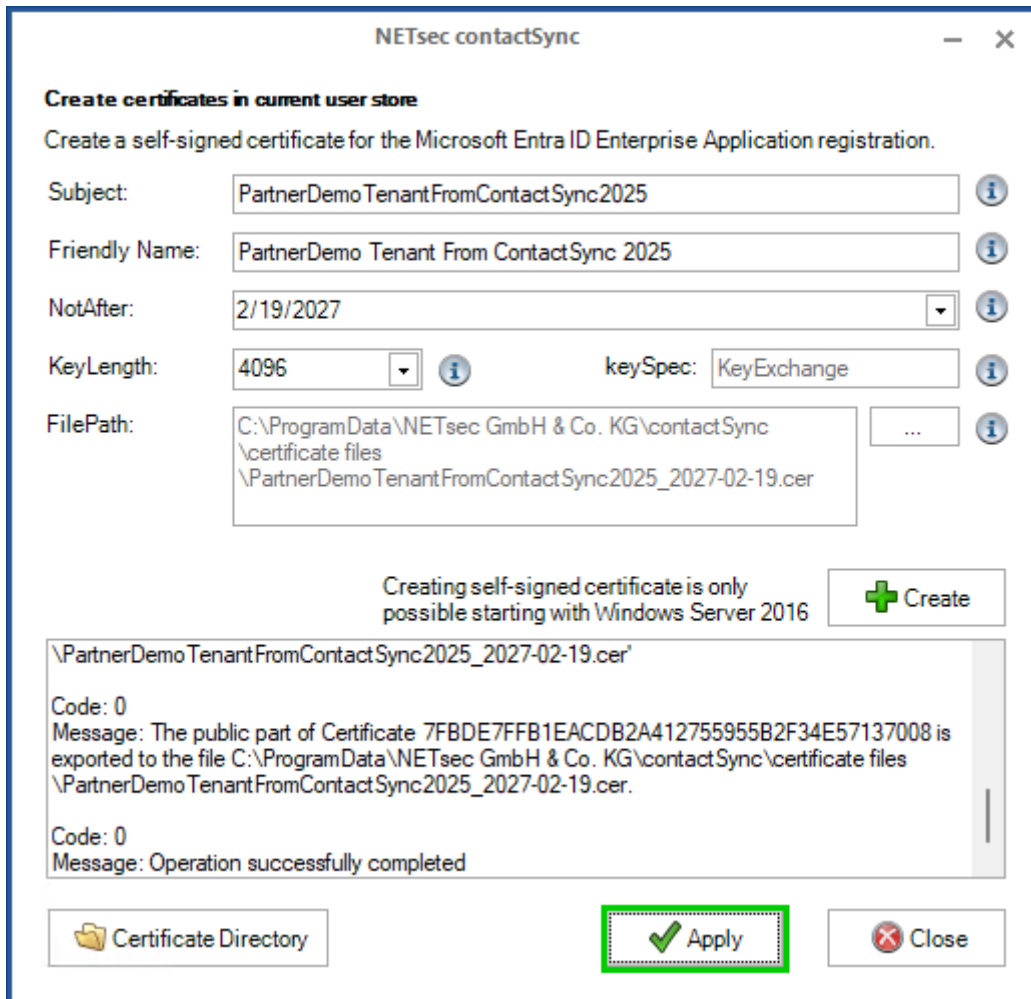
After the operation has been successfully completed, click the **Certificate Directory** button to open the **certificate files** directory in the **Windows Explorer**.



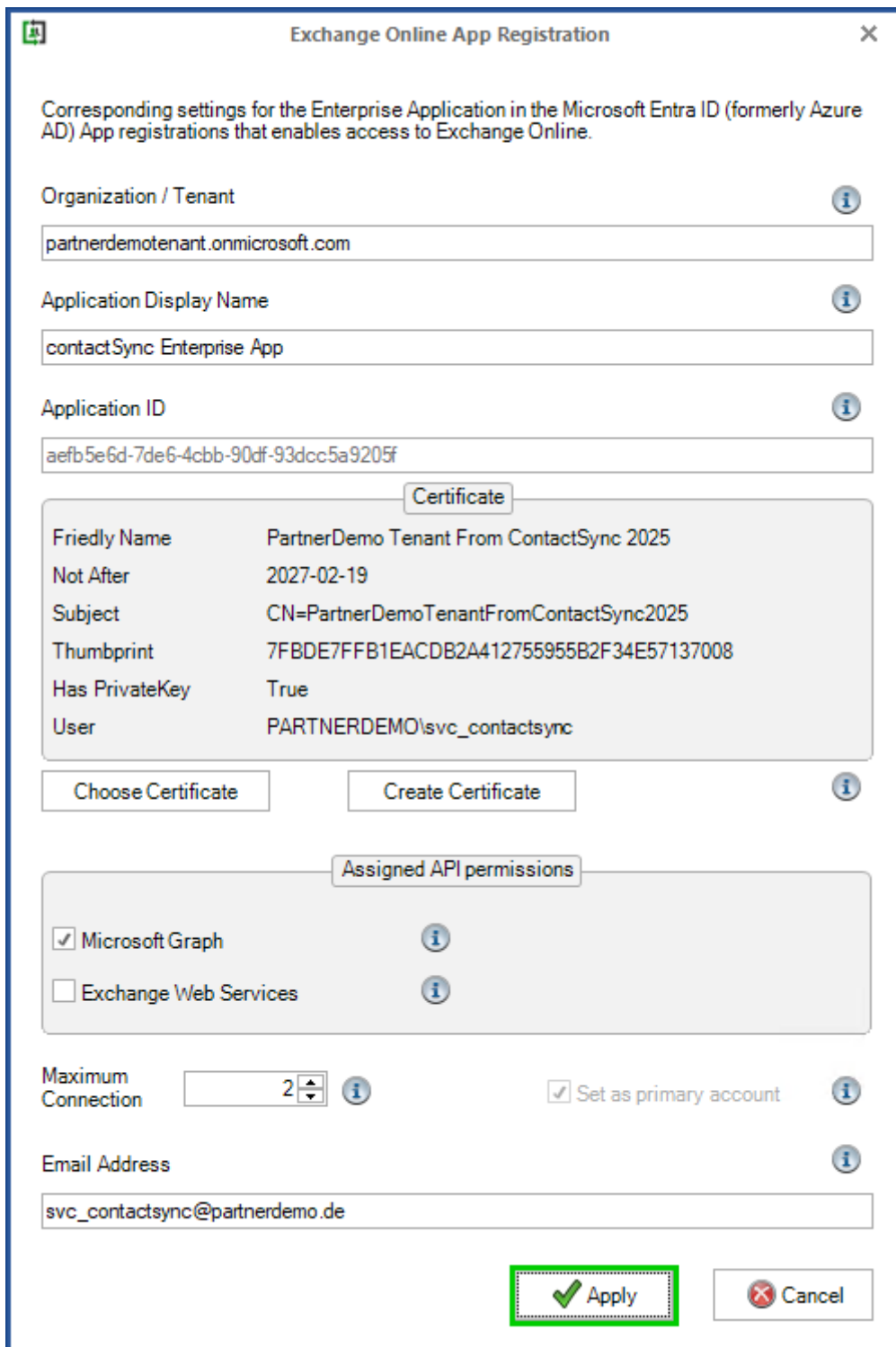
The **Windows Explorer** with the **certificate files** directory will be open.



Afterwards click **Apply** to close the **Create certificates in current user store** dialog to save changes.



Also click **Apply** on the **Environment Configuration** window to save the changes.



The image shows a screenshot of the "Exchange Online App Registration" dialog box. The window title is "Exchange Online App Registration" with a close button (X) in the top right corner. Below the title bar, there is a descriptive text: "Corresponding settings for the Enterprise Application in the Microsoft Entra ID (formerly Azure AD) App registrations that enables access to Exchange Online." The form contains several fields and sections:

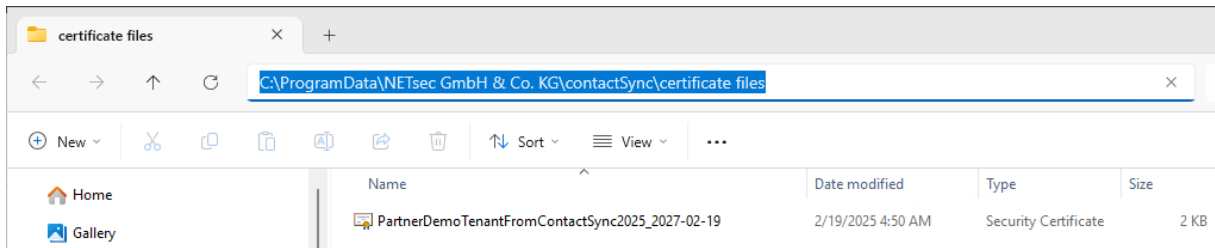
- Organization / Tenant:** A text box containing "partnerdemotenant.onmicrosoft.com".
- Application Display Name:** A text box containing "contactSync Enterprise App".
- Application ID:** A text box containing "aefb5e6d-7de6-4cbb-90df-93dcc5a9205f".
- Certificate:** A section with a tab labeled "Certificate" containing a table of certificate details:

Friendly Name	PartnerDemo Tenant From ContactSync 2025
Not After	2027-02-19
Subject	CN=PartnerDemoTenantFromContactSync2025
Thumbprint	7FBDE7FFB1EACDB2A412755955B2F34E57137008
Has PrivateKey	True
User	PARTNERDEMO\svc_contactsync

Below the table are two buttons: "Choose Certificate" and "Create Certificate".
- Assigned API permissions:** A section with a tab labeled "Assigned API permissions" containing two items:
 - Microsoft Graph
 - Exchange Web Services
- Maximum Connection:** A spinner box set to "2".
- Set as primary account
- Email Address:** A text box containing "svc_contactsync@partnerdemo.de".

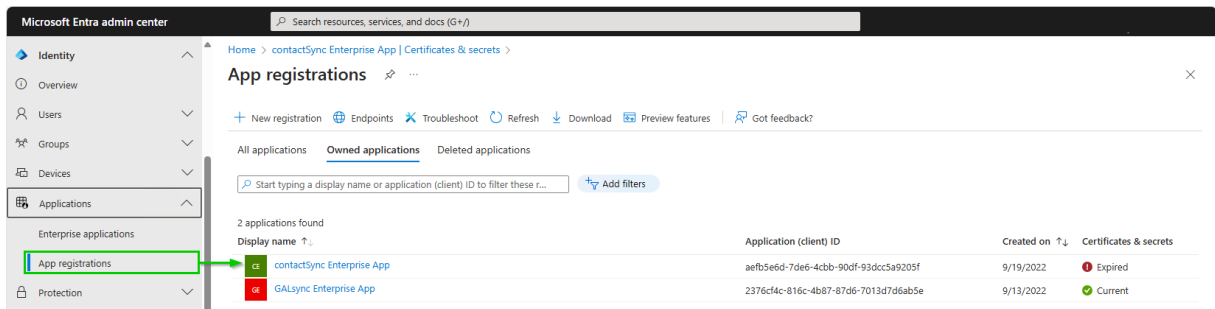
At the bottom of the dialog, there are two buttons: "Apply" (with a green checkmark icon) and "Cancel" (with a red X icon). The "Apply" button is highlighted with a green dashed border.

Go back to the **Windows Explorer** with the **certificate files** directory again and copy the path of the **certificate files** directory into clipboard.



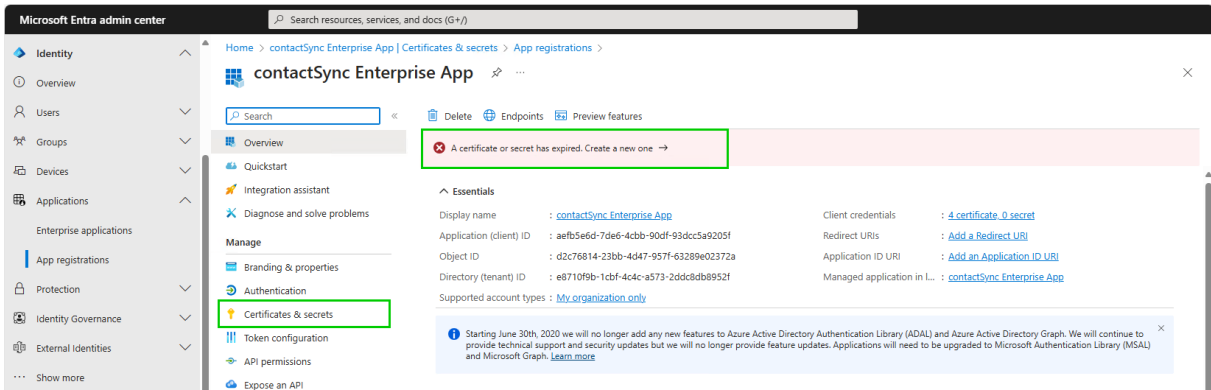
Login to **Microsoft Entra admin center** with a **Global Administrator account**, and go to **Applications > App registrations**.

If the **contactSync** application is not displayed, click **All Applications**.

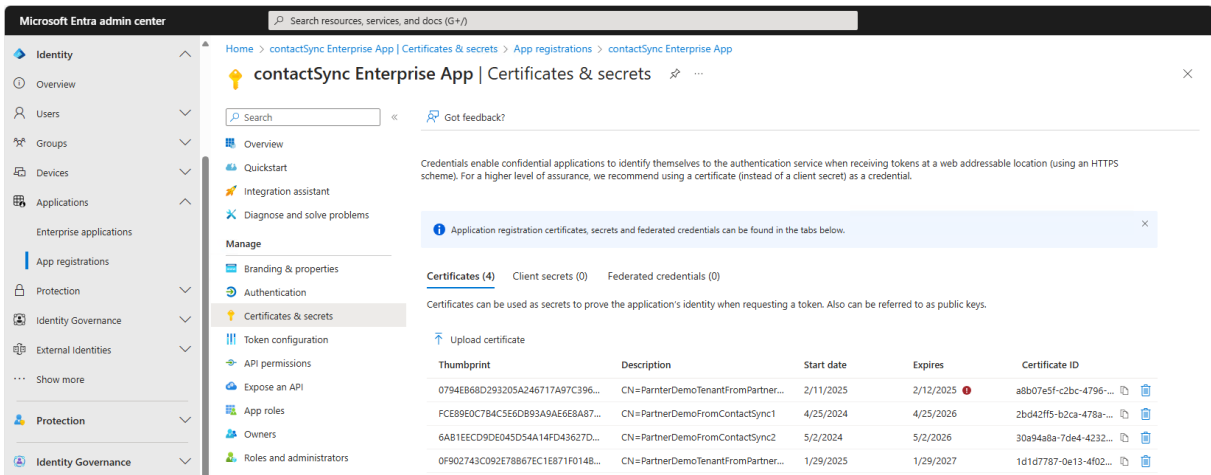


Click onto the **contactSync Enterprise App**.

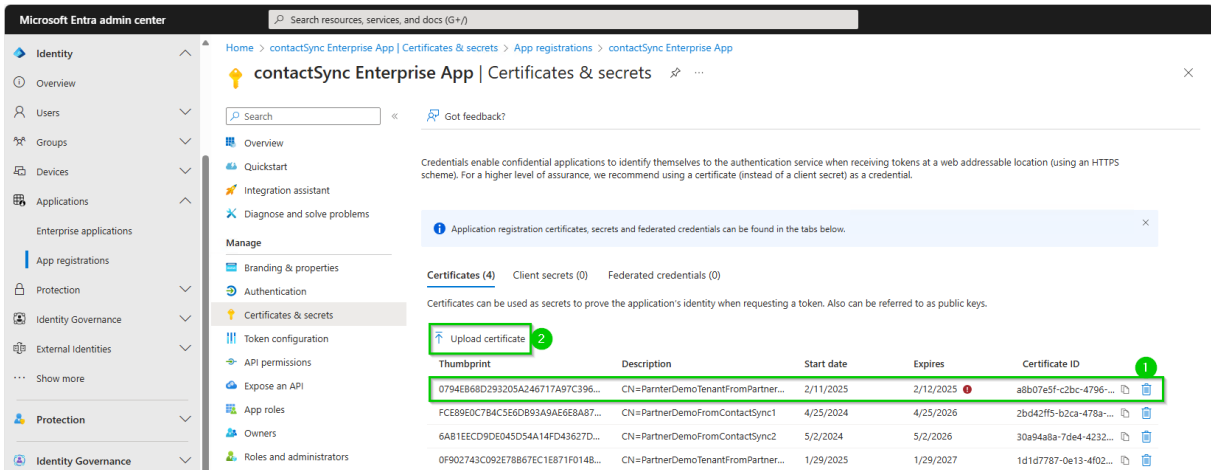
Go to **Certificates & secrets** or click on the notification which prompts you to create a new certificate.



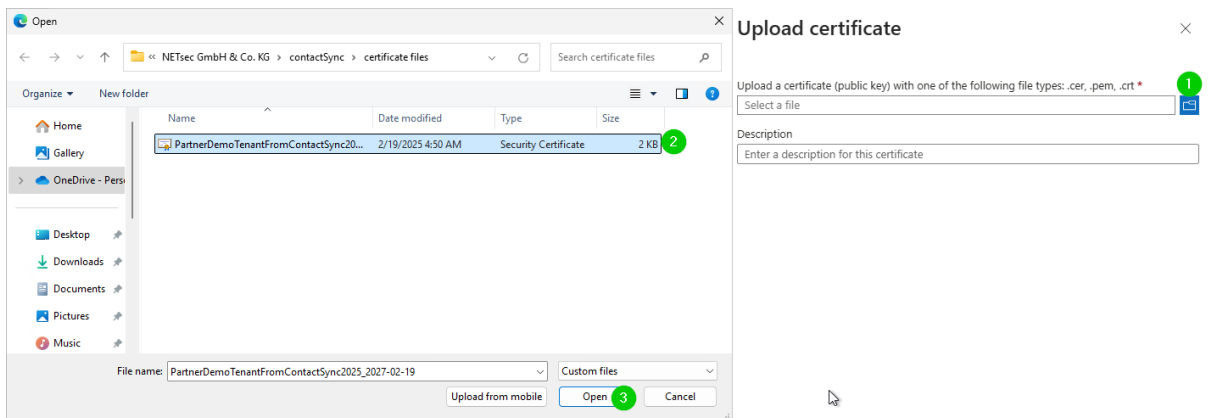
Go to **Certificates & secrets** and click onto the **Certificates** tab.



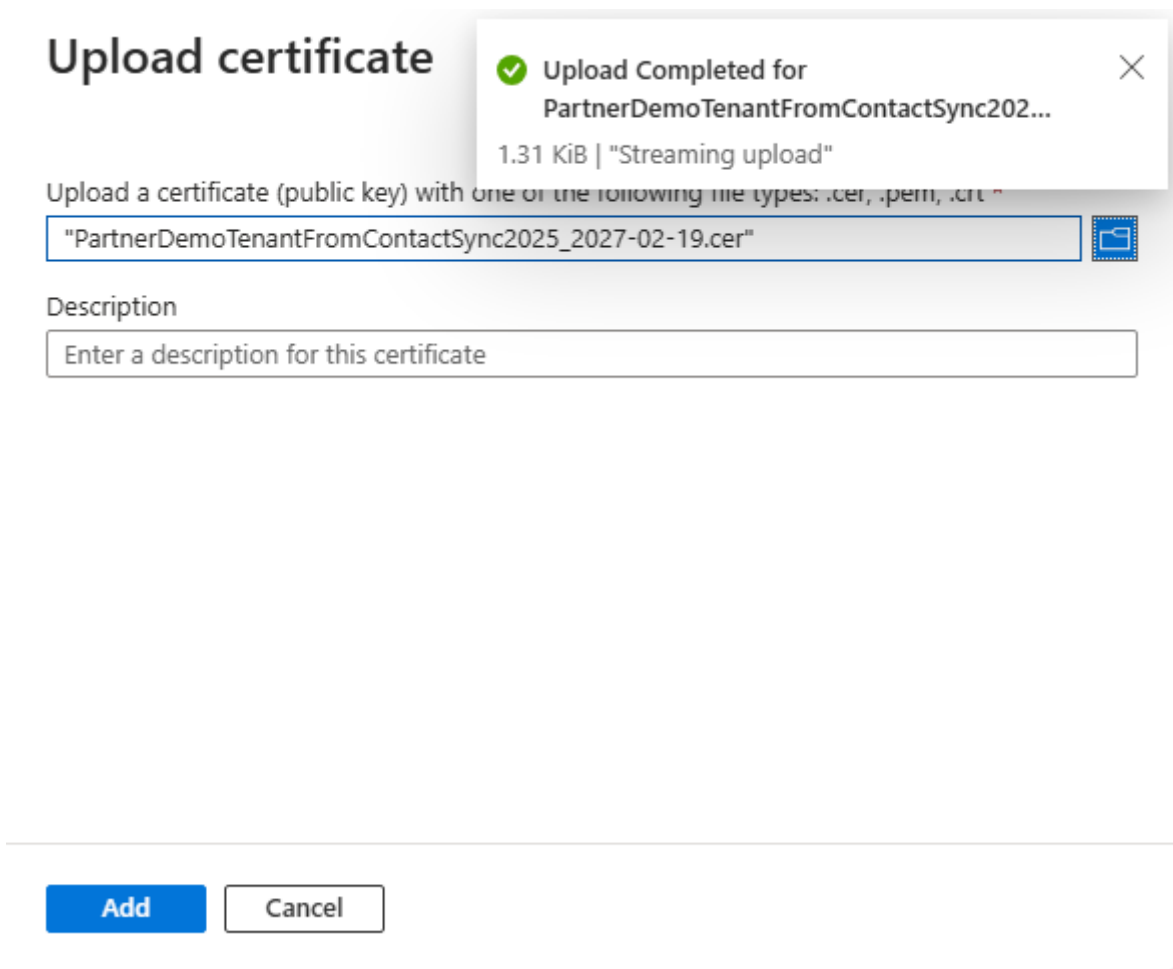
Delete the expired certificate then select **Upload certificate**.



Click onto the folder icon for upload a certificate (*public key*), paste the copied path in the **Open dialog**, select the new certificate, then click **Open**.



After the certificate upload has been successfully completed, click **Add**.



The app registration has a new valid certificate.

The screenshot shows the Microsoft Entra admin center interface. The left-hand navigation pane is expanded to 'App registrations', and the 'Certificates & secrets' sub-section is selected. The main content area displays the 'Certificates & secrets' page for the 'contactSync Enterprise App'. It includes a search bar, a 'Got feedback?' link, and a list of certificates. A new certificate is highlighted with a green border.

Thumbprint	Description	Start date	Expires	Certificate ID
FCE89E0C784C5E6DB9...	CN=PartnerDemoFromContactSync1	4/25/2024	4/25/2026	2bd42f55-b2ca-47...
6AB1EECD9D6045D54A...	CN=PartnerDemoFromContactSync2	5/2/2024	5/2/2026	30a94a8a-7de4-4...
0F902743C092E78867E...	CN=PartnerDemoTenantFromPartnerContactSync05	1/29/2025	1/29/2027	1d1d7787-0e13-4...
7FBDE77FB1EACDB2A4...	CN=PartnerDemoTenantFromContactSync2025	2/19/2025	2/19/2027	0647e442-8c96-4...

Log out from the **Microsoft Entra admin center**.

Go back to the **Exchange Online** tab of the **Environment Configuration** to test the Exchange Online PowerShell connection and send a test email with the new certificate.

PartnerDemo Exchange Online - Environment Configuration

General Exchange Scenario **Exchange Online**

Exchange Online

Manage the settings for the Exchange Online tenant.
All accounts of the Microsoft 365 tenant have Exchange Administrator role permission for Exchange Online.

Credentials

Username	Max. Connection
Primary Mailbox Account	
contactSync Enterprise App	2

Organization Settings

Instance hosted by: Microsoft 365 or Microsoft 365 GCC
Microsoft Azure public cloud

Exchange Web Services URL: https://outlook.office365.com/EWS/Exchange.asmx

Remote PowerShell Connection Test

Please test the Remote PowerShell connection to Exchange Online

2 Test

Warning | No remote PowerShell connections is available anymore.
Connection test was successful for contactSync Enterprise App
Test finished.

Show log

Exchange Mailbox Test

Send a test email to the recipient:

Email address: admin@partnerdemo.de

3 Send test email

Ok Cancel Apply

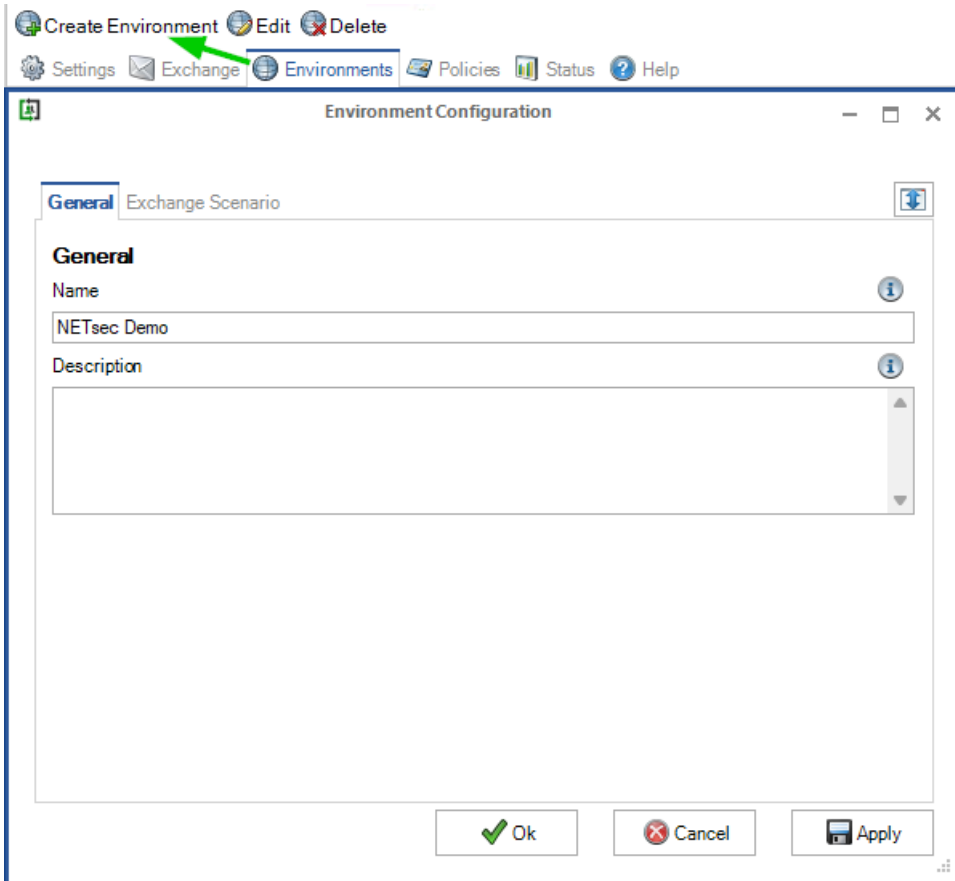
Afterwards, click **Ok** to save and close the **Environment Configuration** window.

How to create and configure an Environment Configuration and an migrate existing policy to it

It is recommended to configure an **Environment Configuration** with a certificate-based authentication for Exchange Online and the existing policies to ensure continued problem-free access to Exchange Online.

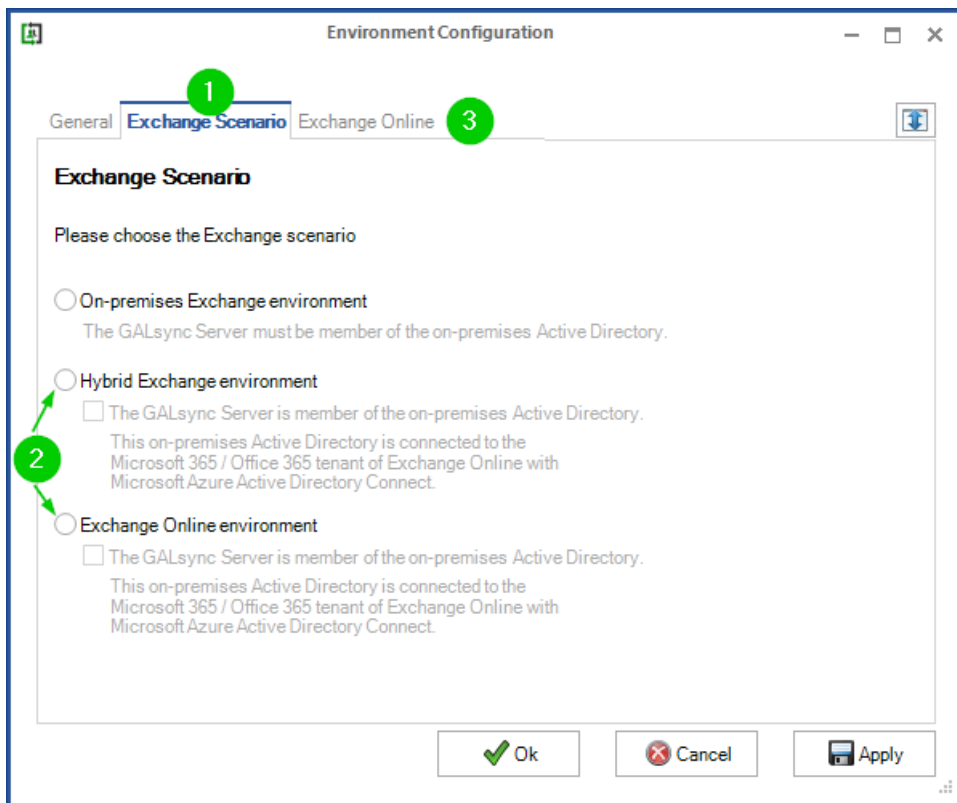
To create an **Environment Configuration**, switch to the Environments tab and click **Create Environment**

Enter a name for the Environment Configuration, e.g. company name.

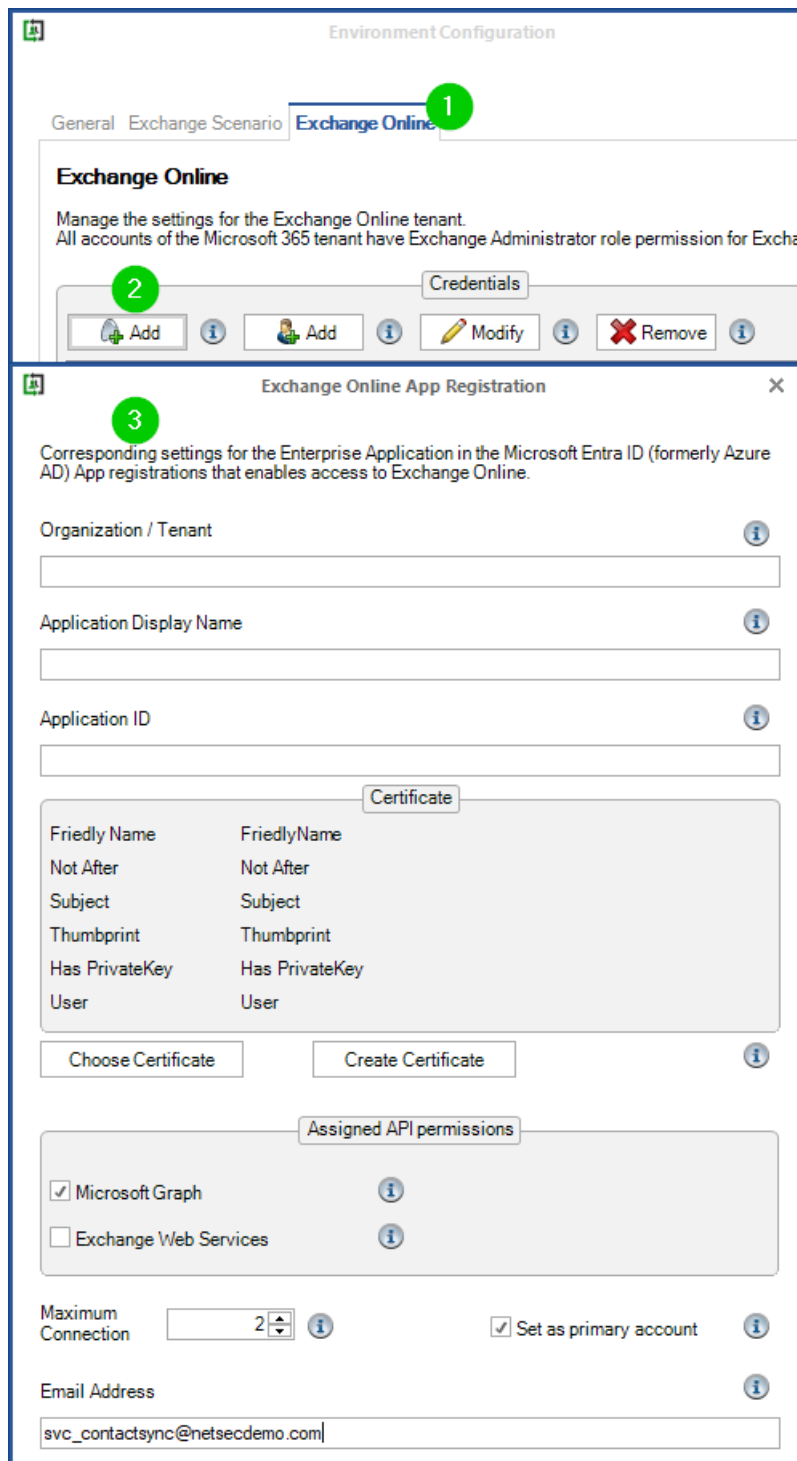


Switch to the **Exchange Scenario** tab and select the appropriate radio button which matches your Exchange environment, Hybrid Exchange or Exchange Online.

If the contactSync Server is member of the on-premises Active Directory, which is connected with the Microsoft 365 Exchange Online tenant via Microsoft Azure Active Directory Connect, also enable the option **The GALsync Server is member of on-premises Active Directory**.



Switch to the **Exchange Online** tab and create a certificate-based account using the **Exchange Online App Registration** dialog.



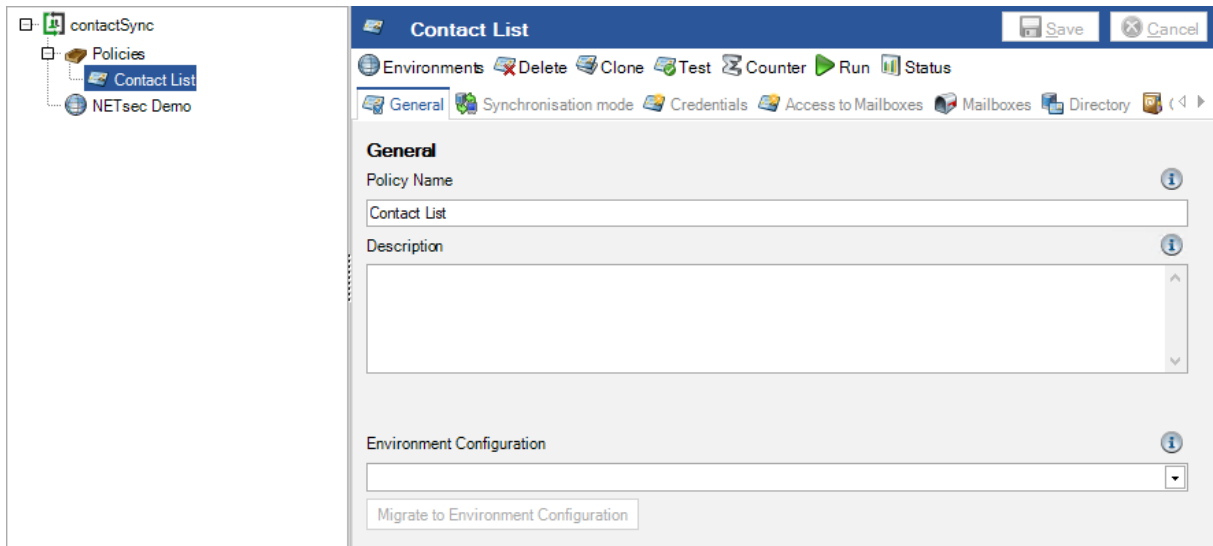
How to carry out an App Registration is described in the **Exchange Online certificate-based authentication via App Registration** chapter.

In the **Exchange Online App Registration** dialog, you can use the email address of your contactSync service account so that the status notification emails can continue to be sent via its mailbox.

Once you have created the **Environment Configuration** and the **Exchange Online PowerShell** and **Microsoft Graph** connections are working, you can migrate the existing policies to the Environment Configuration.

Migrate an existing policy

Policies which were created by contactSync Version 7 or earlier, are not part of an Environment Configuration.



You can migrate such a policy to a corresponding Environment Configuration.

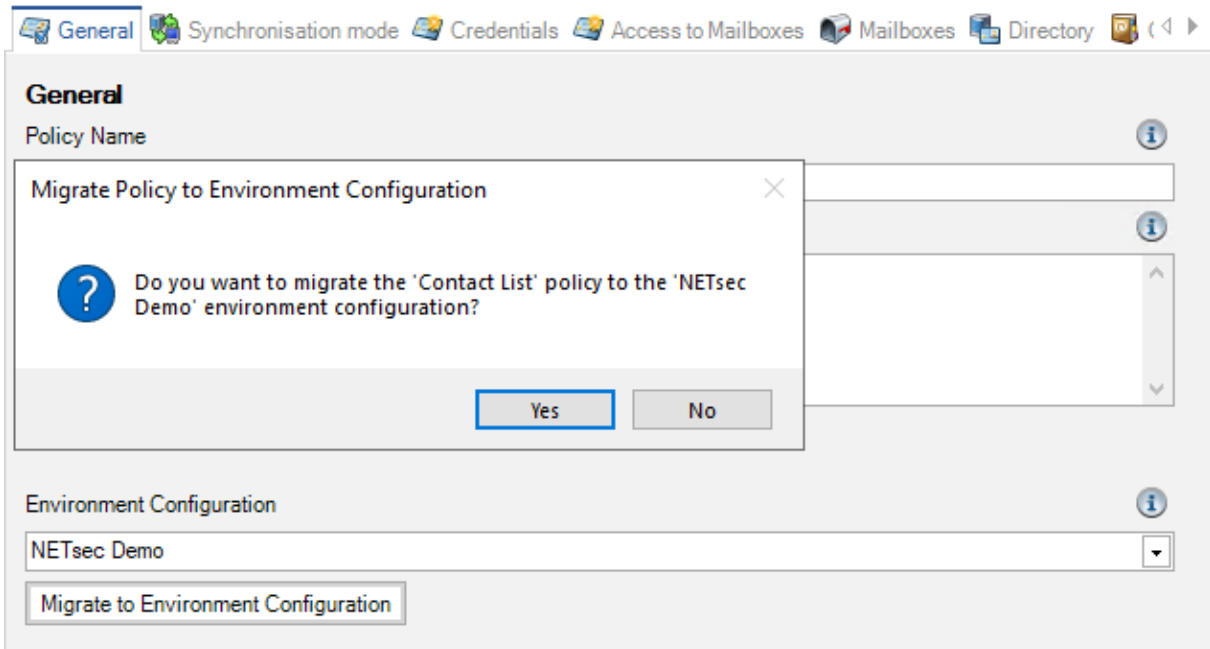
Please note that a policy can only be migrated once.

Select the corresponding **Environment Configuration** on the **General** tab of the policy and click **Migrate to Environment Configuration**.



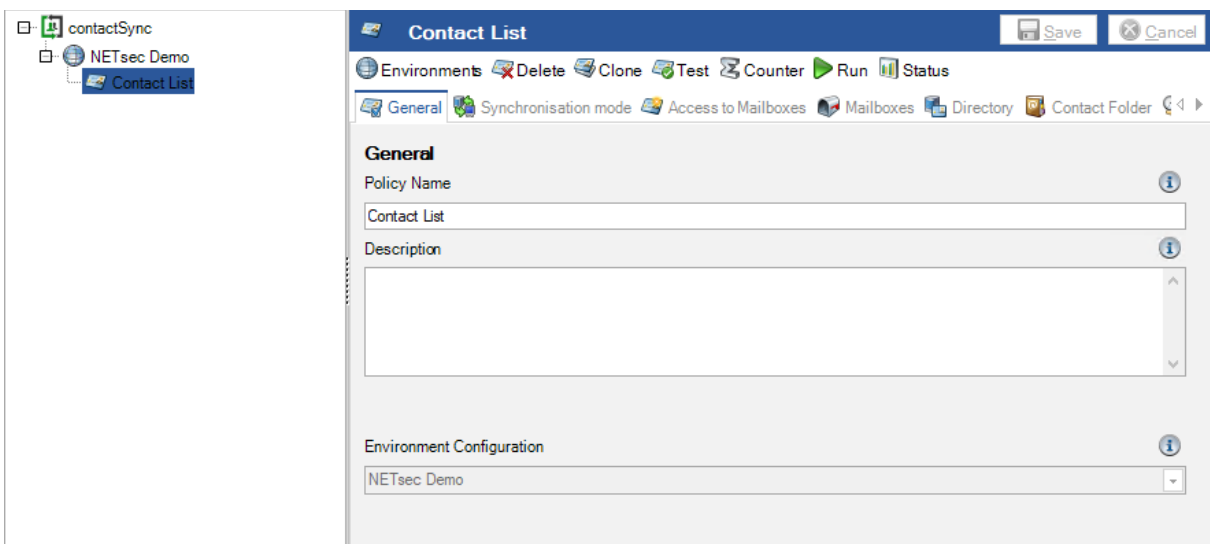
Once you are sure you have selected the correct **Environment Configuration** for the policy migration, click Yes to migrate the policy to the selected Environment Configuration.

Please note that a policy can only be migrated once.



Afterwards, please save the policy.

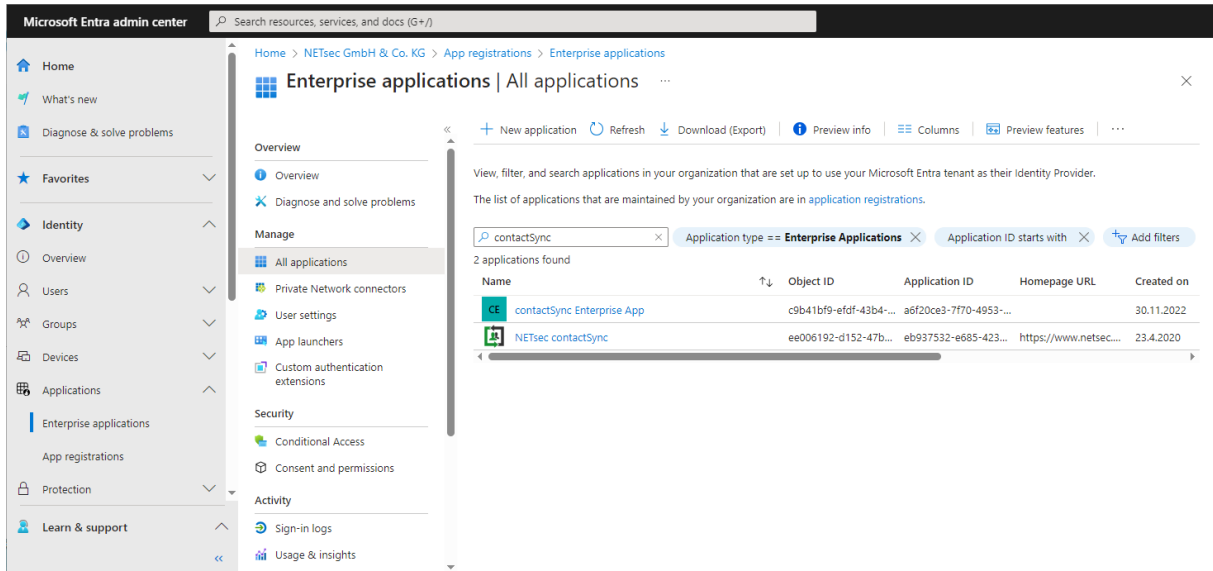
The policy now belongs to the corresponding Environment Configuration, and uses the settings of the Environment Configuration for the Exchange environment.



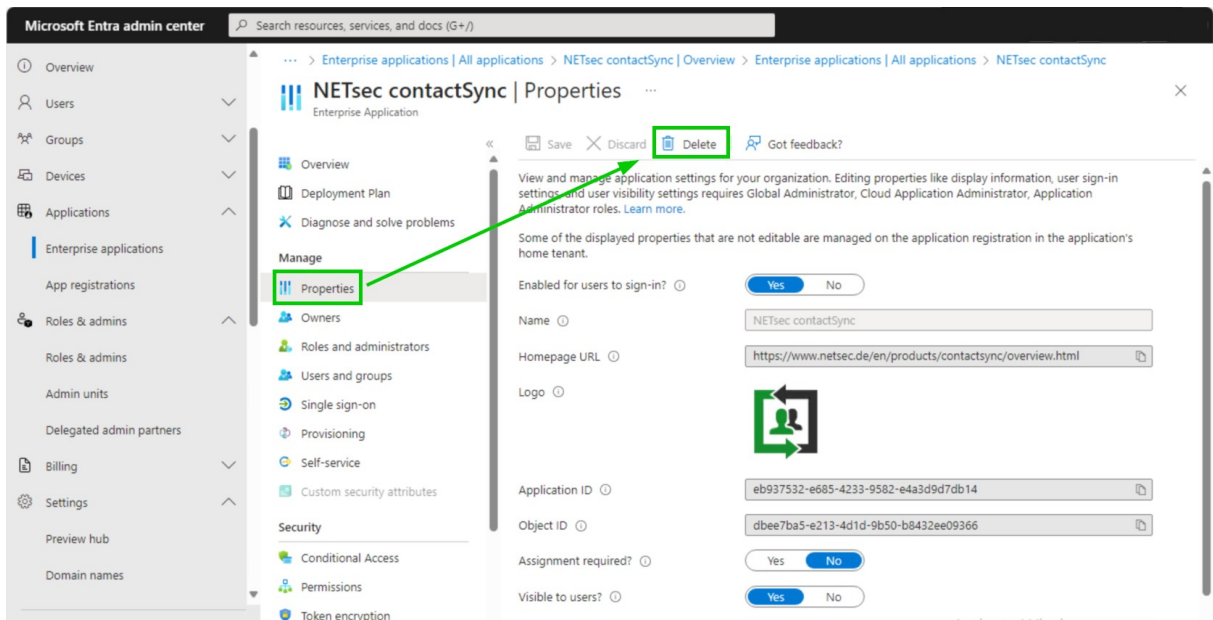
After switching to certificate-based authentication, remove the permission of the user-based authentication in Microsoft Entra ID

Remove Enterprise Application **NETsec contactSync**, which was created by Modern Authentication OAuth 2.0.

To accomplish this, in the **Microsoft Entra Admin Center**, go to **Applications > Enterprise Applications > All applications**, and search for **contactSync**.

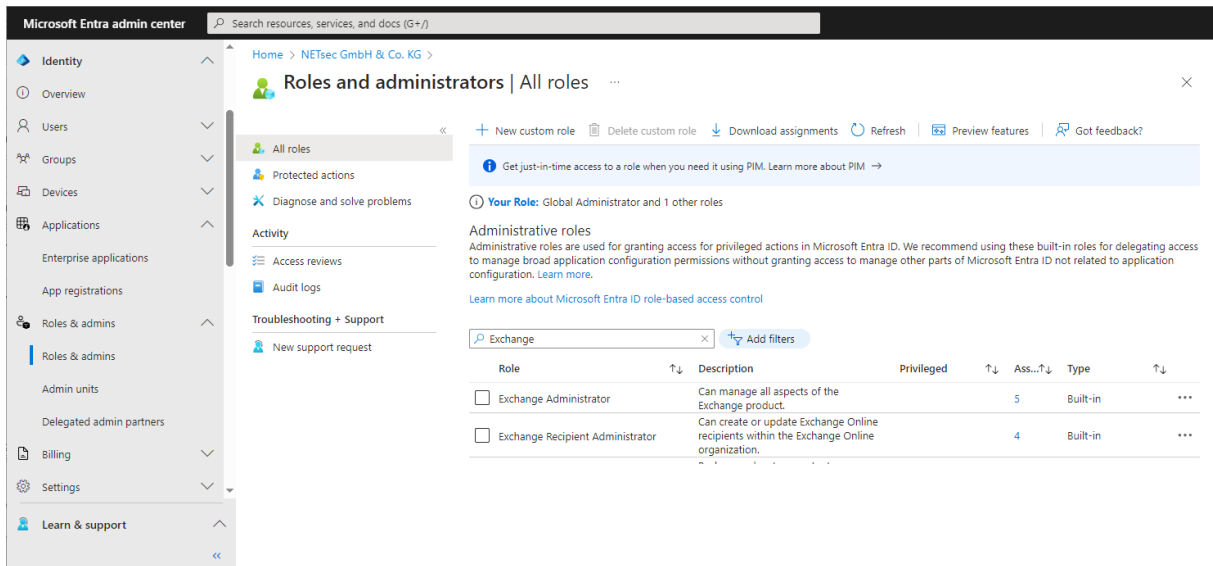


Select **NETsec contactSync**, then go to **Properties**, and click **Delete**.

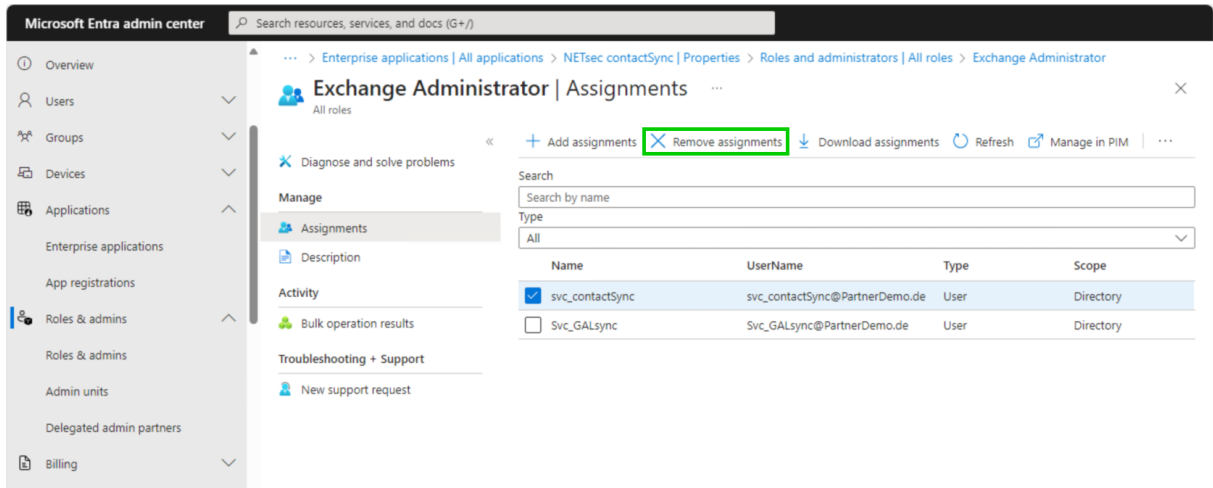


Next, remove the service account from the **Exchange Administrator** role and/or **Exchange Recipient Administrator**.

To accomplish this, go to **Roles and Admins > Roles and Admins > All Roles**, then search for **Exchange** and select the relevant role (**Exchange Administrator** or **Exchange Recipient Administrator**).



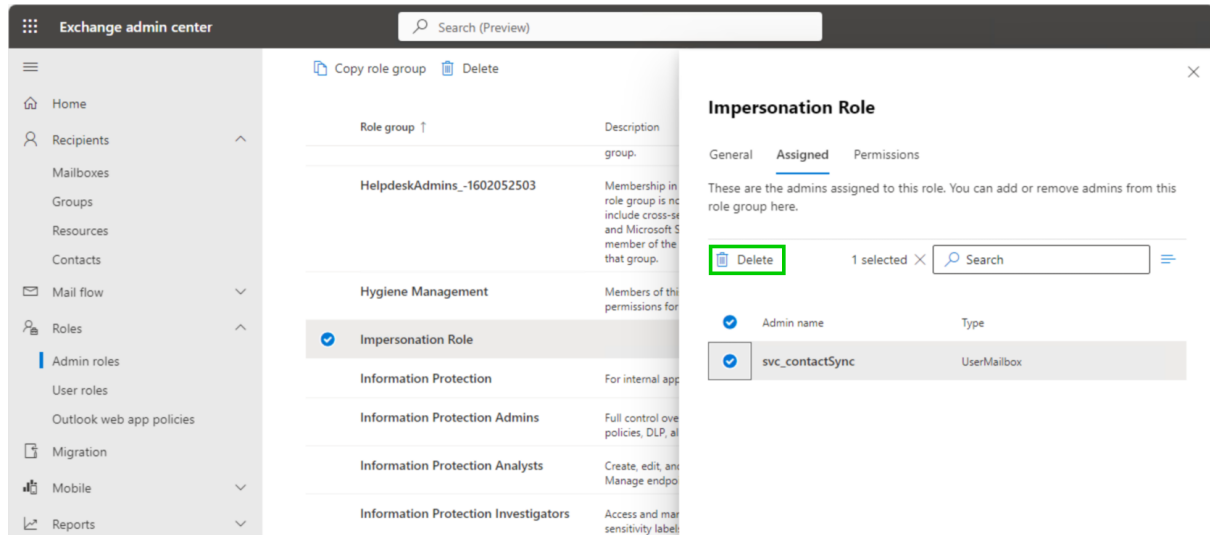
On the **Assignments** page, check the checkbox which corresponds to the contactSync account then click **Remove assignments**.



Remove the service account from the **Application Impersonation Role** in the **Exchange Admin Center** of Exchange Online.

Important: *the Application Impersonation Role in the Exchange Admin Center of the on-premises Exchange Server are still necessary for the service account to synchronize contacts into mailboxes with contactSync.*

In the **Exchange Admin Center**, navigate to **Roles > Admin Roles** and click onto the **Impersonation Role**. Go to the **Assigned** tab and select the account, then click **Delete**.



Troubleshooting and Support Guide

How to check the PowerShell version on the contactSync server

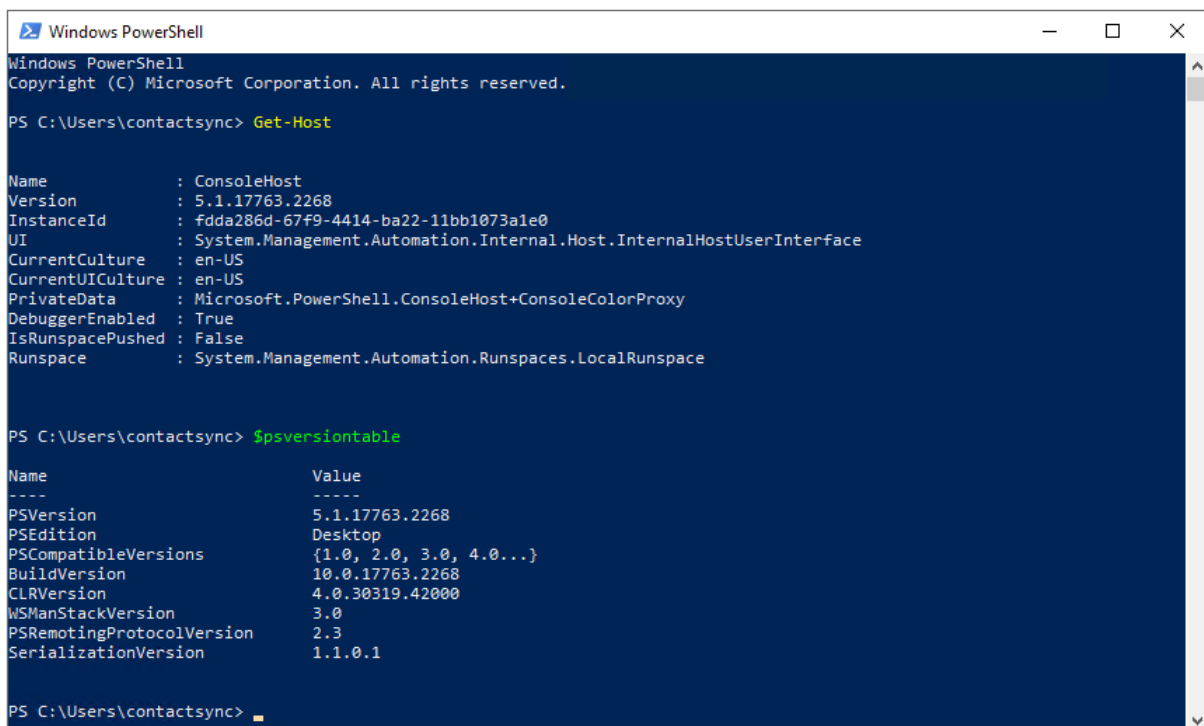
Please log in on the contactSync server with your contactSync service account.

Open the Windows PowerShell and check the result of the following two PowerShell cmdlets:

```
Get-Host
```

and

```
$psversiontable
```



```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

PS C:\Users\contactsync> Get-Host

Name           : ConsoleHost
Version        : 5.1.17763.2268
InstanceId     : fdda286d-67f9-4414-ba22-11bb1073a1e0
UI             : System.Management.Automation.Internal.Host.InternalHostUserInterface
CurrentCulture : en-US
CurrentUICulture : en-US
PrivateData    : Microsoft.PowerShell.ConsoleHost+ConsoleColorProxy
DebuggerEnabled : True
IsRunspacePushed : False
Runspace       : System.Management.Automation.Runspaces.LocalRunspace

PS C:\Users\contactsync> $psversiontable

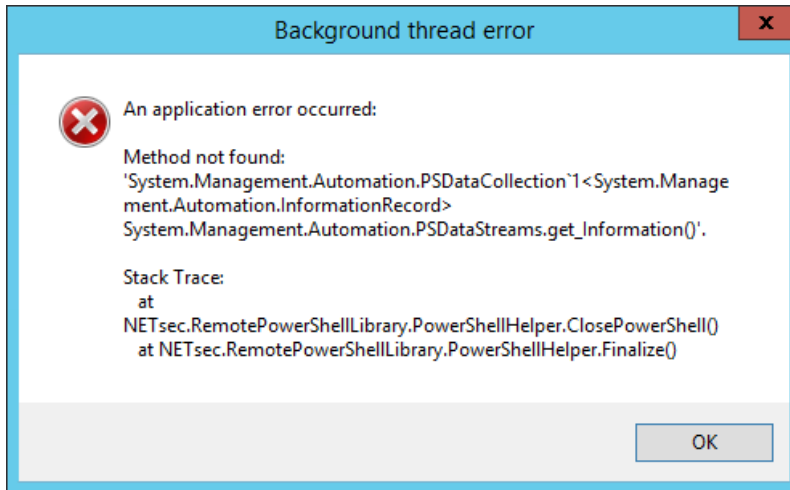
Name                Value
----                -
PSVersion           5.1.17763.2268
PSEdition           Desktop
PSCompatibleVersions {1.0, 2.0, 3.0, 4.0...}
BuildVersion        10.0.17763.2268
CLRVersion          4.0.30319.42000
WSManStackVersion   3.0
PSRemotingProtocolVersion 2.3
SerializationVersion 1.1.0.1

PS C:\Users\contactsync>
```

How to Troubleshoot PowerShell

Failure to Establish Connection to Exchange Online

If an error such as the one below has been generated while connecting to Exchange Online, please follow the troubleshooting steps outlined below.



1. Verify Windows PowerShell 5.1 has been installed on the contactSync server by opening Windows PowerShell and running
`Get-Host;`
2. Verify Exchange Online Management module for Exchange Online PowerShell v2 has been installed on the contactSync server.
The install instructions (from an Administrator PowerShell session) are as follows:

```
Install-Module -Name ExchangeOnlineManagement -Force;  
Import-Module ExchangeOnlineManagement; Get-Module ExchangeOnlineManagement;
```

Connect to Exchange Online:

```
Connect-ExchangeOnline;
```

Get some recipients from Exchange Online:

```
Get-Recipient;
```

Disconnect from Exchange Online:

```
Disconnect-ExchangeOnline
```

Additional details relating to Exchange Online PowerShell v2 module are available here:

<https://docs.microsoft.com/en-us/powershell/exchange/exchange-online-powershell-v2?view=exchange-ps#prerequisites-for-the-exo-v2-module>

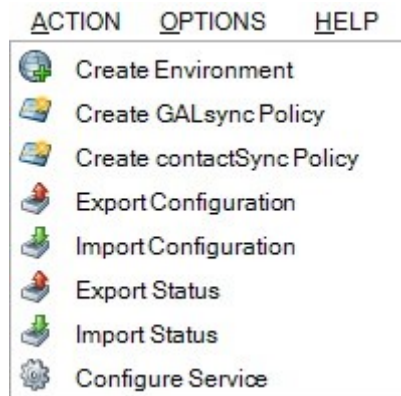
Important: contactSync does not support Exchange Online PowerShell V2 module for PowerShell 7.

11021 - LegacyExchangeDN of the contactSync service account is in the old syntax. Please update this by re-mailenabling the service account or create a new contactSync service account.

Your current contactSync service account was previously migrated from an Exchange 2003 environment. The **legacyExchangeDN** of the contactSync service account is in the old syntax, which was used up to Exchange 2003. However, contactSync needs a service account with a mailbox with the new **legacyExchangeDN** syntax which is used by Exchange 2007 and later.

Please create a new contactSync service account with a new mailbox and the same permissions as the old one.

After that log on with the new contactSync service account, run the contactSync GUI with the new contactSync service account and change the contactSync service to the new contactSync service account.



Use **Configure Service** to start the wizard for changing the service account of the contactSync service.

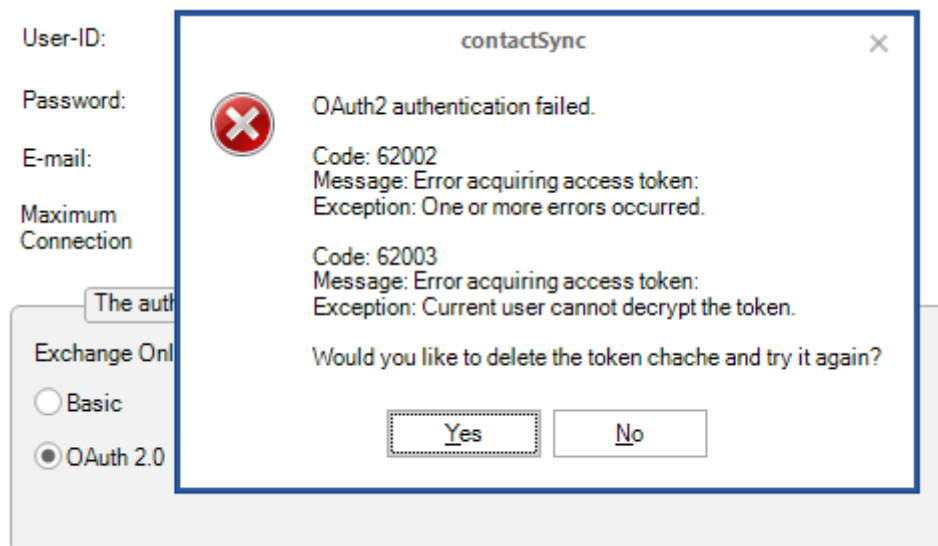
12010 - Error getting Exchange Online connection

Typ Error	Typ Error
Code 12010	Code 12010
Task 244	Task 111
Thread 16	Thread 7
Source GALsyncLibrary.EWSManager.getExchangeService()	Source GALsyncLibrary.EWSManager.getExchangeService()
Message Error getting Exchange Online connection.	Message Error getting Exchange Online connection.
Exmessage One or more errors occurred. Key not valid for use in specified state.	Exmessage One or more errors occurred. Current user cannot decrypt the token. Key not valid for use in specified state.

The error occurs if the logged-on user is not that of the assigned contactSync service account.

Please run the policy in the credentials of the user, who configured the policy. We recommend to run the contactSync GUI in the credentials of the local contactSync service account.

You can encrypt the token for Modern Authentication OAuth 2.0 for Exchange Web Services (EWS) again, if you click the Login button for OAuth 2.0 and delete the token cache.



Please take a look at the chapter Modern Authentication OAuth2 for Exchange Web Services (EWS) to access Exchange Online

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

We always try to provide a very responsive, solution orientated and effective support. Should you encounter any issue, bug or inconvenience please do not hesitate to contact us.

Please send us an email to support@netsec.de.

To enable us to provide you the best quality support possible, please provide us with the following information:

Environment Overview

- Which Exchange version do you use?
- Which contactSync version do you use?
- Does the contactSync service account have an Exchange mailbox and where it is located?

Description of the issue

Please describe your issue/bug/inconvenience thoroughly, in detail, what you wanted to achieve and what you were doing as it occurred.

A screenshot of the issue often helps us to understand.

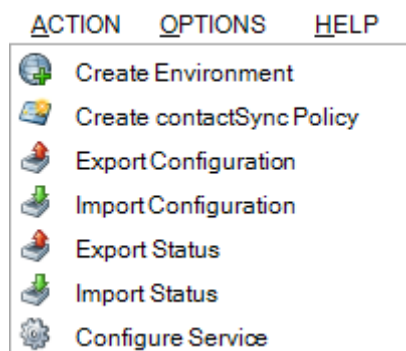
Configuration and log files

We also require the configuration and the logs, preferably zipped.

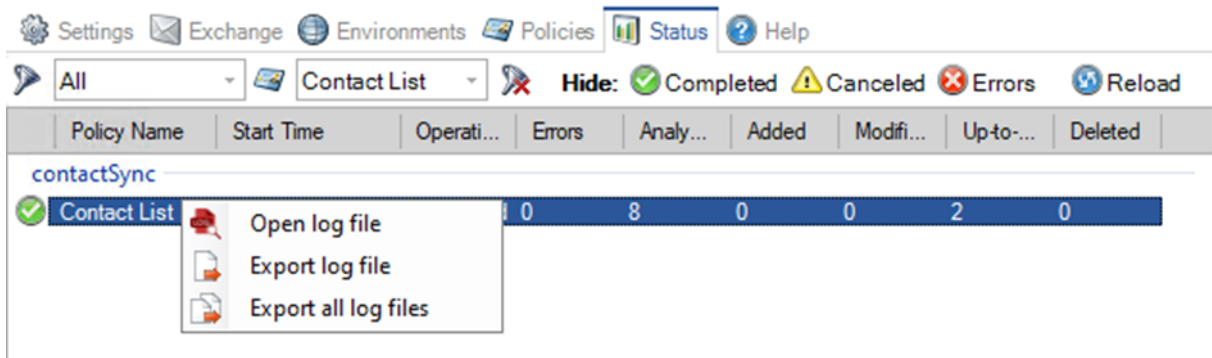
Please take a look at the chapter **Open and export log files**.

In menu **Action** -> **Export Configuration** you can zip the policies.

In menu **Action** -> **Export Status** you can zip the log files.



The log files of a police can be also compressed on the **Status** tab:



Please send an email to support@netsec.de with a description of the issue and attach the compressed file with the configuration and the compressed file with the log files.

Alternatively, you can upload the compressed files to the **NETsec Support Dropzone**

<https://transfer.netsec.de/dropzone/support>

Do you have additional questions, or need further support? Then please do not hesitate to contact the contactSync Support Team.

contactSync Support Team

By phone +49 2421 998 78 16 or via e-mail support@netsec.de