Exchange Inventory

Inventorying Exchange and Exchange Online

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1. Introduction

This document describes the inventory of **Microsoft Exchange** (On-Premise) and **Exchange Online**.

During Exchange On-Premise inventory, problems can occur due to the use of **PSExec**. This document provides solutions for solving these problems as well as alternatives for inventory.

In addition since version 11 of Docusnap it is possible to take an inventory of Exchange Online environments. This is also part of the document.

Note:

If Microsoft Exchange is mentioned in the document, the On-Premise environment is always meant. The online environment is always explicitly referred to as Exchange Online.

2. Basics

2.1 Parts of the inventory

The information about Microsoft Exchange that can be inventoried by Docusnap is located at different points in the IT infrastructure.

Until Exchange 2010, part of the information will be stored in Active Directory, the other part in Exchange databases, as shown in the following graphic:

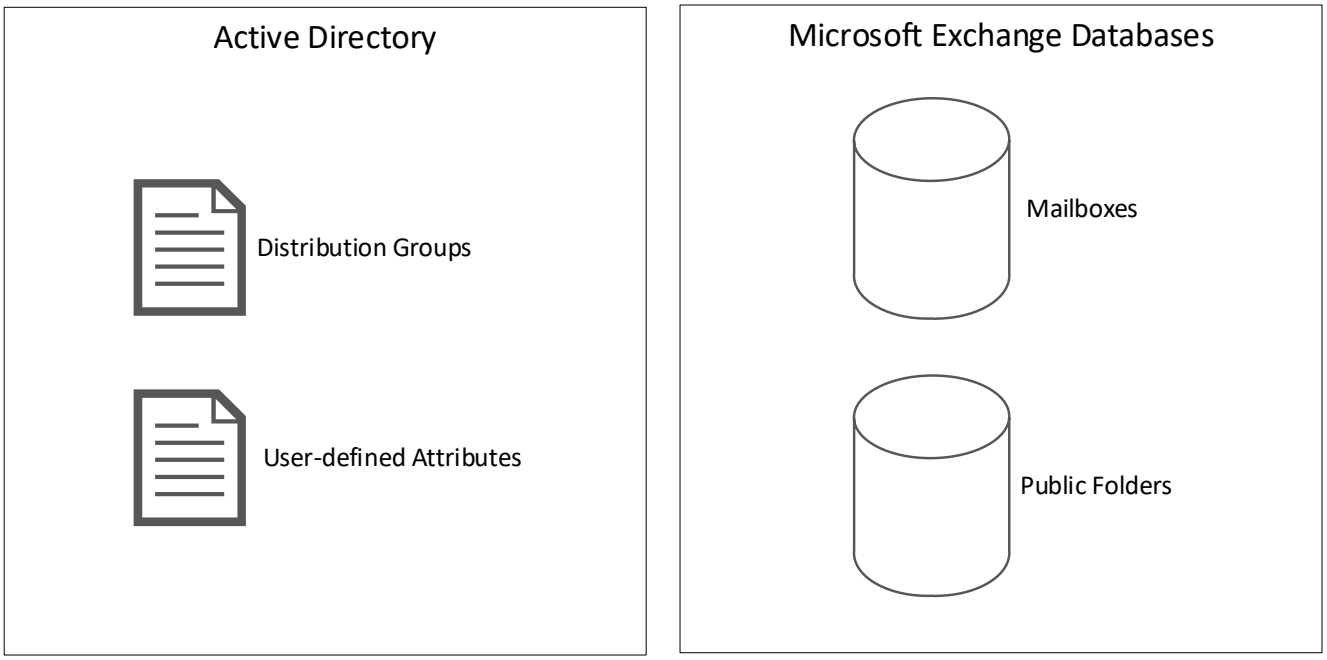

Fig. 1 - Storage location using Exchange 2010 as an example

Starting with Exchange 2013, part of the information is still stored in the Active Directory, but the other part is now located on a single Exchange database, as described in the following graphic:

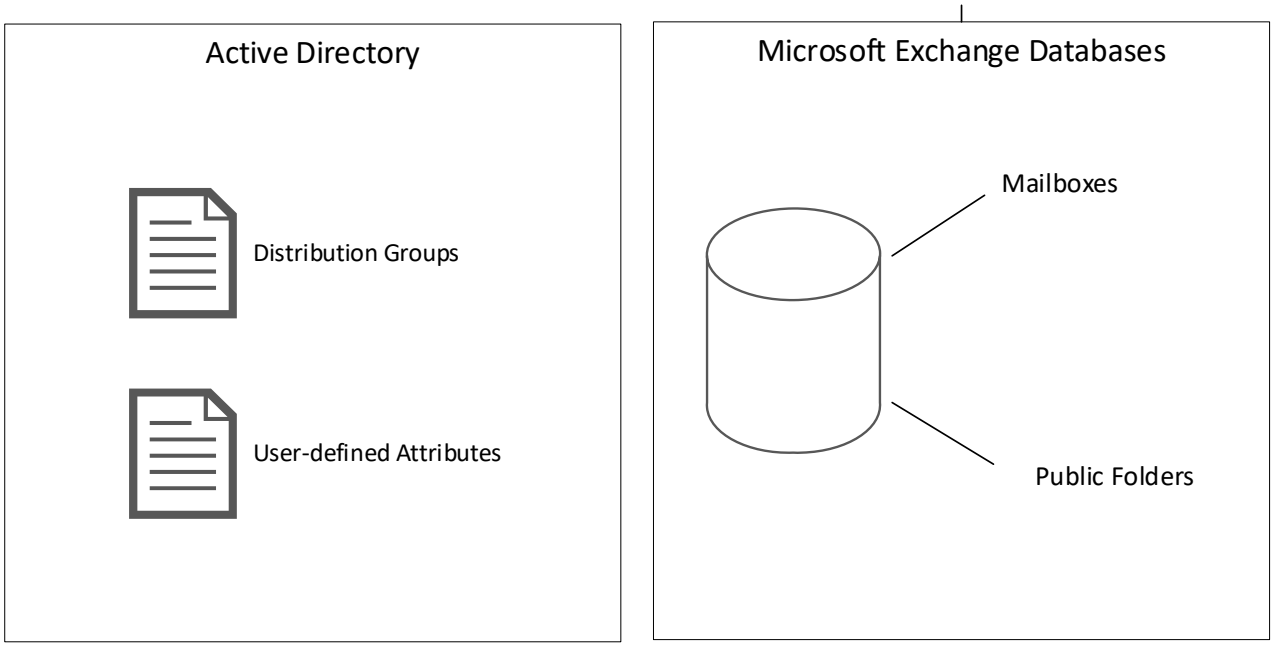

Fig. 2 - Storage location using Exchange 2013 as an example

Depending on the Microsoft Exchange version used, the storage location of the data varies.

2.2 Required permissions

During the inventory it can happen that you use a user account for the inventory, which does not have sufficient permissions in both areas (Active Directory & Exchange).

Therefore, the use of an Exchange Organization Administrator is recommended for the inventory.
A member of the Domain Administrators group **is not** automatically a member of this group.

Docusnap also reads the configuration partition of the Active Directory during the inventory process so that the corresponding Exchange servers can be found. This requires appropriate permissions!

The path is the following and can be checked in the ADSI Editor:

- CN=Configuration…
- CN=Services
- CN=Microsoft Exchange
- CN=Domain
- CN=Administrative Groups
- CN=Exchange Administrative Group…
- CN=Servers

3. Execute the inventory

3.1 Performing the network inventory of MS Exchange

For network inventory, start the Exchange Scan Wizard:

- Discovery - All Wizards - Exchange Server
- Inventory - All Wizards - Exchange Server
- All Jobs - All Wizards - Exchange Server

In step 3 you start the search for the Exchange servers. In the advanced options you can select the inventory scope.

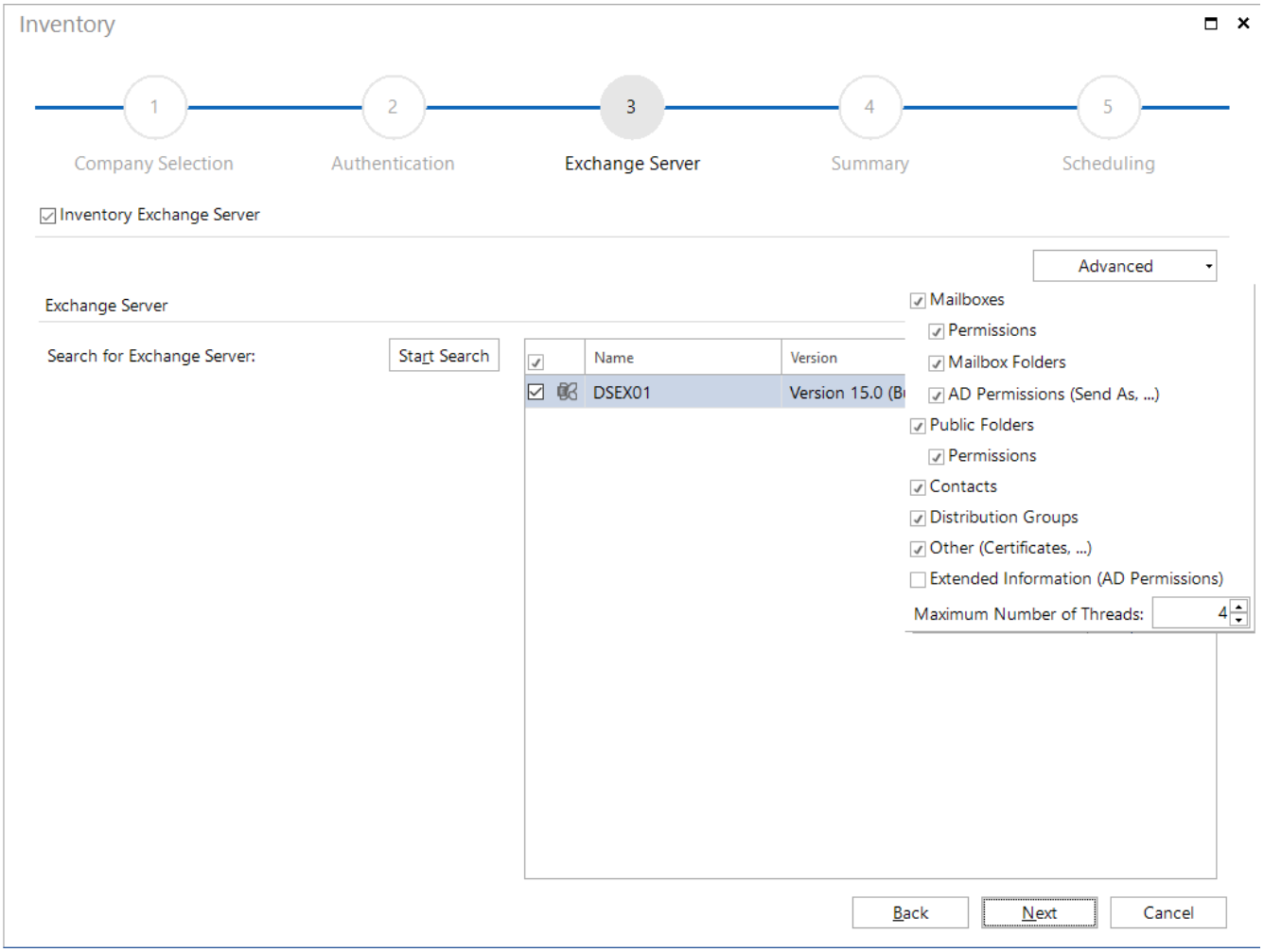

Fig. 3 – Exchange Inventory wizard

3.2 Check PSExec connection

The Exchange inventory in Docusnap is performed by LDAP and PowerShell queries. The PowerShell queries are performed locally on the Exchange servers using PSExec. PSExec is a Windows Sysinternal tool that allows you to run programs on remote systems. In addition, a WMI connection to the Exchange Server is required.

PSExec is classified as "dangerous" by some anti-virus products, which is why execution is not allowed by default. PSExec would have to be classified as "secure" in this case - or you would perform the Exchange inventory using Exchange script. Furthermore, the user who performs the inventory and thus also establishes the PSExec connection must be the local administrator on the Exchange servers.

Check PSExec connection:

- Open command line as administrator and change to following path
  - C:\Program Files\Docusnap 11\Bin
- Now run PSExec with the following parameters
  - psexec.exe \\hostname cmd
    - using the parameter -u domain\username - another user can be specified for the connection

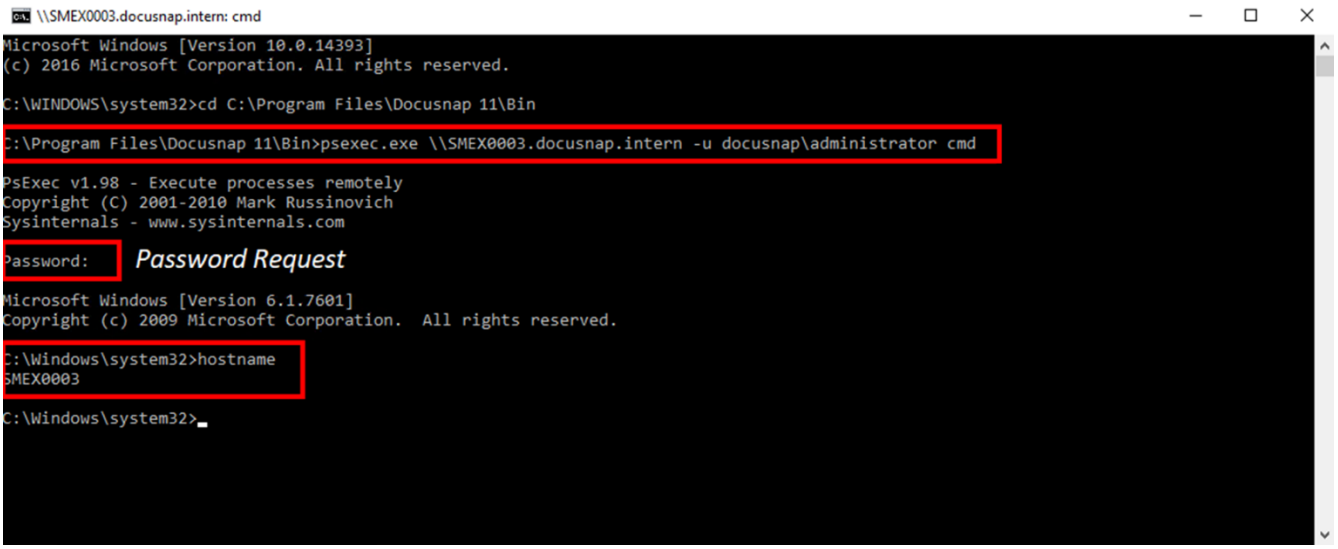

Fig. 4 - Check PSExec Connection

If this connection cannot be successfully established, the anti-virus product on the target computer should be deactivated as a test. If the connection is now successful, PSExec must be released or allowed to run within the anti-virus product.

Check WMI connection:

In most cases, a WMI connection is blocked by a firewall. A detailed HowTo for troubleshooting WMI connection problems can be found in our Knowledge Base.

3.3 Integrated authentication

If the user session is started in Docusnap with a different user account than the user account specified in the Exchange inventory, the use of the integrated authentication can solve an existing problem.

For this Docusnap is executed via the function **Run as another user** (CTRL+SHIFT and right mouse button) with the Exchange inventory user.

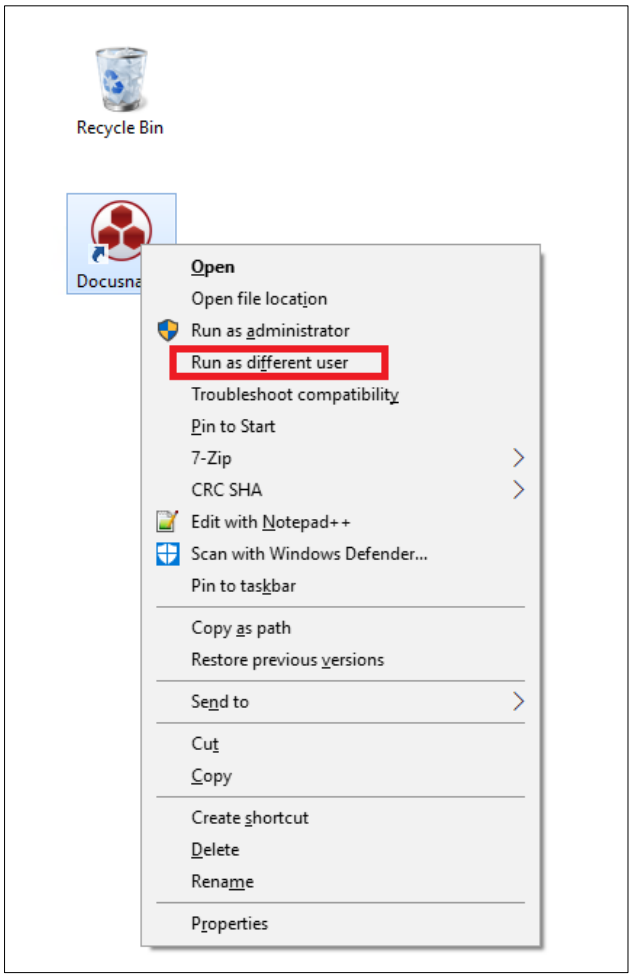

Fig. 5 - Run as another user

Please note that Docusnap may have to be reconfigured for this user at the first start. The settings should be noted in advance from the Docusnap installation already configured.

Alternatively, a central configuration file can be used for Docusnap.

Refer to the User Manual for more information:
https://www.docusnap.com/help/docusnap-x/user/docusnap-advanced-topics-options-configuration-file.html

The Exchange Inventory wizard does not specify a username and password, so Docusnap automatically uses the security context of the logged-on user or the user that started Docusnap.

If you perform the inventory on a scheduled basis via the Server- or Remote Discovery Service, Docusnap would in this case use the security context of the user running the associated services. If the local system account is used in this case, the integrated authentication cannot be used.

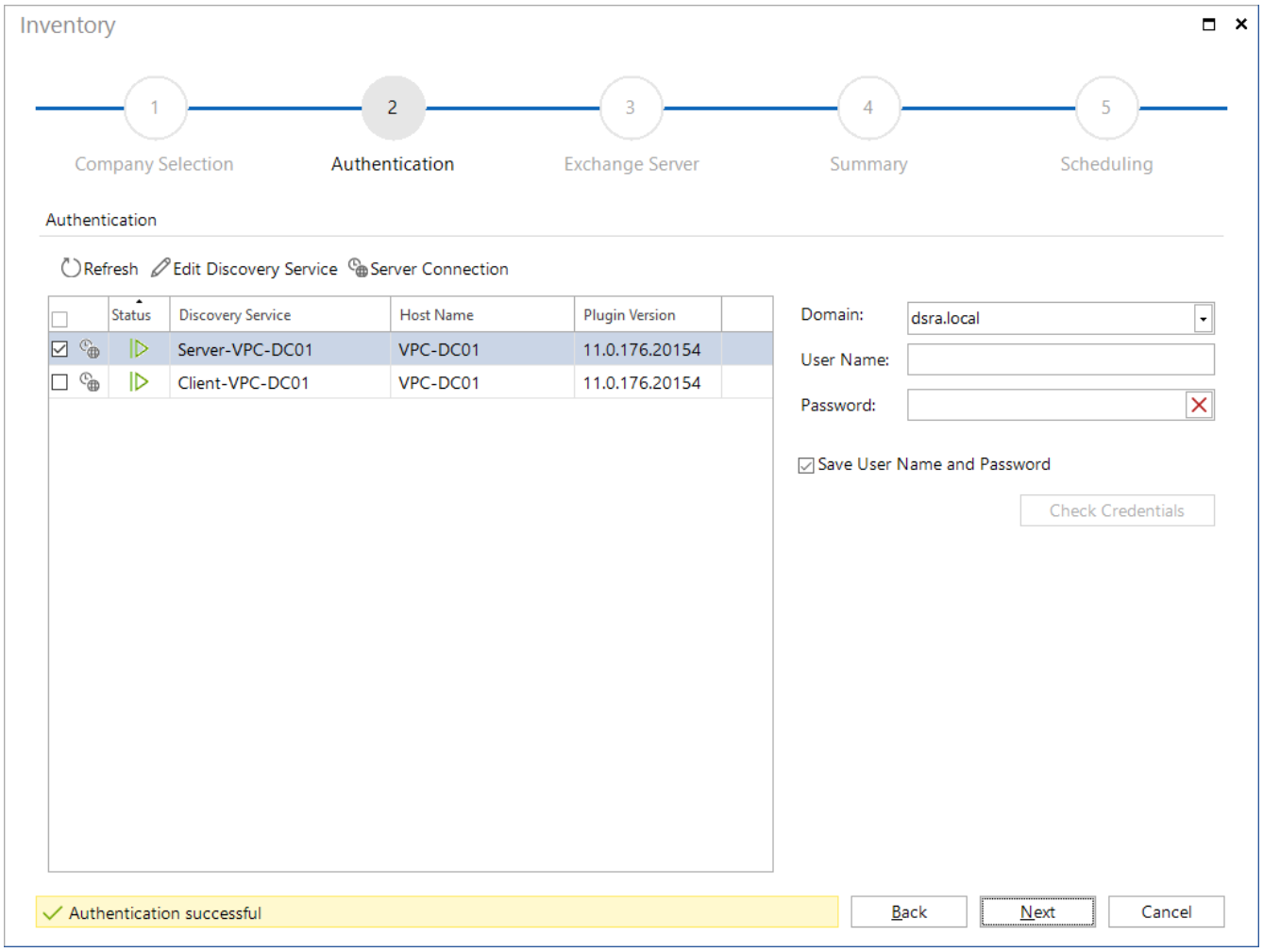

Fig. 6 - Integrated authentication

4. Using the Exchange script inventory

Docusnap offers the possibility that the mailboxes and public folders can be inventoried locally on the Exchange system.

Two executable files exist for this purpose:

- DocusnapExchange.exe for the inventory of Exchange 2007 / 2010
- DocusnapEX13.exe for the inventory of Exchange 2013 / 2016 / 2019

Note: In addition to the two files, you will find an XML configuration file in the Tools folder for the respective script. This enables AES encryption when FIPS (Federal Information Processing Standards) is enabled. If an inventory is made via script, it must also be transferred, if required. If script and XML configuration file exist in the same folder, it will be used automatically. No additional parameter is required.

In the following, only the DocusnapExchange.exe for an Exchange 2010 is specified.

4.1 Storage location

The files are stored in the application directory in the **Tools** folder during installation of Docusnap. This folder can be opened via the user interface using Docusnap Tools:

Switch to the **Inventory - All Wizards - Docusnap Tools**.

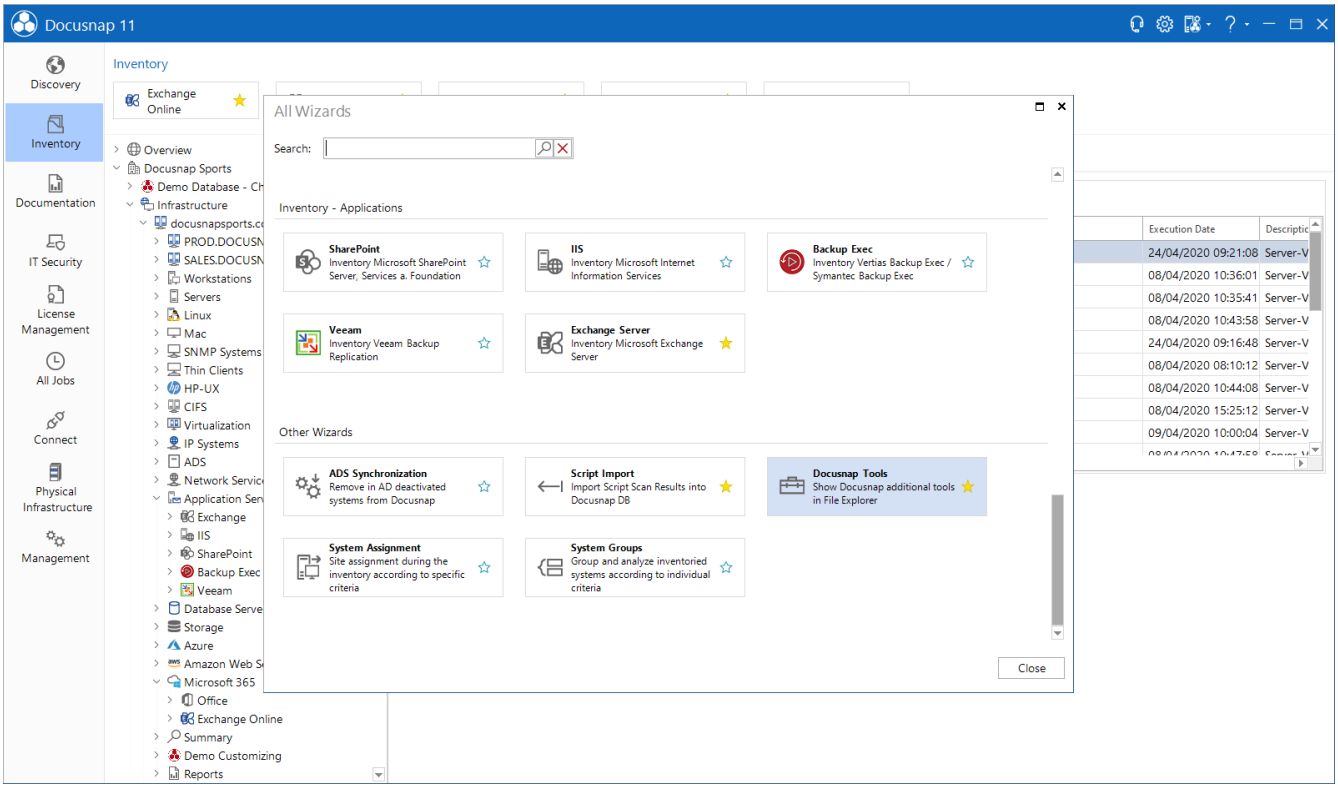

Fig. 7 - Calling the directory via Docusnap Tools

4.2 Function

DocusnapExchange.exe creates several files when called, in which the inventory information of the local Exchange system is contained.

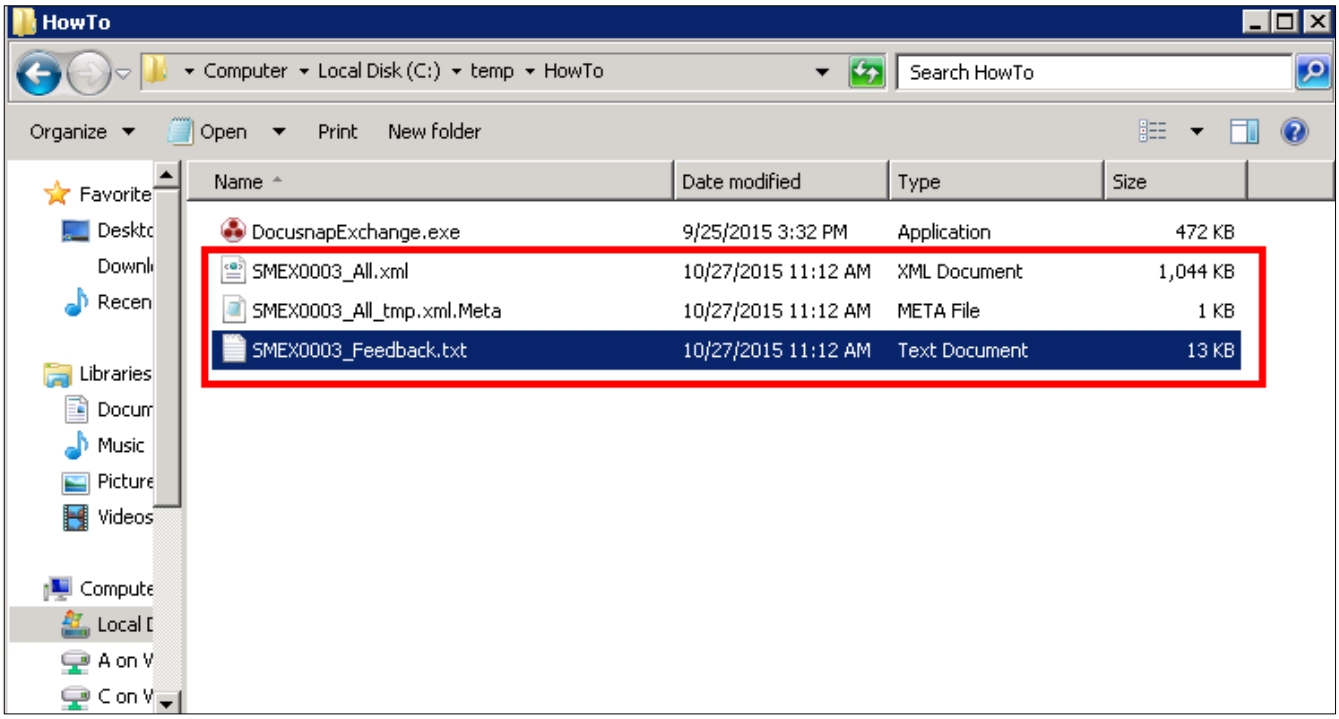

Fig. 8 - Files generated by DocusnapExchange.exe

The XML files can then be imported into Docusnap. For more information, see theImport chapter.

4.3 Automation

It is also possible to run DocusnapExchange.exe automatically. The generated XML files can be stored in a central network share via the **`-outputdir`** parameter and then imported automatically at specified times via the Docusnap server.

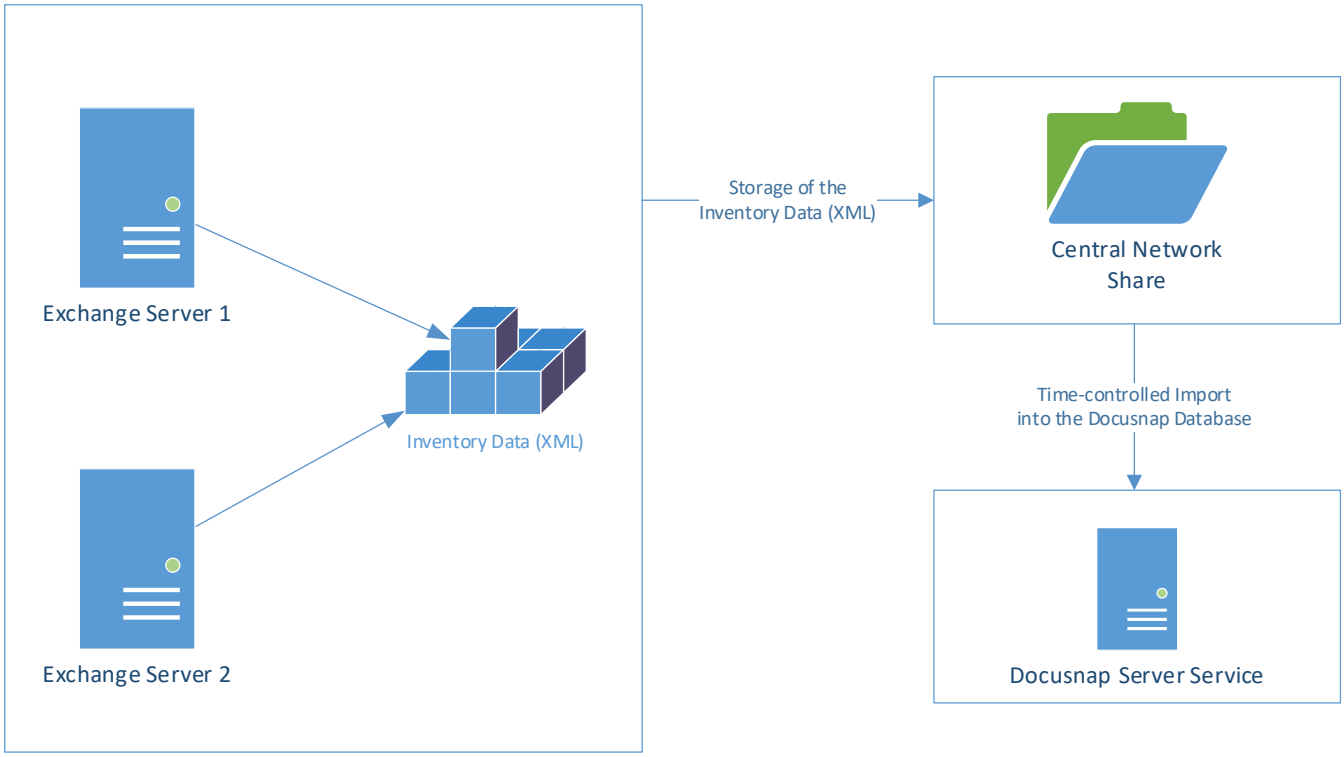

Fig. 9 - Automatic import procedure

Exchange Inventory execution can be scheduled using Windows Task Scheduling.

> The scheduled task must be performed with a user,
> who is authorized to write to the central network path.

4.4 Parameter

The DocusnapExchange.exe has extensive parameters with which the behavior of the inventory can be controlled.

These can be viewed in the user manual:

https://www.docusnap.com/help/docusnap-x/user/docusnap-inventory-scripting-exchange.html

4.5 Implementation

Log on to the Exchange server to be inventoried using a remote session or locally.

The DocusnapExchange.exe suitable for the respective Exchange version must be copied to the system to be inventoried.

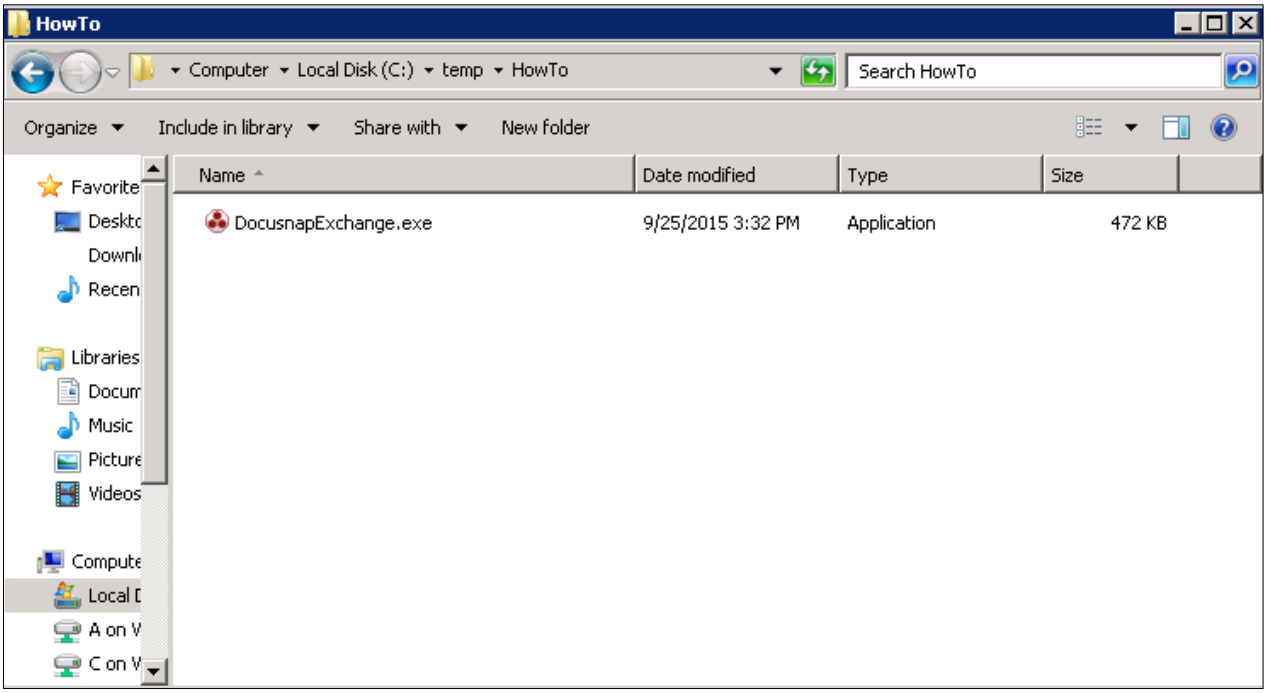

Fig. 10 - Copying DocusnapExchange.exe to the system

Open an administrative command prompt, navigate to DocusnapExchange.exe and run it.

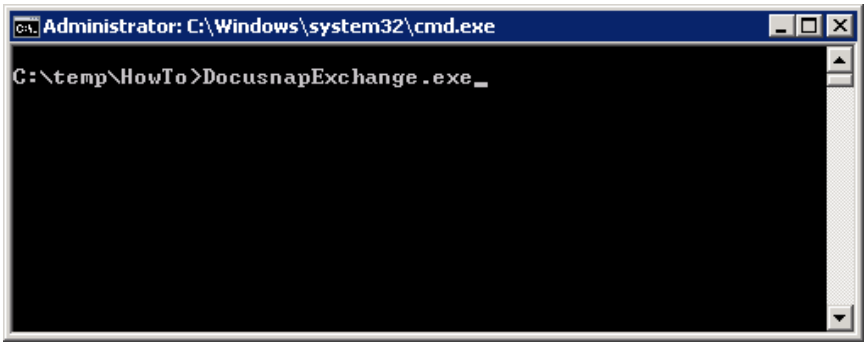

Fig. 11 - Administrative Command Prompt

By default, DocusnapExchange.exe would use all available system resources. In order not to impair the function of productive systems too much, it is recommended to start DocusnapExchange.exe by specifying a thread number.

Example: **`DocusnapExchange.exe -threads 2 -outputdir "C:\temp\HowTo"`** starts DocusnapExchange.exe with only 2 threads and returns the result files to the defined directory.

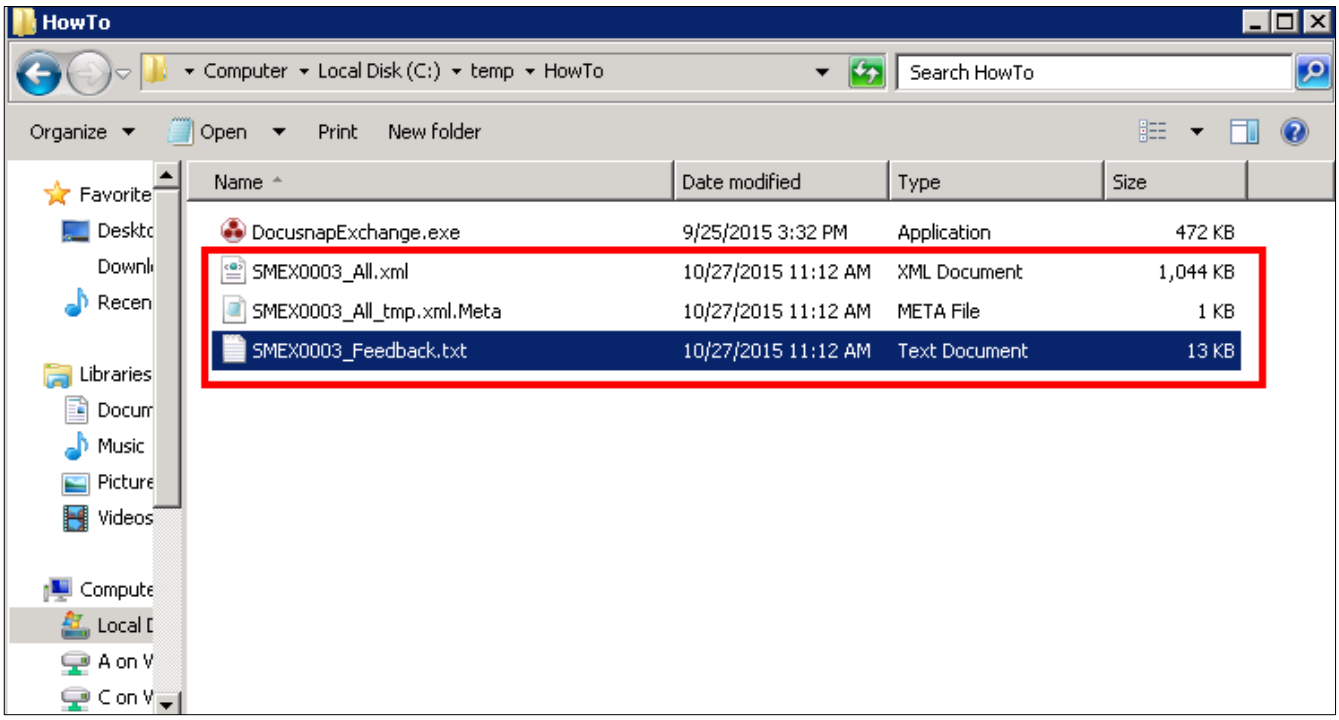

Fig. 12 - Created files

The DocusnapExchange.exe creates an XML file with all information about this Exchange server.

The _Feedback.txt file contains log data from the execution of DocusnapExchange.exe. For large Exchange databases, the inventory may take longer. The status of the inventory can then be checked in this file.

4.6 Import

4.6.1 Preparations for the import

Before the XML file can be imported, you must inventory the information for the Exchange environment from Active Directory. The Exchange environment stores information both on the corresponding Exchange server and in Active Directory - see chapter 2.1.

To inventory Exchange information from Active Directory, the Exchange Inventory Wizard is started. Perform the authentication and finally for step 3 - Exchange Server - do not perform any selection.

Please note that only this part of the inventory creates a new snapshot. The results of the import file are automatically appended to the last snapshot. If data already exists, it is not overwritten. If you want to import a current script inventory, this process must be repeated.

The inventory of the AD part must be done before executing the script!

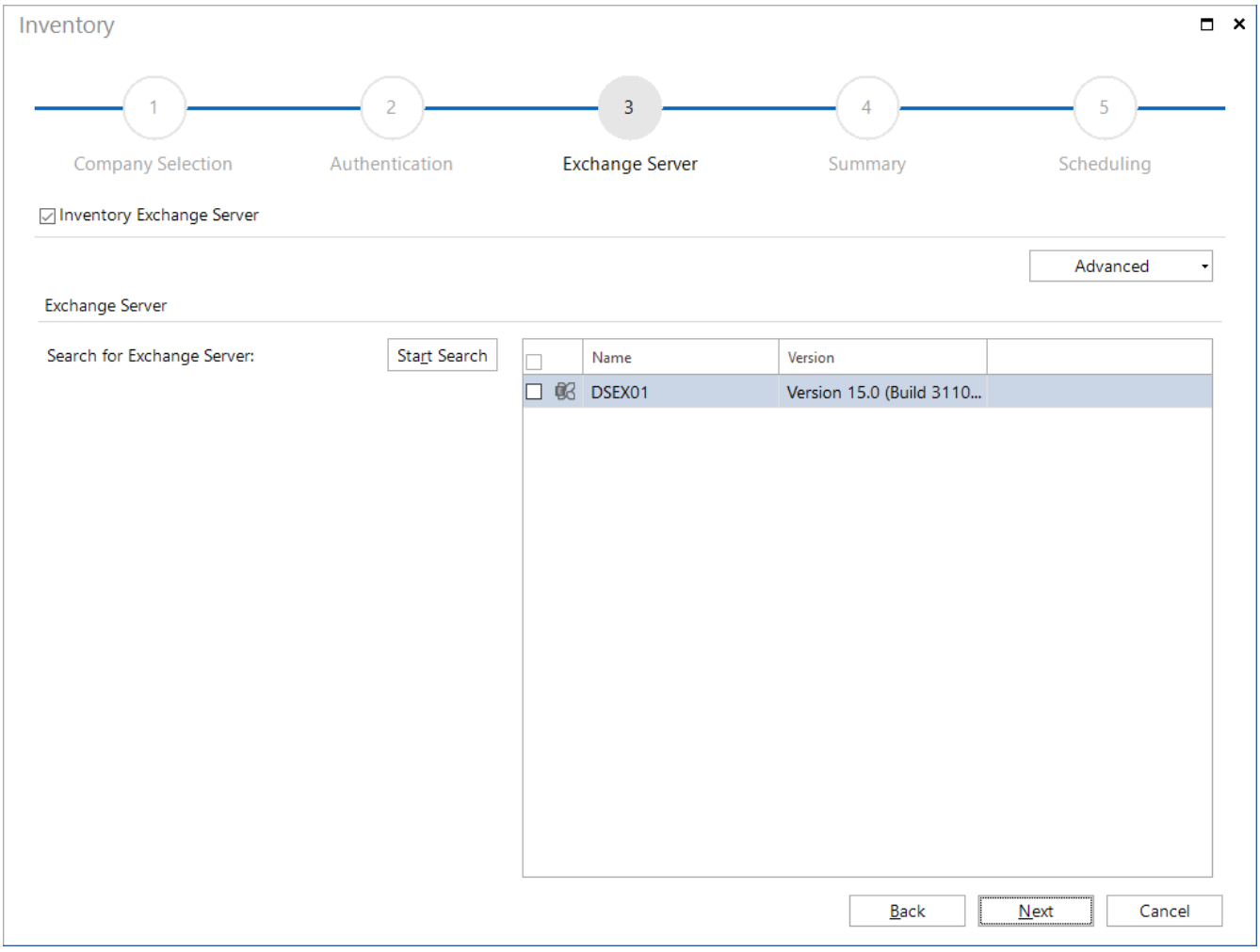

Fig. 13 - Inventory Exchange information from the ADS

4.6.2 Import Exchange XML

In order to import the XML file created by Docusnap, this can be done using the **Script Import** wizard:

- Discovery – All Wizards– Script Import
- Inventory – All Wizards– Script Import
- All Jobs – All Wizards– Script Import

In the first step, select the desired company and domain for the import. Then, specify the path for the XML files. Specify the directory or UNC path of the central share from which to import the XML files.

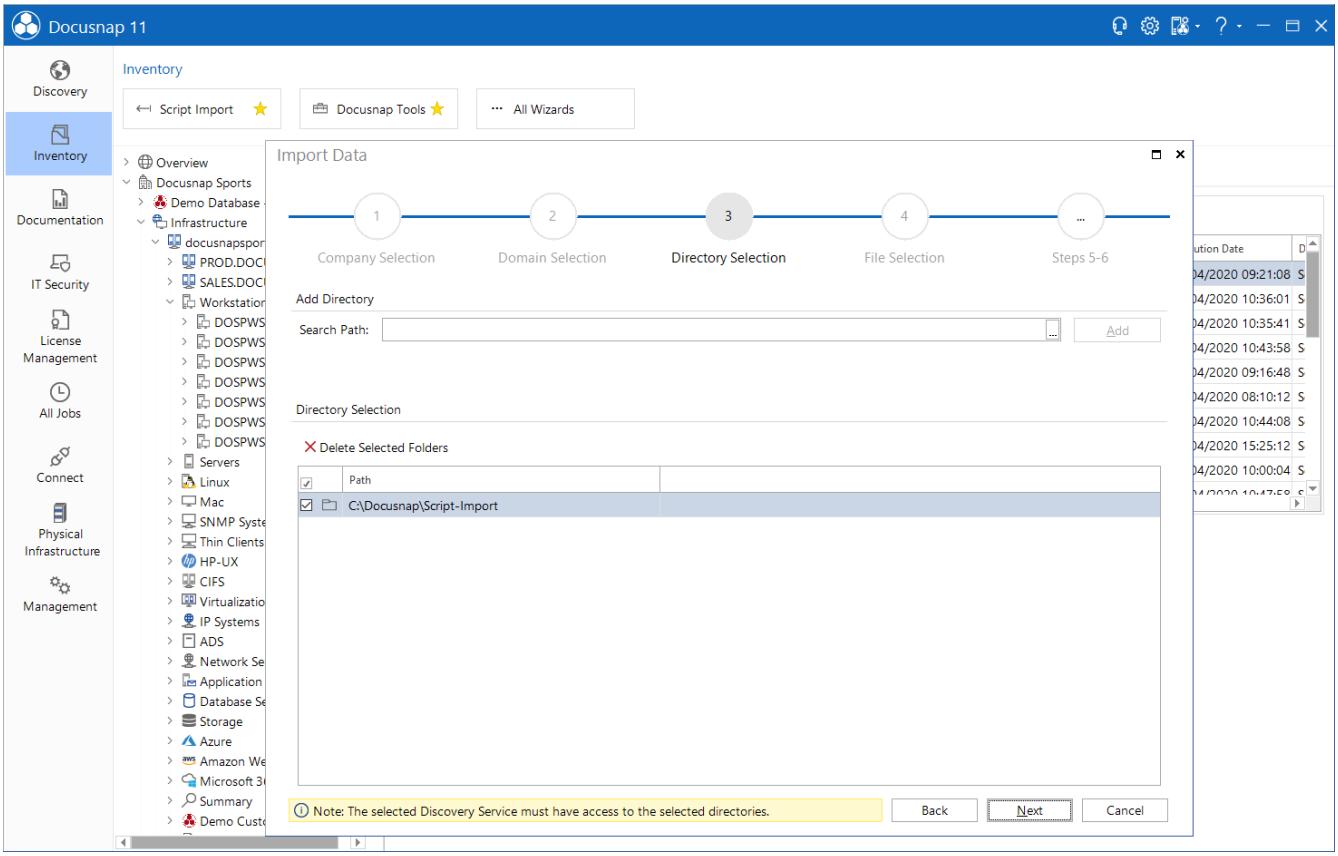

Fig. 14 - Importing the XML file

In step 4 - File selection - the XML file is imported - the import is started via the button **Start search for files**.

Information: If you use DocusnapScript.exe or the DSLinux script to inventory Windows and Linux systems and these files are also stored in the previously selected folder, these XML files would also be available for selection here.

5. Exchange 2003 Inventory

With the Docusnap 11 version no Microsoft Exchange Server 2003 can be inventoried. If a one-time inventory is required, it must be carried out with the Docusnap 6.3 version and then it must be carried out with the database import or export.

Please note that the database import / export is only possible with a multi-client capable license.

Under the following manual entry, you will find the description of the database Import / Export:
https://www.docusnap.com/help/docusnap-x/user/docusnap-data-organization-and-analysis-database-export.html

6. Exchange Online Inventory

The Exchange Online inventory has been adjusted with the release of the version in March 2021. Scheduled jobs created until then must be deleted and created again.

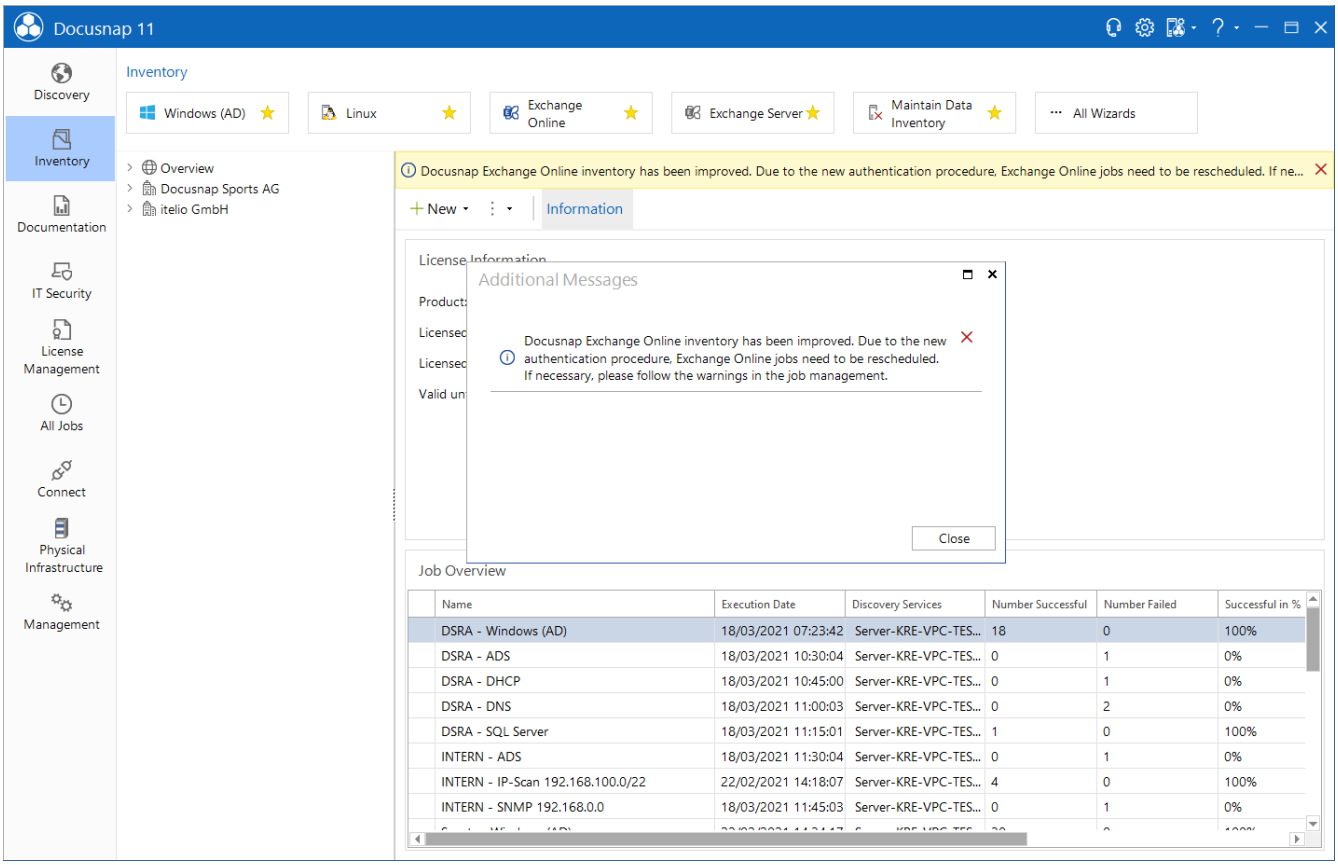

Fig. 15 - Information regarding the change in EXO inventory

The Exchange Online inventory requires an Azure App. This App is the interface between Docusnap and Exchange Online. The required Azure App is created within. The necessary information and steps to do are listed below.

6.1 Information and requirements for creating the app

Active scripting must be enabled in Internet security settings

- Security settings – Internet – Scripting – Active Scripting

The security settings for the Internet zone should be set to medium to high at most

The browser cache should be cleared

The app can only be created via a 64-bit operating system

The user you start Docusnap with must be local administrator – only for creating the app

- Importing PowerShell Modules: ExchangeOnlineManagement

The Azure Administrator you are using must be a member of the Azure Role Global Administrator role

- Necessary for creating the app
- The app you want to create will not have this permission!

The app you want to create will have the following permissions

- Exchange.ManageAsApp
- full_Access_as_app[1]
- Global Reader

The app is referred to in Azure as follows

- *Docusnap_EXO_Inventory_App_" & "One-time App ID"*
- The label cannot be customized
- if you customize the label in azure the inventory can no longer be performed

A self-signed certificate is created in connection with the app

- The certificate is valid two years after creation
- The certificate is stored in the Docusnap database (tAzureOAuthApps)

The inventory system must meet the following system requirements

- 64-bit operating system
- .NET Framework 4.8 or later
- PowerShell 5.0 or later

[1] The app to be created has full_Access_as_app permissions, but can only read Exchange Online due to the assigned directory role "Global Reader". Manipulative (New, Remove, etc.) cmdlets are not available.

6.2 Creating the Azure App

You can open the dialog for creating the necessary Azure App in two ways:

- From the **Exchange Online Scan Wizard** via the **Register App** button.
- In the Docusnap Administration
    - Administration - Inventory - Azure Apps

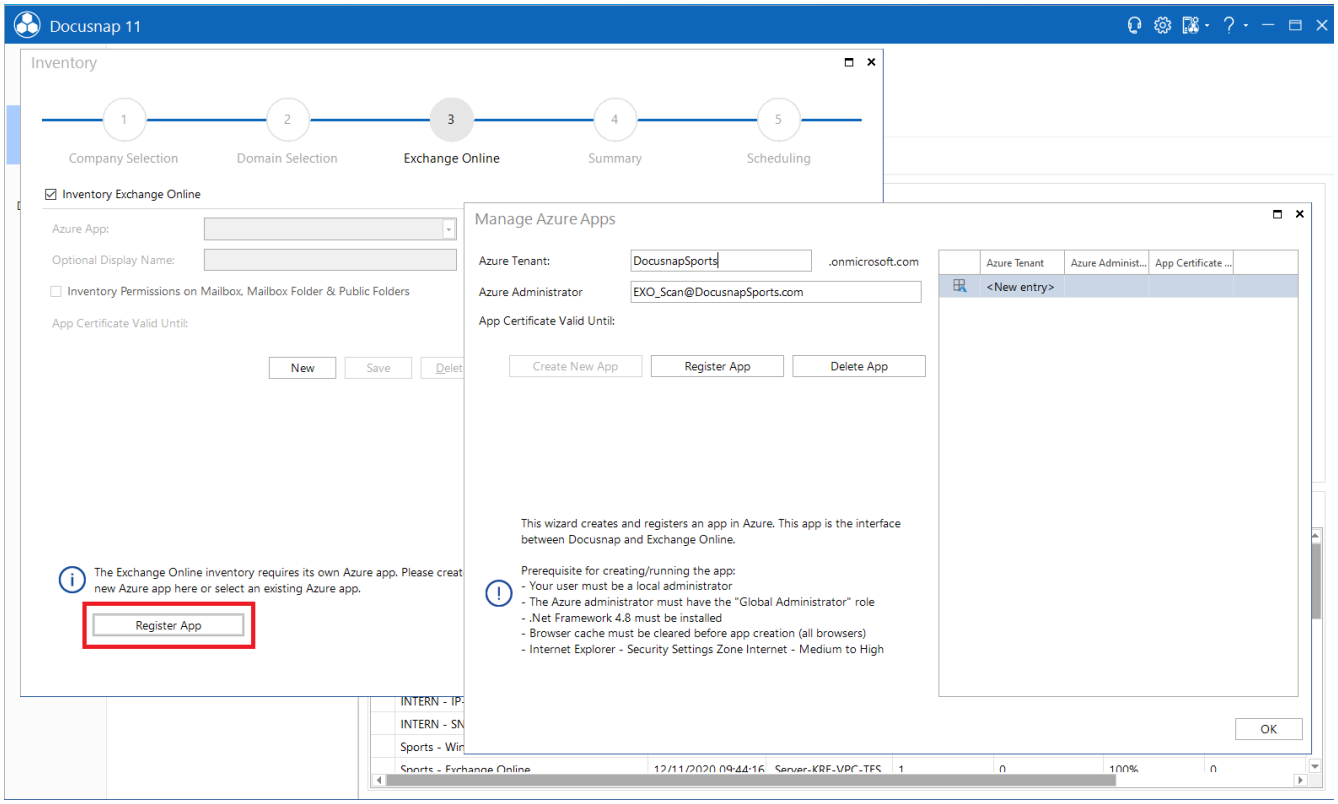

Fig. 16 - Enter App Registration Data - App will then be created automatically

Create New App

Enter Azure Tenant

Enter Azure Administrator (Global Administrator)

Register new App

- Now the Azure connection is established, and the creation of the previously described app is started

Password request of the Azure administrator

- The password of the previously stored Azure administrator must be specified in the pop-up
- If set up, the multi factor authentication must now also be performed

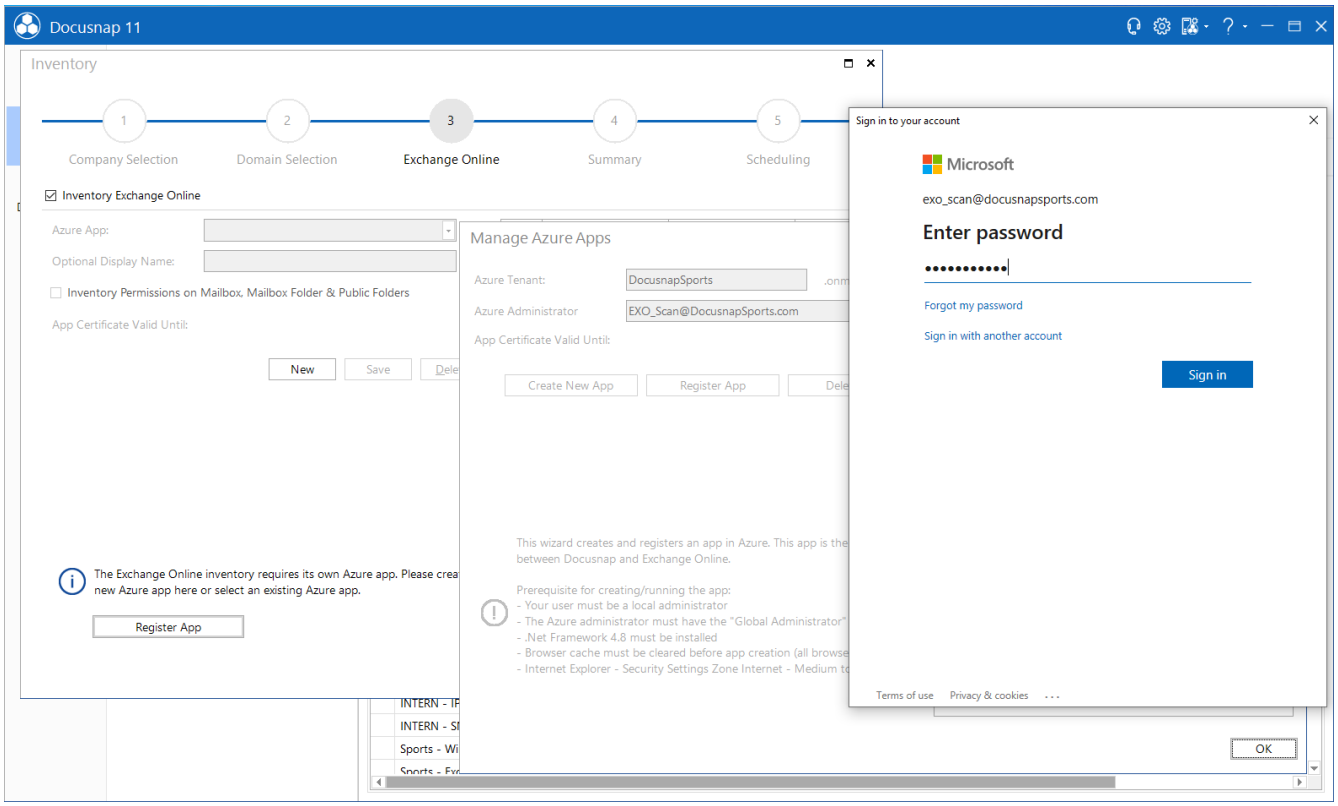

Fig. 17 - Azure Administrator Password Request

Accept requested permissions for the app

- The requested permissions must be checked and confirmed
- For this purpose, it could be necessary to authenticate again with the **Azure Administrator** entered previously

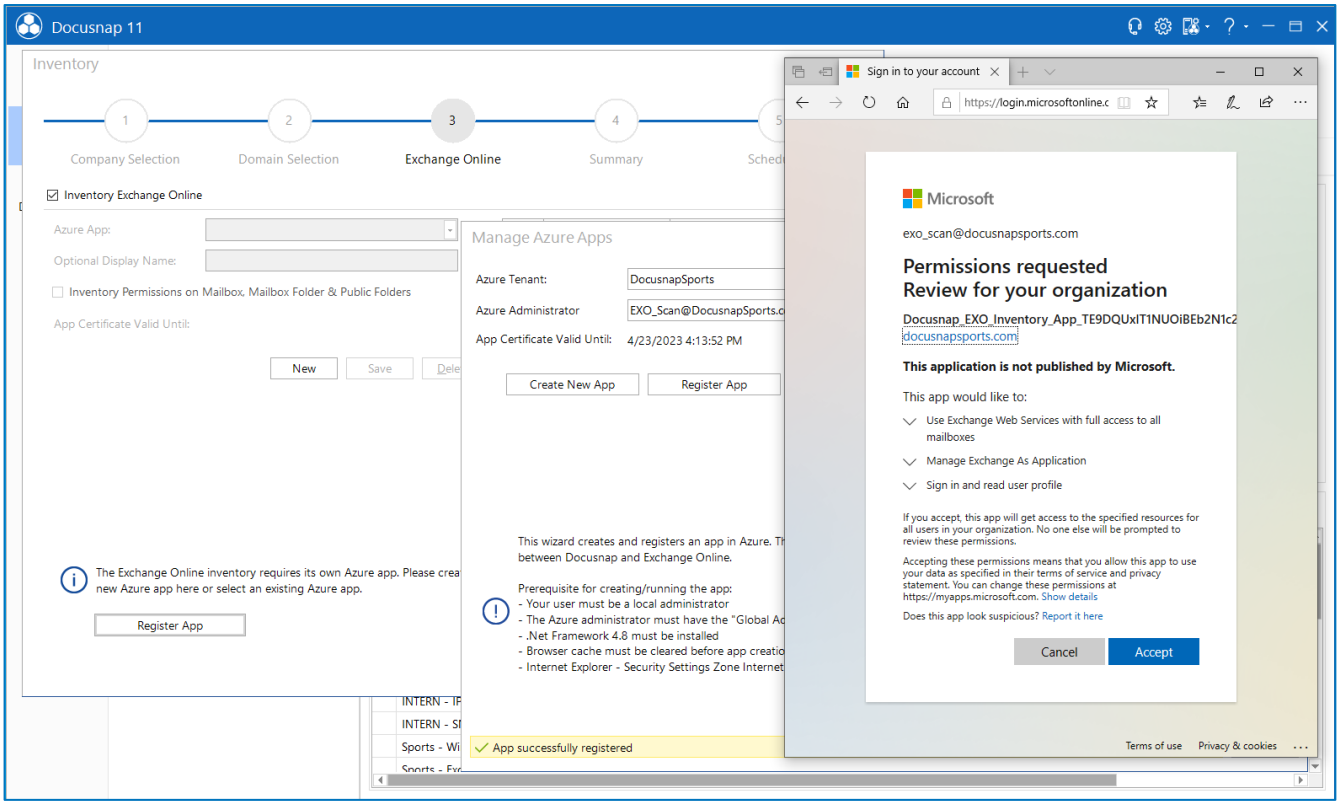

Fig. 18 - Check and confirm requested permissions - accept requested permissions

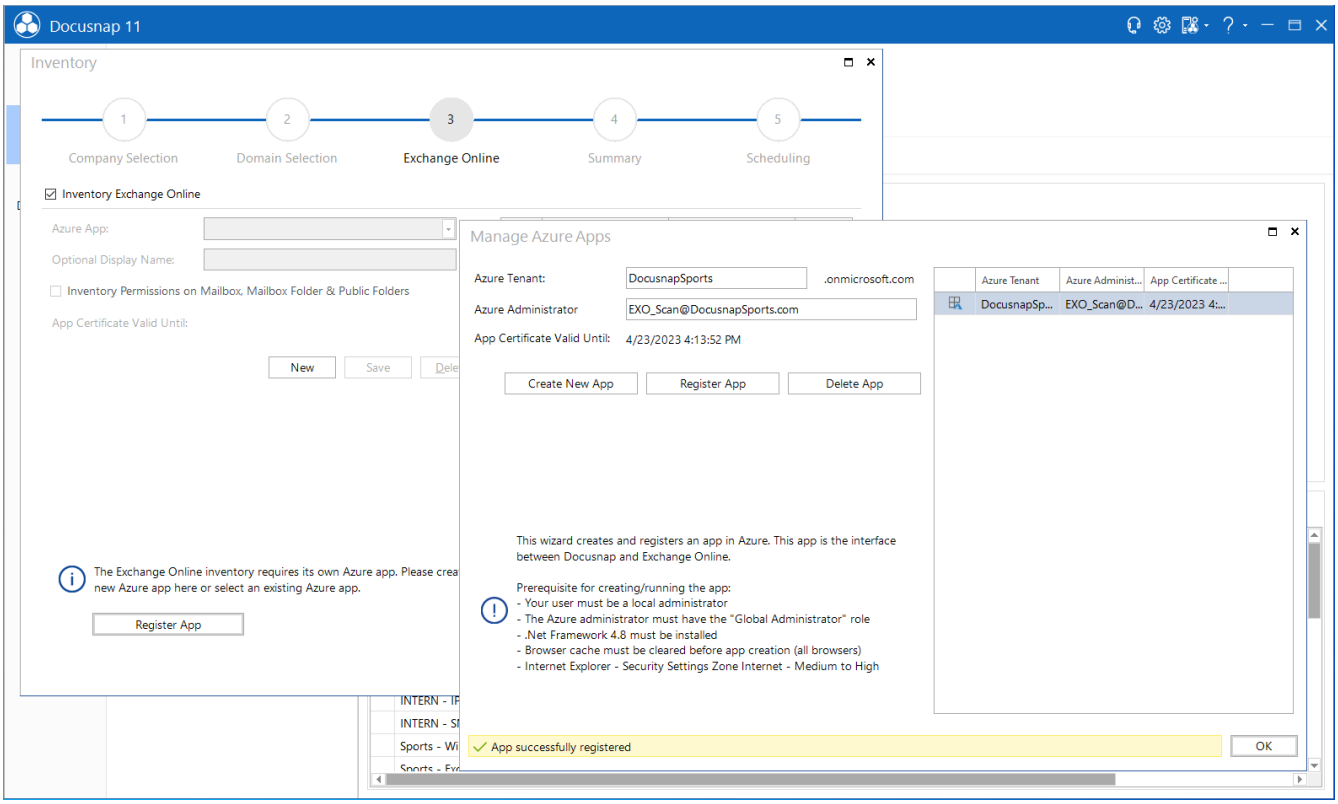

Fig. 19 - App has been successfully created - inventory can be performed

Now the required app for the Exchange Online inventory has been created and you can execute or schedule the inventory.

If the certificate expires after two years, the app must be re-registered. Already scheduled jobs will then automatically use the new certificate - no adjustment is necessary!

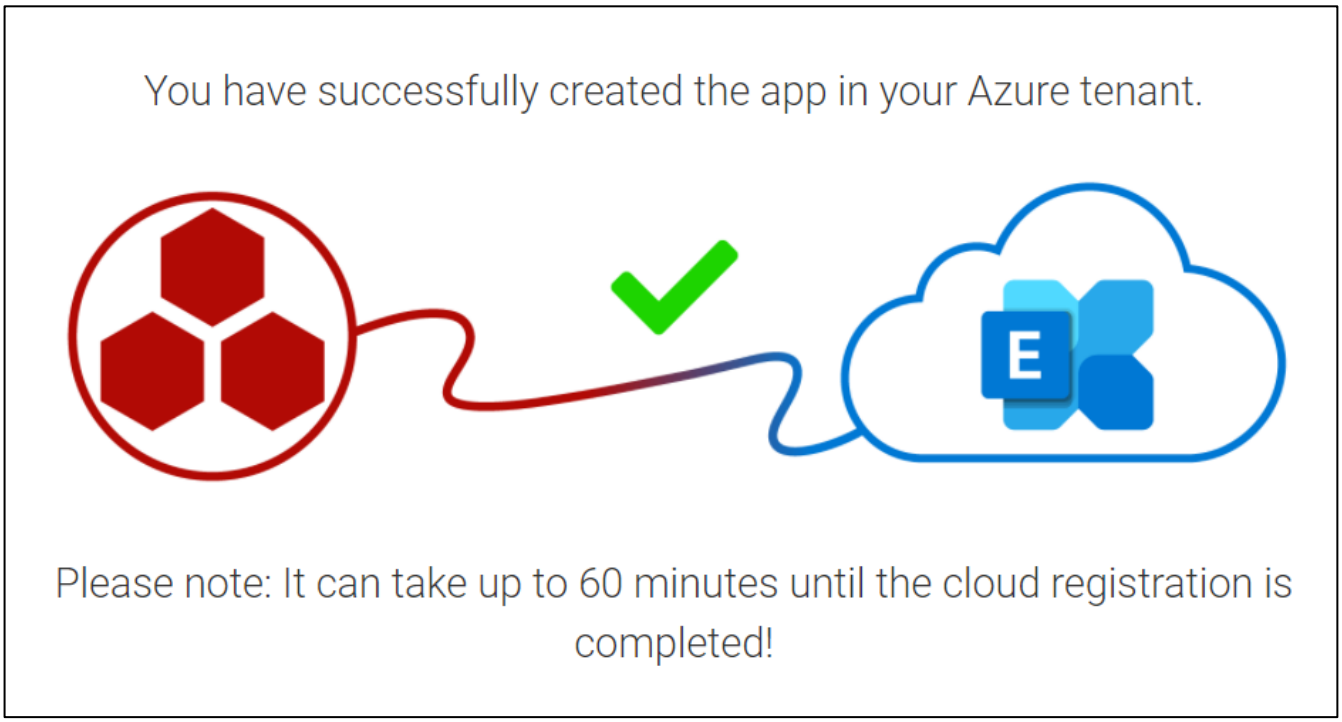

Fig. 20 - App has been successfully created

6.3 Troubleshooting

If the creation of the app fails, you should check whether you can connect to Exchange Online using PowerShell. Perform this check on the Docusnap Server / DDS system.

Start PowerShell as Admin

```
Install-Module -Name ExchangeOnlineManagement
Import-Module ExchangeOnlineManagement
Connect-ExchangeOnline -UserPrincipalName IhrUserPricipalName@IhreFirma.com
```

Now the window for logging on to your account should open - here you still need the password. If this connection can be established, you should now contact our support: support@docusnap.com.

If the connection cannot be established, the error is not initially in Docusnap.

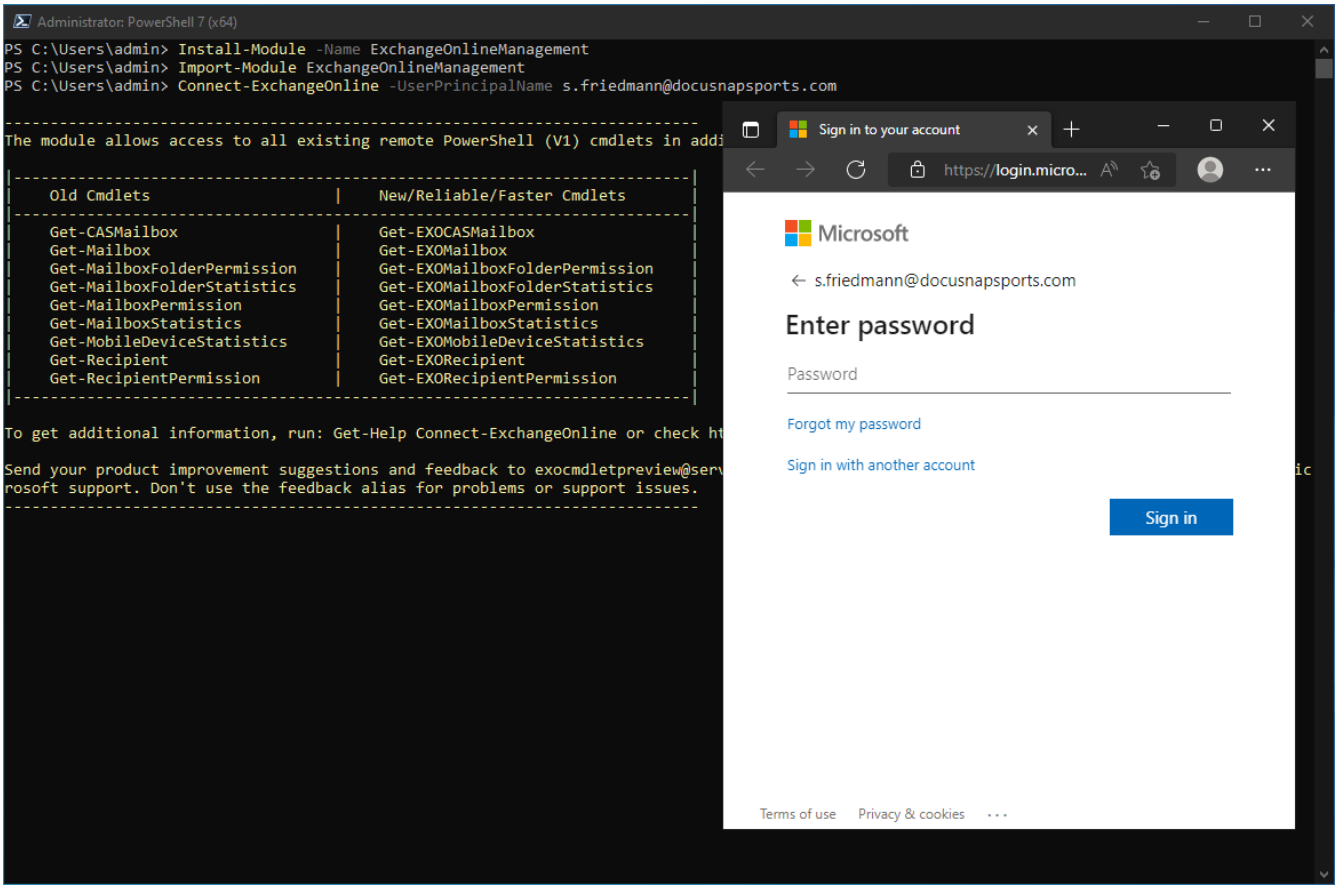

Fig. 21 - Check EXO Connection via PowerShell

7. Exchange Readiness Check

If you are planning to move from Exchange on Premise to the cloud, Docusnap can help you. Do the Exchange Online Readiness Check and check any necessary adjustments in your Exchange environment, Active Directory and Office installations.

The following reports are available in the section Company - Infrastructure - Domain - Reports - Microsoft Exchange:

- Exchange Readiness AD Properties

Based on AD DS scan results, this report provides recommendations for migrating the Exchange OnPremise environment to Microsoft 365, examining the syntax of AD DS attributes, and highlighting issues that can cause problems when synchronizing to the cloud directory service.

- Exchange Readiness compact overview AD / Exchange

Based on AD DS and Exchange inventories, this report provides recommendations for migrating the Exchange OnPremise environment to Microsoft 365. This report provides an overview of the domain requirements and status of the domain to be migrated. The Exchange part of the report provides information about the objects to be synchronized and the certificates found on Exchange servers, in addition to important configuration settings.

- Exchange Readiness MS Office Family

Based on Windows inventories, this report provides recommendations for migrating the Exchange OnPremise environment to Microsoft 365 by listing found Microsoft Office products to allow for a check for outdated installations. As of October 13, 2020, at least Office 2016 is required to access Microsoft 365 services (e.g. Exchange Online).

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VERSION HISTORY

Date	Description
05/10/2016	HowTo created
10/24/2018	Screenshots updated; New wizard for script import, customize parameter information
07/18/2019	Screenshots updated. FIPS note added, permissions updated
06/09/2020	Version 2.0 - Revision of the HowTos for Docusnap 11
03/24/2021	Version 2.1 - Revision of the HowTo for Exchange Online inventory
04/23/2021	Version 2.2 - Revision of the HowTo for Exchange Online inventory
01/20/2022	Version 2.3 - Revision of the HowTo for Exchange Online inventory
06/20/2022	Version 2.4 – Added Chapter Troubleshooting

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